



The Sherwin-Williams Company
Environmental Health and Regulatory Services
101 Prospect Avenue, NW
Cleveland, Ohio 44115-1075
Fax: (216) 566-2730

April 11, 2002

Original: 2238

Mr. Robert Nyce
Independent Regulatory Review Commission
333 Market Street, 14th Floor
Harrisburg, PA 17101

Subject: Regulation #7-371 Architectural and Industrial Maintenance Coatings

Dear Mr. Nyce:

Thank you for meeting with us on Wednesday April 10th to discuss our concerns regarding the DEP proposed regulation #7-371 limiting the volatile organic content in Architectural Coatings. As discussed, our major concerns are as follows:

- The proposed regulation greatly exceeds the requirements in the National Standards for Architectural Coatings and is unnecessarily stringent. Our proposed changes to the DEP proposal results in less than a 5% difference in reductions, and are not needed for Pennsylvania to achieve clean air.
- We are also concerned that this regulation was developed in California for that specific state and was plugged into Pennsylvania. No work has been done to make it specific to Pennsylvania. Fundamentally this makes no sense since the air quality and environmental issues are not similar in the two states.
- The limits for sanding sealers, stains and varnishes are proposed at a level that would impede the performance of our products to the consumer. Sherwin-Williams currently provides the majority of the business in this field, owning popular brands such as MinWax, DuraSeal and Fabulon.
- The limits for primers exclude the use of the solvent borne products that are needed to ensure proper performance and long term durability of low content topcoats. More frequent applications of such coatings will result in an increase, not a decrease, in emissions.
- The proposed regulation will negatively affect our products and could adversely affect our Company. Sherwin-Williams employs over 1,000 people in the Commonwealth of Pennsylvania, including retail, distribution, and production facilities.

More details can be found in the attached Summary of Sherwin-Williams Comments.

If you have comments or questions please call Madelyn Harding at (216) 566-2630 or Douglas Raymond at (216) 515-8899. The Sherwin-Williams Company would greatly appreciate any assistance you can give us on this issue. Thank you again for your time and consideration of our concerns.

Very truly yours,

Madelyn Harding, Manager
Product Compliance & Registrations
Sherwin-Williams, Corporate

Douglas Raymond, Director
Regulatory Affairs
Sherwin-Williams Diversified Brands

cc: Brian Rider (PRA)
Stephanie Johnston (PRA)
Lance Hemsarth (Sherwin-Williams Minwax)

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INDEPENDENT REGULATORY
REVIEW COMMISSION



Summary of Comments

- Sherwin-Williams has significant concerns with the proposed standards for interior wood clear and semi-transparent stains, interior wood varnishes, interior wood sanding sealers, exterior wood primers, and floor coatings.
- The proposed standards are based on the inaccurate assumption that compliant coatings are available or that substitute complying products can be developed which will meet the performance requirements of the customers.
- In fact, the "compliant coatings" for these sub-categories do not meet the performance requirements of our customers and/or will result in increased and earlier repainting. They are effectively not within the limits of current technology.
- The DEP has not considered the increased emissions resulting from such performance issues and repainting results, and has not considered these facts in the proposed regulation.
- Sherwin-Williams proposes changes to the VOC standards for only a few of the 46 product categories proposed by Pennsylvania. In conjunction with the Pennsylvania proposed standards, the Sherwin-Williams proposal will achieve significant reductions beyond the National AIM rule (26.5 tons per day). This is very close to amount of emissions reduction determined for the Pennsylvania proposed rule.
- The proposed rule is unreasonably stringent and unnecessary for the protection of the public health, welfare and safety.
- The record does not support the emission reduction claims of the proposed rule, and the proposed rule is arbitrary and capricious.
- The proposed rule will have a significant adverse economic impact on Sherwin-Williams. In using its discretionary authority to set VOC standards, DEP must consider the economic impact the proposed rule will have on its actions, and has not adequately evaluated the adverse impact on Sherwin-Williams business in Pennsylvania. DEP can issue a rule which still achieves substantial VOC emissions reductions beyond the National AIM rule, without causing a serious adverse impact on potential sales of certain products.
- The economic analysis used in this rule development is inaccurate. It uses a figure of \$6400 per ton of VOC emissions reduced. This figure was copied from California. However, the situation in Pennsylvania is significantly different from that in California. All architectural coating products in California have been under VOC restrictions since the late 1980's. Thus, in estimating the cost impact of a new limit versus a current limit, California only considered the difference between the current status and the proposed status. In Pennsylvania the current status does not include any of the VOC restrictions that are appropriately assumed for California. Pennsylvania will need to make an independent determination of the cost of the VOC reductions contained in the proposed regulation.
- Sherwin-Williams respectfully requests that the DEP adopt Sherwin-Williams comments for alternative VOC limitations for the categories referenced above.
- Both the Consumer Products regulation and the architectural coatings regulation proposed by Pennsylvania are based on rule developments in California. However, while Pennsylvania's proposal includes the California averaging provision for consumer products, it does not do so for architectural coatings. This unbalanced approach to regulatory decisions is arbitrary and capricious and places an unreasonable and unequal burden on the architectural coating industry.
- Thank you for the opportunity to provide these comments.

Madelyn K. Harding, Manager
Product Compliance & Registrations

Original: 2238

July 28th, 2003

cc: Commissioners
IRRC
Independent Regulatory Review Commission
333 Market Street
14th Floor
Harrisburg, Pennsylvania 17101

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INDEPENDENT REGULATORY REVIEW COMMISSION

RE: IRRC August 14th Meeting on AIM coatings regulation

Dear Chairman John H. McGinley, Jr., Esq.,

We are writing to express our support for the Department of Environmental Protection (PADEP) proposed regulation for control of volatile organic chemicals (VOC's) from interior stains and varnishes, called the Architectural Industrial Maintenance (AIM) coatings rule (31 Pa. Bull. 6807). This regulation was unanimously approved, without questions, at the Environmental Quality Board on July 15, 2003. We urge you to expeditiously support and approve this regulation.

PADEP staff has performed extensive research into existing compliant stains and varnishes for interior use. Their research has netted the following examples¹. For clear wood interior varnishes, there are ten existing varnishes that already meet the proposed regulatory requirements of 350 g/L VOC from companies such as **Behr, Clovendale, Columbia, Fuhr, Hallman Linsey, Pittsburgh Paints and Sherwin Williams**. For clear and transparent stains with maximum of 250 g/L there are five existing compliant interior clear and semi-transparent stains, made by **American Formulating and Manufacturing, Fuhr, Van Technologies and Vista**. For gym floor sealers we have 4 examples within 350 g/L from **Basic Coatings, Bona Kemi, Hillyard, and Valspar**. Additionally, we have found that companies such as Livos, AURO USA and BioShield have broken new ground with their offerings for low VOC and solvent free coatings. These can be viewed at: http://www.ecobusinesslinks.com/natural_paint_manufacturers.htm. Pennsylvania State University currently uses alternative coatings on all gymnasium and concert center floors. *Environmental Building News* this year included the Pittsburgh Paint "Pure Performance" zero VOC paint from PPG Architectural Finishes as one of their top ten green products of 2002 for homeowner use. As this listing demonstrates, many manufacturers have already proven that producing products that comply with this rule is both possible and profitable.

Across Pennsylvania, our citizens suffered through 570 recorded exceedances of the eight hour ozone smog limits during 2002, and 19 recorded exceedances of the current one-hour ozone smog limit. Pennsylvania's remaining ozone smog nonattainment area in southeastern Pennsylvania is within a critical time frame, needing to prove that its State Implementation Plan, EPA-approved cleanup strategies have successfully reduced the unhealthy ground-level ozone smog pollution that has become inherent to that five county area. Philadelphia, Chester, Delaware, Montgomery and Bucks counties suffered from 10 exceedances of the current one-hour ozone standard during the 153 days of the ozone season of 2002, and 101 exceedances of the eight hour ozone standard. We continue to struggle to maintain a hair trigger on ozone smog control violation in other Pennsylvania cities such as Pittsburgh (34 exceedances of the eight hour ozone smog standard during the summer of 2002), and Lancaster (19 exceedances of the eight hour ozone standard during summer 2002). DEP has recently identified 33 out of 67 Pennsylvania counties as failing to meet EPA's eight-hour standard for ozone smog.

The Architectural, Industrial Maintenance rule is a requirement built into Pennsylvania's compliance plan – the state implementation plan, SIP – already approved by EPA in 1998. Pennsylvania's failure to proceed with completing a final regulatory framework for this necessary reduction of VOC's in the five county Philadelphia area would trigger a violation of our SIP. Not only would this expose the Commonwealth to an enforcement action by EPA in the Philadelphia five-county area, but more importantly, would also doom all Pennsylvanians to exposure to increased ground-level ozone smog air pollution levels and more dangerous health effects in our vulnerable senior citizens and young children. AIM is part of a group of model regulations suggested to the northeast states by the Ozone Transport Commission (OTC) and agreed to by 11 states and the District of Columbia on March 28, 2001 within the agreement "MOU 01-1". Pennsylvania is an OTC member and has signed this MOU.

AIM will net us an **expected 10,200 tons per year of VOC reduced by 2005** in the five county Philadelphia area; the final year in which Pennsylvania must achieve ground-level ozone smog control and cleanup under the current one-hour ozone standard, and our final goal in achieving cleaner air under the current one hour ozone smog limits. Consequently, we urge you, at this critical time, to be a leader in consumer and public health protections and support the DEP final rule for AIM coatings.

Sincerely,

Nancy F. Parks
Chair Clean Air Committee
Sierra Club, Pennsylvania Chapter
201 West Aaron Square
P.O. Box 120
Aaronsburg, Pennsylvania 16820-0120
814-349-5151
814-349-5121 (fax)



Kevin M. Stewart
Director of Environmental Health
American Lung Association of Pennsylvania
(717) 397-5203
fax: (717) 397-5244
www.alapa.org

Michael Fiorentino, Esq.
Senior Attorney
Air Program Manager
Clean Air Council
135 S. 19th St. Suite 300
Philadelphia, PA 19103
215-567-4004 x238
(f) 215-567-0441

Sue Seppi
Group Against Smog and Pollution
Pittsburgh, PA

ⁱ Attached are examples of each category of compliant stain and varnish.

Compliant Clear Wood Interior Varnishes

VOC Limit of 350 g/L

Behr, Low Solvent Clear Satin Oil-Based Polyurethane, 2-602

VOC: 347 g/L

Technical sheet comment: Resists abrasion, acid, and alcohol, easy to apply, for interior use on wood floors, tabletops, cabinets, furniture, and doors.

www.behr.com

Cloverdale, Acrylic Urethane Semi-Gloss, 42314

VOC: 241 g/L

Technical sheet comment: Premium quality, non-yellowing, excellent hardness, adhesion, durability, and wear resistance, fast dry, low odor, non-flammable, and soap and water clean-up, for interior use on wood furniture, shelving, cabinets, doors, and other woodwork.

www.cloverdalepaint.com

Columbia, Clear Acrylic Urethane Interior Gloss, 10-670

VOC: 224 g/L

Technical sheet comment: Dries to a tough, water and alcohol resistant finish, exceptional flow and leveling, sands easily, high build properties, non-flammable, for use on interior wood surfaces such as cabinets, paneling, molding, furniture, and other similar items.

www.cloumbiapaint.com

Fuhr, Waterborne Acrylic Varnish, 355

VOC: 73 g/L

Technical sheet comment: Best grade, fast dry, excellent durability, anti-sagging formulation, high solids, water clean-up, no HAPs, easy application, meets KCMA (Kitchen Cabinet Manufacturers Association), may be used as a Class B clear coating, for use on interior wood substrates requiring a high quality sealer and topcoat.

www.fuhrinternational.com

Fuhr, Water Clear Acrylic Varnish, 375

VOC: 50 g/L

Technical sheet comment: No flash point, excellent mar resistance, great blocking resistance, HAPs free, high solids, water clean-up, fast drying, high hardness, minimal to no grain rising, for use on interior wood substrates requiring a high quality sealer and topcoat.

www.fuhrinternational.com

Fuhr, Water Clear Varnish, 380

VOC: 87 g/L

Technical sheet comment: Excellent durability, anti-sagging formulation, high solids, fast dry, self-sealing, no HAPs, water clear, easy application, meets KCMA (Kitchen Cabinet Manufacturers Association), may be used as a Class B clear coating, for interior use on cabinets, furniture, moldings, millworks, and many other wood surfaces.

www.fuhrinternational.com

Hallman Lindsay, Clearguard Acrylic Urethane Satin Finish, V364

VOC: 220 g/L

Technical sheet comment: Premium water-based varnish, clear, non-yellowing finish, attractive satin sheen, low-odor, soap and water clean-up, resists water, oil, and alcohol, for interior use on cabinets, doors, trim, table tops, and furniture.

www.hallmanlindsay.com

Pittsburgh Paints, REZ Acrylic Polyurethane Satin Finish, 77-49

VOC: 236 g/L

Technical sheet comment: Crystal clear finish, abrasion-resistant, excellent adhesion, easy application, excellent gloss retention, soap and water clean-up, for interior use on doors, furniture, wood, floors, and trim.

www.pittsburghpaints.com

Sherwin Williams, Wood Classics Waterborne Polyurethane Varnish, A68 Series, 106.07

VOC: Gloss 312 g/L, Satin 309 g/L

Technical sheet comment: Recoat in one hour, maintains excellent clarity, seals and protects, sands to powder in one hour, good durability, for interior use on trim, molding, chair rails, windows, doors, mantels, residential floors, and cabinets.

www.sherwin-williams.com

Compliant Gym Floor Sealers

VOC Limit of 350 g/L

Basic Coatings, Hydroline Wood Sealer, 4X0301

VOC: Does not exceed 250 g/L

Product literature: Guarantee against sidebonding / panelization

www.basiccoatings.com

Bona Kemi, SuperSport Seal, Brand Floor Sealer

VOC: Does not exceed 250 g/L

Technical sheet comment: Non-yellowing, virtually odorless, fast drying, non-flammable, water clean –up, minimizes the possibility of sidebonding

www.bonakemi.com

Hillyard, Court Guard, HIL0032006

VOC: Less than 200 g/L

Technical sheet comment: High quality, fast drying, durable, penetrates evenly, provides protection and the perfect foundation for the finish

www.hillyard.com

Valspar, Acrylic Water Based Seal, WP-3

VOC: Maximum of 250 g/L

Technical sheet comment: Water based speed, excellent film build, easy application, Water White dry film, low odor

www.valspar.com

Compliant Interior Clear and Semi-transparent Stains VOC Limit of 250 g/L

American Formulating and Manufacturing, Safecoat DuroStain

VOC: 208 g/L

Technical sheet comment: Excellent pigmentation stability, superior, durable stain, safely used by and for the chemically sensitive, low odor, semi-transparent stain for interior or exterior use on any wood surface.

www.afmsafecoat.com

Fuhr, Wiping Stain, 105

VOC: 30 g/L

Technical sheet comment: Fast dry, multi-use, low cost, 36 standard colors, film forming, water clean-up, no HAPs, non-flammable, easy application, for use on any wood surface.

www.fuhrinternational.com

Fuhr, ZVOC Universal Stain, 155

VOC: 0 g/L

Technical sheet comment: Solvent free, fast dry, multi-use, low cost, 36 standard colors, film forming, water clean-up, no HAPs, non-flammable, easy application, for use on any wood surface.

www.fuhrinternational.com

Van Technologies, Van-Aqua 220 Water Based Wood Stain

Technical sheet comments: Matches the quality of finest oil based stains available, applied by wiping, spraying, or dipping and then easily wiped to create uniform shade of color desired, dries fast, for use on pre-sanded wood surfaces.

www.vtcoatings.com

Vista, WN11 Interior Wiping Stain

VOC: 245 g/L

Technical sheet comment: A water based semi-transparent stain designed for use on interior wood surfaces including oak, birch, mahogany, and softwoods.

www.vistapaint.com

Original: 2238

IRRC

From: Jim Sell [JSell@paint.org]
Sent: Friday, February 22, 2002 2:16 PM
To: IRRC
Subject: FW: NPCA Comments



Summary OF
Concerns.doc



Appendix A.doc



Appendix B.doc

Dear Sirs:

We request an opportunity to meet with you concerning this matter.

Thanks,

Jim Sell

> -----Original Message-----
> From: Jim Sell
> Sent: Friday, February 22, 2002 2:02 PM
> To: 'RegComments@state.pa.us'
> Subject: NPCA Comments
>
> Dear Sirs:
>
> In addition to the attached, please consider the August 30, 2001
> submission to Delaware concerning its proposed adoption of the OTC AIM
> Coatings Model Rule. These comments were provided to the DEP at the
> workshops.
>
> Thanks,
>
> Jim Sell
>
>
> <<Summary OF Concerns.doc>>
>
> <<Appendix A.doc>> <<Appendix B.doc>>

February 22, 2002

SUMMARY OF CONCERNS ABOUT PROPOSED AIM COATINGS REGULATION BY PENNSYLVANIA

A) The National Paint and Coatings Association vigorously opposes the adoption of the proposed rule as written. The limits are based on ones established in California which are currently under litigation brought by the NPCA. Among NPCA's concerns is the solvent restrictions for many of the coatings involved will result in poorer performing and less durable coatings. In some cases the limits are so low as to compromise lower solvent waterborne coatings which have been developed to replace higher solvent coatings.

B) The record does not reflect substantial evidence sufficient to justify the limits proposed for certain coatings categories and thus the adoption of such limits would be arbitrary capricious. For these coatings categories we suggest alternative limits in the NPCA Alternative Proposal, as well as changes in definitions. These changes would correct these deficiencies in the proposed rule and still provide approximately 70% of the VOC emission reductions purportedly secured by the proposed rule

C) Furthermore, we believe that due to technology changes and customer preference, the actual VOC reductions garnered from the implementation of the NPCA Alternative Proposal could well exceed the reductions projected for it. The NPCA would like to work with the Pennsylvania and other OTC states on conducting a VOC Content Survey of the AIM products sold in the entire OTC region. This survey would provide assurance to Pennsylvania that VOC reductions under our proposal would be achieved and would allow Pennsylvania to take full credit for the all VOC reductions that have actually taken place beyond those based on estimates similar to the figures ascertained.

D) The multitude of performance problems aligned with the implementation of the proposed limits have been outlined in our oral comments to the Board and detailed in the extensive written comments that NPCA and individual coatings companies have submitted to the Pennsylvania DEP. We endorse the comments made by our members, including Benjamin Moore and Sherwin Williams. The DEP has erred in not considering the increased emissions costs that will result from the performance problems.

E) The cost estimate of the rule of **\$65 million/year** is greatly understated because the cost model assumes that all the coatings at the proposed limits will be as good as the coatings at the existing limits and thus will not have the associated performance deficiencies identified by the industry. It also does not take into account the impact of these difficulties on smaller companies, which have fewer chemists to meet the reduced limits and resources to absorb the costs of such deficiencies. Moreover, they are based on estimates of similar limits in California a regulatory environment which had already greatly reduced the limits allowed and thus fail to take account of the full costs imposed by moving from the higher national AIM rule limits.

F) NPCA formally requests a meeting with the Independent Regulatory Review Commission to further explain its concerns and to assist the Commission in carrying out its legislative mandate to ensure that cost effective rules are adopted that achieve real as opposed to only hoped for environmental benefits and that minimize economic burdens. The proposed rule does not pass muster under these reasonable criteria and is thus unreasonably burdensome for the protection of the public health, welfare, and safety.

Appendix A

NPCA

**Recommended Changes to
Proposed Rulemaking of the Environmental Quality Board
[25PA. CODE CH 130]
Architectural and Industrial Maintenance Coatings
[31 Pa.B.6807]**

2/21/2002`

**NPCA Recommended Changes to
Proposed Rulemaking of the Environmental Quality Board [25PA. CODE CH 130]
Architectural and Industrial Maintenance Coatings [31 Pa.B.6807]**

S 130.302 Definitions: In order to make this rulemaking complete and consistent with other OTC AIM rulemakings the following definition should be added to the Proposed Rulemaking. Our recommended changes to OTC definitions are noted in **bold face type**.

1. “*Adhesive*” Any chemical substance that is applied for the purposes of bonding two surfaces together other than by mechanical means.
2. “*Aerosol coating product*” A pressurized coating product containing pigments or resins that dispenses product ingredients by means of a propellant and is packaged in a disposable can for hand-held application, or for use in specialized equipment for ground traffic marking applications.
3. “*Antenna coating*” A coating labeled and formulated exclusively for application to equipment and associated structural appurtenances that are used to receive or transmit electromagnetic signals.
4. “*Appurtenance*” Any accessory to a stationary structure coated at the site of installation, whether installed or detached, including but not limited to: bathroom and kitchen fixtures; cabinets; concrete forms; doors; elevators; fences; hand railings; heating equipment; air conditioning equipment, and other fixed mechanical equipment or stationary tools; lampposts; partitions; pipes and piping systems; rain gutters and downspouts; stairways; fixed ladders; catwalks and fire escapes; and window screens.
5. “*ASTM*” means the American Society for Testing and Materials.
6. “*BAAQMD*” means the Bay Area Air Quality Management District, a part of the California Air Resources Board (CARB) which regulates air quality in the State of California
7. “*Calcimine Recoater*” A flat solventborne coating formulated and recommended specifically for recoating calcimine-painted ceilings and other calcimine-painted substrates.
8. “*CAA*” means the Clean Air Act, as amended in 1990.
9. “*Clear Brushing lacquers*” Clear wood coatings, excluding clear lacquer sanding sealers, formulated with nitrocellulose or synthetic resins to dry by solvent evaporation without chemical reaction and to provide a solid protective film, which are intended exclusively for application by brush and which are labeled as specified in (d)(5).

10. *Clear wood coatings* Clear and semi-transparent coatings, including clear brushing lacquers, clear lacquer sanding sealers, sanding sealers other than clear lacquer sanding sealers and varnishes, applied to wood substrates to provide a transparent or translucent film.
11. “*Colorant*” A concentrated pigment dispersion in water, solvent, and/or binder that is added to an architectural coating after packaging in sales units to produce the desired color.
12. “*Concrete surface retarder*” A mixture of retarding ingredients such as extender pigments, primary pigments, resin, and solvent that interact chemically with the cement to prevent hardening on the surface where the retarder is applied, allowing the retarded mix of cement and sand at the surface to be washed away to create an exposed aggregate finish.
13. “*Conversion varnish*” A clear acid-curing coating with an alkyd or other resin blended with amino resins and supplied as a single component or two-component product. Conversion varnishes produce a hard, durable, clear finish designed for professional application to wood flooring. Film formation is the result of an acid-catalyzed condensation reaction, affecting a transesterification at the reactive ethers of the amino resins.
14. “*Faux finishing coating*” A coating labeled and formulated as a stain or glaze to create artistic effects including, but not limited to, dirt, old age, smoke damage, and simulated marble and wood grain.
15. “*Fire-resistive coating*” An opaque coating labeled and formulated to protect structural integrity by increasing the fire endurance of interior or exterior steel and other structural materials, that has been fire tested and rated by a testing agency and approved by building code officials for use in bringing assemblies of structural materials into compliance with federal, state and local building code requirements.. The fire-resistive coating shall be tested in accordance with ASTM Designation E 119-98, incorporated by reference 130.306(e)(2)(relating to compliance and test methods).
16. “*Floor coating*” An opaque coating that is labeled and formulated for application to flooring, including, but not limited to, decks, porches, steps, and other horizontal surfaces, which may be subjected to foot traffic.
17. “*Flow coating*” A coating labeled and formulated exclusively for use by electric power companies or their subcontractors to maintain the protective coating systems present on utility transformer units.
18. “*Form-release compound*” A coating labeled and formulated for application to a concrete form to prevent the freshly poured concrete from bonding to the form. The form may consist of wood, metal, or some material other than concrete.

19. “*Graphic arts coating or sign paint*” A coating labeled and formulated for hand application by artists using brush or roller techniques to indoor and outdoor signs (excluding structural components) and murals including letter enamels, poster colors, copy blockers, and bulletin enamels.
20. “*Impacted immersion coating*” A high performance maintenance coating formulated and recommended for application to steel structures subject to immersion in turbulent, debris-laden water. These coatings are specifically resistant to high-energy impact damage caused by floating ice or debris.
21. “*Lacquer*” A clear or opaque wood coating, including clear lacquer sanding sealers, formulated with cellulosic or synthetic resins to dry by solvent evaporation without chemical reaction and to provide a solid, protective film.
22. “*Multi-color coating*” A coating that is packaged in a single container and that exhibits more than one color when applied in a single coat.
23. “*Non-industrial use*” means any use of architectural coatings except in the construction or maintenance of any of the following: facilities used in the manufacturing of goods and commodities; transportation infrastructure, including highways, bridges, airports and railroads; facilities used in mining activities, including petroleum extraction; and utilities infrastructure, including power generation and distribution, and water treatment and distribution systems.
24. “*Nuclear coating*” A protective coating formulated and recommended to seal porous surfaces such as steel (or concrete) that otherwise would be subject to intrusions by radioactive materials. These coatings must be resistant to long-term (service life) cumulative radiation exposure [ASTM Method D 4082-89, incorporated by reference in (f)(5)(xiv)], relatively easy to decontaminate, and resistant to various chemicals to which the coatings are likely to be exposed [ASTM Method D 3912-80, incorporated by reference in (f)(5)(xv)].
25. “*Post-consumer coating*” A finished coating that would have been disposed of in a landfill, having completed its usefulness to a consumer, and does not include manufacturing wastes.
26. “*Primer*” A coating labeled and formulated for application to a substrate to provide a firm bond between the substrate and subsequent coats.
27. “*Sanding sealer*” A clear wood coating labeled and formulated for application to bare wood to seal the wood and to provide a coat that can be abraded to create a smooth surface for subsequent applications of coatings. A sanding sealer that also meets the definition of a lacquer is not included in this category, but is included in the lacquer category.

28. “*SCAQMD*” means the South Coast Air Quality Management District, a part of the California Air Resources Board (CARB), which is responsible for regulation of air quality in the State of California.
29. “*Sealer*” A coating labeled and formulated for application to a substrate for one or more of the following purposes: to prevent subsequent coatings from being absorbed by the substrate, or to prevent harm to subsequent coatings by materials in the substrate.
30. “*Secondary coating (rework)*” A fragment of a finished coating or a finished coating from a manufacturing process that has converted resources into a commodity of real economic value, but does not include excess virgin resources of the manufacturing process.
31. “***Shellac***” A clear or pigmented coating formulated with the natural resins (except nitrocellulose resins) soluble in alcohol (including, but not limited to the resinous secretions of the lac beetle (*laciffer lacca*)). Shellacs dry by evaporation without a chemical reaction. [This definition is consistent with definition used in the National AIM Rule: Part 59 Subpart D Sec. 59.401]
32. “*Shop application*” Application of a coating to a product or a component of a product in or on the premises of a factory or shop as part of a manufacturing, production, or repairing process (e.g., original equipment manufacturing coatings).
33. “*Solicit*” To require for use or to specify, by written or oral contract.
- 34.. “*Stain*” A clear, semi-transparent, or opaque coating labeled and formulated to change the color of a surface, but not to conceal the grain pattern or texture.
35. “*Swimming pool coating*” A coating labeled and formulated to coat the interior of swimming pools and to resist swimming pool chemicals.
36. “*Swimming pool repair and maintenance coating*” A rubber-based coating labeled and formulated to be used over existing rubber-based coatings for the repair and maintenance of swimming pools.
37. “*Thermoplastic rubber coating and mastic*” A coating or mastic formulated and recommended for application to roofing or other structural surfaces and that incorporates no less than 40 percent by weight of thermoplastic rubbers in the total resin solids and may also contain other ingredients including, but not limited to, fillers, pigments and modifying resins.
38. “*Tint base*” An architectural coating to which colorant is added after packaging in sale units to produce a desired color.

39. “*Traffic marking coating*” A coating labeled and formulated for marking and striping streets, highways, or other traffic surfaces including, but not limited to, curbs, berms, driveways, parking lots, sidewalks, and airport runways.
40. “*Undercoater*” A coating labeled and formulated to provide a smooth surface for subsequent coatings.
41. “*Varnish*” A clear or semitransparent wood coating, excluding lacquers and shellacs, formulated to dry by chemical reaction on exposure to air. Varnishes may contain small amounts of pigment to color a surface, or to control the final sheen or gloss of the finish.
42. “*Waterproofing sealer*” A coating labeled and formulated for application to a porous substrate for the primary purpose of preventing the penetration of water.
43. “*Waterproofing concrete/masonry sealer*” A clear or pigmented film-forming coating that is labeled and formulated for sealing concrete and masonry to provide resistance against water, alkalis, acids, ultraviolet light and staining.
44. “*Wood preservative*” A coating labeled and formulated to protect exposed wood from decay or insect attack, that is registered with the U.S. EPA under the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. section 136, et. seq.) and with the Department of Agriculture of the State of Delaware under Title 3 Chapter 12 of the Delaware Code.

S 130.303. Standards. [The following provisions of Sec130.303 should be revised to read as follows:]

(b) Most restrictive VOC Limit:

1. If anywhere on the container of any architectural coating, or any label or sticker affixed to the container, or in any sales, advertising, or technical literature supplied by the manufacturer or anyone acting on their behalf, any representation is made that indicates that the coating meets the definition of or is recommended for use for more than one of the coating categories listed in Table 1, then the most restrictive VOC content limit shall apply. This provision does not apply to the following coatings categories.
 - (i) Antenna coatings
 - (ii) Anti-fouling coatings
 - (iii) Bituminous roof primers
 - (iv) **Calcimine recoaters**
 - (v) Fire-retardant coatings
 - (vi) Flow coatings

- (vii) High-temperature coatings
 - (viii) **Impacted immersion coatings**
 - (ix) Industrial maintenance coatings
 - (x) Lacquer coatings (including clear lacquer sanding sealers)
 - (xi) Low-solids coating
 - (xii) Metallic pigmented coatings
 - (xiii) **Nuclear coatings**
 - (xiv) Pre-treatment wash primers
 - (xv) Shellacs
 - (xvi) Specialty primers, sealers, and undercoaters
 - (xvii) Temperature-indicator safety coatings
 - (xviii) **Thermoplastic rubber coatings and mastic**
 - (xix) Wood preservatives
- [Recommended changes to this provision are indicated in **bold typeface**]

(c) Sell-through of architectural or industrial maintenance coatings.

1. **A coating manufactured prior to January 1, 2005, may be sold, supplied, or offered for sale on or after January 1, 2005. In addition, a coating manufactured before January 1, 2005 may be applied at anytime, both before and after January 1, 2005, so long as the coating complied with the standards in effect at the time the coating was manufactured. This does not apply to any coating that does not display the date code required by S130.302 (a)(1).**

NPCA Recommended Changes to:

Table 1

VOC Content Limits for Architectural and Industrial Maintenance Coatings

Limits are expressed in grams of VOC per liter of coating thinned to the manufacturer's maximum recommendation (as indicated on the label or lid of the coating container), excluding the volume of any water, exempt compounds, or colorant added to tint bases.

<u>Coating Category</u>	<u>VOC Content Limit</u>
Flat Coatings	100
Exterior Flats	150
Interior Flats	100
Non-Flat Coatings	150 200
Non-Flat – High Gloss Coatings	250 380

SPECIALTY COATINGS

Antenna Coatings	530 *
Anti-fouling Coatings	400
Bituminous Roof Coatings	300
Bituminous Roof Primers	350
Bond Breakers	350
Calcimine Recoaters	475* (2)
Clear Wood Coatings	
Clear Brushing Lacquers	680
Lacquers (including clear lacquer sanding sealers)	550 680
Sanding Sealers (other than clear lacquer sanding sealers)	350 550
Varnishes	350 450
Conversion Varnish	725* (2)
Concrete Curing Compounds	350 *
Concrete Surface Retarders	780 * (2)
Dry Fog Coatings	400 *
Faux Finishing Coatings	350
Fire-resistive Coatings	350
Fire-retardant Coatings	
Clear	650
Opaque	350
Floor Coatings	250 (b)
<u>(b) Recommended Alternative is a 250 g/l limit for waterborne and 380 g/l limit for solventborne</u>	
Flow Coatings	420
Form-Release Compounds	250
Graphic Arts Coatings (Sign Paints)	500 *
High-Temperature Coatings	420
Impacted Immersion Coatings	780 * (2)
Industrial Maintenance Coatings	340
Low-Solids Coatings	120 * (1)
Magnesite Cement Coatings	450
Mastic Texture Coatings	300 *
Metallic Pigmented Coatings	500
Multi-Color Coatings	250
Nuclear Coatings	450 * (2)
Pre-Treatment Wash Primers	420
Primers, Sealers, and Undercoaters	200
Quick-Dry Enamels	250 380
Quick-Dry Primers, Sealers and Undercoaters	200 250
Recycled Coatings	250
Roof Coatings	250
Rust Preventive Coatings	400 *
Shellacs	
Clear	730
Opaque	550

Specialty Primers, Sealers, and Undercoaters (<u>Modified Definition</u>)	350
Stains	250 <u>550</u>
Swimming Pool Coatings	340
Swimming Pool Repair and Maintenance Coatings	340
Temperature-Indicator Safety Coatings	550
Thermoplastic Rubber Coatings and Mastic	550 * (2)
Traffic Marking Coatings	150 *
Waterproofing Sealers	250
Waterproofing Concrete/Masonry Sealers	400
Wood Preservatives	350

* Indicates limits and definition unchanged from the Federal rule (40CFR59 Subpart D) “National Volatile Organic Compound Emission Standards for Architectural Coatings” .

(1) Units are grams of VOC per liter of coating, including water and exempt compounds.

(2) . The changes in **bold red type** have already been accepted by other OTC jurisdictions and appear in the final Delaware AIM rule [Regulation 41]. These categories and limits are for calcimine recoaters; conversion varnish, concrete surface retarders; impacted immersion coatings; nuclear coatings; thermoplastic rubber coatings & mastics.

Additional NPCA recommendations are underlined in red type.

In addition, the NPCA recommends that the definition for Specialty Primers be revised to read.

Specialty primer means a coating formulated and recommended for application to a substrate to block stains, **odors or efflorescence**; to seal fire, smoke or water damage; to condition excessively chalky surfaces; **or recommended for application to exterior wood or wood-based surfaces, or for highly alkaline cement, plaster, and other cementitious surfaces**. An excessively chalky surface is one that is defined as having a chalk rating of four or less as determined by ASTM Designation D 4214-98 Photographic Reference Standard Nop.1 or the Federation of Societies For Coatings Technology “ Pictorial Standards for Defects”

Appendix B

**Testimony of the
National Paint and Coatings Association
Before
Pennsylvania Environmental Quality Board
on
January 18, 2002
Concerning the Proposed Rulemaking on
[25PA.CODE CH. 130]
Architectural and Industrial Maintenance Coatings
[31 Pa.B 6807]**

Testimony of the
National Paint and Coatings Association
Before
Pennsylvania Environmental Quality Board
on
January 18, 2002
Concerning the Proposed Rulemaking on
[25PA.CODE CH. 130]
Architectural and Industrial Maintenance Coatings
[31 Pa.B 6807]

Good Afternoon. I am Robert Nelson, Senior Director, Environmental Affairs for the National Paint and Coatings Association. I am please to provide the views of the National Paint and Coatings Association concerning the proposal to establish Chapter 130, Subchapter C relating to the regulation of architectural and industrial maintenance coatings.

The National Paint and Coatings Association is a voluntary, nonprofit trade association representing some 400 manufacturers of paints, coatings, adhesives, sealants, and caulks, raw materials used in their manufacture. As the preeminent organization representing the coatings industry in the United States, NPCA's primary role is to serve as ally and advocate on legislative, regulatory and judicial issues at the federal, state, and local levels. Over the past two decades, the NPCA has been extensively involved in the development of clean air regulations at all levels of government, including extensive involvement and participation in California air pollution control district rulemaking activities as well as the activities of the OTC Architectural Coatings Work Group and the activities of the Pennsylvania Department of Environmental Protection on the development of this rule. While we strongly believe in and support initiatives to improve the quality of our air, we also believe Pennsylvania has a responsibility to weigh the environmental benefits gained with the economic impacts.

As you are aware, the proposed rule is based on the model rule that has been recommended by the Northeast Ozone Transport Commission (OTC) for adoption by all of the states within the Northeast Ozone Transport Region. We have submitted a copy of the extensive comments that NPCA filed in response to Delaware's proposed adoption of the same model rule.¹

The dominant theme of our comments is that: we do not believe that many of the VOC content limits listed in the rule are technologically feasible for all of the wide-ranging substrates, application environments and conditions for which a particular category of coatings will be used.

¹ Please note that Attachment A provides concise summary the NPCA Alternative Proposal for Revision of OTC Model Rule.

While compliant coatings may be suitable for many substrates and application environments, they may not be for others. .

It is not simply a question of more cost and less efficiency. It's a question of clean air as well. If coatings are less effective and require more applications, or more frequent recoating, any benefits from the reductions in VOC emissions in the coating may be reduced or eliminated by the need to use more material and thus release more VOCs. The new lower VOC limits (100 g/l) for flat coatings will eliminate currently available low VOC waterborne exterior flat coatings (less than 150 g/l) that can be applied in cooler months when ozone is not a problem. This will force additional coating usage during the hotter summer ozone formation months and clean air objectives will be undermined, not furthered.

You will note in our comments to Delaware that weather conditions have a major impact on the efficacy of coatings. These conditions are even more important for Pennsylvania with its more severe climatic conditions and wider state regional climatic/environmental differences (Allegheny mountains to the Delaware River shore).

The limits are based on ones established in California which are currently under litigation brought by the NPCA. Among the concerns of the NPCA are that the solvent restrictions for many of the coatings involved will result in poorer performing and less durable coatings. In some cases the limits are so low as to compromise effective lower solvent waterborne coatings which have been developed to replace higher solvent coatings.

This is not simply an aesthetic issue. It affects the primary purpose of a coating – protection. It is not a minor issue.

As a compromise and to show our commitment to reducing ozone, we respectfully request that Pennsylvania adopt the attached alternative Table of Standards and rule provisions which have been submitted by the NPCA for consideration by Delaware.

The NPCA compromise will achieve approximately 70% of the VOC emission reductions that are hoped for under the OTC Model AIM Rule being considered by New Jersey and other OTC states. More importantly, because the NPCA limits and provisions represent realistic expectations of technologically feasible coatings chemistries and do not sacrifice crucial application and performance characteristics, we believe that the NPCA approach could well reduce VOC emissions by a greater amount than the OTC Model Rule -- they will not have the paint failures, reduced durability, etc., we believe will be associated with the technologically infeasible limits of the OTC Model Rule.

Further, the NPCA provisions would place the AIM coatings rule on a more equal footing with the Consumer Products Rule by including (1) variance, (2) innovative technology, and (3) averaging provisions. Equity and basic fairness do not permit certain products to be singled out and discriminated against by denying them provisions which are granted to other products to ease regulatory burdens. Also, these provisions actually enhance the efficiency of compliance by allowing flexibility and innovation. It would be arbitrary to provide this for one set of products and deny it to another. It is extremely important to

note that all of these provisions are “VOC neutral” in the sense that they will not result in the net increase of VOC emissions.

This is most clearly seen in the case of averaging. Here, before a manufacturer would increase VOC content of a product above the authorized limit, it would have to ensure the availability of a sufficient amount of below compliance VOC product such that there would be no net increase in VOC emissions from his products as a whole. Under the averaging program of the South Coast Air Quality Management District, significant penalties attach for failures to “keep the ledgers straight” in this regard.

Averaging will permit manufacturers to meet important niche market protective needs, for example, in the broad industrial maintenance coatings category where protection needs and application and exposure environments can often present unique requirements, necessitating a higher VOC product for optimum performance and durability. It will also give them more flexibility in balancing performance requirements across product lines, including in the areas of freeze/thaw stability and the capability to apply more coatings in cooler weather (early spring/late fall – non-ozone formation periods). And again it must be emphasized that averaging does not increase VOC emissions – it merely allocates them to their most required/efficient application as determined by the marketplace and consumer needs. This provision also is seen as absolutely essential for the industry to continue to provide an adequate range of colors. While this an aesthetic and not a protective issue, it nonetheless is an extremely important one. For most people, a residence is not simply their largest capital asset – it’s their home.

Adoption of the proposed (California based) limits would eliminate cost effective, readily applied, durable coatings for Pennsylvania’s homes, churches, schools, hospitals, prisons, commercial, industrial and public structures and will have the following consequences:

- Many coatings will have to be applied more often, in some cases requiring several coats when before one would have been sufficient, increasing the very clean air problem the regulation seeks to cure;
- Many waterborne coatings will have to be stored and transported in heated environments to prevent the freezing and destruction of the paint;
- Virtually all exterior painting and unheated interior painting will be confined to the warmer months only, drastically reducing the livelihoods of contractors and forcing a large number of coatings to be applied when the smog is at it worst instead of cooler periods when there is no smog;
- Many coatings will take longer to dry and cure especially in humid/colder weather leaving the coating more vulnerable to dirt pick up and even complete failure;

- Many coatings will be far more difficult to apply because of their dry times, composition, and increased vulnerability to slight changes in the temperature and humidity;
- Elimination of cost effective durable and scrub resistance interior and exterior wall and trim coatings used for high traffic/usage/impact or extreme exposure environments like exterior wooden windows and door, interior trim and book shelves, kitchen/bathroom walls, children rooms;
- Elimination of cost effective high-traffic floor and porch coatings, and garage floor coatings;
- Elimination of small volume specialty coatings that are designed to cost effectively meet special needs – such as anti-graffiti coatings that are within the budgets of inner city business establishments;
- Reduction in the availability of colors for interior and exterior coatings, and gloss levels; and
- Elimination of effective interior and exterior penetrating stains for wood including interior decorative woods and exterior siding and decks

The limits and approaches that we have proposed at Attachment A of the comments will secure clean air improvements in a cost effective, efficient way. As stated in Attachment B, our approach will secure an additional 21% reduction in VOC emissions beyond the current national AIM coatings rule. Your office is tasked with determining the efficacy of proposed rules and we ask that you review the proposal and our comments thoroughly, in applying this criterion.

One important area where the proposal has gone astray in this connection is the decision to not recognize many of the national rule specialty coatings categories and their unique VOC content limits. While three of these categories have been added by the OTC AIM Work group since the OTC model rule was initially developed, (and we compliment the PA DEP staff for their involvement in these efforts) the OTC AIM Work Group has not acted on our request to recognize additional ones.

A good example is the anti-graffiti coatings category and its national rule limit. As was pointed out in the letter from one of our member companies to the OTC, these coatings are very low volume, niche market coatings that serve an extremely important social purpose. In light of their unique performance characteristics they will never be used as a general purpose coating. Notwithstanding this the OTC group has declined to recognize the coating, stating that effective technology at the general industrial maintenance VOC limit was currently available.

Over the last six months, this company has attempted to formulate a new lower VOC coating or resin system that would be effective against the new growing graffiti instrument of choice – indelible ink pens. The lower VOC materials mandated by the rule only work in 50% of the cases for indelible inks and cost around 50% percent more per gallon. The higher VOC coatings rejected for inclusion in the model rule work in all cases and cost 50% less per gallon, a price differential that is especially important to local governments and businesses battling graffiti. This example illustrates but does not exhaust our many concerns about the cost effectiveness of the proposed rule.

Thank you for the opportunity to present these comments. If you have any questions, I would be pleased to try and address them. The NPCA will be submitting additional written comments before the close of the comment period on February 22, 2002.

Robert J. Nelson
Senior Director, Environmental Affairs
National Paint and Coatings Association
1500 Rhode Island Ave. NW
Washington, DC 20005
202-462-6272
202-462-8549 (fax)
bnelson@paint.org

**Summary of Industry Alternative Proposal For Revision of
[25 PA.CODE CH. 130]
For
Architectural and Industrial Maintenance Coatings**

The NPCA has developed an Alternative Proposal for the revision of the Pennsylvania Department of Environmental Protection proposed rule [25 PA.CODE CH. 130] for Architectural and Industrial Maintenance Coatings. This proposal consists of two types of recommended changes to the Pennsylvania/OTC Model AIM rule: changes that will have no effect (neutral impact) on the VOC reduction credit; and changes that are being recommended due to product performance needs and requirements. The latter revisions to the draft will no doubt have some effect on the amount of VOC reduction credits that the OTC states are will be able to get from the implementation of such a revised AIM rule.

We believe that due to technology changes and customer preference, the actual VOC reductions garnered from the implementation of this revised rule will be very close to those original projected by the OTC. To this end, the NPCA AIM Work Group would like to work with the OTC AIM Work Group on developing and conducting a VOC Content Survey of the AIM Products sold in the OTC region. This survey would provide assurance to the OTC states that VOC reductions are being made.

The proposed PA DEP rule should be revised to include the following provisions:

1. Averaging (Modeled after Rule 1113 and administered on a regional basis.
2. An AIM Specific Variance provision.
3. A scheduled Technology Assessment on the appropriateness of maintaining future VOC limits to be administered by the OTC.

The proposed PA DEP rule should be revised to eliminate:

1. Unnecessary and burdensome reporting and requirements found in Sec.130.305.

If Pennsylvania and the other OTC states find that these extensive and costly reporting requirements are key to implementation and compliance of their AIM rules, these requirements could be undertaken on a regional basis similar to our recommendation that the "averaging provision" be administrated on a regional basis.

II. Revised VOC Limits based on Product Performance Needs and Requirements

These recommended changes to the VOC Content limits in Proposed (and the modifications category definitions) are based on product performance needs and requirements.

The following changes to the Table 1- VOC Content Limits for Architectural Coatings should be made to the Proposed PA DEP rule:

<u>Coating category</u>	<u>Effective January 1, 2005</u>	<u>Current PA Position</u>
	Grams VOC per liter (g/l)	
Flat Coatings		
Exterior coatings	150	100
Interior coatings	100	100
Non-flat coatings:	200	150
Non-Flat -- High Gloss	380	250
Floor coatings	250(b)	250
b (Alternate recommendation is a 250 g/l limit for waterborne and 380 g/l limit for solvent borne.)		
Lacquers (including lacquer sanding sealers)	680	550
Specialty primers sealers and undercoaters (Modified definition)	350	350
Quick-dry coatings:		
Enamels.	380	250
Primers, sealers, and undercoaters	350	200
Sanding sealers (other than lacquer sanding sealers)	550	350

Stains:

Clear and semitransparent	550	250
Opaque	350	250

Varnishes	450	350
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Recommended Changes to the proposed Definitions

In order to implement the revision to the TOS, the following definitions need to be modified in Section (b) Definitions of the draft/Model rule

Nonflat – High gloss coating means a non-flat coating that registers a gloss of 70 or above on a 60 –degree meter according to ASTM Designation D523-89(1999).

Specialty primer means a coating formulated and recommended for application to a substrate to block stains, **odors or efflorescence**; to seal fire, smoke or water damage; to condition excessively chalky surfaces; **or recommended for application to exterior wood or wood-based surfaces, or for highly alkaline cement, plaster, and other cementitious surfaces**. An excessively chalky surface is one that is defined as having a chalk rating of four or less as determined by ASTM Designation D 4214-98 Photographic Reference Standard Nop.1 or the Federation of Societies For Coatings Technology “ Pictorial Standards for Defects”

Recommended changes are underlined and highlighted in **bold type**

(Note: The revised Specialty Primer definition clarifies further the need for specialty primers for all highly alkaline surfaces, not just green concrete.)

In addition the TOS should be revised to reflect the addition of the three specialty categories that the OTC AIM Work Group have been recommended be included: Conversion Varnish; Thermoplastic Rubber Coatings and Mastics; and Impact Immersion Coatings.

Attachment B

Calculation of VOC Emission Reduction

Obtained from Implementation of NPCA Recommended Table of VOC Limits

The NPCA used the same methodology used by the OTC AIM Work Group to determine the percent VOC emissions reduction from the current National AIM Rule. This methodology is outlined on pages 15 and 16 of the Pechan Report and included the use of the same Excel spread sheet that the OTC Work Group used.

Using this methodology the NPCA Recommended Model Rule is estimated to provide a 21 % VOC emissions reduction beyond the National AIM Rule. We used constant solids at the limit as the OTC work Group did.

The following formula was used to account for proper baseline conditions:

NPCA Recommended Rule% reduction after EPA rule = ((NPCA rule % red from 1990 base - EPA rule % red from 1990 base)/(100-EPA rule % red from 1990 base))*100%

$$\begin{aligned} &= (37 - 20 / 100 - 20) * 100 \\ &= 21\% \end{aligned}$$

or another way of calculating using pounds is as follows:

1990 baseline emissions = 758,338,092 lpy emissions

% red from EPA rule from 1990 base = 20 % = 606,670,474 lpy emissions

% red from NPCA Model rule from 1990 base = 37% = 479,648,843 lpy emission

% red = ((606,670,474 - 479,648,843) / 606,670,474) * 100% = 21%

The credit for the NPCA Recommended AIM Rule relative to the National AIM Rule was computed as follows:

$$\begin{aligned} \text{Post NPCA AIM Recommendation control} &= 5.36 \text{ lbs/capita } [1 - (0.21)(1.00)(1.00)] \\ &= 4.23 \text{ lbs/capita} \end{aligned}$$

which is nearly 70 % of the reduction per capita that would be garnered from the OTC AIM Model Rule.

In fact, we believe, that if the OTC states join industry in a cooperative survey of AIM product sales in the OTC region, we will find that the emissions per capita will be substantial less than projected 4.23 lbs. We base this prediction on what has happened in California. . There sales of AIM products have increased but both the total annual emissions of VOC from AIM products and the emissions per capita have been reduced.

All this happened during a time period (1990 to 1996) in which no new AIM VOC controls were implemented. This only go to reinforce our long held position that marketplace preference for waterborne coatings along with the continued introduction of new coatings technologies will continue the decades long trend in reduction of VOC emissions from AIM products.

James Sell

Original: 2238

January 18, 2002

Attachment A

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6 QUICK CURES for ailing fridges

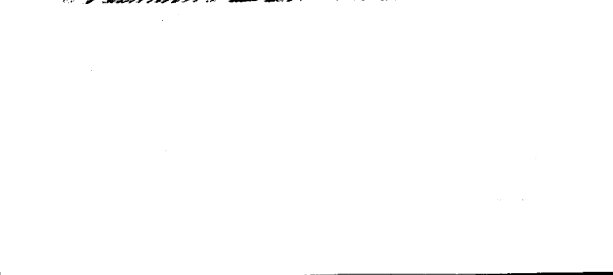
The Family Handyman

February 2002



the Forever FLOOR

- Solid pine planks
- Ages beautifully
- Easier to install than hardwood



BUYING ADVICE

- Polyurethanes
- Furnace filters
- Plywood vs. OSB

PLUS

The world's
EASIEST TABLE
to build

What should I buy?

by Spike Carlsen

Some are effective for up to a year. They can filter out bacteria, dander, odors and smoke particles. But health experts warn that you may be wasting your money on these \$20 to \$40 filters unless you take the following steps: Use them in conjunction with a high-efficiency vacuum cleaner, install a dedicated air purifier, wash or vacuum the filter monthly and take other steps to clean up your air and house as well.

Many filters carry a MERV (minimum efficiency reporting value) rating, which indicates their effectiveness. The higher the MERV rating, the more effective. Most spun filters have a MERV rating of 4. Standard pleated filters average MERV 6. Electrostatic pleated versions start at MERV 8, with the highest quality ones hitting MERV 12.

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HIGH-EFFICIENCY
ELECTROSTATIC
FILTER

YOU CAN BUY a dozen 75¢ filters (left), four \$5 filters or one \$20 to \$50 filter to get you through the year. Which you should buy depends on how good your memory and health are.



WATER-BASED polyurethanes provide a clear finish and have low odor. You can recoat them in two hours and clean your tools with water. If you start early enough in the day, you can apply the recommended four coats and sleep in the room that night.

OIL-BASED polyurethanes leave an amber glow and require fewer coats. But the five-hour wait between coats and 12-hour wait after the last coat will put a bedroom out of commission for a few days—and you'll have to put up with a strong odor.

Water-based vs. oil-based poly

We're installing tongue-and-groove maple flooring in our newly remodeled master bedroom. We love the natural look of the maple but want a finish that will protect it. Is water- or oil-based polyurethane better?

Both offer good protection; the biggest difference is in appearance. If you love the natural look of maple, apply a water-based (waterborne) polyurethane. They appear milky in the can, but go on clear and remain clear. They'll slightly accent the character of your wood without giving it the amber tint of an oil-based poly. (However, some woods, like the oak shown, cry out for that amber tint.) Water-based finishes dry fast—most within two hours—so you can apply several coats in a day and use the room that night. They have minimal odor and clean up with water too.

But water-based polys have their tradeoffs. They cost twice as much as oil-based polys. They won't give wood the rich glow that oil-based polys impart; some even consider them cold looking. When I applied waterborne poly recently, I found

that it went on so clear I had to use a bottle cap to mark each 8-in. wide swath of finish as I went.

Most water-based polys contain only 30 to 35 percent solids, compared with the 45 to 50 percent solids in oil-based products. Since these solids create the protective finish, you need to apply four coats, as opposed to two or three. And you may need to apply additional coats every two years or so.

There's debate over which finish is harder, but some experts maintain that hardness isn't necessarily a good attribute of a floor finish. You want a finish that will flex along with the floor. And a super-hard finish shows scratches more readily.

You'll prolong the protective life of any finish by eliminating its No. 1 enemies: dirt and grit. Sweep or vacuum the floor often and put throw rugs in high-traffic areas.

More WHICH SHOULD I BUY? >>

The Great Outdoors

The forecast for architectural coatings is cold and green.

BY VINCE PUCCIO

We have entered a brave new world for architectural coatings.

Advances made in the formulation of paints is now allowing painters to work in harsher weather with paints that are not as harsh to the environment.

Traditionally, professional painters in the Northeast have had plenty of time to get ready for Thanksgiving. In the past, they've put their brushes and rollers away by Nov. 1, when the temperature dips below 50 degrees F and paint performance became unacceptable. But now, the start of the holiday season figures to be a little more frantic, because new low-temp architectural coatings make it possible for painters to keep working.

The new breed of coatings offers premium performance all the way down to 35 degrees F. Above the Mason-Dixon line, that means approximately one month of possible work time at the end of the season as well as an extra month at the start of the season. Pros can now get busy around the first of March.

This is a tremendous boon to both paint manufacturers and the painters themselves, not to mention their customers, eliminating one of the biggest obstacles painters face. By going from a seven-month season to a nine-month season everybody wins. Manufacturers can sell more paint, painters can work more and strengthen their business, and customers will have an easier time getting service. Low-temp paint offers an opportunity for



New architectural coatings allow painters to work in harsher weather.

29 percent more business than was previously possible.

New coatings offer premium performance even in 35 degrees F temperature.

The new low temps are 100-percent acrylic. They work because they're formulated to dry faster than "normal" coatings; this allows them to resist frosting, peeling and blistering because of the cold. Low

temps can be used on virtually every type of exterior surface.

Using low temp paints requires some foresight, or at least a reliable weather forecast. Air, surface, and material temperatures must all remain above 35 degrees for at least 72 hours after painting. Obviously, precipitation needs to be avoided as well. You cannot paint if snow or rain is expected within two to three hours.

The other big development over the past few years is the increased demand for environmentally friendly, or "green" paint. The federal government imposed restrictions on contaminants known as volatile organic compounds (VOCs) about 10 years ago.

What once seemed to be an undue burden placed upon paint manufacturers by the EPA has now proved to be an advantage in many circumstances.

By definition, low VOC paints are low in toxicity, which is obviously an attractive advantage in some circumstances. Low VOC paints are generally odor-free, which is especially advantageous in both residential and commercial interior painting. The disruption to the customer is significantly reduced.

Additionally, low-VOC paints contain no ozone-depleting chemicals and are non-flammable. What this means is that they are safer, both in the short and the long term.

The advances made in the chemical formulation of coatings, both low temp and low VOC, have proved to be very advantageous for the professional painter. A smarter approach to the mixology of these paints holds great promise for the future—the possibility of a year-round painting season; a better, safer customer experience; an environmentally friendly approach to paint; and increased business

opportunities for both professional painters and paint manufacturers.

Vince Puccio is product manager at M.A.B. Paints. You can reach him at 800-MAB-1899.

Original: 2238

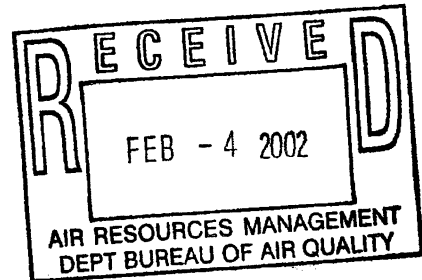


PPG Architectural Finishes, Inc.
151 Colfax Street; Springdale, PA 15144

Robert S. Gross
Manager, Environmental Stewardship
Architectural Finishes
(724) 274-3416

January 31, 2002

Terry L. Black
PA Department of Environmental Protection
Bureau of Air Quality
Rachel Carson State Office Building
P.O. Box 8468
Harrisburg, PA 17105-8468



Dear Mr. Black,

PPG Architectural Finishes, Inc., a wholly owned subsidiary of PPG Industries, Inc. is a global supplier of Architectural Industrial Maintenance (AIM) Coatings. Our review of Pennsylvania's proposed AIM Coatings Regulation, 25 PA Code, Chapter 130, reveals that it lacks the Nuclear Coatings Category that is contained in the National AIM Rule. For the reasons described below, we believe a Nuclear Coatings Category should be included in the Pennsylvania AIM Coatings regulation.

Our rationale for maintaining the definition and VOC limits for Nuclear Coatings as established in the U.S. EPA National AIM VOC Rule includes:

1. There are a limited number of Nuclear Power Plants in the U.S., approximately 100 including those in the state of Pennsylvania.
2. No new nuclear power plants are being built, so the market is very limited and will eventually go away as plants are decommissioned.
3. The entire Level I coatings & thinner market is estimated to be less than 20,000 gallons annually.
4. The re-qualification of a coating/system for use in a nuclear power plant can be fairly costly. Depending on the coating's/system's use (Level I, II, or III) the cost can approach \$50,000.
5. When Level I coatings are applied inside of containment areas, the charcoal filters that are in use, capture most if not all of the volatile emissions from the coating.

As Pennsylvania's proposed Architectural and Industrial Maintenance Coatings Regulation is currently drafted, any coating sold to the nuclear coating industry would default to the 340 g/l VOC limit of the industrial maintenance category. Since product reformulation would be necessary to achieve the 340 g/l VOC limit, the product would

have to be requalified to assure compliance with the testing criteria of the nuclear coatings industry. Considering the high cost of re-qualifying a system, along with the low volume of product sold, reformulation would be extremely costly and potentially could force us out of the nuclear coating market. Also, any newly reformulated products would have to demonstrate compatibility with the previously applied coatings. For example, testing would have to be conducted to assure adequate adhesion between the different coating systems. If adequate adhesion were not exhibited, the old coatings potentially would have to be removed, adding further cost to the nuclear coatings industry.

We are asking you to review the strict testing criteria required for nuclear coatings as defined by the National AIM Rule, and to also seek the nuclear industry's perspective if these coatings cease to exist. Inclusion of the low volume Nuclear Coatings Category at a VOC limit of 450 g/l, only 110 g/l above the Industrial Maintenance VOC limit of 340 g/l, would assure an uninterrupted supply of coatings formulated specifically for the nuclear power industry.

Thank you for the opportunity to comment. If you have any questions, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Bob Gross", written in a cursive style.

Robert S. Gross

Original: 2238
cc: all Commissioners



RECEIVED

July 29, 2003

2003 AUG -1 AM 8:37

INDEPENDENT REGULATORY
REVIEW COMMISSION

Mr. John C. McGinley, Jr., Esq., Chairman
Independent Regulatory Review Commission
333 Market Street, 14th Floor
Harrisburg, PA 17101

Dear Chairman McGinley:

On behalf of Citizens for Pennsylvania's Future (PennFuture), I am writing in support of a critical clean air rule that is expected to be considered by the Independent Regulatory Review Commission in September. The Architectural and Industrial Maintenance (AIM) coatings rule presents one of Pennsylvania's best opportunities to reduce chronic ozone smog, and we urge you to support its approval.

The AIM rule would reduce emissions of smog-causing volatile organic compounds, or VOCs, from 48 types of coatings. The rule will eliminate 10,200 tons of VOCs per year, the equivalent of taking 255,000 cars off the road. With 33 counties across the state failing to meet EPA's new standard for smog, the cleaner air offered by the AIM rule is critical for the health of the one million Pennsylvanians whose respiratory conditions put them at particular risk.

The standards for coatings set by the AIM rule are achievable. In fact, DEP research has shown that some current varnishes, stains, and sealers already meet the new standards. Additionally, the rule allows manufacturers to apply for a variance from its requirements where compliance is technologically infeasible.

Pennsylvania is not alone in its efforts to fight pollution by adopting the AIM rule. Our rule is based on a model regulation adopted by the Ozone Transport Commission, a group of Northeastern states working together to reduce chronic smog. Many of these states are also moving forward with AIM regulations.

Adopting the AIM rule to help Pennsylvania meet EPA smog standards is key for economic development, too. Areas that don't meet these standards are subject to more stringent regulations that can discourage new development. Bringing these areas into attainment is good for economic growth and jobs.

The AIM rule will reduce smog and encourage economic growth, and PennFuture urges its approval by the IRRC. Please call me at (215) 569-9693 if you have any questions.

Sincerely,

Charles McPhedran
Senior Attorney

CM:ch

cc: Robert E. Nyce, Executive Director, IRRC

Citizens for Pennsylvania's Future
610 N. Third Street
Harrisburg, PA 17101-1113
Tele: 717-214-7920
Fax: 717-214-7927
e-mail: info@pennfuture.org

Citizens for Pennsylvania's Future
425 6th Ave., Ste. 2770
Pittsburgh, PA 15219
Tele: 412-624-9943
Fax: 412-648-2648
e-mail: info@pennfuture.org

Citizens for Pennsylvania's Future
117 South 17th Street, Suite 1801
Philadelphia, PA 19103
Tele: 215-569-9691
Fax: 215-569-9637
e-mail: info@pennfuture.org

Original: 2238



The Sherwin-Williams Company
Environmental, Health & Regulatory Services
101 Prospect Avenue, N.W.
Cleveland, Ohio 44115-1075
Facsimile: (216) 566-2730

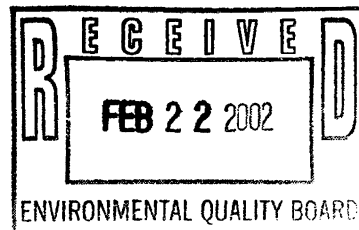
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REVIEW COMMISSION

BY FEDERAL EXPRESS NO. : 8187 4034 2847

February 20, 2002

Environmental Quality Board
Rachel Carson State Office Building
15th Floor
400 Market Street
Harrisburg, PA 17101-2301



**RE: Annex A, Title 25. Environmental Protection
Part I. Department of Environmental Protection
Subpart C. Protection of Natural Resources
Article III. Air Resources
Chapter 130. Standards for Products
Subchapter C. Architectural And Industrial Maintenance Coatings**

Dear Sirs:

Included in this package are 2 items:

1. The summary of comments for The Sherwin-Williams Company, and
2. The actual detailed comments of The Sherwin-Williams Company.

Thank you for your consideration of these items. If you have any questions or need additional information, please feel free to contact me at mkharding@sherwin.com, 216-566-2630, or by fax at 216-263-8635.

Sincerely,

A handwritten signature in cursive script that reads "Madelyn K. Harding".

Madelyn K. Harding, Manager
Product Compliance & Registrations

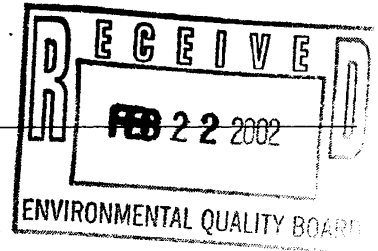
Cc: David Hess, Pennsylvania Department of Environment Protection, 16th Floor, Rachel Carson State Office Building, P. O. Box 2063, Harrisburg, PA 17105-2063 *Fed Ex 8187 4034 2814*

Attachments

1. Summary of comments for The Sherwin-Williams Company
2. Detailed comments of The Sherwin-Williams Company



Summary of Comments



The Sherwin-Williams Company
Environmental, Health & Regulatory Services
101 Prospect Avenue, N.W.
Cleveland, Ohio 44115-1075
Facsimile: (216) 566-2730

- Sherwin-Williams has significant concerns with the proposed standards for interior wood clear and semi-transparent stains, interior wood varnishes, interior wood sanding sealers, exterior wood primers, and floor coatings.
- The proposed standards are based on the inaccurate assumption that compliant coatings are available or that substitute complying products can be developed which will meet the performance requirements of the customers.
- In fact, the "compliant coatings" for these sub-categories do not meet the performance requirements of our customers and/or will result in increased and earlier repainting. They are effectively not within the limits of current technology.
- The DEP has not considered the increased emissions resulting from such performance issues and repainting results, and has not considered these facts in the proposed regulation.
- Sherwin-Williams proposes changes to the VOC standards for only a few of the 46 product categories proposed by Pennsylvania. In conjunction with the Pennsylvania proposed standards, the Sherwin-Williams proposal will achieve significant reductions beyond the National AIM rule (26.5 tons per day). This is very close to amount of emissions reduction determined for the Pennsylvania proposed rule.
- The proposed rule is unreasonably stringent and unnecessary for the protection of the public health, welfare and safety.
- The record does not support the emission reduction claims of the proposed rule, and the proposed rule is arbitrary and capricious.
- The proposed rule will have a significant adverse economic impact on Sherwin-Williams. In using its discretionary authority to set VOC standards, DEP must consider the economic impact the proposed rule will have on its actions, and has not adequately evaluated the adverse impact on Sherwin-Williams business in Pennsylvania. DEP can issue a rule which still achieves substantial VOC emissions reductions beyond the National AIM rule, without causing a serious adverse impact on potential sales of certain products.
- The economic analysis used in this rule development is inaccurate. It uses a figure of \$6400 per ton of VOC emissions reduced. This figure was copied from California. However, the situation in Pennsylvania is significantly different from that in California. All architectural coating products in California have been under VOC restrictions since the late 1980's. Thus, in estimating the cost impact of a new limit versus a current limit, California only considered the difference between the current status and the proposed status. In Pennsylvania the current status does not include any of the VOC restrictions that are appropriately assumed for California. Pennsylvania will need to make an independent determination of the cost of the VOC reductions contained in the proposed regulation.
- Sherwin-Williams respectfully requests that the DEP adopt Sherwin-Williams comments for alternative VOC limitations for the categories referenced above.
- Both the Consumer Products regulation and the architectural coatings regulation proposed by Pennsylvania are based on rule developments in California. However, while Pennsylvania's proposal includes the California averaging provision for consumer products, it does not do so for architectural coatings. This unbalanced approach to regulatory decisions is arbitrary and capricious and places an unreasonable and unequal burden on the architectural coating industry.
- Thank you for the opportunity to provide these comments.

Madelyn K. Harding

Madelyn K. Harding, Manager
Product Compliance & Registrations

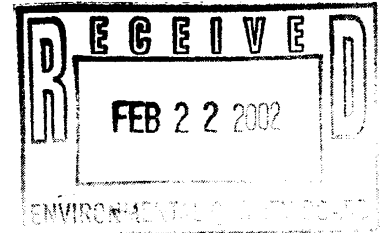


The Sherwin-Williams Company
Environmental, Health & Regulatory Services
101 Prospect Avenue, N.W.
Cleveland, Ohio 44115-1075
Facsimile: (216) 566-2730

BY FEDERAL EXPRESS NO.: 8187 4034 2847

February 20, 2002

Environmental Quality Board
Rachel Carson State Office Building
15th Floor
400 Market Street
Harrisburg, PA 17101-2301



**RE: Annex A, Title 25. Environmental Protection
Part I. Department of Environmental Protection
Subpart C. Protection of Natural Resources
Article III. Air Resources
Chapter 130. Standards for Products
Subchapter C. Architectural And Industrial Maintenance Coatings**

Dear Sirs:

The Sherwin-Williams Company appreciates having the opportunity to comment on the proposed Regulation-Annex A, Title 25. Environmental Protection, Part I. Department of Environmental Protection, Subpart C. Protection of Natural Resources, Article III. Air Resources, Chapter 130. Standards for Products, Subchapter C. Architectural And Industrial Maintenance Coatings limiting emissions of volatile organic compounds (VOC).

The Sherwin-Williams Company is one of the largest coating manufacturers in the world, with 2001 annual sales over 5. billion dollars. We maintain manufacturing facilities and company-owned and operated Stores throughout the country and employ about 26,000 people. In Pennsylvania State we employ 1173 people, own 124 stores, **and own and operate a manufacturing facility**, as well as a warehouse. Our stores are the exclusive distributors / retailers for the Sherwin-Williams brand. In addition to this distribution, our products, under a variety of additional brand names, are distributed through mass merchandisers, do-it-yourself outlets, hardware stores, and by independent distributors. Our product lines include some of the brands best known to the American people, including – but not limited to – Minwax®, Thompsons®, Pratt & Lambert®, Martin-Senour®, Dutch Boy®, Rust Tough®, Cuprinol®, and H&C®. In the architectural and industrial maintenance product areas these coatings are used for their decorative and protective properties.

Perspective

The proposed rule is based on the Ozone Transport Commission's (OTC's) Model Rule, which was based on the model rule recommended by STAPPA/ALAPCO, which was based on the California Suggested Control Measure (SCM) , which was based in turn on Rule 1113 adopted by South Coast Air Quality Management District for most of the four counties around Los

Angeles, California. Pennsylvania's proposed rule is based on the record developed for these previous rule developments, although the OTC, STAPPA/ALAPCO, and the California Air Resources Board do not have legislative rulemaking authority, and did not develop their recommendations under any legislative requirements. We are still including by reference our comments on the STAPPA/ALAPCO model rule submitted to the OTC Stationary Source Committee work group during their discussions. See Attachment 1.

General Comments

The proposed rule is based on the assumption that there are complying coatings which meet all of the performance requirements in the various product categories for which standards are proposed or that acceptable substitute complying products can be developed to meet these performance needs. In fact, the preamble explicitly states this: "Consumers would not be affected by this proposed rulemaking in that, they should not notice any changes in the AIM coatings performance or quality." As discussed in detail below, this assumption is inaccurate and misleading as applied to the following product sub-categories: interior wood clear and semi-transparent stains, interior wood varnishes, interior wood sanding sealers, exterior wood primers, and floor coatings. The report prepared by E. H. Pechan & Associates for the OTC, states that there are complying products for various architectural categories proposed for regulation. This is based on an overly simplistic review of a limited number of product data sheets. Sherwin Williams is concerned because there are sub-categories of products for which so called compliant coatings either do not exist, present significant performance issues, and/or will result in increased and earlier repainting, which in and of itself will increase emissions. The emission reduction calculations for the proposed standards for these sub-categories do not account for the increased emissions associated with earlier repainting needs, and must be re-evaluated to take into account such emissions. The record does not accurately reflect the actual environmental impact of the proposed standards for these coating sub-categories, and thus, the proposed rule is thus arbitrary and capricious.

The proposed rule estimates that 28 tons per day in VOC emission reductions will be achieved. Sherwin-Williams supports efforts to achieve VOC emission reductions, and recommends a few specific changes to the proposed standards which would still result in the substantial reduction of 26.5 tons per day of VOC emission reductions. The proposed Pennsylvania standards as applied to the sub-categories interior wood clear and semi-transparent stains, interior wood varnishes, interior wood sanding sealers, primers for exterior wood surfaces, and wood floor coatings, are unnecessarily stringent. Modifying these standards as recommended below will not significantly affect the amount of VOC emission reductions to be obtained. The higher standards proposed by Sherwin Williams for these sub-categories can not reasonably be expected to cause any harm or adverse impact. In fact, given the clear evidence that the proposed rule will result in use of products that have performance issues and require earlier repainting, there should be little or no difference in environmental affect between the Pennsylvania proposed rule and the rule as modified by Sherwin Williams recommended changes. Thus, the proposed rule is unreasonably stringent, and unnecessary for the protection of the public health, welfare and safety.

DEP has discretionary authority in setting standards; however, DEP must consider the economic impact of its actions in making these determinations. See *Rochez Brothers, Inc., et al. v. D.E.R.* 18 PA Commonwealth 137 (1975). The proposed regulation, if adopted in its present form, will have a substantial adverse impact on Sherwin-Williams' sales and business in Pennsylvania. As

discussed in detail below, Sherwin-Williams has significant concerns for the proposed standards to the extent they apply to interior wood clear and semi-transparent stains, interior wood varnishes, interior wood sanding sealers, exterior wood primers, and floor coatings. For example, estimated industry sales per year in Pennsylvania for coatings for interior wood substrates (interior wood clear and semi-transparent stains, interior wood varnishes, and interior wood sanding sealers) are \$18.5 million per year. Sherwin-Williams sales of these products are the vast majority of this total. The proposed standards would effectively prohibit sales of these products. This constitutes ample evidence of the adverse economic impact of the proposed regulation on Sherwin Williams. DEP must consider the economic impact of its actions in setting the proposed standards. Such an analysis should include an analysis of the impact on the effected regulated community.

In addition, according to the Background and Purpose section of the proposed rule, the cost per ton of VOC reductions under the proposed AIM regulation was estimated by E. H. Pechan & Associates at \$6,400 per ton of reductions. This estimate was copied directly from the California Suggested Control Measure and was the estimate used by California in considering that model for a rule. However, the situation in Pennsylvania is significantly different from that in California. All architectural coating products in California have been under VOC restrictions since the late 1980's. Thus, in estimating the cost impact of a new limit versus a current limit, California only considered the difference between the current status and the proposed status. In Pennsylvania the current status does not include the VOC restrictions assumed for California. Pennsylvania will need to make an independent determination of the cost of the VOC reductions contained in the proposed regulation. Thus, the proposed rule arbitrarily relies on an economic cost analysis prepared for California. The costs to reduce VOC emissions in Pennsylvania will be greater than \$6400/ton for California, and a separate economic analysis must be done which is based on the facts as they apply specifically to Pennsylvania. Such an analysis must be used in setting the proposed standards. .

Notwithstanding this significant error, Pennsylvania is estimating the average consumer would experience cost increases of approximately \$5.50 per year for architectural, industrial maintenance and traffic coatings. Applying this information to the Pennsylvania population from the 2000 census results in approximately \$67,500,000 in annual additional costs to Pennsylvania consumers. Even this significant burden is an underestimate since the basis for this estimate (the Pechan report) was copied directly from situation in California and does not apply in Pennsylvania.

The Regulatory Analysis Form makes a number of statements or conclusions in support of the proposed rule which are inaccurate or misleading. The Form states that certain coating suppliers have indicated that the proposed VOC content limits are acceptable and within existing technologies. While such statements may have been made, it is an unstated significant fact that these coating manufacturers do not participate to any significant extent in certain sub-categories of products; for example, these manufacturers have stated that they have do not participate to any extent in interior wood clear and semi-transparent stains, interior wood varnishes, and interior wood sanding sealer areas. Thus, their statements can not be taken to apply to these sub-categories.

The Form states that certain coatings manufacturers have indicated that the proposed limits are within the limits of current technology. Again, Sherwin-Williams has provided ample evidence that the limits for certain product sub-categories are not within the limits of current technology in view of the significant performance limitations for these categories. Again, the comments of certain manufacturers can not be taken to address issues in sub-categories where they do not have any market share.

The Form does not address the substantial adverse economic impact on the regulated community and on Sherwin-Williams for the proposed standards in the sub-categories discussed above which would result in widespread prohibition on sales of products.

The Form states that the proposed emission reductions are necessary for Pennsylvania to attain and maintain the health based ozone air quality standard. As discussed above, there should be a negligible difference, if any, between the emission reductions to be obtained from the proposed standards for the 46 coating categories and the proposed standards as recommended in Sherwin-Williams' comments. The health based standard can be attained and maintained with standards modified as recommended by Sherwin-Williams. Finally, the Form states that there are no other regulatory alternatives available that will achieve the level of emission reductions necessary. This statement is inaccurate. The DEP has not evaluated, for example, the environmental benefits to be obtained from the use of low temperature latex coatings that can be used in cooler weather when ozone formation and pollution is not of concern and thus avoid the high ozone summer months. DEP has also not evaluated the emission increases that would be linked to use of complaint coatings, due to earlier and more frequent repainting resulting from product performance failures.

Specific Comments

We will divide our discussion into several sections:

TECHNICAL ISSUES

1. Coatings For Interior Wood Substrates (specifically interior stains, varnishes, and sealers)
2. Primers For Exterior Wood Surfaces
3. Semi-Transparent Water-borne Stains
4. Floor Coatings
5. Problems With The NTS Study Cited By California

ADMINISTRATIVE ISSUES

1. Averaging
2. Future Regulatory Status
3. Emission Reductions

TECHNICAL ISSUES

1. COATINGS FOR INTERIOR WOOD SUBSTRATES

The proposed standards for interior wood stains, varnishes, and sanding sealers are based on the assumption that there are either complying coatings available which meet the performance requirements for these sub-categories or that substitutes meeting the performance requirements

can be developed. This assumption is inaccurate and misleading (as will be shown in detail below), and there is no basis to set a standard based on this assumption.

As we have previously discussed in meetings with the OTC Stationary Source Work Group and with Pennsylvania, water-borne coatings are frequently not appropriate for direct application to bare wood. Inherently, water causes a number of problems. As discussed below in detail, these include grain raising, lapping when semi-transparent stains are applied, panelization when applied to maple wood floors, lack of depth in the final appearance of the sealed, stained, and varnished substrate, and inability to seal the wood and prevent staining from coming through, etc.

Grain raising is the consequence of water contacting bare wood. When it occurs, the grain as well as the individual wood fibers are raised above the surface of the wood, producing a rough appearance. Sanding will not remove the raised grain without destroying the underlying wood substrate.

Lapping is the defect that occurs when coatings, especially water-borne stains are applied to substrates. The following explains: a painter will apply the stain to each section as far as his arm will reach...he then moves and applies the coating to the next section of wood. The segment where he has overlapped can show lap marks or lapping, due to having the extra layer of stain. There is no way to apply coatings without such a lap area; coating manufacturers can only work to reduce the effect of this overlap. Water-borne stains show such lap marks to a much greater extent and with much shorter time periods between the two applications than solvent-borne coatings.

Panelization is a condition where localized excessive cracks develop between some strip flooring boards while adjacent boards remain tightly bonded together with no apparent separations. The Maple Flooring Manufacturers Association (MFMA) provides the following important insights into this failure mode:

“Panelization (or sidebonding) ... has gained increasing attention as new EPA V.O.C. regulations have begun to affect the availability of traditional oil-based floor finishing products in many areas of the country.....the problem has **been most closely associated with the use of water-based sealers and finishes** on raw (untreated) maple strip flooring in areas of the country which experience distinctly different seasonal moisture conditions.”

The MFMA considered this issue to be of sufficient importance that it surveyed its membership on the subject. Sixty-nine percent of the respondents had experienced panelization failures. The majority of the projects where panelization was observed were for large area installations of over 1000 square feet (84 percent of the jobs). To the question “My experience with panelization during new installations have occurred primarily

or ----“ when using oil-modified finish”
 ----“ when using water based finish,”

the responses were **100% “water based finish” and 0% “oil-modified finish.”** The responses for panelization during recoating operations and during resurfacing operations were identical: in

each case, **100% occurred when using water based coatings**. In response to the question “have you developed any solutions to the panelization/sidebonding problems you have experienced in the past” 15 respondents said yes and provided their solutions. Of the unique solutions offered, 92% mentioned not using waterbased sealers and 67% mentioned avoiding **all** water-borne finish coats if at all possible.

The MFMA annually issues an “Athletic Flooring Sealer and Finish Specification and Conformance List” which provides a list of products which comply with the MFMA specifications for sealers and for finishes. **There are no water-borne sealers on this approved product listing.**

In the “Athletic Flooring Sealer and Finish Specification and Conformance List,” there is a special note prior to the water-borne finishes listings:

“The use of water based finishes has occasionally produced a sidebonding effect which may result in localized excessive cracks between the boards. The MFMA recommends that you consult with your MFMA flooring contractor and finish manufacturer to obtain their procedures for sealing and finishing a raw maple strip floor with water-based products.”

Such a cautionary note clearly indicates that **the use of water-borne finishes, even with solvent-borne sealers, is of special concern.**

Photographs from the Maple Flooring Manufacturers Association, showing the effect known as panelization, are enclosed. [See Attachment 2.] Arrows are used to point to the cracks from panelization failure. The arrows labeled “A” show two sections where the strength of the sidebonding caused cracking of the actual wood panel. The only solution to a floor which has failed by panelization is replacement of the entire floor.

Panelization is a problem in geographical areas of the country which experience temperature and humidity variations, like the northeast, and is more of a problem in large-area applications, such as gymnasium floors. Thus, this problem will effect professional flooring contractors more severely than do-it-yourselfers. It has been suggested that flooring professionals would need to adjust their schedules to the temperature and humidity. However, this places an unreasonable burden on them. For much of the Northeast, and especially for Pennsylvania, waiting for low humidity and moderate temperatures may mean waiting for another season, and being unable to coat wood floors during the prime painting season, summer. For schools, gymnasium floors are installed and improved during the summer season, when they are not in use. Thus, this suggestion is impractical to both the flooring professionals and to their major customers.

As stated above, Pennsylvania has based its proposal on the Ozone Transport Commission (OTC) Model Rule, and since this Model Rule was taken from the California Suggested Control Measure (SCM the raw data used in the California development is available to review whether performance assumptions are supported by the facts. [The OTC Model Rule limitations are identical to the California SCM with just two exceptions: the industrial maintenance limit in the OTC Model Rule is higher than in California’s SCM, and OTC Model Rule did not include the

flexibility option, specifically averaging, which was included in the California SCM.] For these reasons it is important to consider the data available from California before rule adoption.

California sales information is available through the California Air Resources Board 1998 Architectural Coating Survey Final Report. This is a detailed survey of sales and VOC content information on all products distributed into California; **all** manufacturers distributing products into California are required by California State law to respond to such surveys. The following important facts can be discerned from this report:

1. Sanding Sealers: Sales weighed average VOC content is 648 grams per liter. Less than 20% of the sales in California comply with our recommended VOC content limit of 550 g/l. **Less than 5% comply with the proposed Pennsylvania limit of 350 g/l.**
2. Varnishes: Sales weighted average VOC content for all varnishes (interior and exterior) is 406 g/l. **Over 70% of the varnishes sold in California are solvent-borne, with a sales-weighted average VOC content of 463 g/l**, even though a limit of 350 g/l has been in effect for over 10 years. This shows that additional time has not and will not solve the basic technical issues resulting in the poor performance of, and lack of customer satisfaction with, water-borne varnishes.
3. Clear and semi-transparent stains: **Sales-weighted average VOC content of all interior clear and semi-transparent stains is over 510 g/l. Less than 12% of all clear and semi-transparent stains, including exterior stains which are not being discussed herein, meet the Pennsylvania proposed limit of 250 g/l.**

It is noteworthy, that the sales weighted average VOC content of these product categories exceed the **current** VOC limits in California which have been **in effect in over 90% of the state since the early 1990's**.

This data clearly shows that The Sherwin-Williams Company is not alone in our concerns over the lack of complying products to meet the new limits for these three categories. As discussed above, to the extent that there are complying coatings for interior wood substrates, they are simply not suitable for use in the broad range of applications and they do not meet the performance requirements expected by the vast majority of the customers. In addition, the National Paint & Coatings Association, representing over 80-85% of the market in architectural and industrial maintenance coatings, has recommended higher limits for these categories of coatings.

To better visualize the performance differences between water-borne and solvent-borne systems, demonstration panels were presented to the Pennsylvania Air Quality Technical Advisory Committee at meetings held May 24, 2001 and on July 26, 2001 and with the Pennsylvania Department of Environmental Protection staff at a meeting on November 19, 2001. The critical performance differences shown included the following observations:

1. Lapping [the overlap area when a semi-transparent stain is applied]: the water-borne semi-transparent stain showed lap marks at times between applications **as low as 2 minutes, with severe marks showing at 4-6 minutes**. In contrast the solvent-borne semi-transparent stain showed **no** lap marks throughout the period of the test, which went for a total time between applications of 8 minutes.

2. Grain-raising: all water-borne coatings (sanding sealer, semi-transparent stain, and varnish) resulted in severe grain raising.
3. Appearance: the final appearance of both the varnished (only) and the system (sealed, stained, and varnished) panels were distinctly different between the water-borne and solvent-borne systems, with the water-borne system showing an appearance without depth, reminiscent of Formica® (which is produced from a photograph of wood) and not showing the depth expected of a natural wood substrate.

We recommend the limits for these three categories be raised to the limit recommended by the National Paint and Coatings Association:

Sanding Sealers	550 g/l
Varnishes	450 g/l
Stains – Clear & Semi-Transparent	550 g/l

These limits would protect the performance of products in these categories. These products in turn would protect the investment in flooring and home appurtenances (e.g. doors, moldings, window sills, trim, banisters, stairs, etc.) that would be jeopardized by products forced to comply with the proposed limits.

We have estimated the maximum amount of VOC emission reductions that these limits would forego, if all such products were at the levels we recommend rather than at the currently proposed limits. This was accomplished using our best estimate of the national sales volume of these coatings and pro-rating the volumes by the population in Pennsylvania (according to the 2000 U. S. Census). [See Attachment 3 for detailed explanation of the procedure used to make these determinations.] The results show that the maximum VOC emission reduction that would be sacrificed is small compared to the total VOC emission reductions:

Sanding Sealers and Varnishes for Interior Wood	151.5 tons/year	0.42 tons/day
Interior Clear & Semi-Transparent Wood Stains	323.1 tons/year	0.89 tons/day

Alternatively, **at a minimum**, we recommend three new categories be developed that specifically address our concerns for professional applications: a professional varnish, a professional sanding sealer, and a professional semi-transparent stain. We would recommend the following definitions and requirements:

1. “Professional varnish” means a varnish which is formulated and labeled specifically for application by professional contractors and includes the statement “For Professional Use” on the label.
2. “Professional sanding sealer” means a sanding sealer which is labeled and formulated for application by professional contractors and includes the statement “For Professional Use” on the label.
3. “Professional semi-transparent stain” means a stain which is formulated for application by professionals to change the color of a surface but not conceal the surface and includes the statement “For Professional Use” on the label.

4. "Professional clear stain" means a clear stain which is formulated for application by professionals and includes the statement "For Professional Use" on the label.
5. "Stain means a coating that produces a dry film with minimal coloring."
6. "Clear means allowing light to pass through, so that the substrate may be distinctly seen."

To meet the performance requirements of these customers, we recommend the following VOC content limits:

<u>VOC Limits:</u>	g/l, less water and exempt compounds and <u>excluding any colorant added to tint bases</u>
Professional varnish	450
Professional sanding sealer	550
Professional semi-transparent stain	550
Professional clear stain	550

We want to stress that considering the very low complying market shares in California of products that will meet the Pennsylvania proposed limits, it is apparent that there are not currently available products which sufficiently meet the performance requirements of these products to satisfy customer demands. This is evident from consideration of the sales weighted average VOC contents for each of these coating categories, which exceed the VOC content limits that have been effective in most California districts since 1990. It is not reasonable to assume that by 2005 new products can be developed to meet the performance requirements and comply with the Pennsylvania proposed limits. In California time has not resulted in the development of complying products that can satisfy the marketplace needs for performance.

2. PRIMERS FOR EXTERIOR WOOD SURFACES

PRIMERS, SEALERS AND UNDERCOATERS FOR EXTERIOR WOOD SURFACES

The proposed standard of 200 g/l for all primers, sealers, and undercoaters is based on the assumption that there are complying coatings available for these categories or that acceptable substitutes can be developed. This assumption is inaccurate when applied to primers, sealers, and undercoaters for exterior wood surfaces where there are unique and demanding performance issues. The Pennsylvania proposal for primers, sealers, undercoaters, and quick dry primers, sealers, and undercoaters eliminates all solvent-borne primers from the market and thus has a significant adverse economic impact on Sherwin-Williams. The national rule has a limit of 350 g/l for primers and undercoaters, a limit of 400 g/l for sealers, and a limit of 450 g/l for quick dry primers, quick dry sealers, and quick dry undercoaters. In addition, the national rule has a limit of 550 g/l for sanding sealers. We consider this a critically serious problem: painting systems depend upon the primer system to perform. For the Sherwin-Williams brand, **for wood and wood composites we exclusively recommend alkyd primers under all of our water-borne exterior latex coatings.** [The only exception is under the LowTemp35® coatings we recommend the LowTemp 35® primer. There are compatibility problems between the LowTemp 35® topcoat and solvent-borne primers.]

There are two types of exterior wood surfaces: "real" wood boards and sheets of composition boards. The latter are made of resin, wax, surfactants, and wood fibers, flakes, particles, chips,

or etc. When water-borne systems are in direct contact with this substrate, wax can bleed through, surfactants can leach out, and swelling can occur. All of these performance problems can be solved by application of a solvent-borne primer prior to topcoating with a water-borne paint.

At the Pennsylvania Air Quality Technical Advisory Committee meetings on May 24, 2001 and on July 26, 2001 and at a meeting with the Pennsylvania Department of Environmental Protection staff November 19, we showed an exposure panel comparing the performance of our standard exterior water-borne primer [A100® Exterior Latex Primer] to our standard exterior solvent-borne primer [A100® Exterior Oil Primer] under an exterior latex topcoat. The exposure panel was prepared in the laboratory by applying A100® Exterior Latex Primer to one half of the board, and applying A100® Exterior Oil Primer to the other half. After both had dried completely, the entire board was topcoated with A100® Exterior Latex Satin House Paint. After complete drying, the board was placed on exterior exposure in Medina, Ohio for 82 months. The panel reveals some of the performance issues associated with latex primers in direct contact with bare woods: bleed-through of tannins and poor protection of the substrate were revealed.

The VOC content for the coatings used in this study are:

A100® Exterior Latex Primer	121 g/l
A100® Exterior Oil Primer	325 g/l
A100® Exterior Latex Satin House Paint	112 g/l

In addition to the problems associated with bare wood boards, wood composites have additional problems. Wood composition boards contain wax, surfactants, and wood fibers. Without a proper primer these composition woods can have wax bleeding and surfactants leaching out of the wood and through the topcoat, as well as edge swelling and failure. All of these problems can be avoided if an appropriate **solvent-borne** primer is used.

It is important to note that The Sherwin-Williams Company products recommend the use of our **solvent-borne primer under all exterior latex topcoats being applied to wood and wood composition boards**. [For use over plywood we recommend our A100® Exterior Latex Primer.] Data sheets showing these recommendations are included in Attachment 4 .

As part of these comments, we are incorporating by reference the comments we submitted to Mr. John Elston on January 11, 2001. [See Attachment 1]

We recommend a limit of **350 g/l for exterior wood primers, sealers, and undercoaters**. This can be accomplished by adding Exterior Wood Primers, Sealers and Undercoaters to the definition for Specialty Primer category in the proposal, as shown below:

Specialty Primer, Sealer, and Undercoater--A coating labeled as specified in subsection 130.304(a)(7) and that is formulated for application to a substrate to seal fire, smoke or water damage; to condition excessively chalky surfaces; for exterior wood; or to block stains. An excessively chalky surface is one that is defined as having a chalk rating of four or less as determined by ASTM Designation D 4214-98, incorporated by reference in subsection 130.306(e)(7) (relating to compliance provisions and test methods).

We have estimated the maximum amount of VOC emission reductions that such a limit would forego, if all such products were at the higher levels rather than at the currently proposed limit. This was accomplished using our best estimate of the national sales volume of these coatings and pro-rating the volumes by the population in Pennsylvania (according to the 2000 U. S. Census). [See Attachment 3 for detailed explanation of the procedure used to make these determinations.] Revising the standards to include exterior wood surfaces as a subcategory of the Specialty Primer category is expected to result in a VOC emission reduction sacrifice of:

Exterior Wood Primers, Sealers and Undercoaters	32.4 tons/year	0.09 tons/day
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The maximum amount of VOC emission reductions that such a limit might forego would be:

Exterior Wood Primers, Sealers and Undercoaters	83.2 tons/year	0.23 tons/day
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3. SEMI-TRANSPARENT WATER-BORNE STAINS

In addition to the performance issues associated with all water-borne stains, we have an additional problem when it comes to water-borne stains with a VOC limit of 250 g/l. Many of water-borne semi-transparent stains exceed the 250 g/l limit; many even exceed 350 g/l. However, in use these coatings will emit from each can no more VOCs than the stains at 250 g/l. In most cases these stains will emit significantly less. Our water-borne coatings are formulated for the desired properties; reducing the VOC content, although it reduces our costs, also reduces the quality and performance of these coatings. I have attached Table 1 [Attachment 5 , showing a variety of our water-borne semi-transparent stains: most do not comply with the proposed 250 g/l limit. Although all of the stains on application emit less than 120 g/l and thus, would seem to be perfect candidates for the low solids category, the solids content is too high to meet the definitional requirement for this category. Our laboratory has determined that lower solids will cause more problems with lapping, so reducing solids to fit into the low solids category does not make sense.

California has formed a work group to consider the issues surrounding the calculation of VOC content which causes the discrepancy between the VOC content (e.g. 250 g/l) and the VOC amount that is actually emitted in water-borne coatings. It is expected that the resolution will solve the problem addressed above, probably by expanding the definition for low solids coatings, as shown below.

We recommend a small change to the definition for low solids coatings:

“Low-solids coating” means a coating containing 0.12 kilogram or less of solids per liter (1 pound or less of solids per gallon) of coating material or a water-borne clear or semi-transparent stain.

This change will not result in any increase in VOC emissions from the Pennsylvania proposed rule. Rather, it will result in a decrease since the emissions will be the same but the product performance will be enhanced.

4. FLOOR COATINGS

Although California has included a 250 g/l limit in their Suggested Control Measure, we consider this extremely problematic for the northeastern states. For example, California does not have the wood porches that are so common in the northeast. Coatings for these wood porches need the penetrating capability of solvent-borne floor paints. In fact, the testing program that is being utilized in California to **confirm the limits is testing only coatings for concrete floors; no tests are being performed on floor coatings for wood substrates.**

We recommend a limit of 380-400 g/l for floor paints based on the availability of high performance coatings that would meet such a standard. [The national rule provides 400 g/L for floor coatings, while the rules effective in New Jersey and the 9 counties in metropolitan New York City do not have a floor coating category, defaulting to the nonflat category with a limit of 380 g/l.]

We have estimated the maximum amount of VOC emission reductions that a 400 g/l limit would forego, if such products were at the higher levels rather than at the currently proposed limit. This was accomplished using our best estimate of the national sales volume of these coatings and prorating the volumes by the population in Pennsylvania (according to the 2000 U. S. Census). [See Attachment 3 for detailed explanation of the procedure used to make these determinations.] Revising the limit to 400 g/l instead of the proposed 250 g/l limit is estimated to result in a loss of the following VOC emission reductions:

Deck and Porch Coatings	5.0 tons/year	0.01 tons/day
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The maximum amount of VOC emission reductions that such a limit might forego if the Floor Coating category limit were revised would be:

Floor Coatings	51.4 tons/year	0.14 tons/day
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5. PROBLEMS WITH THE NTS STUDY CITED BY CALIFORNIA

All panels prepared for the NTS Studies, including but not limited to the exterior wood and steel exposure panels, were prepared by draw down. This is not the generally accepted procedure. Normally, panels would be prepared using one or more methods of application that are used "in the field" to insure that the performance observed would be consistent with the performance actually experienced. Application by either brush or spray would be the most common method to prepare panels for these types of studies.

The films were drawn down using a single draw down rod and then the dry film thickness was measured. Normally, one would apply the coatings to the wet and dry film thickness recommended by the manufacturer.

The sizes of the exposure panels were too small in size. There were no positive nor negative controls. Normally one includes both a positive and a negative control in each set of exposures to have a baseline for comparison.

As a result of these technical and procedural errors, the data can not be used to support the proposed limits.

ADMINISTRATIVE REQUIREMENTS

I. Averaging

The proposed limits are based on the limits adopted by the South Coast Air Quality Management District and included in the California Air Resources Board (CARB) Suggested Control Measure. However, both of **these include an averaging provision** to allow coatings which “over” comply to be averaged with coatings unable to meet the limits.

While the State claims that the CARB SCM’s averaging provision will “sunset” on 1/1/05, the State has ignored the record of the adoption. That record clearly shows that CARB intends the SCM to continue to include a flexibility option after 1/1/05; that one idea being considered is to change the entire SCM foundation to a reactivity basis, rather than the current organic content basis, prior to that time.

Averaging is needed to allow the sale of coatings that satisfy particular performance needs in the marketplace. For example, The Sherwin-Williams Company offers a unique product called LowTemp 35®: this exterior latex product is specifically designed and marketed for application at lower temperatures, down to 35 degrees Fahrenheit. This is in contrast to the normal application temperature limits required for latex products, which can be applied only down to 50 degrees Fahrenheit. This product was formulated specifically to satisfy the need to extend the painting season as long as possible, which previously had only been satisfied by the use of solvent-borne products at high VOC contents (emitting over 3.5 pounds per gallon, 400 grams per liter). However, this product will be prohibited from sale, unless averaging is allowed, since the VOC content of the LowTemp 35® flat is over the proposed 100g/l limit. Rather than recommend a new category just for this product, we are recommending averaging.

One environmental advantage of this product is that it allows coating applications to occur during the fall and spring, which are not part of the ozone season, rather than requiring application in summer when the ozone problem is most problematic. Thus, this product is actually beneficial when compared to other, compliant, exterior latex coatings that are more limited in use.

Another example of the need for averaging to allow the sale of a product with special performance is Everclean® by The Sherwin-Williams Company. This interior latex product is truly washable, allowing stains and dirt to be removed from walls and trim by simply cleaning with a detergent. This product has the clean-up performance usually found only in solvent-borne coatings. However, this product line will not be available at any sheen level (flat, satin, nor semi-gloss), since it exceeds the VOC content limits in the proposed rule. Again, rather than recommend a new category just for this product, we are recommending averaging.

One environmental advantage of Everclean® is that it allows the wall surfaces to be cleaned to a “like-new” appearance, rather than requiring an early re-coating of the paint system. Thus, it actually results in less VOC emissions than other interior latex coatings, which might be “compliant” but which can not be cleaned, and thus dirt, fingerprints, stains, and etc. result in

more frequent re-painting. Rather than recommend a separate category for this unique product line, we recommend an averaging program similar to the one included in California be adopted.

The Consumer Products regulation proposed by Pennsylvania is also based on California's Consumer Products regulation. However, it includes all of the flexibility options present in California, including the California averaging provision. This is in contrast to the approach Pennsylvania has taken with the Architectural Coating, where CARB's averaging provision is not included in the proposal. This **unbalanced approach to regulatory decisions** is arbitrary and capricious and places an unreasonable and unequal burden on the architectural coating industry.

2. *Future Regulatory Status*

Our concerns about satisfying the performance requirements of our consumers can not be solved by Pennsylvania duplicating the California regulatory developments for several reasons. The weather conditions prevalent in Pennsylvania are much more severe and challenging to coatings than in California. The construction methods in Pennsylvania differ from those predominating in California where stucco housing predominates, in contrast to the wood buildings found in the northeastern part of the country. However, California has an averaging provision which will allow us to provide some high performance coatings by averaging with ultra-low VOC coatings. Thus, potential problems that may arise in Pennsylvania will not necessarily develop in California first. Also, the Pennsylvania proposal is significantly more stringent than the rule recommended in California..

3. *Emission Reductions from and Cost Effectiveness of the Proposal*

In earlier discussions with the OTC Work Group for Architectural Coatings, an emission reduction of 20% was expected from adoption of this proposal. Even with the changes to the rule which we are recommending (sanding sealers, varnishes, interior semi-transparent stains, exterior wood primers, and floor coatings), our proposal will achieve far higher emission reductions than this target reduction. The State estimates that the proposal will achieve a VOC emission reduction of 28 tons per day. The modifications recommended by Sherwin-Williams will reduce this by only 1.4-1.5 tons per day to 26.5-26.6 tons per day.

The regulatory background information published in the Pennsylvania Bulletin as a preamble to the proposed regulations states "Consumers would not be affected by this proposed rulemaking in that, they should not notice any changes in the AIM coatings performance or quality." This is misleading in reference to the sub-categories discussed above (interior wood clear & semi-transparent stains, interior wood varnishes, interior wood sanding sealers, exterior wood primers, and floor coatings). These represent specific examples of products where the performance will be dramatically impacted by the proposed rule. In these, as well as many other coating categories, traditional solvent borne coatings will be unavailable to the Pennsylvania consumers. This is a striking and noticeable change that will severely challenge consumer's ability to adapt and which will be clearly noticed.

The information published in the Pennsylvania Bulletin as a preamble to the proposed regulations also states that the cost per ton of VOC reductions under the proposed regulation was estimated by E. H. Pechan & Associates at \$6,400 per ton of reductions. This estimate was copied directly from the California Suggested Control Measure and was the estimate used by

California in considering that model for a rule. However, the situation in Pennsylvania is significantly different from that in California. All architectural coating products in California have been under VOC restrictions since the late 1980's. Thus, in estimating the cost impact of a new limit versus a current limit, California only considered the difference between the current status and the proposed status. In Pennsylvania the current status does not include the VOC restrictions that are appropriately assumed for California. Pennsylvania will need to make an independent determination of the cost of the VOC reductions contained in the proposed regulation.

In addition, the information published in the Pennsylvania Bulletin as a preamble to the proposed regulations also states that an analysis by the Aberdeen Proving Grounds indicated "that low VOC coatings are available and that they will produce a cost savings of approximately \$1.76 per gallon compared to higher VOC coatings." It is critical to note that the Aberdeen Proving Grounds study only evaluated 3 of the 46 categories proposed for regulation in Pennsylvania. Also, and of more importance, Aberdeen Proving Grounds study included products which do not comply with the Pennsylvania proposal as a "low VOC coatings" for certain sub-categories of the three evaluated.

The Sherwin-Williams Company is pleased to have had this opportunity to comment on the proposed Regulation-Annex A, Title 25. Environmental Protection, Part I. Department of Environmental Protection, Subpart C. Protection of Natural Resources, Article III. Air Resources, Chapter 130. Standards for Products, Subchapter C. Architectural And Industrial Maintenance Coatings limiting emissions of volatile organic compounds (VOC) from architectural, industrial maintenance, and traffic coatings. We are hopeful that these comments will be used to finalize a rule that will provide the needed emission reductions in a way that addresses industry and consumer needs.

If you have any questions or need additional information, please feel free to contact me at mkharding@sherwin.com, 216-566-2630, or by fax at 216-263-8635.

Sincerely,



Madelyn K. Harding, Manager
Product Compliance & Registrations

Cc: David Hess, Pennsylvania Department of Environment Protection, 16th Floor, Rachel Carson State Office Building, P. O. Box 2063, Harrisburg, PA 17105-2063
Attachments

ATTACHMENT 1

**COMMENTS SUBMITTED TO THE
OZONE TRANSPORT COMMISSION
STATIONARY SOURCE COMMITTEE WORK GROUP
ON ARCHITECTURAL COATINGS**



The Sherwin-Williams Company
Environmental, Health & Regulatory Services
101 Prospect Avenue, N.W.
Cleveland, Ohio 44115-1075
Phone: (216) 566-2892
Facsimile: (216) 515-8750

January 11, 2001

Mr. John Elston
New Jersey Dept. of Environmental Protection
401 E. State Street, CN 402
Trenton, N. J. 08625

FEDERAL EXPRESS NO. 8246 6727 4623

Mr. Rob Silwinski
Section Chief, Stationary Source Planning
Division of Air Resources
New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233-3250

FEDERAL EXPRESS NO. 8246 6727 4643

Ms. Leah Weiss
Ozone Transport Commission
444 N. Capitol Street, N.W. Suite 638
Washington, DC 20001

FEDERAL EXPRESS NO. 8246 6727 4654

Re: Proposed Regulation Limiting the Volatile Organic Compound Content of Architectural Coatings

To the Members of the Stationary Source Committee of the Ozone Transport Commission,

The Sherwin-Williams Company is pleased to have this opportunity to comment on the document "Regulating Air Emissions From Paint" published by STAPPA / ALAPCO and represented as the Ozone Transport Commission Stationary Source Committee Draft regulation to limit the volatile organic compound (VOC) content of architectural, industrial maintenance, and traffic coatings.

The Sherwin-Williams Company is one of the largest coating manufacturers in the world, with 1999 annual sales over five billion dollars. We maintain manufacturing facilities and company-owned and operated Stores throughout the country. These stores are the exclusive distributors / retailers for the Sherwin-Williams brand. In addition to this distribution, our products, under a variety of additional brand names, are distributed through mass merchandisers, do-it-yourself outlets, hardware stores, and by independent distributors. Our product lines include some of the brands best known to the American people, including – but not limited to – Minwax®, Thompsons®, Pratt & Lambert®, Martin-Senour®, Dutch Boy®, Rust Tough®, Cuprinol®, and H&C®. In the architectural and industrial maintenance product areas these coatings are used for their decorative and protective properties.

TECHNICAL ISSUES

The Sherwin-Williams Company has a number of concerns with the document, "Regulating Air Emissions from Paint: A Model Rule for State & Local Air Agencies" (by State and Territorial Air Pollution Program Administrators [STAPPA] and Association of Local Air Pollution control Officials [ALAPCO]).

In the Table "A Comparison of the STAPPA/ALAPCO Model Rule and the National Rule" a column is dedicated to explaining the Basis for the Model Rule/CARB SCM VOC Limit. It is important to note that for a number of categories the "explanation" states that a limit is feasible because there were "no adverse comments received concerning this limit" during the SCM development and/or that in California there is a "high complying market share." However, this explanation can not be used to defend a limit to be newly introduced in other states, like New Jersey or Massachusetts. There will NOT be a high complying market share in such locations. The only reason that such a "high" complying market share exists in California is because the limit is law in the most highly populated sections of the state. No adverse comments were submitted to CARB on these limits because they were not open for discussion. However, other states considering such limits do need to consider the technical issues facing the development of such coatings, the performance sacrifices to be made, and the cost increase of such coatings.

Emission Reductions

The STAPPA/ALAPCO document states that the California Air Resources Board (CARB) predicted over 19 tons of VOC reductions per day statewide excluding emission reduction in the South Coast Air Quality Management District (AQMD). This is incorrect. The page 14 of the Staff Report (Volume I: Introduction and Executive Summary) published by CARB states that the emission reduction is estimated at 10 tons per day excluding South Coast AQMD.

The STAPPA/ALAPCO document claims that the proposed rule would result in emission reductions of 20% from the national rule baseline. This is incorrect. CARB claims that the Suggested Control Measure (SCM) will result in emission reductions of 20% from the current California rule limits. While these limits vary from District to District within the State of California, they are all significantly lower than the national rule. Thus, any state adopting the STAPPA/ALAPCO proposed limits would achieve emission reductions significantly greater than 20%.

This fact is inherently recognized by STAPPA/ALAPCO. In testifying about the national rule proposal, STAPPA/ALAPCO presented an alternative to the national rule with two Tables of Standards:

"Under the STAPPA/ALAPCO Tables of Standards, emission reductions on a volume basis would equal approximately 18 percent under the 1997 standards and about 27 percent under the 2002 standards; when calculated on a solids basis, emission reductions would increase to nearly 30 percent under the 1997 standards and about 40 percent under the 2002 standards."

Yet the standards proposed in this testimony for 1997 have significantly higher VOC content limits than the new STAPPA/ALAPCO proposed limits. In addition, the standards proposed for 2002 had higher limits in the categories with the highest volumes and emissions: flats, nonflats, industrial maintenance coatings, primers and undercoaters, sealers, clear and semi-transparent stains, waterproofing sealers, and floor coatings. (The only categories having significant volumes with higher limits in the standards proposed for 2002 were dry fog, lacquers, and metallic pigmented coatings.)

¹ Testimony of Josie Pradella on behalf of the State and Territorial Air Pollution Program Administrators and the Association of Local Air Pollution Control Officials on EPA's Proposal to Regulated Architectural Coatings, July 30, 1996

It is obvious from this data that the emission reduction potential of the current STAPPA/ALAPCO proposal far exceeds a 20% emission reduction – and that this proposal could be moderated to one acceptable to industry and still obtain an emission reduction of 20%!

We strongly recommend that the OTC adopt the limits recommended by the National Paint & Coatings Association.

Technology Assessments

CARB has committed to performing technology assessments prior to the rule effective date for the categories with limits below their current level. This will insure that the technical developments needed to meet the VOC limits with the necessary performance properties have been accomplished. This will allow continued consideration of the issues of concern.

The OTC has depended on the work done by CARB but does not have the luxury to be able to perform technology assessments. Once the OTC has adopted a rule, it will be sent to the states for adoption. If CARB determines that a product category limit can not be met, what will the OTC and the states do? Is there personnel available to amend any adopted rules? Will there be time to amend such rules?

CARB has staff dedicated specifically to the architectural coating area. They will be performing additional surveys of sales in California, rule developments, research into alternative units of measure, etc. In addition, they are available to address issues on performance differentiation that may occur as reformulation efforts are finalized over the next several years. In contrast, how much staff will the OTC or the states have available for this rule? How will unanticipated problems be addressed?

Averaging

It is important to note that the CARB SCM includes a comprehensive proposal on averaging. We strongly support this concept. If the OTC rule is modeled on the CARB SCM, then we strongly recommend that it include a similar averaging concept. However, we believe that averaging will continue to be an important compliance option beyond the 2005 time frame. CARB continues to have staff actively involved in the architectural coating area and is planning to develop a reactivity version of the SCM. If such a version does not work out, CARB will be able to develop an alternative flexibility option or to allow the continued use of the averaging option well beyond the 2005 date. However, since OTC does not plan to continue actively managing this project area nor to develop an alternative flexibility option, we recommend

- An averaging provision be included in the OTC rule
- That the averaging provision not include a sunset provision.

LIMIT ISSUES

Industrial Maintenance Coatings

The proposed limit for Industrial Maintenance Coatings of 250 g/l is too low to meet the performance requirements of the Northeast. This fact is recognized in the STAPPA/ALAPCO document which states on page 4, "...the majority of California's population areas are not subject to the severity or duration of extreme weather conditions prevalent in some parts of the nation..." California recognized specific conditions of fog and "lower" temperatures as needing higher VOC coatings and provided a petition process. However, the typical weather conditions in the OTC states is more severe and at lower temperatures than in the most populated areas of California. Such a petition process will be time

consuming, costly to implement, and difficult to administer. We recommend the limit for industrial maintenance coatings be set at 340 g/l.

Vanishes

The February, 2001 issue of Consumer Reports reports on a study of vanishes. The study evaluated the performance of waterborne and solventborne vanishes. While the VOC contents were not provided in the article, the cost per square feet as well as the cost per gallon were given. On average both of these costs were significantly higher for the waterborne vanishes compared to the solventborne vanishes. In addition, on average the performance of the waterborne vanishes did not match the performance of the solventborne vanishes. While the VOC contents for these coatings were not included in the final report, we can estimate that many of the waterborne products would meet the 350 g/l and that most of the solventborne vanishes would exceed 350 g/l.

Exterior Wood Primers

The primers and undercoaters recommended by Sherwin-Williams for use on wood and composition board under exterior latex coatings are consistently solvent borne primers with a VOC content of 350 g/l. We have reviewed all of the Sherwin-Williams product data sheets (attached) and have found only one product line where a latex primer is recommended under wood and/or composition board: the LowTemp 35™ product line recommends the LowTemp 35™ Exterior Latex Primer for application over wood and composition board. However, since this is a unique system, we do not recommend this primer for use under any other latex coatings.

We want to stress that the concerns with wood and composition board are not limited to stains bleeding through from the substrate. While that is a significant problem with waterborne coatings on certain woods (e.g. redwood, cedar, etc.), it is less of a problem with composition board. However, composition board frequently has a wax-type of material bleeding out. Unless sealed by a solvent borne primer, this wax will appear as unsightly dark patches on the finish.

In addition, composition board is very water sensitive. Coating the board with an alkyd based primer is necessary to ensure the best protection from water penetrating the substrate. Alkyd based primers resist the penetration of water and moisture to a significantly higher level than latex based coatings. The need for greater protection from moisture and water with composition substrates is due to the potential for swelling of the edges and around nails that are installed "incorrectly" (that is, that have penetrated below the paper overlay - which occurs routinely in the field despite the recommendations made by the substrate suppliers). In addition, alkyd primers are needed on composition board to reduce the likelihood for wax bleed-through, since these substrates frequently contain high levels of wax.

For your reference we are including here a number of papers on hardboard, also known as composition board, failures. These papers come from a wide variety of sources, including the Georgia Association of Home Inspectors and various sites dedicated to hardboard issues. **All agree that water absorption and hardboard swelling at edges and around nails are significant concerns for hardboard products.**

The importance of using a solventborne primer on wood substrates, especially under waterborne topcoats must be stressed. The most important distinction between solventborne alkyds and waterborne latex coatings is that the alkyds are dissolved in the solvent, and thus can be carried into the wood by the solvent. By penetrating deeply, the alkyd resin can bind to

the wood. In contrast, latexes are fairly large sized particles, which are not dissolved in water, but rather are dispersed in it – with the help of dispersing agents in water. These agents tend to make the large latex “ball” even larger. The latex resins do not penetrate deeply into the substrate; instead, they will tend to sit on the surface. Thus, the solventborne primer will bind to the wood and the latex topcoat will adhere to the primer. Without the solventborne primer, the latex is more likely to peel and chip off of the wood substrate, especially due to temperature variations and rain.

These concerns, while representing a very small segment of the primer market, are significant since these effects cause irreversible damage to the substrate. We recommend the following category be added with a 350 g/l limit:

Exterior wood primer, sealer, and undercoater: A primer, sealer, or undercoater formulated and recommended for use exclusively on exterior wood.

An alternative would be to include an exterior wood primer within the specialty primer category definition:

Specialty Primer: A coating formulated and recommended for application to a substrate to block stains, odors, or efflorescence; to seal fire, smoke or water damage; to condition excessively chalky surfaces; or recommended for application to exterior wood surfaces. An excessively chalky surface is one that is defined as having a chalk rating of four or less as determined by ASTM Designation D 4214-98 Photographic Reference Standard No.1 or the Federation of Societies For Coatings Technology "Pictorial Standards for Coatings Defects.

At the meeting on January 18, 2001, we will demonstrate the performance differences between latex and alkyd primers on wood substrates by showing actual wood boards that have been on exposure with the two primer types side-by-side. These boards clearly show the performance advantage of alkyd primers on wood.

Interior Wood Sealers

The lowering of the VOC limit for sealers and quick dry sealers to 200g/l will force these mineral spirits based products to either raise solids or use alternative exempt solvents. The use of acetone is unacceptable due to the highly flammable nature of this solvent and the use of Oxol 100 is too expensive. (A complete discussion on the use of Exempt Solvents is included at the end of this section.) The increase of solids is unreasonable since it would result in a product that would not dry properly, would be too thick to form a thin film, would not level, would not penetrate into the substrate, etc. In addition, the cost of such a poorly performing product would be significantly higher (by approximately 100%) than the current product. Also, the corresponding increase in viscosity as a result of increasing the solids content would force applicators to apply much thicker films, which would reduce coverage and increase the cost per square foot of sealer applied. By reducing coverage, the VOC emitted per square foot covered would not be reduced.

Compliance with the proposed limit of 200 g/l would force solvent borne sealers to become cost prohibitive, less efficacious, or potentially dangerous, and would effectively ban all performing products in this category.

The only remaining alternative to solvent borne interior wood sealers would be water borne sealers. While presently on the market, these products are less efficacious for 3 important reasons.

1. Waterborne sealers cause grain raise on wood. When water is applied to bare wood surfaces, wood fibers swell and create a rough feel and appearance. Any steps taken to alleviate this effect such as sanding will increase the cost of the job.
2. Waterborne sealers are more expensive than solvent borne sealers.
3. Waterborne sealers have the potential to cause panelization. In areas where fluctuations in humidity cause the expansion and contraction of wood (such as, flooring) - even after sealing and topcoating - water borne sealers can cause the wood boards to become glued together. As the wood naturally expands and contracts (with humidity and temperature variations), large cracks will appear in the flooring as a result of being glued. Solvent borne sealers do not panelize wood (flooring).

The remedial action required for this panelization is the replacement of the floor. This is an enormous expense. In addition to the expense of the new floor, removal of all objects would be needed to prevent dust accumulation in crevices: all surfaces, all furniture, all appliances, including clothing, pictures, personal belongings, light fixtures, appliances, window treatments, etc. - to new building emptiness would be needed. This "inconvenience" would be extra costly.

Exempt Solvents

There are several potentially useful solvents which have been exempt from consideration as a VOC by U. S. Environmental Protection Agency.

Acetone

There are health and safety concerns with the use of acetone. There is a significantly higher fire hazard associated with the increased flammability and the increased volatility of acetone compared to the currently used solvents. The use of acetone would change the formulations that are currently combustible to flammable, and lower the flash point from above 100 F to -4°F. This would significantly increase the hazards of fires and explosions. In addition, it changes the shipping class as well as the storage class of the product. This is a very significant change.

There is a significant difference between flammable and combustible materials. The South Coast Air Quality Management District interviewed four local fire departments on the hazards associated with acetone-containing coatings. All four indicated that they would be equally concerned with any coating or solvent that has a flash point below 65 °F. In the report South Coast AQMD quoted Captain Michael R. Lee, County of Los Angeles, Fire Department, as stating, "... Acetone represents the highest degree of fire hazard of the four solvents considered..." (The four solvents are acetone, xylene, methyl ethyl ketone, and butyl acetate.) However, the most common solvent used in solvent borne floor coatings, high temperature coatings, industrial maintenance coatings, flat and nonflat coatings, primers, sealers & undercoaters, quick dry primers, sealers, and undercoaters, roof coatings, rust preventative coatings, stains, and waterproofing sealers for wood is mineral spirits, with a flash point of 105 °F (combustible).

The cost differential between acetone and mineral spirits is over 100% - acetone costing more. However, this is a less importance than the other issues surrounding the use of acetone in the types of

coatings that are the subject of the document.

Oxsol 100

The other currently exempt solvent which is potentially applicable to coatings is Oxsol 100. The use of Oxsol 100 would significantly increase the cost of the formulas. Oxol 100 is several times the cost of the mineral spirits that would need to be replaced by at least 50% to achieve the projected limits. The availability of Oxsol 100 has been jeopardized since the only US plant manufacturing this material will be closed.

Usefulness of the Exemption of t-butyl acetate

We have considered the possible usefulness of t-butyl acetate if it becomes exempt from classification as a VOC, and included this factor in our cost and time analyses. However, there are very few applications where such an exemption would be useful. Most consumers would consider the odor from the t-butyl acetate obnoxious and unacceptable.

Stains

One of the difficulties in lowering the VOC content of waterborne stains relates to the intrinsic nature of the system, which consists of resin (usually latex), pigments, and a small amount of additives (including volatile organic compounds). If the level of pigments is increased, then the quality of the film is reduced. If the resin level is increased, additional volatile organic compounds are needed to insure film formation, freeze thaw stability, colorant acceptance, open time, application properties, etc. The level of resin can not be increased without increasing these additives. Thus, the solids can not be increased and the only way to reduce the VOC content is to reduce the quality and eliminate some of these important properties. Thus we recommend that the limit for semi-transparent stains be maintained at 550 g/l.

Interior Wood Stains

The lowering of the limit for stains to 250 g/l is an effective ban of solvent borne stains. The same arguments against the use of exempt solvents and of increased solids discussed for interior wood sealers (see above) apply to these stains.

Alternative water borne interior wood stains pose several problems in addition to those discussed for water borne or high solids wood sealers, when compared to the solvent borne coatings they are meant to replace. While the effect of grain raising caused by water borne stains is the same as for water borne sealers, sanding is not a viable option for stains. This is due to the potential removal of color, which will be caused by sanding. To avoid this color removal, sanding must occur after sealing or subsequent topcoating (with varnish or lacquer). This can cause entrapment of microfoam in the middle coats. This microfoam can not be removed when the raised grain is finally sanded.

Lapping is another problem attributed to water borne interior wood stains. Larger areas such as floors are prone to lap marks caused by the fast drying of such stains and subsequent overlapping of the stain during application. The only remedy for lap marks is a full re-sanding of the floor. As discussed above, this is expensive and distressing since it reduces the long term service life of the wood floor (sanding the floor removes a layer of the wood; a floor can only be sanded about three or four times before there is not enough wood left to avoid nails and to maintain its integrity. Thus, the full replacement expense of the floor can be divided by 3 or 4 to determine the cost of removing a wood layer by sanding – in addition to the direct costs of the sanding and coating re-applications.)

Even water-borne stains include the use of VOC solvents to extend dry times. Reducing the VOC limit to 250g/l would cause water borne stain formulas to dry even faster, enhancing the potential for lapping problems.

The longer dry time provided by currently compliant oil based stains prevent lap marks from forming.

We strongly recommend the limit for interior wood stains be maintained at 550 g/l.

The following spreadsheets shows the data for several waterborne semi-transparent stains that do not comply with the current 350 g/l limit, nor the proposed 250 g/l limit. However, these stains would comply with a low solids coating limit of 120 g/l including water and exempt compounds. However, these stains do not meet the definition for low solids coating (less than 1 pound of solids per gallon).

Example	VOC Actual		VOC Regulatory		Solids	
	including water & exempts		less water			
	grams/liter	lbs/gal	grams/liter	lbs/gal	kg in liter	lbs in gal
Semi-Transparent Stain 1	94	0.78	417	3.48	0.158	1.32
Semi-Transparent Stain 2	94	0.78	402	3.36	0.189	1.57
Semi-Transparent Stain 3	95	0.79	404	3.37	0.187	1.56
Semi-Transparent Stain 4	94	0.79	405	3.38	0.185	1.54
Semi-Transparent Stain 5	94	0.78	410	3.42	0.178	1.48
Semi-Transparent Stain 6	94	0.78	412	3.43	0.170	1.41

We request that Section 3.2 be changed to allow either limit be used for semi-transparent stains, at the discretion of the manufacturer, by adding the following:

Semi-transparent stains can meet the VOC content limit for semi-transparent stains or the limit for low solids stains, without restriction.

The rationale for this is that semi-transparent stains are inherently meant to be low solids. However, the determination of the solids content needed in a particular semi-transparent stain is based on the technology used, the application methods, and the end use (interior or exterior, wood, concrete, or other substrate, etc.). The attached spreadsheet shows clearly that these waterborne semi-transparent stains emit less VOC's in use than the current materials which comply with the 350 g/l limit and less VOC's than other materials complying with the low solids coating limit. Thus, no loss in emission reductions will result from allowing semi-transparent stains to comply with either the stain or the low solids coating limit.

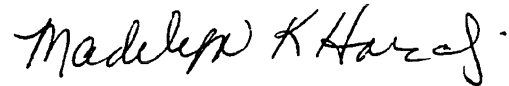
Technically, we can not reduce the solids content of these stains. Critical performance characteristics will be lost if the solids are reduced (as would be needed to meet the low solids coating definition). The specific performance characteristic which requires the specific level of solids found in these semi-transparent waterborne coatings is lapping, which is always a problem with waterborne semi-transparent stains but which would become even worse if the solids were to be reduced.

Allowing the use of VOC content including water and exempt solvents would broaden the use of waterborne stains without lessening the emission reductions.

The Sherwin-Williams Company is pleased to have had this opportunity to comment on the Ozone Transport Commission Stationary Source Committee Draft regulation to limit VOC content of architectural, industrial maintenance, and traffic coatings. We are hopeful that these comments are used to finalize a rule that will provide the needed emission reductions in a way that industry can accommodate.

If you have any questions or need additional information, please feel free to contact me at mkharding@sherwin.com, 216-566-2630, or by fax at 216-263-8635.

Sincerely,

A handwritten signature in black ink that reads "Madelyn K. Harding". The signature is written in a cursive, flowing style.

Madelyn K. Harding, Administrator
Product Compliance & Registrations

Attachments

Hardboard siding is the generic term given to a class of siding that has been in the news lately. This type of siding is made up of compressed fibers or wood chips. When formed into siding, the material may be embossed with a wood like grain that when painted resembles wood siding. Hardboard siding is manufactured by several companies under several brand names. The names most often heard when it comes to hardboard siding are Georgia Pacific, Louisiana Pacific and Masonite. These are separate companies that all manufacture different types of hardboard siding. Some homes are experiencing problems with the installed hardboard siding. Some hardboard sidings are failing and in need of replacement long before the anticipated lifespan of the product.

Some of these failures are due to improper installation. The proper installation of siding, particularly when it comes to vapor barriers, and joints between other siding boards and other trim boards is very important. Many warranties are voided due to improper installation.

There are some hardboard siding owners that are experiencing failures of their siding due to defective materials. It is these homeowners that may have remedy through the courts to recover monies spent in the replacement of defective siding. The process of discovery and recovery for damaged hardboard siding is different for each manufacturer. Listed below are links to sites that deal with class action lawsuits and information regarding specific types of hardboard siding. All links other than "home" and "table of contents" from this page are outside the GAHI domain.

- [Masonite siding](#)
- [L-P Inner Seal® siding](#)
 - [Home](#)
- [Table of Contents](#)

Georgia Association of Home Inspectors

Attachment 1

Defective Hardboard Siding Information Center

Home

[How do I identify the manufacturer?](#)

[How do I make a claim against the manufacturer?](#)

[My claim is denied, what now?](#)

[Why is my hardboard siding failing?](#)

[How does a class action work?](#)

[How do I know if I'm included in a class action?](#)

[Information on fiber cement siding](#)

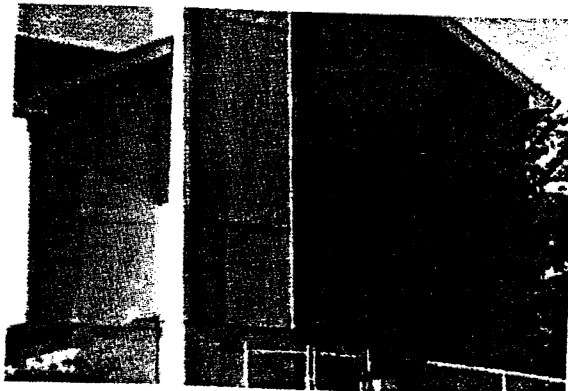
[Siding Mold and Fungus Health Information](#)

[Siding Photos](#)

[Links](#)

Defective Hardboard Siding Photos

Just a few examples of bad siding, in different parts of the country and different manufacturers.



[Weyerhaeuser](#)

[ABTCO/Abitibi-Price](#)

[ABT
Canada/Canoxel](#)

[Boise Cascade](#)

[Temple-Inland](#)

[Masonite](#)

[Georgia-Pacific](#)

[Louisiana-Pacific](#)

[Jefferson
Smurfit](#)

[Stimson](#)

[Celotex](#)

[Omniwood/Woodruf](#)

[MacMillan
Bloedel](#)

Defective Hardboard Siding Information Center

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[Links](#)

What is hardboard siding and why is it failing?

The following is an excerpt from *Alternatives To Solid Wood Exterior Trim*, by Paul Fiset. Building Material and Wood Technology, University of Massachusetts Amherst. Thanks to Mr. Fiset for allowing me to reproduce a portion of his article!

Each company's fiberboard is made in roughly the same way. Hardwood chips are heated with steam and hot water and then passed through 2 rotating discs to create the fiber that is eventually pressed into board stock. An interesting thing happens during this process. When the wood fibers that were sheared apart are hot-pressed into boards, lignin normally found in wood cells begins to flow. In a sense the wood fibers are coated by their own lignin. Lignin is a naturally-occurring "adhesive" that holds wood together. Brown rot fungus does not attack lignin. And many scientists believe that it is this fact that causes hardboard to be a little more resistant to decay than some untreated species like spruce, pine and fir.

There are many similarities among the fiberboard products sold to builders. Hardboard trim is readily available in all regions of the country. All hardboard trim products weigh about the same, around 50 pounds per cubic foot. This is about twice as heavy as solid redwood. Hardboard trim products are available in 1- and 5/4- inch thickness, 4" - 12" widths and 16-foot lengths. Manufacturers offer 7/16-inch thick soffit material too. The trim is made with an exterior-grade binder and usually comes in smooth and wood-figured textures. The motivating force for developing these products is cost and availability of high-grade solid wood

....
Each of the manufacturers I talked with expressed concern over the reputation hardboard siding seems to have developed among builders. Many builders I know (myself included) have had problems using hardboard siding. Thickness-swell is a problem. Wood fibers are compressed in the hot-press when the boards are made. Some of this compression stress is relieved over time. This causes the swelling that is observed around nail heads and at the ends of some boards. Hardboard is more likely to absorb moisture and swell where unprotected fibers are exposed to weather. The forces associated with thickness swell are so great that they cause paint coatings to fail along the edges of boards. Water enters cracks and unprotected penetrations (like over-driven nails) in the paint surface accelerating the

Weyerhaeuser

ABTCO/Abitibi-Price

ABT
Canada/Canexel

Boise Cascade

Temple-Inland

Masonite

Georgia-Pacific

Louisiana-Pacific

Jefferson
Smurfit

Stimson

Celotex

Omniwood/Woodruf

MacMillan
Bloedel

manufacturing process. Even if the claims of rot-resistance are accurate, softening, swelling and delamination of fiberboard is an undeniable concern.

Buckling can be a problem too. As we go from solid wood to hardboard during the manufacturing process, we tear down the grain structure of wood, randomize the fiber direction and put it back together as a homogeneous material. The low longitudinal expansion of solid wood is averaged out with the higher tangential and radial potentials. As a result, hardboard shrinks and swells more along its length than solid wood. But manufacturers blame improper application, detailing and maintenance for swelling and buckling problems.

[View the complete article](#)

Why is the siding failing?

Water Molecules and Capillarity - When water is allowed to stay in contact with the hardboard siding, because of the attractive force of the wood fibers in the siding, water spreads out in a thin film around the wood fibers. Capillary water in hardboard siding refers to the water in small pores that is connected to a free water surface of the siding, or rainwater on the edge of the siding. The smaller the pores, the higher the water will rise above the water source. The higher the rise, the tighter the water will be held to wood fibers to overcome the force of gravity.

If we place water in a pan and then put a capillary tube in the water, water will rise inside the tube. The smaller the tube, the more adhesive forces are in play and the higher the water rises. In big tubes, the cohesive forces pull the water down into the tube and keep it from rising.

For an easy demonstration of capillary action at home, check out [The Celery Stalks at Midnight](#) from the U.S. Department of Education. Or, take your notepad of paper, turn it over and place a few drops of water on the cardboard backing. Look what happens after a few minutes . . . the cardboard becomes mushy and soft. When the paint on hardboard encounters minor cracks, the water is able to infiltrate and "uncompress" the wood fibers in the siding, allowing them to return to their natural state. After it rains, go outside and examine where the water drops form on the siding . . . on the edge and the drops stay there for an extended period of time allowing capillary action to occur.

Very small cracks at the edges of the siding are only one opening moisture uses to enter and begin to damage hardboard siding. Although the manufacturers also blame poor installation, Jon Naef (named plaintiff in the

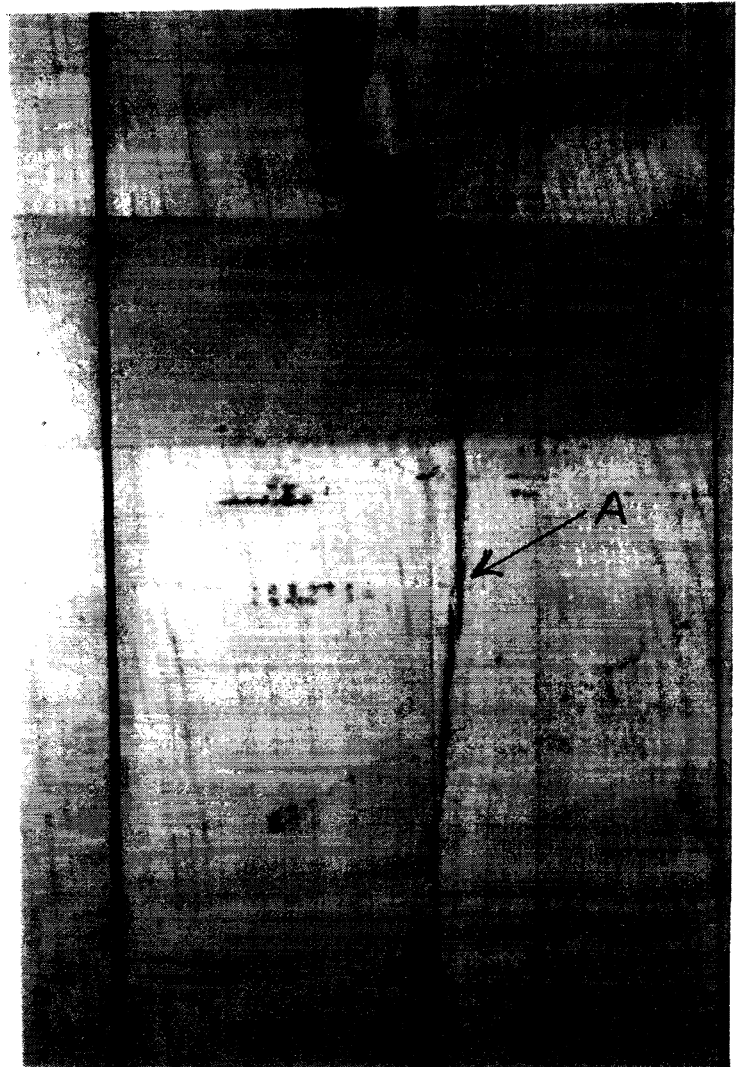
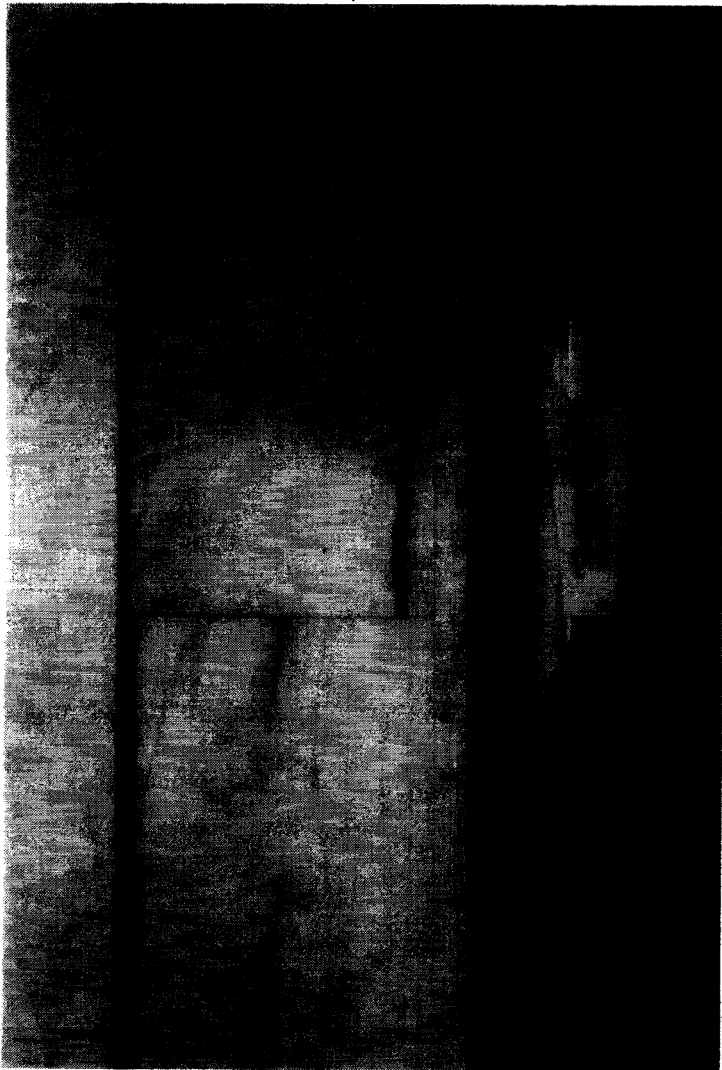
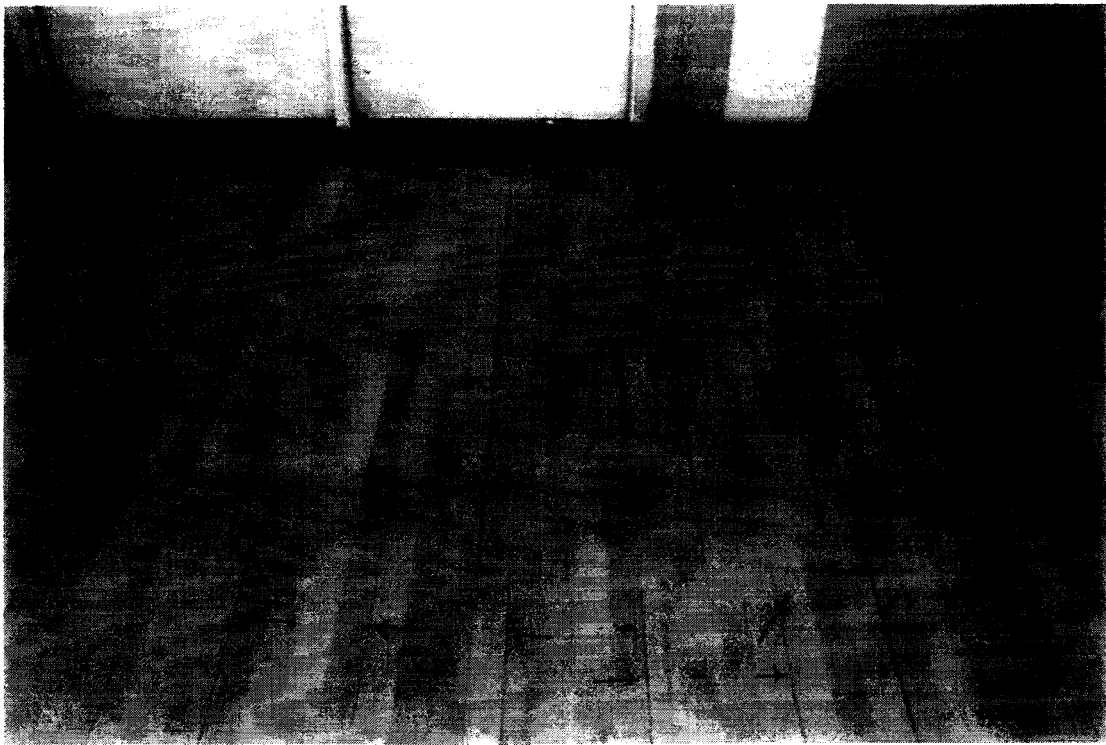
Masonite national
class action) informed me that Masonite tried to install its own
siding on a housing development in Florida. ***It still failed!!*** If the
manufacturer can't get its own siding to work, how should
anyone else?

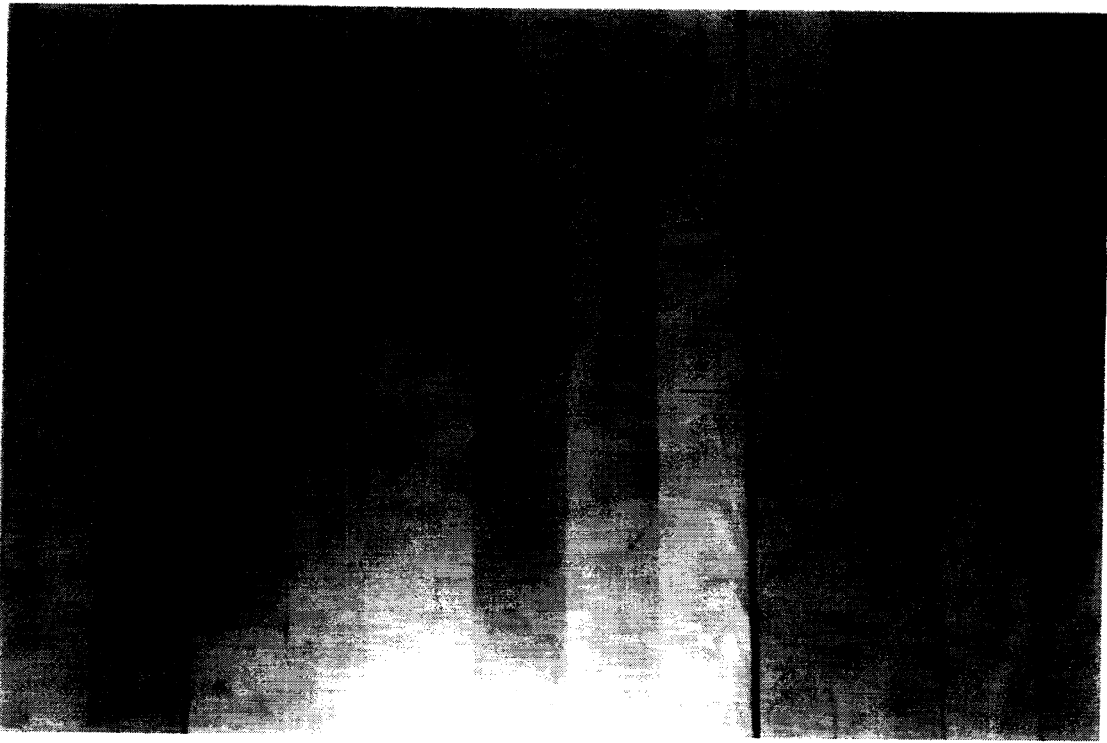
Copyright 1999 David J. O'Doherty

ATTACHMENT 2

PHOTOGRAPHS SHOWING PANELIZATION FAILURE

[PROVIDED COURTESY OF
THE MAPLE FLOORING MANUFACTURERS ASSOCIATION]





ATTACHMENT 3

DETERMINATION OF POTENTIAL EMISSION REDUCTION DECREASES
UNDER THE SHERWIN-WILLIAMS PROPOSED LIMITS

DETERMINATION OF POTENTIAL EMISSION REDUCTION DECREASES UNDER THE SHERWIN-WILLIAMS PROPOSED LIMITS

EXTERIOR WOOD PRIMERS

The data used to determine the emission reduction decreases are based on the 1990 sales data from the Architectural and Industrial Maintenance Surface Coatings VOC Emissions Inventory Survey conducted by Industry Insights for the National Paint & Coatings Association in Cooperation with the AIM Reg-Neg Industry Caucus.

Reference has been made to the proportion of flat and nonflat coatings used for exterior versus interior application to determine what proportion of the sales of primers and undercoaters would be for exterior use:

Interior versus exterior percentages:

	<u>Interior</u>	<u>Exterior</u>	<u>Both</u>
Nonflat gallons	83,695,053	40,344,817	
Flat gallons	<u>116,380,041</u>	<u>49,874,689</u>	
Total	200,075,094	90,219,506	290,294,600
	68.92%	31.08%	

The total gallons reported for primers and undercoaters for use on wood and wood composites substrates that would be above the Pennsylvania proposed limit, and thus affected by a limit change, are 3,335,180 gallons.

Of the primer and undercoater category, the following are the wood and wood composite volume that could decrease the emission reductions:

Gallons of wood and wood composite primers above PA proposed limit	3,335,180 gallons
31% of these are exterior gallons above PA proposed limit	1,033,906 gallons
PA population versus the national population (US census data)	0.043057
PA exterior wood primers above PA proposed limit	44,516 gallons
Difference in VOC between Sherwin-Williams proposed limit and PA proposed limit	150 g/l
Total emission reduction decrease for PA exterior wood primers in grams VOC	25,274,220 grams VOC
Total emission reduction decrease for PA exterior wood primers in pounds VOC	55,670 pounds VOC
Total emission reduction decrease for PA exterior wood primers in tons VOC	27.84 tons VOC
Total emission reduction decrease for PA exterior wood primers in tons VOC per day	0.0763 tons VOC per day

Only 15% of the volume of the entire primer and undercoater category were identified as applied to wood and wood composites. Using this figure and the total volume of all quick dry primers sold (3,596,208) we can determine the impact of quick dry primers used for wood substrates (since that data is not available). By a calculation comparable to that shown above, the total emission reduction decrease for PA exterior wood quick dry primers would be 4.54 tons per year, or 0.0124 tons per day.

Thus, the total emission reduction decrease that might occur if exterior wood primers are included in the Specialty Primer category with a limit of 350 g/l is 0.09 tons per day (32.38 tons per year).

An alternative, less accurate, methodology for estimating the impact of the Sherwin-Williams proposed limits on the emission reductions is to simply estimate that 10% of the entire volume of primers and undercoaters is applied to exterior wood substrates, and then to adjust that number by the ratio of the US population that resides in PA. This results in an estimate of the maximum emission reductions that could be decreased of 0.23 tons per day (83.18 tons per year).

FLOOR COATINGS

The data used to determine the emission reduction sacrifices is based on the 1990 sales data from the Architectural and Industrial Maintenance Surface Coatings VOC Emissions Inventory Survey conducted by Industry Insights for the National Paint & Coatings Association in Cooperation with the AIM Reg-Neg Industry Caucus.

Reference has been made to the volume of nonflat coatings identified for application to decks and porches. This volume has been adjusted by the proportion of population in Pennsylvania compared to the entire US to determine the volume of deck and porch coatings in Pennsylvania.

Gallons of deck and porch coatings	185,609 gallons
PA population versus the national population (US census data)	0.043057
PA deck and porch coatings	7,992 gallons
Difference in VOC between Sherwin-Williams proposed limit and PA proposed limit	150 g/l
Total emission reduction decrease for PA deck and porch coatings in grams VOC	4,537,283 grams VOC
Total emission reduction decrease for PA deck and porch coatings in pounds VOC	9,994 pounds VOC
Total emission reduction decrease for PA deck and porch coatings in tons VOC	5.00 tons VOC
Total emission reduction decrease for PA deck and porch coatings in tons VOC per day	0.0137 tons VOC per day

Thus, less than 0.1 ton per day VOC emission reductions would be decreased if decks and porches were allowed a limit of 400 g/l rather than the proposed limit of 250 g/l for all floor coatings.

The worse case scenario would be if all nonflat coatings applied to floors, porches, and decks were regulated at the Sherwin-Williams recommended limit of 400 g/l. That situation is shown below:

Gallons of deck, porch, & floor nonflat coatings	1,909,902 gallons
PA population versus the national population (US census data)	0.043057
PA deck, porch, & floor nonflat coatings above the PA proposed limit	82,234 gallons
Difference in VOC between Sherwin-Williams proposed limit and PA proposed limit	150 g/l
Total emission reduction decrease for PA deck, porch, and floor coatings in grams VOC	46,688,281 grams VOC
Total emission reduction decrease for PA deck, porch, & floor coatings in pounds VOC	102,838 pounds VOC
Total emission reduction decrease for PA deck, porch, & floor coatings in tons VOC	51.42 tons VOC
Total emission reduction decrease for PA deck, porch, & floor coatings in tons VOC per day	0.1409 tons VOC per day

Thus, the expected emission reductions to be decreased by adjusting the limit for floor coatings to 400 g/l is estimated between 0.01 and 0.14 tons per day.

INTERIOR WOOD COATINGS

The Sherwin-Williams Company has more up-to-date and accurate estimates for the national sales volumes for interior wood coatings (clear and semi-transparent stains, varnishes, and sanding sealers). The primary reference source for this data is from VISTA, as well as internal company estimates.

Gallons of interior wood clear and semi-transparent stains, nationally	6,000,000 gallons
PA population versus the national population (US census data)	0.043056592
PA interior wood clear & semi-transparent stains	258,340 gallons
Difference in VOC between Sherwin-Williams proposed limit and PA proposed limit	300 g/l
Total emission reduction decrease for PA clear & semi-transparent interior wood stains in grams VOC	293,344,562 grams VO
Total emission reduction decrease for PA clear & semi-transparent interior wood stains in pounds VOC	646,133 pounds V
Total emission reduction decrease for PA clear & semi-transparent interior wood stains in tons VOC	323.07 tons VOC
Total emission reduction decrease for PA clear & semi-transparent interior wood stains in tons VOC per day	0.89 tons VOC
Gallons of "clears" for interior wood	7,675,000 gallons
Percentage of clears for interior wood that are sanding sealers (estimated)	10 %
Gallons of interior wood sanding sealers	767,500
PA population versus the national population (US census data)	0.043056592
PA interior wood sanding sealers	33,046 gallons
Difference in VOC between Sherwin-Williams proposed limit and PA proposed limit (550 vs. 350)	200 g/l
Total emission reduction decrease for PA interior wood sanding sealers in grams VOC	25,015,772 grams VO
Total emission reduction decrease for PA interior wood sanding sealers in pounds VOC	55,101 pounds V
Total emission reduction decrease for PA interior wood sanding sealers in tons VOC	27.55 tons VOC
Total emission reduction decrease for PA interior wood sanding sealers in tons VOC per day	0.08 tons VOC
Gallons of clears for interior wood	7,675,000 gallons
Percentage of clears for interior wood that are varnishes (estimated)	90 %
Gallons of interior wood varnishes	6,907,500
PA population versus the national population (US census data)	0.043056592
PA interior wood varnishes	297,413 gallons
Difference in VOC between Sherwin-Williams proposed limit and PA proposed limit (450 vs. 350)	100 g/l
Total emission reduction decrease for PA interior wood varnishes in grams VOC	112,570,976 grams VO
Total emission reduction decrease for PA interior wood varnishes in pounds VOC	247,954 pounds V
Total emission reduction decrease for PA interior wood varnishes in tons VOC	123.98 tons VOC
Total emission reduction decrease for PA interior wood varnishes in tons VOC per day	0.34 tons VOC
TOTAL for all clears	151.53 tons VOC
	0.42 tons VOC

Thus, the Sherwin-Williams limit recommendations will only result in a decreasing the VOC emission reduction by 0.42 tons per day.

ATTACHMENT 4

**DATA SHEETS FOR ALL
SHERWIN-WILLIAMS COMPANY EXTERIOR LATEX TOPCOATS**

**PRIMER RECOMMENDATIONS
FOR WOOD AND WOOD COMPOSITE SUBSTRATES
ARE HIGHLIGHTED.**



A-100®

EXTERIOR LATEX FLAT A6 SERIES

CHARACTERISTICS

A-100 Exterior Latex Flat is our best quality exterior flat finish. This product is recommended for use on aluminum and vinyl siding, wood siding, clapboard, shakes, shingles, plywood, masonry, and metal.

Color: All Exterior ColorAnswers® colors

Coverage:

Recommended: 400 sq ft/gal
@4 mils wet; 1.3 mils dry

Drying Time, @ 77°F, 50% RH:
temperature and humidity dependent

Touch: 1 hour

Recoat: 4 hours

Flash Point: 201°F, PMCC

Finish: 0-5 units @ 85°

Solvent/Reducer: Water

Tinting with Blend-A-Color:

Base	oz/gal	Strength
Tinting White	0-4	100%
Base A, B, C	4-8	100%
Burgundy Base	4-8	100%
Ultradeep Base	8-12	100%
Package Colors	0-4	not controlled

Vehicle Type: Acrylic

VOC (as packaged): 100 - 156

(less water) 57 grams/liter; 0.40 lbs/gal

Volume Solids: 32 ± 2%

Weight Solids: 49 ± 2%

Weight per Gallon: 11.1 lbs

Provides performance which is comparable to the products that are formulated in accordance with federal specification:

TT-P-96D

TT-P-1510A

SPECIFICATIONS

Aluminum & Aluminum Siding
2 cts. A-100 Exterior Latex Flat Block

1 ct. PrepRite Block Filler

2 cts. A-100 Exterior Latex Flat Brick

1 ct. Masonry Conditioner, or

1 ct. ProMar Masonry Conditioner

2 cts. A-100 Exterior Latex Flat Exterior Drywall

1 ct. A-100 Exterior Latex Wood Primer

2 cts. A-100 Exterior Latex Flat Galvanized Steel

2 cts. A-100 Exterior Latex Flat

Masonry/Stucco

1 ct. Loxon Ext. Acrylic Masonry Primer

2 cts. A-100 Exterior Latex Flat Plywood

1 ct. A-100 Exterior Latex Wood Primer

2 cts. A-100 Exterior Latex Flat

Steel, alkyd primer

1 ct. Kem Kromik Universal Metal Primer

2 cts. A-100 Exterior Latex Flat

Steel, latex primer

1 ct. DTM Acrylic Primer/Finish

2 cts. A-100 Exterior Latex Flat

Vinyl Siding

2 cts. A-100 Exterior Latex Flat

Wood, Composition Board

1 ct. A-100 Oil Exterior Wood Primer

2 cts. A-100 Exterior Latex Flat

SURFACE PREPARATION

Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or checked paint should be scraped and sanded to a sound surface. Glossy surfaces should be sanded dull.

Aluminum and Galvanized Steel

Wash with a water based degreasing cleaner to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, steel wool, or other abrading method.

Brick

All brick must weather at least one year followed by wire brushing to remove all efflorescence. Prime the surface with one coat of Masonry Conditioner.

Exterior Drywall

Fill cracks and holes with an exterior grade patching paste/spackle and sand smooth. Remove all sanding dust.

Masonry, Concrete, Cement, Block

All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Ext. Acrylic Masonry Primer.

Steel

Rust and mill scale must be removed using sandpaper, steel wool, or other abrading method. Bare steel must be primed the same day as cleaned.

LAT →



A-100®

EXTERIOR LATEX FLAT

A6 SERIES

<u>SURFACE PREPARATION</u>	<u>APPLICATION</u>	<u>CAUTIONS</u>
<p>Stucco Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 5-7 days and prime with Loxon Exterior Masonry Acrylic Primer.</p>	<p>Brush No reduction necessary. Use a nylon/polyester brush.</p> <p>Roller No reduction necessary. Use a 3/8" - 3/4" nap synthetic roller cover.</p> <p>Pad No reduction necessary.</p> <p>Spray—Airless Pressure2000 psi Tip015"-.019" Reduction none</p> <p>Spray—Conventional Air Pressure 40-60 psi Fluid Pressure20 psi Cap/Tip704/FX Reduction up to 1 pint/gallon</p>	<p>For exterior use only. Do not apply at temperatures below 50°. Protect from freezing. Non-photochemically reactive.</p>
<p>Vinyl Siding Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.</p>	<p><u>CLEANUP INFORMATION</u></p>	<p>LABEL CAUTIONS Contains CRYSTALLINE SILICA and ZINC Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH/MSHA TC23C or equivalent) or leave the area. Adequate ventilation required when sanding or abrading the dried film. If adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH/MSHA TC21C or equivalent). Follow respirator manufacturer's directions for respirator use. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage. FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, get medical attention immediately. DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Abrading or sanding of the dry film may release crystalline silica which has been shown to cause lung damage and cancer under long term exposure. WARNING: This product contains a chemical(s) known to the State of California to cause cancer. DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN. GB98</p>
<p>Wood, Composition Board Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth.</p>	<p>Clean spills and spatters immediately with soap and warm water. Clean hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with mineral spirits to prevent rusting of the equipment. Follow manufacturers safety recommendations when using mineral spirits.</p>	<p>The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Sheet.</p>
<p>Mildew Remove before painting by washing with a solution of 1 quart liquid bleach and 3 quarts of water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.</p>	<p><u>LABEL ANALYSIS</u></p>	
<p>Caulking—After cleaning the surface thoroughly, prime the surface, caulk, allow to dry, then topcoat.</p>	<p><u>A6W501</u></p> <p>Pigment by Weight..... 33%</p> <p>Titanium Dioxide 15.0%</p> <p>Zinc Oxide 2.0%</p> <p>Silica/Silicates 16.0%</p> <p>Vehicle by Weight..... 67%</p> <p>Acrylic Resin 12.9%</p> <p>Water 47.9%</p> <p>Glycol 2.0%</p> <p>Mildewcide 0.2%</p> <p>Additives 4%</p> <p>Total 100%</p>	



A-100[®] EXTERIOR GLOSS LATEX A8 SERIES

<u>CHARACTERISTICS</u>	<u>SPECIFICATIONS</u>	<u>SURFACE PREPARATION</u>															
<p>A-100 Exterior Latex Gloss is our best quality exterior gloss finish. This product is recommended for use on aluminum and vinyl siding, wood siding, clapboard, shakes, shingles, plywood, masonry, and metal.</p> <p>Color: All Exterior ColorAnswers® colors</p> <p>Coverage: Recommended: 400 sq ft/gal @4 mils wet; 1.3 mils dry</p> <p>Drying Time, @77°F, 50% RH: temperature and humidity dependent</p> <p>Touch: 1 hour</p> <p>Recoat: 24 hours</p> <p>Flash Point: 201°F, PMCC</p> <p>Finish: 35-45 units @ 60°</p> <p>Solvent/Reducer: Water</p> <p>Tinting with Blend-A-Color:</p> <table border="0"> <tr> <td>Base</td> <td>oz/gal</td> <td>Strength</td> </tr> <tr> <td>Tinting White</td> <td>0-4</td> <td>100%</td> </tr> <tr> <td>Base A, B, C</td> <td>4-8</td> <td>100%</td> </tr> <tr> <td>Burgundy Base</td> <td>4-8</td> <td>100%</td> </tr> <tr> <td>Package Colors</td> <td>0-4</td> <td>not controlled</td> </tr> </table> <p>Vehicle Type: Acrylic</p> <p>VOC (as packaged): 132-156 g/l less water 132 grams/liter; 1.00 lbs/gal</p> <p>Volume Solids: 33 ± 2%</p> <p>Weight Solids: 44 ± 2%</p> <p>Weight per Gallon: 10.0 lb</p>	Base	oz/gal	Strength	Tinting White	0-4	100%	Base A, B, C	4-8	100%	Burgundy Base	4-8	100%	Package Colors	0-4	not controlled	<p>Aluminum & Aluminum Siding</p> <p>2 cts. A-100 Exterior Gloss Latex Block</p> <p>1 ct. PrepRite Block Filler</p> <p>2 cts. A-100 Exterior Gloss Latex Brick</p> <p>1 ct. Masonry Conditioner or ProMar Masonry Conditioner</p> <p>2 cts. A-100 Exterior Gloss Latex Exterior Drywall</p> <p>1 ct. A-100 Exterior Latex Wood Primer</p> <p>2 cts. A-100 Exterior Gloss Latex Galvanized Steel</p> <p>2 cts. A-100 Exterior Gloss Latex Masonry/Stucco</p> <p>1 ct. Loxon Ext. Acrylic Masonry Primer</p> <p>2 cts. A-100 Exterior Gloss Latex Plywood</p> <p>1 ct. A-100 Exterior Latex Wood Primer</p> <p>2 cts. A-100 Exterior Gloss Latex Steel, alkyd primer</p> <p>1 ct. Kem Kromik Universal Metal Primer</p> <p>2 cts. A-100 Exterior Gloss Latex Steel, latex primer</p> <p>1 ct. DTM Acrylic Primer/Finish</p> <p>2 cts. A-100 Exterior Gloss Latex Vinyl Siding</p> <p>2 cts. A-100 Exterior Gloss Latex Wood, Composition Board</p> <p>1 ct. A-100 Exterior Oil Wood Primer</p> <p>2 cts. A-100 Exterior Gloss Latex</p>	<p>Remove all surface contamination by washing with an appropriate cleaner, rinse and allow to dry. Scrape and sand existing peeled or checked paint to a sound surface. Sand glossy surfaces dull. Seal stains from water, smoke, ink, pencil, grease, etc., with PrepRite ProBlock Primer Sealer.</p> <p>Aluminum & Galvanized Steel—Wash with a water based degreasing cleaner to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, steel wool, or other abrading method.</p> <p>Exterior Drywall—Fill cracks and holes with an exterior grade patching paste/spackle and sand smooth. Joint compounds must be cured and sanded smooth. Remove all sanding dust.</p> <p>Masonry, Concrete, Cement, Block All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Exterior Acrylic Masonry Primer.</p> <p>Steel—Rust and mill scale must be removed using sandpaper, steel wool, or other abrading method. Bare steel must be primed the same day as cleaned.</p>
Base	oz/gal	Strength															
Tinting White	0-4	100%															
Base A, B, C	4-8	100%															
Burgundy Base	4-8	100%															
Package Colors	0-4	not controlled															



A-100®

EXTERIOR GLOSS LATEX

A8 SERIES

SURFACE PREPARATION

Stucco—Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 5-7 days and prime with Loxon Exterior Acrylic Masonry Primer.

Vinyl—Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.

Wood, Plywood, Composition Board—Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. All patched areas must be primed.

Mildew—Remove before painting by washing with a solution of 1 quart liquid bleach and 3 quarts of water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, water-proof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

Caulking—After cleaning the surface thoroughly, prime the surface, caulk, allow to dry, then topcoat.

APPLICATION

Brush
No reduction necessary. Use a nylon/polyester brush.

Roller
No reduction necessary. Use a 3/8" - 3/4" nap synthetic roller cover.

Pad
No reduction necessary.

Spray—Airless
Pressure 2000 psi
Tip019" - .021"
Reduction none

Spray—Conventional
Air Pressure 40-60 psi
Fluid Pressure 20 psi
Cap/Tip 704/FX
Reduction up to 1 pint/gallon

CLEANUP INFORMATION

Clean spills and spatters immediately with soap and warm water. Clean hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with mineral spirits to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using mineral spirits.

LABEL ANALYSIS

A8W16

Pigment by Weight	19%
Titanium Dioxide	17%
Zinc Oxide	2%
Vehicle by Weight	81%
Acrylic Resin	23%
Water	52%
Glycol/Alcohol/Esters	4%
Mildewcide	0.2%
Additives	1.8%
Total	100%

CAUTIONS

For exterior use only.
Do not apply at temperatures below 50°F.
Protect from freezing.
Non-photochemically reactive.

LABEL CAUTIONS

Contains CRYSTALLINE SILICA and ZINC
Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH/MSHA TC23C or equivalent) or leave the area. Adequate ventilation required when sanding or abrading the dried film. If adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH/MSHA TC21C or equivalent). Follow respirator manufacturer's directions for respirator use. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage.
FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, get medical attention immediately. **DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE.** Abrading or sanding of the dry film may release crystalline silica which has been shown to cause lung damage and cancer under long term exposure. **WARNING:** This product contains a chemical(s) known to the State of California to cause cancer.
DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.
GB98

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SUPERPAINT®

EXTERIOR LATEX FLAT A80 SERIES

CHARACTERISTICS

SuperPaint Exterior Latex Flat is our finest quality exterior flat finish. This product is recommended for use on aluminum and vinyl siding, wood siding, clapboard, shakes, shingles, plywood, masonry, and metal.

Color: All ColorAnswers® colors

Coverage:
Recommended: 400 sq ft/gal
@ 4.0 mils wet; 1.4 mils dry

Drying Time, @ 77°F, 50% RH:
temperature and humidity dependent

Touch: 1 hour

Recoat: 4 hours

Flash Point: 201°F, PMCC

Finish: 0-5 units @ 85°

Solvent/Reducer: Water

Tinting with Blend-A-Color:

Base	oz/gal	Strength
Tinting White	0-4	100%
Base A, B, C	4-8	100%
Burgundy Base	4-8	100%
Package Colors	0-4	not controlled

Vehicle Type: Acrylic

VOC (less exempt solvents):
139 grams/liter; 1.16 lb/gal

Volume Solids: 34 ± 2%

Weight Solids: 51 ± 2%

Weight per Gallon: 11.2 lb

Provides performance which is comparable to the products that are formulated in accordance with federal specification:

TT-P-19D

TT-P-96D (cancelled spec)

TT-P-1510A (cancelled spec)

TT-E-2784A, Type III

SPECIFICATIONS

Aluminum & Aluminum Siding

2 cts. SuperPaint Exterior Latex Flat
Block

1 ct. PrepRite Block Filler

2 cts. SuperPaint Exterior Latex Flat
Brick

1 ct. Loxon Conditioner

2 cts. SuperPaint Exterior Latex Flat
Exterior Drywall

1 ct. A-100 Exterior Latex Wood Primer

2 cts. SuperPaint Exterior Latex Flat
Galvanized Steel

2 cts. SuperPaint Exterior Latex Flat
Masonry/Cement/Stucco

1 ct. Loxon Ext. Acrylic Masonry Primer

2 cts. SuperPaint Exterior Latex Flat
Plywood

1 ct. A-100 Exterior Latex Wood Primer

2 cts. SuperPaint Exterior Latex Flat
Steel, alkyd primer

1 ct. Kem Kromik Universal Metal
Primer

2 cts. SuperPaint Exterior Latex Flat
Steel, latex primer

1 ct. DTM Acrylic Primer/Finish

2 cts. SuperPaint Exterior Latex Flat
Vinyl Siding

2 cts. SuperPaint Exterior Latex Flat

Wood, Composition Board

1 ct. A-100 Alkyd Exterior Wood Primer

2 cts. SuperPaint Exterior Latex Flat

SURFACE PREPARATION

Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or checked paint should be scraped and sanded to a sound surface. Glossy surfaces should be sanded dull.

Aluminum and Galvanized Steel

Wash with a water based degreasing cleaner to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, steel wool, or other abrading method.

Brick

All brick must weather at least one year followed by wire brushing to remove all efflorescence. Prime the surface with one coat of Masonry Conditioner.

Exterior Drywall

Fill cracks and holes with an exterior grade patching paste/spackle and sand smooth. Remove all sanding dust.

Masonry, Concrete, Cement, Block

All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Ext. Acrylic Masonry Primer.

Steel

Rust and mill scale must be removed using sandpaper, steel wool, or other abrading method. Bare steel must be primed the same day as cleaned.

Lat



SUPERPAINT®

EXTERIOR LATEX FLAT

A80 SERIES

SURFACE PREPARATION

Stucco

Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 5-7 days and prime with Loxon Exterior Masonry Acrylic Primer.

Vinyl Siding

Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.

Wood, Composition Board

Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth.

Mildew

Remove before painting by washing with a solution of 1 part liquid bleach and 3 parts of water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

Caulking

After cleaning the surface thoroughly, prime the surface, caulk, allow to dry, then topcoat.

APPLICATION

Brush

No reduction necessary. Use a nylon/polyester brush.

Roller

No reduction necessary. Use a 3/8" - 3/4" nap synthetic roller cover.

Pad

No reduction necessary.

Spray—Airless

Pressure 2000 psi

Tip015"-.019"

Reduction none

Spray—Conventional

Air Pressure 40-60 psi

Fluid Pressure 20 psi

Cap/Tip 704/FX

Reduction up to 1 pint/gallon

CLEANUP INFORMATION

Clean spills and spatters immediately with soap and warm water. Clean hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with mineral spirits to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using mineral spirits.

LABEL ANALYSIS

A80W507

Pigment by Weight	35%
Titanium Dioxide	19%
Zinc Oxide	2%
Silica/Silicates	14%
Vehicle by Weight	65%
Acrylic Resin	14%
Water	45%
Glycols/Alcohols/Esters	4%
Mildewcide	0.3%
Additives	1.7%
Total	100%

CAUTIONS

For exterior use only.
Do not apply at temperatures below 50°F.
Protect from freezing.
Non-photochemically reactive.

LABEL CAUTIONS

Contains CRYSTALLINE SILICA and ZINC
Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH/MSHA TC23C or equivalent) or leave the area. Adequate ventilation required when sanding or abrading the dried film. If adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH/MSHA TC21C or equivalent). Follow respirator manufacturer's directions for respirator use. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage.
FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, get medical attention immediately. DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Abrading or sanding of the dry film may release crystalline silica which has been shown to cause lung damage and cancer under long term exposure. WARNING: This product contains a chemical known to the State of California to cause cancer.
DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.
GB98 6/98

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A-100[®]

EXTERIOR LATEX SATIN

A82 SERIES

<u>CHARACTERISTICS</u>	<u>SPECIFICATIONS</u>	<u>SURFACE PREPARATION</u>
<p>A-100 Exterior Latex Satin is our best quality exterior satin finish. This product is recommended for use on aluminum and vinyl siding, wood siding, clapboard, shakes, shingles, plywood, masonry, and metal.</p>	<p>Aluminum & Aluminum Siding 2 cts. A-100 Exterior Latex Satin Block 1 ct. PrepRite Block Filler 2 cts. A-100 Exterior Latex Satin Brick 1 ct. Masonry Conditioner or Loxon Conditioner 2 cts. A-100 Exterior Latex Satin Cement Composition Siding/Panels 1 ct. Loxon Ext. Acrylic Masonry Primer or Loxon Conditioner 2 cts. A-100 Exterior Latex Satin Exterior Drywall 1 ct. A-100 Exterior Latex Wood Primer 2 cts. A-100 Exterior Latex Satin Galvanized Steel 2 cts. A-100 Exterior Latex Satin Masonry/Stucco 1 ct. Loxon Ext. Acrylic Masonry Primer 2 cts. A-100 Exterior Latex Satin Plywood 1 ct. A-100 Exterior Latex Wood Primer 2 cts. A-100 Exterior Latex Satin Steel 1 ct. Kem Kromik Universal Metal Primer or DTM Acrylic Primer/Finish 2 cts. A-100 Exterior Latex Satin Vinyl Siding 2 cts. A-100 Exterior Latex Satin Wood, Composition Board 1 ct. A-100 Exterior Oil Wood Primer 2 cts. A-100 Exterior Latex Satin</p>	<p>Remove all surface contamination by washing with an appropriate cleaner, rinse and allow to dry. Scrape and sand existing peeled or checked paint to a sound surface. Sand glossy surfaces dull. Seal stains from water, smoke, ink, pencil, grease, etc., with PrepRite ProBlock Primer Sealer.</p>
<p>Color: All Exterior ColorAnswers[®] colors Coverage:</p>	<p>Aluminum & Galvanized Steel— Wash</p>	<p>with a water based degreasing cleaner to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, steel wool, or other abrading method.</p>
<p>Recommended: 400 sq ft/gal @ 4 mils wet; 1.3 mils dry</p>	<p>Exterior Drywall— Fill cracks and holes</p>	<p>with an exterior grade patching paste/spackle and sand smooth. Joint compounds must be cured and sanded smooth. Remove all sanding dust.</p>
<p>Drying Time, @77°F, 50% RH: temperature and humidity dependent</p>	<p>1 ct. A-100 Exterior Latex Wood Primer 2 cts. A-100 Exterior Latex Satin</p>	<p>Masonry, Concrete, Cement, Block All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Exterior Acrylic Masonry Primer.</p>
<p>Touch: 1 hour</p>	<p>Galvanized Steel</p>	<p>Cement Composition Siding/Panels Clean thoroughly. Do not pressure wash, the pressure may damage the panels. Allow the surface to dry thoroughly. Prime bare panels with an acrylic primer.</p>
<p>Recoat: 4 hours</p>	<p>Steel—Rust and mill scale must be removed using sandpaper, steel wool, or other abrading method. Bare steel must be primed the same day as cleaned.</p>	<p></p>
<p>Flash Point: 201°F, PMCC</p>	<p></p>	<p></p>
<p>Finish: 10-20 units @ 60°</p>	<p></p>	<p></p>
<p>Solvent/Reducer: Water</p>	<p></p>	<p></p>
<p>Tinting with Blend-A-Color:</p>	<p></p>	<p></p>
<p>Base oz/gal Strength</p>	<p></p>	<p></p>
<p>Tinting White 0-4 100%</p>	<p></p>	<p></p>
<p>Base A, B, C 4-8 100%</p>	<p></p>	<p></p>
<p>Burgundy Base 4-8 100%</p>	<p></p>	<p></p>
<p>Package Colors 0-4 not controlled</p>	<p></p>	<p></p>
<p>Vehicle Type: Acrylic</p>	<p></p>	<p></p>
<p>VOC (less exempt solvents): 100-110</p>	<p></p>	<p></p>
<p>less water 38 grams/liter, 0.32 lb/gal</p>	<p></p>	<p></p>
<p>Volume Solids: 33 ± 2%</p>	<p></p>	<p></p>
<p>Weight Solids: 47 ± 2%</p>	<p></p>	<p></p>
<p>Weight per Gallon: 10.4 lb</p>	<p></p>	<p></p>
<p>Provides performance which is comparable to the products that are formulated in accordance with federal specification:</p>	<p></p>	<p></p>
<p>TT-P-19D</p>	<p></p>	<p></p>
<p>TT-P-96D (cancelled)</p>	<p></p>	<p></p>
<p>TT-P-1510A (cancelled)</p>	<p></p>	<p></p>



A-100®

EXTERIOR LATEX SATIN

A82 SERIES

SURFACE PREPARATION

Stucco—Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 5-7 days and prime with Loxon Exterior Acrylic Masonry Primer.

Vinyl—Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.

Wood, Plywood, Composition Board—Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. All patched areas must be primed.

Mildew—Remove before painting by washing with a solution of 1 part liquid bleach and 3 parts of water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

Caulking—After cleaning the surface thoroughly, prime the surface, caulk, allow to dry, then topcoat.

APPLICATION

Brush

No reduction necessary. Use a nylon/polyester brush.

Roller

No reduction necessary. Use a 3/8" - 3/4" nap synthetic roller cover.

Pad

No reduction necessary.

Spray—Airless

Pressure 2000 psi

Tip015"-.019"

Reduction none

Spray—Conventional

Air Pressure 40-60 psi

Fluid Pressure 20 psi

Cap/Tip 704/FX

Reduction up to 1 pint/gallon

CLEANUP INFORMATION

Clean spills and spatters immediately with soap and warm water. Clean hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with mineral spirits to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using mineral spirits.

LABEL ANALYSIS

A82W510

Pigment by Weight	25%
Titanium Dioxide	20%
Zinc Oxide	2%
Silica/Silicates	3%
Vehicle by Weight	75%
Acrylic Resin	20%
Water	49%
Additives	6%
Total	100%

CAUTIONS

For exterior use only.
Do not apply at temperatures below 50°F.
Protect from freezing.
Non-photochemically reactive.

LABEL CAUTIONS

Contains CRYSTALLINE SILICA and ZINC
Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH/MSHA TC23C or equivalent) or leave the area. Adequate ventilation required when sanding or abrading the dried film. If adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH/MSHA TC21C or equivalent). Follow respirator manufacturer's directions for respirator use. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage.

FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, get medical attention immediately. **DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE.** Abrading or sanding of the dry film may release crystalline silica which has been shown to cause lung damage and cancer under long term exposure. **WARNING:** This product contains a chemical(s) known to the State of California to cause cancer.

DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.
GB98

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SUPERPAINT®

EXTERIOR GLOSS LATEX

A84 SERIES

CHARACTERISTICS	SPECIFICATIONS	SURFACE PREPARATION															
<p>SuperPaint Exterior Gloss Latex is our finest quality exterior gloss finish. This product is recommended for use on aluminum and vinyl siding, wood siding, clapboard, shakes, shingles, plywood, masonry, and metal.</p> <p>Color: All Exterior ColorAnswers colors</p> <p>Coverage: Recommended: 400 sq ft/gal @4 mils wet; 1.4 mils dry</p> <p>Drying Time, @ 77°F, 50% RH: temperature and humidity dependent</p> <p>Touch: 1 hour</p> <p>Recoat: 24 hours</p> <p>Flash Point: 201°F, PMCC</p> <p>Finish: 35-45 units @ 60°</p> <p>Solvent/Reducer: Water</p> <p>Tinting with Blend-A-Color:</p> <table border="0"> <tr> <td>Base</td> <td>oz/gal</td> <td>Strength</td> </tr> <tr> <td>Tinting White</td> <td>0-4</td> <td>100%</td> </tr> <tr> <td>Base A, B, C</td> <td>4-8</td> <td>100%</td> </tr> <tr> <td>Burgundy Base</td> <td>4-8</td> <td>100%</td> </tr> <tr> <td>Package Colors</td> <td>0-4</td> <td>not controlled</td> </tr> </table> <p>Vehicle Type: Acrylic</p> <p>VOC (as packaged): 120 - 156 (less water) 57 grams/liter; 0.43 lbs/gal</p> <p>Volume Solids: 36 ± 2%</p> <p>Weight Solids: 48 ± 2%</p> <p>Weight per Gallon: 10.3 lbs</p>	Base	oz/gal	Strength	Tinting White	0-4	100%	Base A, B, C	4-8	100%	Burgundy Base	4-8	100%	Package Colors	0-4	not controlled	<p>Aluminum & Aluminum Siding</p> <p>2 cts. SuperPaint Exterior Gloss Latex Block</p> <p>1 ct. PrepRite Block Filler</p> <p>2 cts. SuperPaint Exterior Gloss Latex Brick</p> <p>1 ct. Masonry Conditioner or ProMar Masonry Conditioner</p> <p>2 cts. SuperPaint Exterior Gloss Latex Exterior Drywall</p> <p>1 ct. A-100 Exterior Latex Wood Primer</p> <p>2 cts. SuperPaint Exterior Gloss Latex Galvanized Steel</p> <p>2 cts. SuperPaint Exterior Gloss Latex Masonry/Stucco</p> <p>1 ct. Loxon Ext. Acrylic Masonry Primer</p> <p>2 cts. SuperPaint Exterior Gloss Latex Plywood</p> <p>1 ct. A-100 Exterior Latex Wood Primer</p> <p>2 cts. SuperPaint Exterior Gloss Latex Steel, alkyd primer</p> <p>1 ct. Kem Kromik Universal Metal Primer</p> <p>2 cts. SuperPaint Exterior Gloss Latex Steel, latex primer</p> <p>1 ct. DTM Acrylic Primer/Finish</p> <p>2 cts. SuperPaint Exterior Gloss Latex Vinyl Siding</p> <p>2 cts. SuperPaint Exterior Gloss Latex Wood, Composition Board</p> <p>1 ct. A-100 Exterior Oil Wood Primer</p> <p>2 cts. SuperPaint Exterior Gloss Latex</p>	<p>Remove all surface contamination by washing with an appropriate cleaner, rinse and allow to dry. Scrape and sand existing peeled or checked paint to a sound surface. Sand glossy surfaces dull. Seal stains from water, smoke, ink, pencil, grease, etc., with PrepRite ProBlock Primer Sealer.</p> <p>Aluminum & Galvanized Steel—Wash with a water based degreasing cleaner to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, steel wool, or other abrading method.</p> <p>Exterior Drywall—Fill cracks and holes with an exterior grade patching paste/spackle and sand smooth. Joint compounds must be cured and sanded smooth. Remove all sanding dust.</p> <p>Masonry, Concrete, Cement, Block All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Exterior Acrylic Masonry Primer.</p> <p>Steel—Rust and mill scale must be removed using sandpaper, steel wool, or other abrading method. Bare steel must be primed the same day as cleaned.</p>
Base	oz/gal	Strength															
Tinting White	0-4	100%															
Base A, B, C	4-8	100%															
Burgundy Base	4-8	100%															
Package Colors	0-4	not controlled															



SUPERPAINT®

EXTERIOR GLOSS LATEX

A84 SERIES

SURFACE PREPARATION

Stucco—Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 5-7 days and prime with Loxon Exterior Acrylic Masonry Primer.

Vinyl—Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.

Wood, Plywood, Composition Board—Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. All patched areas must be primed.

Mildew—Remove before painting by washing with a solution of 1 quart liquid bleach and 3 quarts of water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, water-proof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

Caulking—After cleaning the surface thoroughly, prime the surface, caulk, allow to dry, then topcoat.

APPLICATION

Brush
No reduction necessary. Use a nylon/polyester brush.

Roller
No reduction necessary. Use a 3/8" - 3/4" nap synthetic roller cover.

Pad
No reduction necessary.

Spray—Airless
Pressure2000 psi
Tip015"-.019"
Reduction none

Spray—Conventional
Air Pressure 40-60 psi
Fluid Pressure20 psi
Cap/Tip704/FX
Reduction up to 1 pint/gallon

CLEANUP INFORMATION

Clean spills and spatters immediately with soap and warm water. Clean hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with mineral spirits to prevent rusting of the equipment. Follow manufacturers safety recommendations when using mineral spirits.

LABEL ANALYSIS

A84W507

Pigment by Weight.....	21%
Titanium Dioxide	19%
Zinc Oxide	2%
 Vehicle by Weight.....	 79%
Acrylic Resin	24%
Water	47%
Glycols/Alcohols/Esters.....	3%
Mildewcide	0.3%
Additives	4.7%
 Total	 100%

CAUTIONS

For exterior use only.
Do not apply at temperatures below 50°F.
Protect from freezing.
Non-photochemically reactive.

LABEL CAUTIONS

Contains CRYSTALLINE SILICA and ZINC
Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH/MSHA TC23C or equivalent) or leave the area. Adequate ventilation required when sanding or abrading the dried film. If adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH/MSHA TC21C or equivalent). Follow respirator manufacturer's directions for respirator use. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage.
FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, get medical attention immediately. **DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE.** Abrading or sanding of the dry film may release crystalline silica which has been shown to cause lung damage and cancer under long term exposure. **WARNING:** This product contains a chemical(s) known to the State of California to cause cancer.
DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.
GB98

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SUPERPAINT®

EXTERIOR HIGH GLOSS LATEX ENAMEL A85 SERIES

<u>CHARACTERISTICS</u>	<u>SPECIFICATIONS</u>	<u>SURFACE PREPARATION</u>																		
<p>SuperPaint Latex High Gloss Enamel</p>	<p>Aluminum 1 ct. DTM Acrylic Primer/Finish 2 cts. SuperPaint Exterior High Gloss Latex Enamel</p>	<p>Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or checked paint should be scraped and sanded to a sound surface. Glossy surfaces should be sanded dull.</p>																		
<p><u>Recommended for:</u></p>	<p>Exterior Drywall 1 ct. A-100 Exterior Latex Wood Primer 2 cts. SuperPaint Exterior High Gloss Latex Enamel</p>	<p>Aluminum & Galvanized Steel Wash with a water based degreasing cleaner to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, steel wool, or other abrading method.</p>																		
<ul style="list-style-type: none"> • Doors • Trim • Windows • Shutters 	<p>Galvanized Steel 1 ct. DTM Acrylic Primer/Finish 2 cts. SuperPaint Exterior High Gloss Latex Enamel</p>	<p>Exterior Drywall Fill cracks and nail holes with an exterior grade patching paste/spackle and sand smooth. Remove all sanding dust.</p>																		
<p><u>Use on:</u></p>	<p>Masonry/Stucco 1 ct. Loxon Ext. Acrylic Masonry Primer 2 cts. SuperPaint Exterior High Gloss Latex Enamel</p>	<p>Masonry, Concrete, Cement, Block All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Exterior Acrylic Masonry Primer.</p>																		
<ul style="list-style-type: none"> • Wood • Metal—Aluminum, Galvanized, Primed Steel • Masonry, Cement, Brick, Block • Stucco • Vinyl trim, Shutters 	<p>Plywood 1 ct. A-100 Exterior Latex Wood Primer 2 cts. SuperPaint Exterior High Gloss Latex Enamel</p>	<p>Steel Rust and mill scale must be removed using sandpaper, steel wool or other abrading method. Bare steel must be primed the same day as cleaned.</p>																		
<p><u>Superior Performance in:</u></p>	<p>Steel 1 ct. Kem Kromik Universal Metal Primer or DTM Acrylic Primer/Finish 2 cts. SuperPaint Exterior High Gloss Latex Enamel</p>	<p>Stucco Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 5-7 days and prime with Loxon Exterior Acrylic Masonry Primer.</p>																		
<ul style="list-style-type: none"> • Block Resistance • Moisture Resistance • Gloss Retention • Flow and Leveling 	<p>Vinyl 2 cts. SuperPaint Exterior High Gloss Latex Enamel</p>	<p>Vinyl Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.</p>																		
<p><u>Color:</u> All exterior ColorAnswers colors</p>	<p>Wood, Composition Board 1 ct. A-100 Exterior Oil Wood Primer 2 cts. SuperPaint Exterior High Gloss Latex Enamel</p>																			
<p><u>Coverage:</u> 400 sq ft/gal</p>																				
<p>@4 mils wet: 1.32 mils dry</p>																				
<p><u>Drying Time, @ 77°F, 50% RH:</u></p>																				
<p>temperature and humidity dependent</p>																				
<p>Touch: 1 hour</p>																				
<p>Tack Free: 4 hours</p>																				
<p>Recoat: 24 hours</p>																				
<p>Flash Point: 201°F, PMCC</p>																				
<p>Finish: 70+ units @ 60°</p>																				
<p>Solvent/Reducer: Water</p>																				
<p>Tinting with Blend-A-Color:</p>																				
<table border="0"> <tr> <td>Base</td> <td>oz/gal</td> <td>Strength</td> </tr> <tr> <td>Tinting White</td> <td>0-4</td> <td>100%</td> </tr> <tr> <td>Base A, B, C</td> <td>4-8</td> <td>100%</td> </tr> <tr> <td>Red Base</td> <td>4-8</td> <td>100%</td> </tr> <tr> <td>Neutral Base</td> <td>8-12</td> <td>100%</td> </tr> <tr> <td>Package colors</td> <td>0-4</td> <td>not controlled</td> </tr> </table>	Base	oz/gal	Strength	Tinting White	0-4	100%	Base A, B, C	4-8	100%	Red Base	4-8	100%	Neutral Base	8-12	100%	Package colors	0-4	not controlled		
Base	oz/gal	Strength																		
Tinting White	0-4	100%																		
Base A, B, C	4-8	100%																		
Red Base	4-8	100%																		
Neutral Base	8-12	100%																		
Package colors	0-4	not controlled																		
<p>Vehicle Type: Acrylic</p>																				
<p>VOC (less exempt solvents): 110-132</p>																				
<p>(less water) 148 grams/liter, 0.96 lbs/gal</p>																				
<p>Volume Solids: 43 ± 2%</p>																				
<p>Weight Solids: 54 ± 2%</p>																				
<p>Weight per Gallon: 10.3 lb</p>																				
<p>Provides performance which is comparable to the products that are formulated in accordance with federal specification:</p>																				
<p>TT-E-2784A, Type I, Gloss</p>																				



SUPERPAINT®

EXTERIOR HIGH GLOSS LATEX ENAMEL A85 SERIES

SURFACE PREPARATION

Wood, Composition Board
Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. All patched areas must be primed.

Mildew - Remove before painting by washing with a solution of 1 part liquid bleach and 3 parts of water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

CLEANUP INFORMATION

Clean spills and spatters immediately with soap and warm water. Clean hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with mineral spirits to prevent rusting of the equipment. Follow manufacturers safety recommendations when using mineral spirits.

LABEL ANALYSIS

A85W507

Pigment by Weight	15%
Titanium Dioxide	15%
Vehicle by Weight	85%
Acrylic Resin	48%
Styrene Acrylic	6%
Water	24%
Glycol	4%
Additives	3%
Total	100%

APPLICATION

Brush

No reduction necessary. Use a nylon/polyester brush.

Roller

No reduction necessary. Use a 3/8"-1/2" SherFab roller cover.

Spray—Airless

Pressure 2000 psi

Tip013"-.017"

Reduction none

SuperPaint High Gloss Enamel sets up very quickly, providing painted surfaces which resists sticking together (blocking). When used at normal temperature and humidity, windows and doors can be closed after 4 hours drying. Maximum blocking resistance is achieved after 24 hours. With this benefit, some adjustments to your painting approach must be made.

- Do not paint in direct sun. Temperatures over 80°F and humidities under 30% will make the paint set up quicker.
- Do not over-work the product. Load paint on the surface, spread to cover, smooth out with long, even strokes. Finish this area before moving to a new area. Do not attempt to brush back into and further uniform an area once finished.
- Work quickly to maintain a wet edge.
- Paint objects in a vertical position to reduce the collection of airborne dirt and dust on the drying paint.

CAUTIONS

For exterior use only.
Do not apply at temperatures below 50°F.
Protect from freezing.
Non-photochemically reactive.
Do not shake excessively.
Not for use on roofs, floors, or decks.
Do not use Red, Yellow, or Violet Blend-A-Color Toner for exterior use.

LABEL CAUTION

Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH/MSHA TC23C or equivalent) or leave the area. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage.
FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, get medical attention immediately.
WARNING: This product contains chemicals known to the State of California to cause cancer.
DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.
GB528-4/98

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SUPERPAINT®

EXTERIOR LATEX SATIN

A89 SERIES

CHARACTERISTICS

SuperPaint Exterior Latex Satin is our finest quality exterior satin finish. This product is recommended for use on aluminum and vinyl siding, wood siding, clapboard, shakes, shingles, plywood, masonry, and metal.

Color: All Exterior ColorAnswers® colors

Coverage:

Recommended: 400 sq ft/gal
@4 mils wet; 1.44 mils dry

Drying Time, @ 77°F 50% RH:

temperature and humidity dependent

Touch: 1 hour

Recoat: 4 hours

Flash Point: 201°F, PMCC

Finish: 10-20 units @ 85°

Solvent/Reducer: Water

Tinting with Blend-A-Color:

Base	oz/gal	Strength
Tinting White	0-4	100%
Base A, B, C	4-8	100%
Burgundy Base	4-8	100%
Package Colors	0-4	not controlled

Vehicle Type: Acrylic

VOC (less exempt solvents):
110 grams/liter; 0.92 lb/gal

Volume Solids: 36 ± 2%

Weight Solids: 50 ± 2%

Weight per Gallon: 10.5 lb

Provides performance which is comparable to the products that are formulated in accordance with federal specification:

TT-P-19D

TT-P-96D (cancelled spec)

TT-P-1510A (cancelled spec)

SPECIFICATIONS

Aluminum & Aluminum Siding

2 cts. SuperPaint Exterior Latex Satin
Block

1 ct. PrepRite Block Filler

2 cts. SuperPaint Exterior Latex Satin
Brick

1 ct. Loxon Conditioner

2 cts. SuperPaint Exterior Latex Satin
Exterior Drywall

1 ct. A-100 Exterior Latex Wood Primer

2 cts. SuperPaint Exterior Latex Satin

Galvanized Steel

2 cts. SuperPaint Exterior Latex Satin

Masonry/Stucco

1 ct. Loxon Ext. Acrylic Masonry Primer

2 cts. SuperPaint Exterior Latex Satin

Plywood

1 ct. A-100 Exterior Latex Wood Primer

2 cts. SuperPaint Exterior Latex Satin

Steel, alkyd primer

1 ct. Kem Kromik Universal Metal
Primer

2 cts. SuperPaint Exterior Latex Satin
Steel, latex primer

1 ct. DTM Acrylic Primer/Finish

2 cts. SuperPaint Exterior Latex Satin

Vinyl Siding

2 cts. SuperPaint Exterior Latex Satin

Wood, Composition Board

1 ct. A-100 Exterior Oil Wood Primer

2 cts. SuperPaint Exterior Latex Satin

SURFACE PREPARATION

Remove all surface contamination by washing with an appropriate cleaner, rinse and allow to dry. Scrape and sand existing peeled or checked paint to a sound surface. Sand glossy surfaces dull. Seal stains from water, smoke, ink, pencil, grease, etc., with PrepRite ProBlock Primer Sealer.

Aluminum & Galvanized Steel

Wash with a water based degreasing cleaner to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, steel wool, or other abrading method.

Exterior Drywall

Fill cracks and holes with an exterior grade patching paste/spackle and sand smooth. Joint compounds must be cured and sanded smooth. Remove all sanding dust.

Masonry, Concrete, Cement, Block

All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Exterior Acrylic Masonry Primer.

Steel

Rust and mill scale must be removed using sandpaper, steel wool, or other abrading method. Bare steel must be primed the same day as cleaned.



SUPERPAINT®

EXTERIOR LATEX SATIN

A89 SERIES

SURFACE PREPARATION

Stucco

Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 5-7 days and prime with Loxon Exterior Acrylic Masonry Primer.

Vinyl

Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.

Wood, Plywood, Composition Board

Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. All patched areas must be primed.

Mildew

Remove before painting by washing with a solution of 1 part liquid bleach and 3 parts of water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

Caulking

After cleaning the surface thoroughly, prime the surface, caulk, allow to dry, then topcoat.

APPLICATION

Brush

Use a nylon/polyester brush.

Roller

Use a 3/8" - 3/4" nap synthetic roller cover.

Spray—Airless

Pressure2000 psi

Tip015"-.017"

Reduction none

Spray—Conventional

Air Pressure 40-60 psi

Fluid Pressure 10-20 psi

Cap/Tip704/FX

Reduction up to 1 pint/gallon

CLEANUP INFORMATION

Clean spills and spatters immediately with soap and warm water. Clean hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with mineral spirits to prevent rusting of the equipment. Follow manufacturers safety recommendations when using mineral spirits.

LABEL ANALYSIS

A89W507

Pigment by Weight..... 25%

Titanium Dioxide 20%

Zinc Oxide 2%

Silica/Silicates 3%

Vehicle by Weight..... 75%

Acrylic Resin22%

Water46%

Additives 7%

Total..... 100%

CAUTIONS

For exterior use only.
Do not apply at temperatures below 50°F.
Protect from freezing.
Non-photochemically reactive.

LABEL CAUTIONS

Contains CRYSTALLINE SILICA and ZINC
Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH/MSHA TC23C or equivalent) or leave the area. Adequate ventilation required when sanding or abrading the dried film. If adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH/MSHA TC21C or equivalent). Follow respirator manufacturer's directions for respirator use. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage.

FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, get medical attention immediately. **DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE.** Abrading or sanding of the dry film may release crystalline silica which has been shown to cause lung damage and cancer under long term exposure. **WARNING:** This product contains a chemical known to the State of California to cause cancer.

DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.

GB98 6/98

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LOWTEMP 35™

EXTERIOR LATEX FLAT

B15 SERIES

<u>CHARACTERISTICS</u>	<u>SPECIFICATIONS</u>	<u>SURFACE PREPARATION</u>																																												
<p>LowTemp 35 Exterior Latex Flat is a quality product recommended for use on aluminum and vinyl siding, wood siding, clapboard, shakes, shingles, plywood, masonry, and primed metal down to a surface and air temperature of 35°F.</p> <p>Color: Exterior ColorAnswers colors Coverage: 350 - 400 sq ft/gal @4 mils wet; 1.5 mils dry Drying Time @ 50% RH: temperature and humidity dependent @ 35-45°F @ 45-60°F Touch: 2 hour 2 hours Recoat: 24-48 hours 5 hours Air and surface temperatures must not drop below 35°F for 48 hours after application. Flash Point: 201°F, PMCC Finish: 0-5 units @ 85° Solvent/Reducer: Water Tinting with Blend-A-Color: <table border="0"> <tr> <td>Base</td> <td>oz/gal</td> <td>Strength</td> </tr> <tr> <td>Tinting White</td> <td>0-4</td> <td>100%</td> </tr> <tr> <td>Base A, B, C</td> <td>4-8</td> <td>100%</td> </tr> <tr> <td>Burgundy</td> <td>4-8</td> <td>100%</td> </tr> </table> Vehicle Type: Acrylic B15W210 VOC: 129 grams/liter; 1.08 lb/gal Volume Solids: 40 ± 2% Weight Solids: 57 ± 2% Weight per Gallon: 11.7 lb</p> <p>This product contains agents which inhibit the growth of mildew on the surface of this paint film.</p> <p>Provides performance which is comparable to the products that are formulated in accordance with federal specification: TT-P-19D TT-E-2784A, Type III</p>	Base	oz/gal	Strength	Tinting White	0-4	100%	Base A, B, C	4-8	100%	Burgundy	4-8	100%	<p>Latex primers cannot be used below 50°F. See specific primer label for that product's application conditions.</p> <p><u>Two topcoats are recommended for all surfaces.</u></p> <table border="0"> <tr> <td>Substrate</td> <td>Primer</td> </tr> <tr> <td>Aluminum¹</td> <td></td> </tr> <tr> <td>Block</td> <td>no primer necessary</td> </tr> <tr> <td>Brick</td> <td>Loxon Block Surfacers</td> </tr> <tr> <td>or</td> <td>Masonry Conditioner</td> </tr> <tr> <td>Exterior Drywall</td> <td>ProMar Masonry Conditioner</td> </tr> <tr> <td>Galvanized Steel¹</td> <td>LowTemp 35 Exterior Latex Primer</td> </tr> <tr> <td></td> <td>no primer necessary</td> </tr> <tr> <td>Masonry/Cement/Stucco</td> <td>LowTemp 35 Exterior Latex Primer</td> </tr> <tr> <td></td> <td>Loxon Ext. Acrylic Masonry Primer²</td> </tr> <tr> <td>Plywood</td> <td>LowTemp 35 Exterior Latex Primer</td> </tr> <tr> <td>Preprimed Metal Siding¹</td> <td>DTM Bonding Primer²</td> </tr> <tr> <td>Steel, alkyd primer¹</td> <td>All Surface Enamel Oil Primer</td> </tr> <tr> <td>Steel, latex primer¹</td> <td>All Surface Enamel Latex Primer²</td> </tr> <tr> <td>Vinyl Siding</td> <td>no primer necessary</td> </tr> <tr> <td>Wood, Composition Board</td> <td>LowTemp 35 Exterior Latex Primer</td> </tr> </table> <p>¹ On large expanses of metal siding, the air, surface, and material temperatures must be 50°F or higher. ² Not for use at temperatures under 50°F.</p>	Substrate	Primer	Aluminum ¹		Block	no primer necessary	Brick	Loxon Block Surfacers	or	Masonry Conditioner	Exterior Drywall	ProMar Masonry Conditioner	Galvanized Steel ¹	LowTemp 35 Exterior Latex Primer		no primer necessary	Masonry/Cement/Stucco	LowTemp 35 Exterior Latex Primer		Loxon Ext. Acrylic Masonry Primer ²	Plywood	LowTemp 35 Exterior Latex Primer	Preprimed Metal Siding ¹	DTM Bonding Primer ²	Steel, alkyd primer ¹	All Surface Enamel Oil Primer	Steel, latex primer ¹	All Surface Enamel Latex Primer ²	Vinyl Siding	no primer necessary	Wood, Composition Board	LowTemp 35 Exterior Latex Primer	<p>When the air temperature is at 35°F, substrates may be colder; prior to painting, check to be sure the air, surface, and material temperature are above 35°F and at least 5°F above the dew point. Avoid using if rain or snow is expected within 2-3 hours.</p> <p>Remove all surface contamination by washing with ProClean All Surface Cleaner or other appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or checked paint should be scraped and sanded to a sound surface. Glossy surfaces should be sanded dull. Stains from water, smoke, ink, pencil, grease, etc. should be sealed with PrepRite Quick Seal or A-100 Exterior Oil Wood Primer.</p> <p>Aluminum and Galvanized Steel—Wash with a water based degreasing cleaner to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, steel wool, or other abrading method.</p> <p>Brick—Allow brick to weather at least one year followed by wire brushing to remove all efflorescence.</p> <p>Exterior Drywall—Fill cracks and holes with an exterior grade patching paste/spackle and sand smooth. Remove all sanding dust.</p> <p>Masonry, Concrete, Cement, Block—All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Exterior Acrylic Masonry Primer.</p>
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LOWTEMP 35™

EXTERIOR LATEX FLAT

B15 SERIES

SURFACE PREPARATION

Preprimed Metal Siding—(Florocarbon, Silicone Polyester, and Polyester Polymers) Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.

Steel—Remove rust and mill scale using sandpaper, steel wool, or other abrading method. Remove all sanding dust. Prime bare steel the same day as cleaned.

Stucco—Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 5-7 days and prime with Loxon Exterior Acrylic Masonry Primer.

Vinyl Siding—Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.

Wood, Composition Board—Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. Remove all sanding dust.

Mildew—Remove before painting by washing with a solution of 1 part liquid bleach and 3 parts water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

Caulking—After cleaning the surface thoroughly, prime the surface, caulk, allow to dry, then topcoat.

APPLICATION

Do not apply at air or surface temperatures below 35°F or when air or surface temperatures may drop below 35°F within 48 hours.

No reduction necessary.

Brush

Use a nylon/polyester brush.

Roller

Use a 3/8" - 3/4" nap synthetic cover.

Spray—Airless

Pressure 2000 psi

Tip015"-.019"

CLEANUP INFORMATION

Clean spills and spatters immediately with soap and warm water. Clean hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with mineral spirits to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using mineral spirits.

LABEL ANALYSIS

B15W296

Pigment by Weight	37%
Titanium Dioxide	13%
Silicates	22%
Zinc Oxide	2%
Vehicle by Weight	63%
Acrylic Polymer	15%
Water	41%
Glycol/Esters	4%
Additives	3%
Total	100%

CAUTIONS

For exterior use only.

Protect from freezing.

Non-photochemically reactive.

Not for use on horizontal surfaces, such as a roof, deck, or floor, where water may collect.

On large expanses of prefinished metal siding, the air, surface, and material temperatures must be 50°F or higher.

LABEL CAUTIONS

CAUTION contains ZINC. Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH/MSHA TC22C or equivalent) or leave the area. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage. **FIRST AID:** In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, get medical attention immediately. **WARNING:** This product contains a chemical known to the State of California to cause cancer. **DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.**
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06 00

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LOWTEMP 35™ EXTERIOR LATEX SATIN B17 SERIES

CHARACTERISTICS

LowTemp 35 Exterior Latex Satin is a quality product recommended for use on aluminum and vinyl siding, wood siding, clapboard, shakes, shingles, plywood, masonry, and primed metal down to a surface and air temperature of 35°F.

Color: Exterior ColorAnswers colors
Coverage: 350 - 400 sq ft/gal
@ 4 mils wet; 1.3 mils dry

Drying Time @ 50% RH:
temperature and humidity dependent
@ 35-45°F @ 45-60°F

Touch: 2 hours 2 hours
Recoat: 48 hours 5 hours

Air and surface temperatures must not drop below 35°F for 48 hours after application.

Flash Point: 201°F, PMCC

Finish: 10-20 units @ 60°

Solvent/Reducer: Water

Tinting with Blend-A-Color:

Base	oz/gal	Strength
Tinting White	0-4	100%
Base A, B, C	4-8	100%
Burgundy	4-8	100%

Vehicle Type: Acrylic

B17W410

VOC: 102 grams/liter; 0.85 lb/gal

Volume Solids: 35 ± 2%

Weight Solids: 47 ± 2%

Weight per Gallon: 10.3 lb

This product contains agents which inhibit the growth of mildew on the surface of this paint film.

Provides performance which is comparable to the products that are formulated in accordance with federal specification:
TT-P-19D

SPECIFICATIONS

Latex primers cannot be used below 50°F. See specific primer label for that product's application conditions.

Two topcoats are recommended for all surfaces.

Substrate	Primer
Aluminum ¹	
Block	no primer necessary
Brick	Loxon Block Surfacer
or	Masonry Conditioner
Exterior Drywall	ProMar Masonry Conditioner
Galvanized Steel ¹	LowTemp 35 Exterior Latex Primer
	Masonry/Cement/Stucco
	no primer necessary
	LowTemp 35 Exterior Latex Primer
	Loxon Ext. Acrylic Masonry Primer ²
Plywood	LowTemp 35 Exterior Latex Primer
Preprimed Metal Siding ¹	DTM Bonding Primer ²
Steel, alkyd primer ¹	All Surface Enamel Oil Primer
Steel, latex primer ¹	All Surface Enamel Latex Primer ²
Vinyl Siding	no primer necessary
Wood, Composition Board	LowTemp 35 Exterior Latex Primer

SURFACE PREPARATION

When the air temperature is at 35°F, substrates may be colder; prior to painting, check to be sure the air, surface, and material temperature are above 35°F and at least 5°F above the dew point. Avoid using if rain or snow is expected within 2-3 hours.

Remove all surface contamination by washing with ProClean All Surface Cleaner or other appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or checked paint should be scraped and sanded to a sound surface. Glossy surfaces should be sanded dull. Stains from water, smoke, ink, pencil, grease, etc. should be sealed with PrepRite Quick Seal or A-100 Exterior Oil Wood Primer.

Aluminum and Galvanized Steel—Wash with a water based degreasing cleaner to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, steel wool, or other abrading method.

Brick—Allow brick to weather at least one year followed by wire brushing to remove all efflorescence.

Exterior Drywall—Fill cracks and holes with an exterior grade patching paste/spackle and sand smooth. Remove all sanding dust.

Masonry, Concrete, Cement, Block—All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Exterior Acrylic Masonry Primer.

¹ On large expanses of metal siding, the air, surface, and material temperatures must be 50°F or higher.

² Not for use at temperatures under 50°F.



LOWTEMP 35™

EXTERIOR LATEX SATIN

B17 SERIES

<u>SURFACE PREPARATION</u>	<u>APPLICATION</u>	<u>CAUTIONS</u>
<p>Preprimed Metal Siding—(Fluorocarbon, Silicone Polyester, and Polyester Polymers) Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.</p> <p>Steel—Remove rust and mill scale using sandpaper, steel wool, or other abrading method. Remove all sanding dust. Prime bare steel the same day as cleaned.</p> <p>Stucco—Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 5-7 days and prime with Loxon Exterior Acrylic Masonry Primer.</p> <p>Vinyl Siding—Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.</p> <p>Wood, Composition Board—Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. Remove all sanding dust.</p> <p>Mildew—Remove before painting by washing with a solution of 1 part liquid bleach and 3 parts water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.</p> <p>Caulking—After cleaning the surface thoroughly, prime the surface, caulk, allow to dry, then topcoat.</p>	<p>Do not apply at air or surface temperatures below 35°F or when air or surface temperatures may drop below 35°F within 48 hours.</p> <p>No reduction necessary.</p> <p>Brush Use a nylon/polyester brush.</p> <p>Roller Use a 3/8" - 3/4" nap synthetic cover.</p> <p>Spray—Airless Pressure 2000 psi Tip015"-.019"</p> <p><u>CLEANUP INFORMATION</u></p> <p>Clean spills and spatters immediately with soap and warm water. Clean hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with mineral spirits to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using mineral spirits.</p>	<p>For exterior use only. Protect from freezing. Non-photochemically reactive. Not for use on horizontal surfaces, such as a roof, deck, or floor, where water may collect. On large expanses of prefinished metal siding, the air, surface, and material temperatures must be 50°F or higher.</p> <p><u>LABEL CAUTIONS</u></p> <p>CAUTION contains CRYSTALLINE SILICA and ZINC. Use only with adequate ventilation. To avoid over-exposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH/MSHA TC23C or equivalent) or leave the area. Adequate ventilation required when sanding or abrading the dried film. If adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH/MSHA TC21C or equivalent). Follow respirator manufacturer's directions for respirator use. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage.</p> <p>FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, get medical attention immediately. DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Abrading or sanding of the dry film may release crystalline silica which has been shown to cause lung damage and cancer under long term exposure. WARNING: This product contains a chemical known to the State of California to cause cancer. DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.</p> <p>LCE 9/22/99 04 00</p> <p>The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Sheet.</p>



WEATHERPERFECT[®]

EXTERIOR LATEX FLAT

B36 SERIES

CHARACTERISTICS	SPECIFICATIONS	SURFACE PREPARATION															
<p>WeatherPerfect Exterior Latex Flat House & Trim is recommended for use on aluminum and vinyl siding, wood siding, clapboard, shakes, shingles, plywood, masonry, and metal.</p>	<p>Aluminum & Aluminum Siding 2 cts. WeatherPerfect Exterior Latex Flat Block 1 ct. PrepRite Block Filler 2 cts. WeatherPerfect Exterior Latex Flat Brick 1 ct. Masonry Conditioner or ProMar Masonry Conditioner 2 cts. WeatherPerfect Exterior Latex Flat Exterior Drywall 1 ct. A-100 Exterior Latex Wood Primer 2 cts. WeatherPerfect Exterior Latex Flat Galvanized Steel 1 ct. DTM Acrylic Primer/Finish 2 cts. WeatherPerfect Exterior Latex Flat Masonry/Stucco 1 ct. Loxon Ext. Acrylic Masonry Primer 2 cts. WeatherPerfect Exterior Latex Flat Plywood 1 ct. A-100 Exterior Latex Wood Primer 2 cts. WeatherPerfect Exterior Latex Flat Steel, alkyd primer 1 ct. Kem Kromik Universal Metal Primer 2 cts. WeatherPerfect Exterior Latex Flat Steel, latex primer 1 ct. DTM Acrylic Primer/Finish 2 cts. WeatherPerfect Exterior Latex Flat Vinyl Siding 2 cts. WeatherPerfect Exterior Latex Flat Wood, Composition Board 1 ct. WeatherPerfect Alkyd Exterior Undercoater 2 cts. WeatherPerfect Exterior Latex Flat</p>	<p>Remove all surface contamination by washing with an appropriate cleaner, rinse and allow to dry. Scrape and sand existing peeled or checked paint to a sound surface. Sand glossy surfaces dull. Seal stains from water, smoke, ink, pencil, grease, etc., with PrepRite ProBlock Primer Sealer.</p> <p>Aluminum & Galvanized Steel—Wash with a water based degreasing cleaner to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, steel wool, or other abrading method.</p> <p>Exterior Drywall—Fill cracks and holes with an exterior grade patching paste/spackle and sand smooth. Joint compounds must be cured and sanded smooth. Remove all sanding dust.</p> <p>Masonry, Concrete, Cement, Block All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Exterior Acrylic Masonry Primer.</p> <p>Steel—Rust and mill scale must be removed using sandpaper, steel wool, or other abrading method. Bare steel must be primed the same day as cleaned.</p>															
<p>Color: All ColorAnswers[®] colors Coverage: Recommended: 400 sq ft/gal @ 4 mils wet; 1.3 mils dry Drying Time, @ 77°F, 50% RH: temperature and humidity dependent Touch: 1 hour Recoat: 4 hours Flash Point: 201°F, PMCC Finish: 0-5 units @ 85° Solvent/Reducer: Water Tinting with Blend-A-Color: <table border="1"> <thead> <tr> <th>Base</th> <th>oz/gal</th> <th>Strength</th> </tr> </thead> <tbody> <tr> <td>Tinting White</td> <td>0-4</td> <td>100%</td> </tr> <tr> <td>Base A, B, C</td> <td>4-8</td> <td>100%</td> </tr> <tr> <td>Burgundy</td> <td>4-8</td> <td>100%</td> </tr> <tr> <td>Yellow Corn</td> <td>4-8</td> <td>100%</td> </tr> </tbody> </table> Package Colors 0-4 not controlled Vehicle Type: Vinyl Acrylic VOC (as packaged): 110-120 g/l less water 22 grams/liter, 0.55 lbs/gal Volume Solids: 32 ± 2% Weight Solids: 48 ± 2% Weight per Gallon: 10.8 lb</p>	Base	oz/gal	Strength	Tinting White	0-4	100%	Base A, B, C	4-8	100%	Burgundy	4-8	100%	Yellow Corn	4-8	100%		
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<p>Provides performance which is comparable to the products that are formulated in accordance with federal specification: TT-P-19D TT-P-96D TT-P-1510A</p>																	

Flat



WEATHERPERFECT®

EXTERIOR LATEX FLAT

B36 SERIES

SURFACE PREPARATION

Stucco—Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 5-7 days and prime with Loxon Exterior Acrylic Masonry Primer.

Vinyl—Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.

Wood, Plywood, Composition Board—Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. All patched areas must be primed.

Mildew—Remove before painting by washing with a solution of 1 quart liquid bleach and 3 quarts of water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

Caulking—After cleaning the surface thoroughly, prime the surface, caulk, allow to dry, then topcoat.

APPLICATION

Brush
No reduction necessary. Use a nylon/polyester brush.

Roller
No reduction necessary. Use a 3/8" - 3/4" nap synthetic roller cover.

Pad
No reduction necessary.

Spray—Airless
Pressure 2000 psi
Tip015"-.019"
Reduction none

Spray—Conventional
Air Pressure 40-60 psi
Fluid Pressure 20 psi
Cap/Tip 704/FX
Reduction up to 1 pint/gallon

CLEANUP INFORMATION

Clean spills and spatters immediately with soap and warm water. Clean hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with mineral spirits to prevent rusting of the equipment. Follow manufacturers safety recommendations when using mineral spirits.

LABEL ANALYSIS

B36W306

Pigment by Weight	33%
Titanium Dioxide	19%
Zinc Oxide	1%
Silica/Silicates	13%
Vehicle by Weight	67%
Vinyl/Acrylic Polymer	12%
Water	48%
Mildewcide	0.1%
Glycol	2%
Additives	4.9%
Total	100%

CAUTIONS

For exterior use only.
Do not apply at temperatures below 50°F.
Protect from freezing.
Non-photochemically reactive.

LABEL CAUTIONS

Contains **CRYSTALLINE SILICA** and **ZINC**
Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH/MSHA TC23C or equivalent) or leave the area. Adequate ventilation required when sanding or abrading the dried film. If adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH/MSHA TC21C or equivalent). Follow respirator manufacturer's directions for respirator use. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage.
FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, get medical attention immediately. **DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE.** Abrading or sanding of the dry film may release crystalline silica which has been shown to cause lung damage and cancer under long term exposure. **WARNING:** This product contains a chemical(s) known to the State of California to cause cancer.
DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.
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WEATHERPERFECT®

EXTERIOR LATEX SATIN

B77 SERIES

CHARACTERISTICS

WeatherPerfect Exterior Latex Satin is a quality satin finish recommended for use on aluminum and vinyl siding, wood siding, clapboard, shakes, shingles, plywood, masonry, and metal.

Color: All ColorAnswers® colors

Coverage: Recommended: 400 sq ft/gal
@4 mils wet; 1.4 mils dry

Drying Time, @77°F, 50% RH: temperature and humidity dependent

Touch: 1 hour

Recoat: 24 hours

Flash Point: 201°F, PMCC

Finish: 10-20 units @ 85°

Solvent/Reducer: Water

Tinting with Blend-A-Color:

Base	oz/gal	Strength
Tinting White	0-4	100%
Base A, B, C	4-8	100%
Burgundy	4-8	100%
White	0-4	not controlled

Vehicle Type: Vinyl Acrylic

VOC (as packaged): 110-120 g/l

less water 42 grams/liter, 0.35 lbs/gal

Volume Solids: 34 ± 2%

Weight Solids: 47 ± 2%

Weight per Gallon: 10.4 lb

SPECIFICATIONS

Aluminum & Aluminum Siding
2 cts. WeatherPerfect Exterior Latex Satin Block

1 ct. PrepRite Block Filler

2 cts. WeatherPerfect Exterior Latex Satin Brick

1 ct. Masonry Conditioner

or ProMar Masonry Conditioner

2 cts. WeatherPerfect Exterior Latex Satin Exterior Drywall

1 ct. A-100 Exterior Latex Wood Primer

2 cts. WeatherPerfect Exterior Latex Satin Galvanized Steel

2 cts. WeatherPerfect Exterior Latex Satin Masonry/Stucco

1 ct. Loxon Ext. Acrylic Masonry Primer

2 cts. WeatherPerfect Exterior Latex Satin Plywood

1 ct. A-100 Exterior Latex Wood Primer

2 cts. WeatherPerfect Exterior Latex Satin Steel, alkyd primer

1 ct. Kem Kromik Universal Metal Primer

2 cts. WeatherPerfect Exterior Latex Satin Steel, latex primer

1 ct. DTM Acrylic Primer/Finish

2 cts. WeatherPerfect Exterior Latex Satin Vinyl Siding

2 cts. WeatherPerfect Exterior Latex Satin Wood, Composition Board

1 ct. WeatherPerfect Alkyd Exterior Undercoater

2 cts. WeatherPerfect Exterior Latex Satin

SURFACE PREPARATION

Remove all surface contamination by washing with an appropriate cleaner, rinse and allow to dry. Scrape and sand existing peeled or checked paint to a sound surface. Sand glossy surfaces dull. Seal stains from water, smoke, ink, pencil, grease, etc., with PrepRite ProBlock Primer Sealer.

Aluminum & Galvanized Steel—Wash with a water based degreasing cleaner to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, steel wool, or other abrading method.

Exterior Drywall—Fill cracks and holes with an exterior grade patching paste/spackle and sand smooth. Joint compounds must be cured and sanded smooth. Remove all sanding dust.

Masonry, Concrete, Cement, Block All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Exterior Acrylic Masonry Primer.

Steel—Rust and mill scale must be removed using sandpaper, steel wool, or other abrading method. Bare steel must be primed the same day as cleaned.



WEATHERPERFECT®

EXTERIOR LATEX SATIN

B77 SERIES

SURFACE PREPARATION

Stucco—Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 5-7 days and prime with Loxon Exterior Acrylic Masonry Primer.

Vinyl—Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.

Wood, Plywood, Composition Board—Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. All patched areas must be primed.

Mildew—Remove before painting by washing with a solution of 1 quart liquid bleach and 3 quarts of water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

Caulking—After cleaning the surface thoroughly, prime the surface, caulk, allow to dry, then topcoat.

APPLICATION

Brush
No reduction necessary. Use a nylon/polyester brush.

Roller
No reduction necessary. Use a 3/8" - 3/4" nap synthetic roller cover.

Pad
No reduction necessary.

Spray—Airless
Pressure 2000 psi
Tip019" - .021"
Reduction none

Spray—Conventional
Air Pressure 40-60 psi
Fluid Pressure 20 psi
Cap/Tip 704/FX
Reduction up to 1 pint/gallon

CLEANUP INFORMATION

Clean spills and spatters immediately with soap and warm water. Clean hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with mineral spirits to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using mineral spirits.

LABEL ANALYSIS B77W506

Pigment by Weight	25%
Titanium Dioxide	19%
Zinc Oxide	1%
Silica/Silicates	5%
Vehicle by Weight	75%
Vinyl/Acrylic Polymer	15%
Water	50%
Glycols/Alcohols/Esters	3%
Mildewcide	0.1%
Additives	6.9%
Total	100%

CAUTIONS

For exterior use only.
Do not apply at temperatures below 50°F.
Protect from freezing.
Non-photochemically reactive.

LABEL CAUTIONS

Contains CRYSTALLINE SILICA and ZINC
Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH/MSHA TC23C or equivalent) or leave the area. Adequate ventilation required when sanding or abrading the dried film. If adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH/MSHA TC21C or equivalent). Follow respirator manufacturer's directions for respirator use. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage.

FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, get medical attention immediately. **DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE.** Abrading or sanding of the dry film may release crystalline silica which has been shown to cause lung damage and cancer under long term exposure. **WARNING:** This product contains a chemical(s) known to the State of California to cause cancer.
DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.
GB98

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Sheet.



TOUGH ONE®

EXTERIOR LATEX FLAT

C1 SERIES

<u>CHARACTERISTICS</u>	<u>SPECIFICATIONS</u>	<u>SURFACE PREPARATION</u>									
<p>Tough One Exterior Latex Flat is an economical finish for residential use on aluminum and vinyl siding, wood siding, clapboard, shakes, shingles, plywood, masonry, and metal.</p> <p>Color: Many ColorAnswers colors</p> <p>Coverage: Recommended: 400 sq ft/gal @ 4 mils wet; 1.0 mils dry</p> <p>Drying Time, @ 77°F, 50% RH: temperature and humidity dependent</p> <p>Touch: 1 hour</p> <p>Recoat: 4 hours</p> <p>Flash Point: 201°F, PMCC</p> <p>Finish: 0-10 units @ 85°</p> <p>Solvent/Reducer: Water</p> <p>Tinting with Blend-A-Color:</p> <table border="0"> <tr> <td>Base</td> <td>oz/gal</td> <td>Strength</td> </tr> <tr> <td>Tinting White</td> <td>0-4</td> <td>100%</td> </tr> <tr> <td>White</td> <td>0-4</td> <td>not controlled</td> </tr> </table> <p>Vehicle Type: Acrylic</p> <p>VOC: 43 grams/liter; 0.36 lb/gal</p> <p>Volume Solids: 25 ± 2%</p> <p>Weight Solids: 41 ± 2%</p> <p>Weight per Gallon: 10.5 lb</p>	Base	oz/gal	Strength	Tinting White	0-4	100%	White	0-4	not controlled	<p>Aluminum & Aluminum Siding 2 cts. Tough One Exterior Latex Flat Block 1 ct. PrepRite Block Filler 2 cts. Tough One Exterior Latex Flat Brick 1 ct. Loxon Conditioner 2 cts. Tough One Exterior Latex Flat Exterior Drywall 1 ct. A-100 Exterior Latex Wood Primer 2 cts. Tough One Exterior Latex Flat Galvanized Steel 1 ct. All Surface Enamel Latex Primer 2 cts. Tough One Exterior Latex Flat Masonry/Stucco 1 ct. Loxon Ext. Acrylic Masonry Primer 2 cts. Tough One Exterior Latex Flat Plywood 1 ct. A-100 Exterior Latex Wood Primer 2 cts. Tough One Exterior Latex Flat Steel, alkyd primer 1 ct. All Surface Enamel Oil Primer 2 cts. Tough One Exterior Latex Flat Steel, latex primer 1 ct. All Surface Enamel Latex Primer 2 cts. Tough One Exterior Latex Flat Vinyl Siding 2 cts. Tough One Exterior Latex Flat Wood, Composition Board 1 ct. WeatherPerfect Alkyd Exterior Undercoater 2 cts. Tough One Exterior Latex Flat</p>	<p>Remove all surface contamination by washing with ProClean All Surface Cleaner or other appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or checked paint should be scraped and sanded to a sound surface. Glossy surfaces should be sanded dull. Stains from water, smoke, ink, pencil, grease, etc. should be sealed with PrepRite ProBlock Primer Sealer.</p> <p>Aluminum and Galvanized Steel Wash with a water based degreasing cleaner to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper or other abrading method.</p> <p>Brick All brick must weather at least one year followed by wire brushing to remove all efflorescence. Prime the surface with one coat of Loxon Conditioner.</p> <p>Exterior Drywall Fill cracks and holes with an exterior grade patching paste/spackle and sand smooth. Remove all sanding dust.</p> <p>Masonry, Concrete, Cement, Block All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Ext. Acrylic Masonry Primer. Repair cracks, voids, and other holes using ConSeal Patches and Sealants.</p>
Base	oz/gal	Strength									
Tinting White	0-4	100%									
White	0-4	not controlled									

Lat



TOUGH ONE®

EXTERIOR LATEX FLAT

C1 SERIES

<u>SURFACE PREPARATION</u>	<u>APPLICATION</u>	<u>CAUTIONS</u>																						
<p>Steel Rust and mill scale must be removed using sandpaper, steel wool, or other abrading method. Bare steel must be primed the same day as cleaned.</p> <p>Stucco Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 5-7 days and prime with Loxon Exterior Masonry Acrylic Primer.</p> <p>Vinyl Siding Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly.</p> <p>Wood, Composition Board Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth.</p> <p>Mildew Remove before painting by washing with a solution of 1 part liquid bleach and 3 parts water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.</p> <p>Caulking—After cleaning the surface thoroughly, prime the surface, caulk, allow to dry, then topcoat.</p>	<p>Apply at temperatures above 50°F. No reduction necessary.</p> <p>Brush Use a nylon/polyester brush.</p> <p>Roller Use a 3/8" - 3/4" nap synthetic roller cover.</p> <p>Spray—Airless Pressure 2000 psi Tip015"-.019"</p> <p><u>CLEANUP INFORMATION</u></p> <p>Clean spills and spatters immediately with soap and warm water. Clean hands and tools immediately after use with soap and warm water. After cleaning, flush spray equipment with mineral spirits to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using mineral spirits.</p> <p><u>LABEL ANALYSIS</u> C1W502</p> <table border="0"> <tr> <td>Pigment by Weight</td> <td>29%</td> </tr> <tr> <td>Titanium Dioxide</td> <td>9%</td> </tr> <tr> <td>Zinc Oxide</td> <td>1%</td> </tr> <tr> <td>Silica/Silicates</td> <td>19%</td> </tr> <tr> <td>Vehicle by Weight</td> <td>71%</td> </tr> <tr> <td>Acrylic Resin</td> <td>8%</td> </tr> <tr> <td>Water</td> <td>58%</td> </tr> <tr> <td>Soya Alkyd</td> <td>1%</td> </tr> <tr> <td>Mildewcide</td> <td>0.1%</td> </tr> <tr> <td>Additives</td> <td>3.9%</td> </tr> <tr> <td>Total</td> <td>100%</td> </tr> </table>	Pigment by Weight	29%	Titanium Dioxide	9%	Zinc Oxide	1%	Silica/Silicates	19%	Vehicle by Weight	71%	Acrylic Resin	8%	Water	58%	Soya Alkyd	1%	Mildewcide	0.1%	Additives	3.9%	Total	100%	<p>For exterior use only. Protect from freezing. Non-photochemically reactive.</p> <p><u>LABEL CAUTIONS</u> Contains CRYSTALLINE SILICA Use only with adequate ventilation. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH/MSHA TC23C or equivalent) or leave the area. Adequate ventilation required when sanding or abrading the dried film. If adequate ventilation cannot be provided wear an approved particulate respirator (NIOSH/MSHA TC21C or equivalent). Follow respirator manufacturer's directions for respirator use. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage. FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, get medical attention immediately. DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Abrading or sanding of the dry film may release crystalline silica which has been shown to cause lung damage and cancer under long term exposure. WARNING: This product contains a chemical known to the State of California to cause cancer. DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN. GB366 4/99 25 00</p> <p>The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Sheet.</p>
Pigment by Weight	29%																							
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Additives	3.9%																							
Total	100%																							



Duration™

EXTERIOR LATEX SATIN COATING K33 SERIES

DESCRIPTION	CHARACTERISTICS	APPLICATION												
<p>DURATION™ Exterior Latex Coating is the result of advances in acrylic technology. DURATION uses PermaLast™ technology to provide you with the most durable and longest lasting coating available for protecting the outside of your home.</p>	<p>Color: all ColorAnswers® colors</p> <p>Coverage: Recommended: 250-300 sq ft/gal up to 7.0 mils wet; 2.8 mils dft</p> <p>Drying Time, @ 77°F, 50% RH: temperature and humidity dependent</p> <p>Touch: 1 hour Recoat: 4 hours</p> <p>Flash Point: 201°F, PMCC</p> <p>Finish: 10-20 units @ 60°</p> <p>Solvent/Reducer: Water</p> <p>Tinting with Blend-A-Color:</p> <table border="1"> <thead> <tr> <th>Base</th> <th>oz/gal</th> <th>Strength</th> </tr> </thead> <tbody> <tr> <td>Tinting White</td> <td>0-5</td> <td>125%</td> </tr> <tr> <td>Base A, B, C</td> <td>5-10</td> <td>125%</td> </tr> <tr> <td>Burgundy</td> <td>5-10</td> <td>125%</td> </tr> </tbody> </table> <p>Vehicle Type: Acrylic</p> <p>VOC: 68-120 ^{less water} grams/liter; 0-80 ^{less water} lbs/gal</p> <p>Volume Solids: 40 ± 2%</p> <p>Weight Solids: 55 ± 2%</p> <p>Weight per Gallon: 10.9 lb</p>	Base	oz/gal	Strength	Tinting White	0-5	125%	Base A, B, C	5-10	125%	Burgundy	5-10	125%	<p>Thoroughly follow the recommended surface preparations. On repaint work, apply one coat of DURATION coating; on bare surfaces, apply two coats of DURATION, allowing 4 hours drying between coats.</p> <p>Apply using a brush, roller, or sprayer. Thinning not normally required. Do not paint in direct sun. Apply at temperatures above 50°F. During application at temperatures above 80°F, DURATION sets up quickly. Some adjustment in your painting approach may be required. Paint from a dry area into the adjoining wet coating area. Dries to touch in 1 hour and is ready for service overnight.</p> <p>Previously Painted Surfaces — Spot prime bare areas with DURATION, wait 4 hours, and paint the entire surface. Some specific surfaces require specialized treatment.</p> <p>Unpainted Surfaces — DURATION can be used as a self-priming coating on many bare surfaces. When used this way, the first coat of DURATION acts like a coat of primer and the second coat provides the final appearance and performance. However, some specific surfaces require specialized treatment. See following surface preparations.</p> <p>No reduction necessary.</p> <p>Brush - Use a nylon/polyester brush.</p> <p>Roller - Use a 3/8" - 3/4" nap synthetic cover.</p> <p>Spray—Airless</p> <p>Pressure 2000 psi Tip015"-.019" Reduction none</p>
Base	oz/gal	Strength												
Tinting White	0-5	125%												
Base A, B, C	5-10	125%												
Burgundy	5-10	125%												
<p>Performance</p>														
<ul style="list-style-type: none"> • One Coat Protection • Self-Priming • Easy Application • Superior Hiding • Thicker. More Flexible • Resists Blistering and Peeling 														
<p>Projects</p>														
<ul style="list-style-type: none"> • Homes • Windows • Gutters • Trim • Architectural plastics, such as shutters & gutters 														
<p>Surfaces</p>														
<ul style="list-style-type: none"> • Wood • Stucco • Masonry/Cement Composition Panels • Aluminum Siding • Vinyl Siding • Galvanized Metal 														
<p>MILDEW RESISTANT. This coating contains agents that inhibit the growth of mildew on the surface of this coating.</p>														
		<p>CLEANUP INFORMATION</p>												
		<p>Clean hands and tools <i>immediately</i> after use with soap and warm water. The PermaLast technology in DURATION, which creates the tenacious bond to the surface, also creates a tenacious bond to applicators and any other surface it comes in contact with. You may want to clean occasionally during use. After cleaning, flush spray equipment with mineral spirits to prevent rusting of the equipment. Follow manufacturers safety recommendations when using mineral spirits.</p>												



Duration™

EXTERIOR LATEX SATIN COATING K33 SERIES

SURFACE PREPARATION

Most coating failures are due to inadequate surface preparation or application. Thorough surface preparation will help provide long term protection with DURATION coating. Remove all surface contamination, including mildew and chalk, by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Scrape and sand existing peeled or cracked paint to a sound surface. Remove any oil or grease with a water-based degreasing cleaner. Sand glossy surfaces dull. All rust must be removed. Seal stains from water, smoke, graffiti, grease, etc. with PrepRite ProBlock Primer/Sealer. **Caulking**—After cleaning the surface thoroughly, caulk around windows, doors, and other openings with Sherwin-Williams Exterior Caulk after spot priming any bare surfaces in these areas with DURATION or other appropriate primer.

Aluminum and Galvanized Steel - Wash with a water based degreasing cleaner to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, steel wool, or other abrading method. After cleaning any corrosion from galvanized steel, apply 1 coat of Sherwin-Williams' All Surface Enamel Primer to the cleaned area.

Cement Composition Siding/Panels - Pressure clean, if needed, with a minimum of 2100 psi pressure to remove all dirt, dust, grease, oil, loose particles, laitance, foreign material, and peeling or defective coatings. Allow the surface to dry thoroughly. If the surface is new, test it for pH, if the pH is higher than 8, prime with Loxon® Exterior Masonry Primer.

Cement, Concrete, Masonry, Block - All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Exterior Acrylic Masonry Primer. If a smoother finish is desired on rough surfaces, use Loxon

SURFACE PREPARATION

Block Surfacers or PrepRite Block Filler. After power washing, previously painted masonry may still have a powdery surface that should be sealed with Loxon Conditioner and then apply 1 coat of DURATION.

Composition Board/Hardboard — Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. Because of the potential for wax bleeding out of the substrate, we recommend 1 coat of A-100® Exterior Oil Primer and then 1 coat of DURATION.

Exterior Drywall - Fill cracks and holes with an exterior grade patching paste/spackle and sand smooth. Remove all sanding dust. **Steel** - Rust and mill scale must be removed using sandpaper, steel wool, or other abrading method. To prevent surface rusting on bare steel, apply 1 coat of Sherwin-Williams' All Surface Enamel Primer and then 1 coat of DURATION.

Stucco - Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 5-7 days and prime with Loxon Exterior Masonry Acrylic Primer.

Vinyl Siding - Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly. Do not paint vinyl siding with any color darker than the original color. Painting with darker colors may cause the siding to warp.

Wood - Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. Knots and some woods, such as redwood and cedar, contain a high amount of tannin, a colored wood extract. If applied to these bare woods, the first coat of DURATION may show some staining, but it will be trapped in the first coat. A second coat will uniform the appearance. If staining persists, spot prime severe areas with 1 coat of A-100 Exterior Oil Wood Primer prior to using DURATION.

CAUTIONS

For exterior use only.
Do not apply at temperatures below 50° .
Protect from freezing.
Non-photochemically reactive.

LABEL CAUTIONS

Contains ANTIMONY and ZINC.
Use only with adequate ventilation. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH/MSHA TC23C or equivalent) or leave the area.

Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage.

FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, get medical attention immediately.

WARNING: This product contains chemicals known to the State of California to cause cancer.

DO NOT TAKE INTERNALLY.

KEEP OUT OF THE REACH OF CHILDREN.

Do not apply on toys and other children's articles or furniture.

11/98

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Sheet.

ATTACHMENT 5
COMPARISON OF
VOC'S EMITTED VERSUS VOC REGULATORY

TABLE 1
COMPARISON OF
VOC'S EMITTED VERSUS VOC REGULATORY
FOR WATER-BORNE SEMI-TRANSPARENT STAINS

The following spreadsheet shows the data for several water-borne semi-transparent stains that do not comply with the proposed 250 g/l limit. However, these stains would comply with a low solids coating limit of 120 g/l including water and exempt compounds. However, these stains do not meet the definition for low solids coating (less than 1 pound of solids per gallon).

Example	VOC Actual		VOC Regulatory		Solids	
	including water & exempts		less water		kg in liter	lbs in gal
	grams/liter	lbs/gal	grams/liter	lbs/gal		
Semi-Transparent Stain 1	94	0.78	417	3.48	0.158	1.32
Semi-Transparent Stain 2	94	0.78	402	3.36	0.189	1.57
Semi-Transparent Stain 3	95	0.79	404	3.37	0.187	1.56
Semi-Transparent Stain 4	94	0.79	405	3.38	0.185	1.54
Semi-Transparent Stain 5	94	0.78	410	3.42	0.178	1.48
Semi-Transparent Stain 6	94	0.78	412	3.43	0.170	1.41

Recommendation:

Define Low solids coatings as shown:

“Low-solids coating” means a coating containing 0.12 kilogram or less of solids per liter (1 pound or less of solids per gallon) of coating material or a water-borne clear or semi-transparent stain.



Duration™

EXTERIOR LATEX FLAT COATING K32 SERIES

DESCRIPTION	CHARACTERISTICS	APPLICATION												
<p>Duration™ Exterior Latex Coating is the result of advances in acrylic technology. Duration uses PermaLast™ technology to provide you with the most durable and longest lasting coating available for protecting the outside of your home.</p> <p>Performance</p> <ul style="list-style-type: none"> • One Coat Protection • Self-Priming • Easy Application • Superior Hiding • Thicker. More Flexible • Resists Blistering and Peeling <p>Projects</p> <ul style="list-style-type: none"> • Homes • Windows • Gutters • Trim • Architectural plastics, such as shutters & gutters <p>Surfaces</p> <ul style="list-style-type: none"> • Wood • Stucco • Masonry/Cement Composition Panels • Aluminum Siding • Vinyl Siding • Galvanized Metal <p>MILDEW RESISTANT. This coating contains agents that inhibit the growth of mildew on the surface of this coating.</p>	<p>Color: all ColorAnswers® colors</p> <p>Coverage: Recommended: 250-300 sq ft/gal up to 7.0 mils wet; 2.8 mils dft</p> <p>Drying Time, @ 77°F, 50% RH: temperature and humidity dependent</p> <p>Touch: 1 hour Recoat: 4 hours</p> <p>Flash Point: 201°F, PMCC</p> <p>Finish: 0-5 units @ 85°</p> <p>Solvent/Reducer: Water</p> <p>Tinting with Blend-A-Color:</p> <table border="1"> <thead> <tr> <th>Base</th> <th>oz/gal</th> <th>Strength</th> </tr> </thead> <tbody> <tr> <td>Tinting White</td> <td>0-5</td> <td>125%</td> </tr> <tr> <td>Base A, B, C</td> <td>5-10</td> <td>125%</td> </tr> <tr> <td>Burgundy</td> <td>5-10</td> <td>125%</td> </tr> </tbody> </table> <p>Vehicle Type: Acrylic</p> <p>VOC: 109 grams/liter; 0.91 lb/gal</p> <p>Volume Solids: 40 ± 2%</p> <p>Weight Solids: 58 ± 2%</p> <p>Weight per Gallon: 11.8 lb</p>	Base	oz/gal	Strength	Tinting White	0-5	125%	Base A, B, C	5-10	125%	Burgundy	5-10	125%	<p>Thoroughly follow the recommended surface preparations. On repaint work, apply one coat of DURATION coating; on bare surfaces, apply two coats of DURATION, allowing 4 hours drying between coats.</p> <p>Apply using a brush, roller, or sprayer. Thinning not normally required. Do not paint in direct sun. Apply at temperatures above 50°F. During application at temperatures above 80°F, DURATION sets up quickly. Some adjustment in your painting approach may be required. Paint from a dry area into the adjoining wet coating area. Dries to touch in 1 hour and is ready for service overnight.</p> <p>Previously Painted Surfaces — Spot prime bare areas with DURATION, wait 4 hours, and paint the entire surface. Some specific surfaces require specialized treatment.</p> <p>Unpainted Surfaces — DURATION can be used as a self-priming coating on many bare surfaces. When used this way, the first coat of DURATION acts like a coat of primer and the second coat provides the final appearance and performance. However, some specific surfaces require specialized treatment. See following surface preparations.</p> <p>No reduction necessary.</p> <p>Brush - Use a nylon/polyester brush.</p> <p>Roller - Use a 3/8" - 3/4" nap synthetic cover.</p> <p>Spray—Airless</p> <p>Pressure 2000 psi Tip015"-.019" Reduction none</p> <p>CLEANUP INFORMATION</p> <p>Clean hands and tools <i>immediately</i> after use with soap and warm water. The PermaLast technology in DURATION coating, which creates the tenacious bond to the surface, also creates a tenacious bond to applicators and any other surface it comes in contact with. You may want to clean occasionally during use. After cleaning, flush spray equipment with mineral spirits to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using mineral spirits.</p>
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Duration™

EXTERIOR LATEX FLAT COATING K32 SERIES

SURFACE PREPARATION

Most coating failures are due to inadequate surface preparation or application. Thorough surface preparation will help provide long term protection with DURATION coating.

Remove all surface contamination, including mildew and chalk, by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Scrape and sand existing peeled or cracked paint to a sound surface. Remove any oil or grease with a water-based degreasing cleaner. Sand glossy surfaces dull. All rust must be removed. Seal stains from water, smoke, graffiti, grease, etc. with PrepRite ProBlock Primer/Sealer. **Caulking**—After cleaning the surface thoroughly, caulk around windows, doors, and other openings with Sherwin-Williams Exterior Caulk after spot priming any bare surfaces in these areas with DURATION or other appropriate primer.

Aluminum and Galvanized Steel - Wash with a water based degreasing cleaner to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, steel wool, or other abrading method. After cleaning any corrosion from galvanized steel, apply 1 coat of Sherwin-Williams' All Surface Enamel Primer to the cleaned area.

Cement Composition Siding/Panels - Pressure clean, if needed, with a minimum of 2100 psi pressure to remove all dirt, dust, grease, oil, loose particles, laitance, foreign material, and peeling or defective coatings. Allow the surface to dry thoroughly. If the surface is new, test it for pH, if the pH is higher than 8, prime with Loxon® Exterior Masonry Primer.

Cement, Concrete, Masonry, Block - All new surfaces must be cured according to the supplier's recommendations—usually about 30 days. Remove all form release and curing agents. If painting cannot wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Exterior Acrylic Masonry Primer. If a smoother finish is desired on rough surfaces, use Loxon

SURFACE PREPARATION

Block Surfer or PrepRite Block Filler. After power washing, previously painted masonry may still have a powdery surface that should be sealed with Loxon Conditioner and then apply 1 coat of DURATION.

Composition Board/Hardboard — Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. Because of the potential for wax bleeding out of the substrate, we recommend 1 coat of A-100® Exterior Oil Primer and then 1 coat of DURATION.

Exterior Drywall - Fill cracks and holes with an exterior grade patching paste/spackle and sand smooth. Remove all sanding dust. **Steel** - Rust and mill scale must be removed using sandpaper, steel wool, or other abrading method. To prevent surface rusting on bare steel, apply 1 coat of Sherwin-Williams' All Surface Enamel Primer and then 1 coat of DURATION.

Stucco - Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 5-7 days and prime with Loxon Exterior Masonry Acrylic Primer.

Vinyl Siding - Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly. Do not paint vinyl siding with any color darker than the original color. Painting with darker colors may cause the siding to warp.

Wood - Sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. Knots and some woods, such as redwood and cedar, contain a high amount of tannin, a colored wood extract. If applied to these bare woods, the first coat of DURATION may show some staining, but it will be trapped in the first coat. A second coat will uniform the appearance. If staining persists, spot prime severe areas with 1 coat of A-100 Exterior Oil Wood Primer prior to using DURATION.

CAUTIONS

For exterior use only.
Do not apply at temperatures below 50°F.
Protect from freezing.
Non-photochemically reactive.

LABEL CAUTIONS

Contains ANTIMONY and ZINC.
Use only with adequate ventilation. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH/MSHA TC23C or equivalent) or leave the area.

Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage.

FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, get medical attention immediately.

WARNING: This product contains chemicals known to the State of California to cause cancer.

DO NOT TAKE INTERNALLY.

KEEP OUT OF THE REACH OF CHILDREN.

Do not apply on toys and other children's articles or furniture.

11/98

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Sheet.

Original: #2238



Benjamin Moore & Co. *Paints • Stains • Clear Finishes*

TECHNICAL & ADMINISTRATIVE CENTER • 360 ROUTE 206 • P.O. BOX 4000 • FLANDERS, NEW JERSEY 07836-4000 • (201) 927-8600 • FAX: (201) 252-2660

February 20, 2002

Environmental Quality Board
P.O. Box 8477
Harrisburg, PA 17105-8477

Re: Proposed Regulation Ch. 130 Architectural & Industrial Maintenance Coatings Annex A in PA Bulletin 31-50

Dear Mr. Hess:

Benjamin Moore & Co. was a publicly owned manufacturer of architectural coatings incorporated in the State of New Jersey, and is now a wholly owned subsidiary of Berkshire Hathaway Inc.

Your Rule Ch. 130 as it is currently drafted will do great damage to Benjamin Moore & Co., both financially and to our reputation as a manufacturer of "Superior High Quality Architectural Coatings". On the basis of year 2000 sales we will lose 43.6% of our products and 26.7% of our sales by volume. We support the NPCA alternate proposal and their comments as submitted to OTC, the individual North Eastern States, and Pennsylvania.

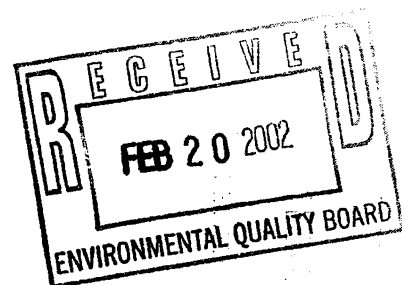
However, in order to survive in the State of Pennsylvania, Benjamin Moore & Co. must have:

1. **An Averaging Provision** like the one found in South Coast Rule 1113 and similar to the Proposed Consumer Products Rule
2. **A TOS and Definitions** like those in the National AIM Rule but including those additional categories recommended by NPCA, i.e. High Gloss Non-flats and Specialty Primers (these additional categories are required because of the gross lowering of the National TOS limits). Since your proposal in the Bulletin does not have a complete set of definitions, can we presume the Federal definitions are to be used?
3. **An AIM Coatings Specific Variance/Petition Provision** which would allow for future new technology
4. **A Technology Assessment** to confirm technologic feasibility of the proposed limits. Relying on California experience in the next three years will not allow you time to change your rule or give you authority from USEPA once it is place in your SIP.
5. **The Elimination of unnecessary and burdensome reporting requirements** which do not lead to VOC reduction but rather take away from the paint industry's scarce resources tasked with developing and selling compliant paint in the first place (the language in the Bulletin Annex A does address this concern).
6. **We need the infinite grandfather clause** in Delaware's Reg No. 41 Draft 6/26/01: Section 1, a.2.. Requiring the disposal of good paint after three years will just lead to contaminated landfills or air pollution from incineration.

Our industry is not being treated fairly compared to the rest of the Consumer products group. We are only asking for a fair, technologically feasible chance at staying in business.

Sincerely,
Benjamin Moore & Co.

Barry A. Jenkin
Regulatory Affairs
973-252-2650 Phone
973-252-2659 Fax
barry.jenkin@benjaminmoore.com



MONTVALE NJ • NEW YORK NY • NEWARK NJ • FLANDERS NJ • NUTLEY NJ • BOSTON MA • RICHMOND VA • JACKSONVILLE FL • JOHNSTOWN NY • CHICAGO IL • ST. LOUIS MO
CLEVELAND OH • HOUSTON TX • DALLAS TX • BIRMINGHAM AL • DENVER CO • LOS ANGELES CA • SANTA CLARA CA • TORONTO ON • MONTREAL PQ • LANGLEY BC • BURLINGTON ON

Established 1883

Original: 2238

Trostle, Sharon F. - DEP

From: Shallow, Tom [tshallow@kellencompany.com]
Sent: Friday, February 22, 2002 1:59 PM
To: 'RegComments@state.pa.us'
Subject: Proposed Rulemaking - Environmental Quality Board - Architectural and Industrial Maintenance Coatings

Attached are the comments of the Roof Coatings Manufacturers Association regarding the above referenced rulemaking.

Respectfully submitted,

Thomas A. Shallow
Executive Director
Roof Coating Manufacturers Association
1156 15th Street, NW Suite 900
Washington, DC 20005
202-207-1110 (voice)
202-223-9741 (fax)
tshallow@kellencompany.com

<<February 2002 Comments.doc>> <<PA Comments Attachment A.doc>>

02/22/2002



Roof Coatings Manufacturers Association
1156 – 15th Street, NW, Suite 900
Washington, DC 20005
Tele: 202-207-0919
Fax: 202-223-9741
www.roofcoatings.org

February 22, 2002

Environmental Quality Board
Rachel Carson State Office Building
15th Floor
400 Market Street
Harrisburg, PA 17101-2301

RCMA is the national trade association representing the producers of bituminous and non-bituminous roof coatings and cements for use in a variety of roofing, waterproofing, and dampproofing applications. RCMA participated in the Environmental Protection Agency Regulatory Negotiations on the Architectural and Industrial Maintenance Coating Rule in the 1990's and supported the National Rule.

The members of RCMA producing and distributing product in Pennsylvania would like to share our concerns with you regarding the proposed AIM coating regulation. Our comments are as follows:

1. Under Section §130.302, the definition given for Bituminous Roof Coatings is rather limiting for our members. There are bituminous roof coatings which are used for both roofing and such other uses as dampproofing and waterproofing compounds. In many instances, the products are virtually the same but are used simply for different applications. Some materials labeled as roof coating may also, on the label, offer the alternative use of that product as a dampproofing or waterproofing compound. We understand the proposed definition comes from the proposed new California regulation but the definition for "Bituminous Coatings and Mastics" listed in the EPA National Rule would be more accurate for our industry covering the multitude of products currently available to the consumer. That rule defines Bituminous Coatings and Mastics as "a coating or mastic formulated and recommended for roofing, pavement sealing, or waterproofing that incorporates bitumens..." A similar definitional problem exists for Bituminous Roof Primers.
2. The VOC content proposed "Bituminous Roofing Primer" [350 grams per liter] is below the limits necessary to provide a primer in accordance with the consensus

performance standard published by the American Standard for Testing and Materials (ASTM). This referenced standard is ASTM D-41 "Standard Specification for Asphalt Primers used in Roofing, Dampproofing, and Waterproofing."

It is important to recognize the performance limitations of this important consumer product if the VOC content for these products is reduced below the 500 grams per liter as specified in the National Rule. At the level proposed by Pennsylvania [350 grams per liter], this product would be more difficult to install in cooler climates. The product will be more viscous, will not cure as quickly and will potentially create poor roofing performance that ultimately can cause roof system failures.

In addition, reducing the bituminous roof primer product category below 500 grams per liter would not necessarily result in lower VOC emissions into the atmosphere. At 500 g/l, the product would be applied in a relatively thin coat. If your proposal is adopted, the lower VOC standard would result in a "thicker" application of the product on a per square foot basis, particularly at cold temperatures, resulting in greater VOC emissions. See the results of testing performed at an independent laboratory (attachment).

3. Finally, in §130.305, the Pennsylvania proposal requires the producers of bituminous roof coatings and bituminous roof primers to submit an annual report commencing in the year 2006. We would suggest to you that such reporting would not provide an accurate database of usage for these products within Pennsylvania. Many of our members sell products into distribution or to private label accounts rather than directly to end-users and thus can not provide the location of the ultimate sale or use. For example, many purchasers of these products in the State re-ship the materials outside of the State and some distributors, located outside of the State, purchase these products for distribution within Pennsylvania. Thus, the manufacturers of such products would have no means of knowing how much of the products it sells to facilities located either inside or outside the state are consumed within Pennsylvania.

As we indicated previously to your office and at the hearing, we would be willing to meet with you to discuss the underlying elements of our positions in greater detail. We would also be able to further expand on the issues and work with you on equitable solutions. We feel that the sooner these issues can be addressed the better it will be for all parties.

We will be contacting your office shortly for follow-up. If you have any questions, I can be reached at 1-202-207-1110.

Sincerely,

Thomas A. Shallow
Executive Director



ASPHALT

TECHNOLOGIES

FAX TRANSMISSION

COVER PAGE PLUS: -0-

TO: Russ Snyder - RCMA **FAX:** 301-348-2020
FROM: Don Portfolio **DATE:** April 19, 1999
SUBJECT: Test and Evaluation Status Report: Asphalt Primers

Three primers were tested for VOC and subsequently VOC released upon hand application with a brush at 40° F. The purpose of the testing was to determine the VOC release of VOC compliant asphalt based primers at 40°F as compared to a D 41 compliant asphalt based primer.

The three primers are identified as follows:

- RCMA 1: A labeled low VOC primer.
- RCMA 2: A labeled 350 g/l VOC compliant primer.
- D41: An ASTM D 41 compliant primer.

Property	ASTM Test Method	RCMA 1	RCMA 2	D 41	ASTM D 41 Requirement
Saybolt Viscosity @77° F, SFS	D 88	1520	190	29	25 - 125
VOC, g/l	USEPA 24	372	330	434	NR
Non-Volatile matter, %	D 2369	59.3	64.4	51.9	NR
Distillation, Volume %	D 402				
To 437° F		31.5		40.5	≥35
To 680° F		46.5		54.5	≤65
Distillation Residue					
Penetration @ 25° F, dmm	D 5	30.7		48	20 - 50
Solubility in TCE, %	D 2042	99.65		99.6	≥99
Volatiles released from application w/brush at 40° F, g/15 in ²	PRI	1.0	0.37	0.33	NR
Solids from application w/brush at 40° F, g/15 in ²	Weight Loss	2.44	1.05	0.69	NR

RCM-02-02-01/03R

PRI Accreditations: ICBO TL-89; Metro-Dade 98-0608.07

The test results, opinions, or interpretations are based on the material supplied by the client. This report is for the exclusive use of stated client. No reproduction or facsimile in any form can be made without the client's permission. PRI Asphalt Technologies, Inc. assumes no responsibility nor makes a performance or warranty statement for this material or products and processes containing this material in connection with this report.

Trostle, Sharon F. - DEP

From: Gross, Robert S. [rgross@ppg.com]
Sent: Friday, February 22, 2002 2:53 PM
To: 'Black, Terry'; 'PA Regulatory Comments'
Subject: Comments to Pennsylvania's Proposed AIM Rule



PAAIMCommentsFinal.
DOC

Terry,

Attached are additional comments, from PPG Architectural Finishes, Inc., regarding PA's proposed AIM Regulation.

<<PAAIMCommentsFinal.DOC>>

Best Regards,
Bob Gross

100-110955
100-110955
100-110955



PPG Architectural Finishes, Inc.
151 Colfax Street; Springdale, PA 15144

Robert S. Gross
Manager, Environmental Stewardship
Architectural Finishes
(724) 274-3416

February 21, 2002

Terry L. Black
PA Department of Environmental Protection
Bureau of Air Quality
Rachel Carson State Office Building
P.O. Box 8468
Harrisburg, PA 17105-8468

Dear Mr. Black,

PPG Architectural Finishes, Inc., a wholly owned subsidiary of PPG Industries, Inc. is a global supplier of Architectural Industrial Maintenance (AIM) Coatings. We have examined Pennsylvania's proposed AIM Coatings Regulation, 25 PA Code, Chapter 130, and submitted comments regarding the rule's lack of a Nuclear Coatings Category, and we appreciate your efforts to resolve our previous concerns. However, in addition to those comments we would now like to provide comments supporting the rule's lack of an averaging provision.

We are aware that the California Air Resource Board's (CARB's) Suggested Control Measure (SCM) does include an averaging provision to aid manufacturers during the transition as new limits are implemented and new technology is adopted. However, CARB's averaging provision will cease to be effective on January 1, 2005, which is the date your limits will become effective. The two-year period CARB allows for averaging should provide manufacturers sufficient time to reformulate coatings for use in Pennsylvania as well as California. In addition, your proposed indefinite sell through period, for non-compliant products manufactured prior to your implementation date, provides manufacturers the continued ability to sell non-compliant products after the rule limits become effective.

Please understand that while we support Pennsylvania's proposed rule "as is" without an averaging provision, we do not support any type of small manufacturer exemption or delayed implementation dates for small or other types of manufacturers. We believe that the rules finally adopted should provide a level playing field for all manufacturers regardless of their size.

Thank you for the opportunity to comment. If you have any questions, please feel free to contact me.

Sincerely,

Robert S. Gross

Robert S. Gross

DRAFT: Testimony by Geoff Crenson, American Stone-Mix
 On behalf of the Roof Coatings Manufacturers Association
 (RCMA)

Mr. Chairman, Good afternoon. I am Geoff Crenson from American Stone-Mix. I am appearing today on behalf of the Roof Coatings Manufacturers Association, the national association representing the manufacturers of bituminous and non-bituminous roof coatings and cements. Our members represent approximately 90% of the volume of products produced in the United States and three members have manufacturing facilities in the State of Pennsylvania.

RCMA has reviewed the proposed Rule for Architectural and Industrial Maintenance Coatings under Title 25, Part I., Subpart C, Article III, Chapter 180, Standards and Products, Subchapter C, Architectural and Industrial Maintenance Coatings. We respectfully request that the VOC level for Bituminous Primer in the proposed Rule be set at 500 grams per liter to achieve the necessary application properties, and the definition of Bituminous Roof Primer and Bituminous Roof Coating be clarified.

I. The Standard for Bituminous Roof Primers is too low to allow useful application of the product.

The purpose of a primer is to prepare a surface for application of the top coating exposed to the weather. The primer flows into the porous and rough areas of the roof surface to fill its natural voids before a top coating can be properly applied. In many circumstances,

without the appropriate primer, the final coat cannot adhere properly to the substrate.

This creates significant performance problems with the roofs.

The basic standard for our industry's primers -- American Society for Testing and Materials' (ASTM) D-41- "Standard Specification for Roof Primers" -- recognizes the importance of these performance requirements. Chief among these are penetration of the primer into the nooks and crannies of the surface and a related concept -- the spreadability of the products. Both are direct functions of viscosity (the thickness of the coating). ASTM D-41 has requirements for viscosity and solids content which directly relate to performance. To achieve the viscosity requirement of ASTM D-41, one must utilize approximately 460-470 grams per liter VOC. The RCMA would be pleased to demonstrate how differences in solvent content of otherwise identical material (and hence viscosity) effect spreadability of that product.

These problems of application are magnified in cooler temperatures. Included in our written materials are the results of testing of the relationship between viscosity and temperature with an ASTM D-41 Roof Primer. You will note that at 70 degrees F, the viscosity is 2500 cPs, and at 40 degrees F, the viscosity is 20,800 cPs. These variances are extremely critical to the applicability and the performance of the product. Products must have enough flexibility to be installed in the spring and fall months when temperature ranges are wider. This consideration is important in the State of Pennsylvania where climate and temperatures vary greatly.

It's ironic that a reduction of the primer limit to 350 grams per liter may actually cause an increase in VOC emissions to the atmosphere. With a more viscous, less spreadable material, it is inevitable that more product will be used to cover the same roof area. With increased usage will come increased VOC emissions.

II. Definition of Bituminous Roof Coating and Bituminous Roof Primers:

We recommend that the reference for roofing be eliminated from the definition for Bituminous Roof Coating and Bituminous Roof Primer. Bituminous materials can be used on a variety of surfaces and applications such as foundations, bulkheads and walls. The current language requiring labeling and formulation exclusively for roofing applications would create substantial confusion among manufacturers. For this reason, the federal AIM rule covered all bituminous coatings. While we understand the decision that has been made to distinguish between regular bituminous coatings and bituminous primers, we do not believe that further restrictions to roofs alone are appropriate. With respect to bituminous primers, the same considerations to product performance apply, whether the material is applied on a roof surface or on a vertical surface. The surface on which these products are applied still must properly prepared.

We believe that the current definitions also could present some problems in the enforcement area. If these terms were limited to roofing applications, there would be a practical problem from an enforcement standpoint determining whether a product (however labeled) was "exclusively formulated" for roofing. We believe that the

objective nature of the product and the label should be used for classification rather than the subjective aspect of why a product was “formulated”

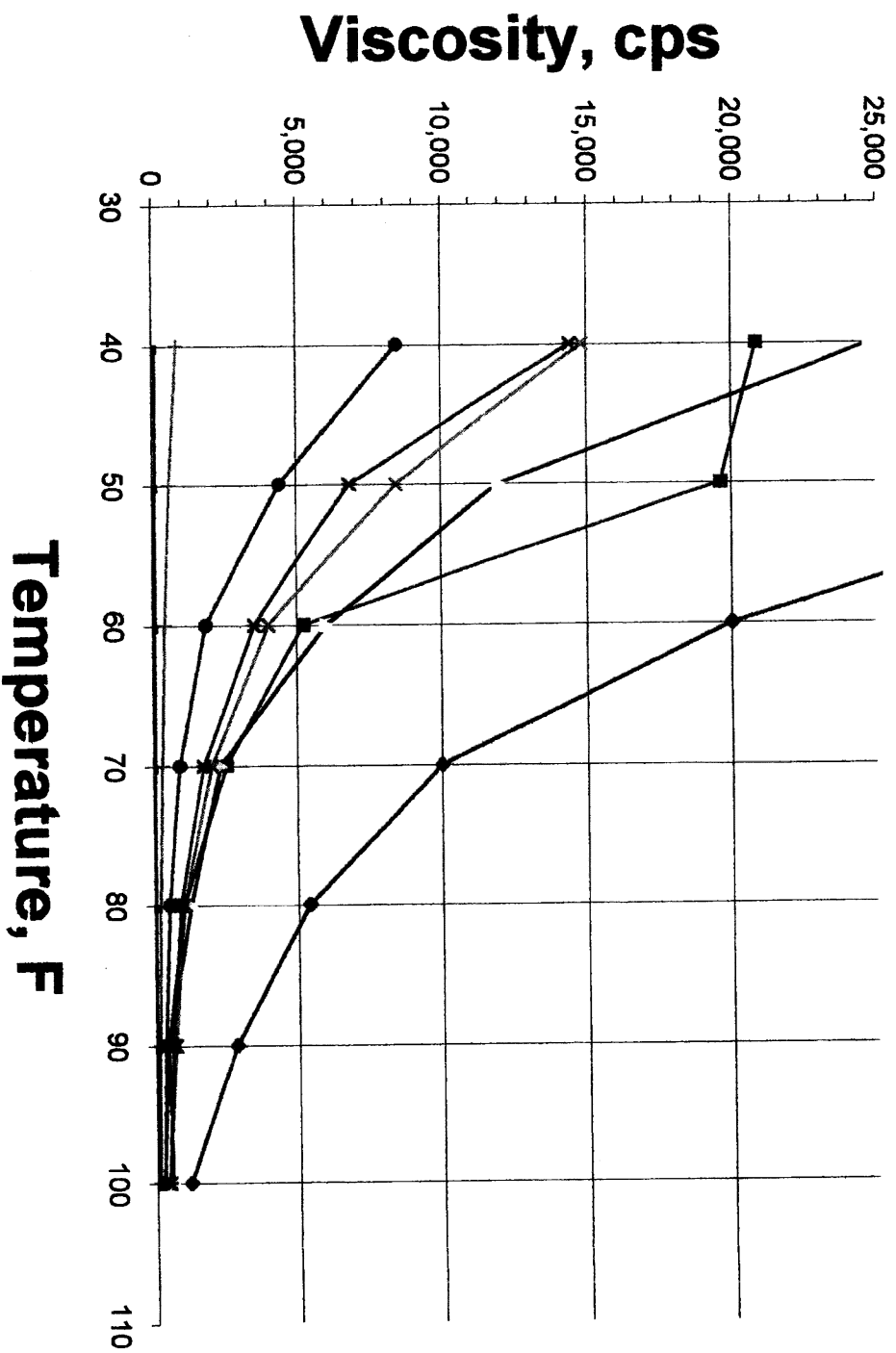
We recommend the following definitions be incorporated:

Bituminous Coating means a coating formulated and labeled for roofing, pavement sealing, or waterproofing that incorporates bitumens.

Bituminous Primer means a coating formulated and labeled for application to a substrate to provide a firm bond between the substrate and subsequent coatings that incorporates bitumens.

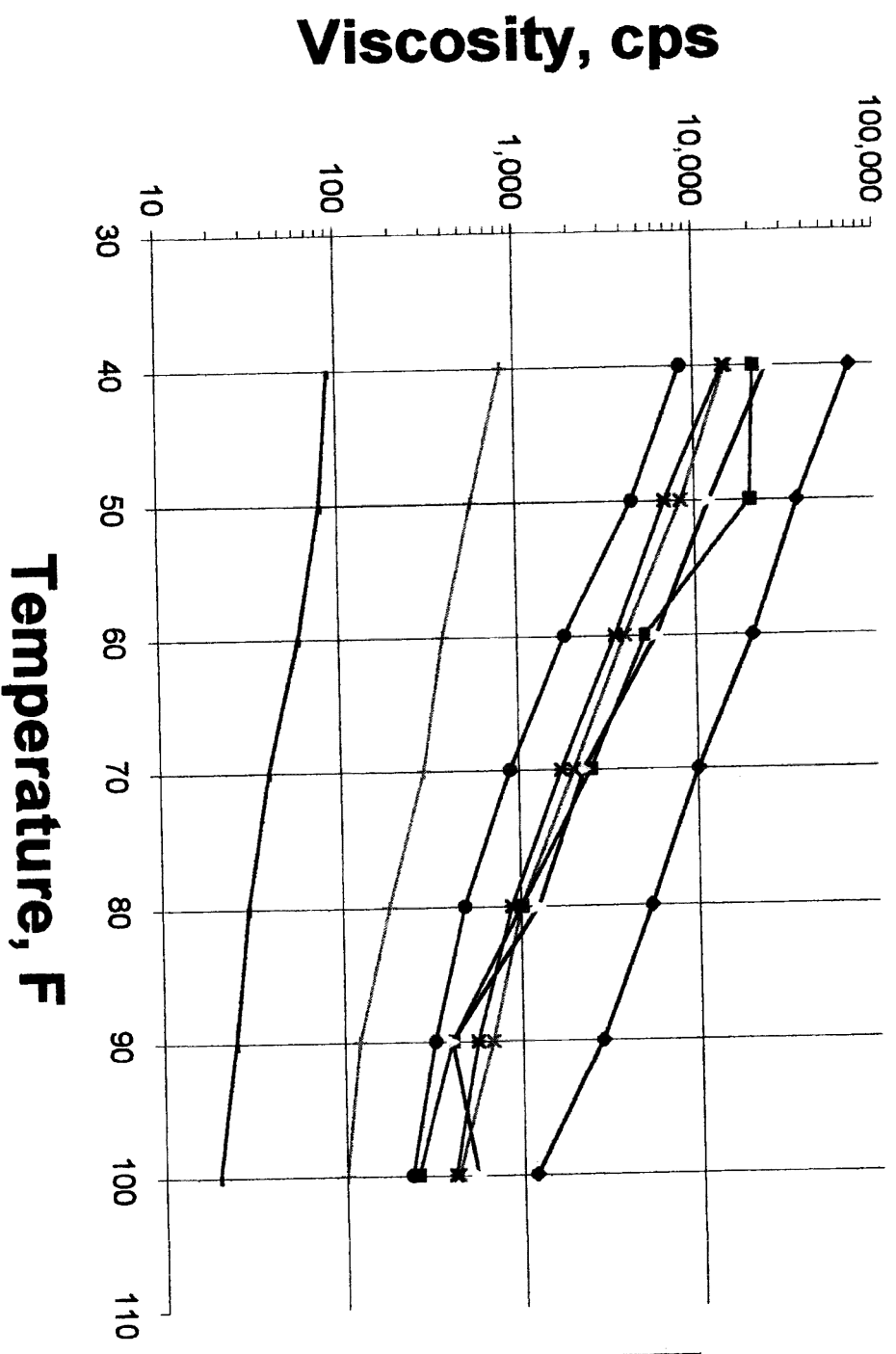
Thank you for the opportunity to provide these comments.

Primer Viscosity vs Temperature



- ◆ "0" - 285 g/l
- D41a - 470 g/l
- "2" - 340 g/l
- × "3" - 350 g/l
- * "4" - 335 g/l
- "10" - 350 g/l
- + "7" - 340 g/l
- D41 - 500 g/l

Primer Viscosity vs Temperature



- ◆ "0" - 285 g/l
- D41a - 470 g/l
- "2" - 340 g/l
- * "3" - 350 g/l
- * "1" - 335 g/l
- "10" - 350 g/l
- "7" - 340 g/l
- D41 - 500 g/l

Textured Coatings of America, Inc

August 30, 2001

Via E-mail: rthompson@state.de.us

Via Federal Express Priority Overnight Service

Robert R. Thompson, Hearing Officer
State of Delaware
DNRECR & R Building
89 Kings Highway
Dover, Delaware 19901

RE: OZONE TRANSPORT COMMISSION
Architectural and Industrial Maintenance Coatings Draft Model Rule

Dear Mr. Thompson:

Textured Coatings of America, Inc., (hereinafter "TCA") is a small national paint and coatings manufacturer having factories in California and Florida. We are a member of the National Paints and Coatings Association as we manufacture architectural industrial maintenance coatings (AIM). We would like to address some concerns regarding the Ozone Transport Commission (OTC) model rule for volatile organic compounds (VOC) reductions in AIM. We would like to state our position regarding the OTC AIM Draft Model Rule and we hope you will consider our points that we state throughout this letter.

BACKGROUND

TCA is beginning its 42nd year in business as a company and has previously faced and had to deal with continued VOC regulations of this industry. I am president and CEO of TCA and personally attended workshops that were held regarding Rule 1113. TCA manufacturers products in the categories you are proposing amendments to. In addition, I have also served as a small company representative during the entire regulatory negotiations for the federal Architectural and Industrial Maintenance Coatings (AIM) Rule.

We are seeking the inclusion of or changes to four niche market groups in the OTC Rule. The four coating categories are all specialty areas, with coatings that have been proven in the marketplace and are continually specified by DOT's in OTC states. These categories are Concrete

Protective Coatings, Specialty Primers, Anti-Graffiti Coatings and Concrete Masonry Penetrating Sealers. Tex•Cote® XL-70® Bridge•Cote® and XL-70® Primer are used on green concrete, as

they can withstand the high pH and resist salt migration. Tex•Cote® Graffiti Gard® IIIS is a permanent anti-graffiti coating that can withstand many washings before it needs to be reapplied. Tex•Cote®'s Rainstopper® silanes and siloxanes are concrete masonry penetrating sealers that provide protection to concrete, brick or limestone for many years. These products have continued to perform over years of service, resulting in lower costs for maintenance, fewer recoats, while protecting bridges from deleterious effects of ultraviolet, pollution and precipitation.

CATEGORIES REQUESTED

Your current draft rule will delete certain categories, which we believe will result in an actual increase in VOC's in non-attainment areas and the elimination of key high-performance products. You recognize there are specific performance needs that certain coatings require – the OTC at this time is allowing a specialty varnish level to exist at 725 grams/liter based on performance criteria and a low market volume (less than 3%). The categories we are most interested are Concrete Protective Coatings, Specialty Primers, Anti-Graffiti Coatings and Waterproofing Concrete/Masonry Sealers. In a survey conducted by the NPCA, our concrete protective coating, XL-70® Bridge•Cote® sold in the OTC regions represents only 1/10 of 1 percent of the volume of the entire industrial maintenance coatings category. Anti-Graffiti coatings represent an even smaller amount – less than 0.0008% of the entire industrial maintenance coatings category. The VOC levels we are seeking for the two categories are:

Concrete Protective Coatings	400 grams/liter
Anti-Graffiti Coatings	600 grams/liter

These levels represent considerably fewer VOC's than the specialty varnish category recommended for incorporation by the OTC. We are including justifications for the different categories below.

We are seeking definition changes in the Specialty Primer category as well as the Waterproofing Concrete/Masonry Sealer category.

CONCRETE PROTECTIVE COATINGS

EPA DEFINITION:

The final rule by the EPA includes the category for Concrete Protective coatings. The definition reads: "Concrete protective Coating means a high-build coating, formulated and recommended for application in a single coat process over concrete, plaster, or other cementitious surfaces. These coatings are formulated to be primerless, one-coat systems that can be applied over form

oils and/or uncured concrete. These coatings prevent the spalling of concrete in freezing temperatures by providing long-term protection from water and chloride ion intrusion.”

This category was added to the federal AIM rule because this is a niche market where specialty coatings are required. The definition under, the Federal EPA Rule includes the performance standards Tex•Cote® XL-70® was formulated to meet.

Performance Based Coating

XL-70® Bridge•Cote® is a concrete protective coating that has a proven lifespan of over twenty years protecting bridge abutments, medians and other concrete surfaces. We believe the creation of a special category is similar to the reasoning for the creation of a varnish category – the use of this low volume coating saves time, labor and materials in comparison to a waterborne coating. In addition, no primer is needed when applying this coating over cured or uncured concrete. These are all the factors that led EPA to the creation of the Concrete Protective Coating Category.

Technology

The coating technology used in XL-70® Bridge•Cote® , vinyl toluene acrylic copolymer, requires a certain amount of solvent as the carrier to yield a high performance concrete coating with superior weathering capabilities. As bridges and other concrete structures weather, they are exposed to salt spray and chloride ion intrusion. In addition, rusting rebar causes severe bridge damage. Carbonation, the ability of excess carbon dioxide permeating into concrete lowers the pH of the concrete, which causes the environment around the rebar to become more acidic. This allows corrosion of the rebar, contributing to premature failure of the structure. The XL-70® Bridge•Cote® Concrete Protective Coating protects the concrete against these factors, as well as ultraviolet rays, rain, and numerous other factors which erode concrete.

Specified by State and Local DOT's

In order for XL-70® Bridge•Cote® to be specified by states' DOTs, military and architects, the product undergoes multiple testing, and has been used successfully for 42 years as a concrete protective coating. Our country as a whole is experiencing severe problems with deteriorating highway bridges – over 25% of all bridges need repair or replacement. We will spend billions of dollars replacing spalling concrete and rusting rebar. Much of this could be avoided with the use of a protective coating. Listed below are some of the tests that XL-70® Bridge•Cote® must pass, documented by independent laboratories,

Federal Specification TTC-555B – Pass all requirements

98 Miles Per Hour Wind Driven Rain – Pass (24 hours)

Percents solids (wt.) –73.6% typical

Alkali Resistance – 5% solution sodium hydroxide in water at 120°F for 16 hours –

Pass

Moisture Vapor Permeability ASTM E96 – 5.2 and 6.0 Perms – Pass

Weatherometer

(a) Color Uniformity 400 hours – Pass

(b) No chipping or peeling for 8603 hours – Pass (Equivalent to 24 years California weather)

Florida DOT Freeze-Thaw, 400.15.26.7(a) – 50 cycles – Pass

Salt Spray Resistance, ASTM B117 – 300 hours – Pass

Abrasion Test, ASTM D968-81, Falling Sand, 2000 liters – Pass

Low Volume

While the volume of Tex•Cote® XL-70® Bridge•Cote® sold is not large - 38,300 gallons of XL-70® Bridge•Cote® were sold in the Ozone Transport Region in the year 2000, the coating is valuable in that it can be applied to wet, green concrete, as well as older surfaces without the use of a primer. The material can also be applied in freezing temperatures. There are no waterborne products that will perform all these functions and all waterborne coating require use of a primer. Also, the typical lifespan of acrylic coatings is three to five years. Both these factors would lead to an actual increase in VOC's in the OTC area. In addition, waterborne coatings cannot be applied in cold, damp weather, a critical factor in the northeast, where road construction crews are strained to complete work in suitable weather conditions.

Cold Weather Application

Tex•Cote® XL-70® Bridge•Cote® can be applied at low temperatures, allowing bridge repair and maintenance to be carried out in extremely low temperatures, while latex coatings would freeze at similar temperatures. We recommend application temperatures above freezing so there is a sound substrate to which to adhere, but being a solvent-borne product, the cure only slows at below freezing temperatures. Water-borne products would freeze and the film would not form properly.

Unique Properties

One of the unique properties of Tex•Cote® XL-70® Bridge•Cote® is the ability to be applied as a self priming coating to green or old concrete, and on top of many of the form release residues. This means the coating can be applied without a primer. Another consideration is the protection of the rebar embedded in the concrete. The moisture, oxygen, carbon dioxide and salts must be kept from the rebar to prevent rusting. The XL70® system will accomplish this when applied at 50 square feet per gallon.

The prevention of the deterioration of concrete buildings, bridges and other structures that are not easily maintained or rebuilt is the coatings primary purpose. The chemistry of the product, which results in the hardness and durability of the coating, is a high solids chemistry. The high solids and density of the material, which causes the unique film properties, requires a higher VOC content to perform and be effectively applied. The coating achieves excellent adhesion to the concrete and cures to a hard protective coating, lasting for periods of over 20 years without requiring recoating. Also, concrete is being used increasing in construction in lieu of steel structures. These surfaces need protection from extreme weather conditions, salt spray,

and from water and chloride ion intrusion, which can break down the concrete and thereby deteriorate the structure. Examples of extreme weather are hail and heavy rain, where softer, less durable coatings may fail and cause deterioration of the structure. The coating's primerless, single coat application, and longevity features not only reduce VOC emissions, they also reduce worker safety risks because of the total number of man-hours that otherwise would be required to coat and recoat the difficult and often dangerous to paint concrete structures are greatly reduced.

Reformulation

This product has been reformulated many times in order to meet California's VOC requirements. The viscous nature of the resin, the high solids, and dense materials used in Tex•Cote® XL-70® Bridge•Cote® make the material impossible to reformulate this product anymore and keep the hard, durable coating currently in use. The softer films fail in the field, resulting in more frequent recoating. There is no room for acetone in this product – the viscosity would dramatically increase, as the resin is not fully soluble in acetone. This would cause problems when spray applications are made in the field.

Economic Impact

Tex•Cote® XL-70® Bridge•Cote® is used by many State, Federal and local DOT's for both new construction and refurbishment of older bridges. Even though the volume used positions this product in a niche market, it is demanded because of its performance. The product has years of proven performance, protecting bridges for over 20 years with a one-coat application. Removing this category and this coating from the OTC Rule will actually cause an increase in VOC's released. A water-borne product has a typical lifespan of three to five years. In the lifespan of one application of Tex•Cote® XL-70® Bridge•Cote®, a waterbased product, at 200 grams per liter, would have to be applied three to four times. This would result in more than two times the VOC's emitted.

In addition, Tex•Cote® XL-70® Bridge•Cote® can be applied on new construction. A waterbased product needs about 28 days cure time for application over green concrete. This time adds costs to the construction project, as well as ties up traffic for a longer period of time. Therefore, municipalities would endure higher costs, and individuals would be forced to sit in traffic jams while the waterborne coating is reapplied each successive time through the lifespan of the XL-70® Bridge•Cote®.

In addition, allowing the waterborne material to fail on the bridge every three to five years subjects the concrete to chloride ion intrusion. This will lead to concrete spalling and rebar rust. These will cause premature failure of the bridges, forcing DOT's to replace them more often. The country already has an enormous problem with the replacement of bridges. One of the methods for reducing the replacement is to protect the bridges, supports, abutments, etc., with coatings like the Tex•Cote® XL-70® Bridge•Cote®. Removing this category forces the DOT's to go with unproven systems, which will increase the costs of maintaining the bridges.

Recommendations

We recommend the inclusion of a category for “Concrete Protective Coating”, identical to the category in the EPA Federal Rule, with a VOC limit of 400 grams/liter. The products would be specifically for use on concrete as a high build coating, formulated and recommended for application in a single coat over concrete, plaster or other cementitious surfaces. These coatings are formulated to be primerless, one-coat systems that can be applied over form oils and/or uncured concrete. These coatings prevent spalling of concrete in freezing temperatures by providing protection from water and chloride ion intrusion.

SPECIALTY PRIMERS

OTC PROPOSED DEFINITION

The OTC proposed definition for this category reads “‘Specialty primer, sealer, and undercoater’ means a coating labeled as specified in (d)(7) and that is formulated for application to a substrate to seal fire, smoke or water damage; to condition excessively chalky surfaces; or to block stains. An excessively chalky surface is one that is defined as having a chalk rating of four or less as determined by ASTM Designation D 4214-98, incorporated in reference (f)(5)(vii).”

RECOMMENDED PROPOSED DEFINITION BY NPCA:

“*Specialty primer* means a coating formulated and recommended for application to a substrate to block stains, odors or efflorescence; to seal fire, smoke or water damage; to condition excessively chalky surfaces; or recommended for application to exterior wood or wood-based surfaces, or for highly alkaline cement, plaster, and other cementitious surfaces. An excessively chalky surface is one that is defined as having a chalk rating of four or less as determined by ASTM Designation D 4214-98 Photographic Reference Standard No. 1 of the Federation of Societies For Coatings Technology ‘Pictorial Standards for Defects.’”

Background

We are seeking this modification to the definition of the specialty primer category. The main function of a primer is to provide a stable finish coat and compatibility with the substrate. Maximum penetration of the vehicle is vital in order to anchor the primer successfully as well as thoroughly stabilizing the surface for the topcoat. Emulsion or Latex systems are limited in the amount of substrate penetration as well as tying up a surface that might be coated with chalk or latence. Also, if a latex primer is applied to fresh, green, or highly alkaline surface, it will delaminate or even breakdown chemically.

In lowering the VOC’s of primers to 200 grams/liter, the ability to flow, level, penetrate and maintain a viable primer for specific concrete and masonry applications is totally lost. The results would be holidays (holes in the coating), dry spray particles and heavy overlapped films. The use of acetone would not achieve a VOC of 200 grams per liter and would further contribute to the problems of film formation and application problems, especially cobwebbing. Many materials are simply not soluble with the percentage of acetone needed to bring the VOC’s down to 200 grams/liter.

We have seen many failures of waterborne coatings, both one and two-part systems being applied to either highly alkaline cementitious surfaces, or as a result of going over a previously powerwashed surface that contains residue of the form oils used in manufacturing the cementitious panels. We have photographs of several buildings where waterbased primers were used. The primer, and often the top coat applied to it, peels off in large sheets, resulting in the entire building being recoated. This is not a rare occasion, but is often seen by our sales representatives. Our specialty primers, manufactured for application over green, highly alkaline concrete surfaces, where there are often residual form oils, are often used after these failures occur. In reality, deleting this specialty primer can result in more VOC's emitted as the building needs to be repainted. The technology for a waterborne primer that works under these conditions has not been developed, although much time has been spent by many companies to develop such a product.

Performance Based Primer

XL-70® Primer is a specialty primer formulated for application to green or highly alkaline concrete. Similar to XL-70® Bridge•Cote®, XL-70® Primer can be applied to green, uncured concrete, stopping the salts from coming through the coatings. There are also other reasons to use XL-70® Primer - one of the main reasons is that it adheres to most concrete bond breakers and form oils. Waterbased products cannot adhere to these materials. Pressure washing in the field does not remove all the form oils from the concrete, giving at best, spotty adhesion with waterbased materials.

Technology

XL-70® Masonry Primer is used primarily to prime poured-in-place concrete and tilt-up concrete - pre-formed concrete that is delivered to the building site and then "tilted" into place. The product is a solvent based vinyl acrylic copolymer system that is designed to go through the form oils and release agent materials that are used in the forming of concrete, which remain on the surface of the concrete. Lower VOC products (including latex systems) cannot penetrate these materials and provide the required adhesion for the topcoat.

There are two other problems often associated with tilt-up walls, as well as cured or fresh concrete or masonry. One is the high alkalinity of the substrate. Exposure of latex primers to high alkalinity conditions will result in the breakdown of the latex, causing delamination of the cured primer. This will cause the material to come off the walls. The other problem, which is part of the current definition is the chalky surfaces. Even after power washing, many of these substrates still have excessive chalk. Waterbased systems cannot penetrate these chalky surfaces, which will again result in a failure to bond the primer to the substrate. The coating system will fail, the walls will have to be reprimed and repainted. We believe the intent was to include the highly alkaline surfaces, because these are also the surfaces that will have excessive chalk.

The use of a solvent-borne primer is to provide a sound surface for many types of topcoats, including water-borne or latex system. The coverage rate for a solvent primer is high, typically 200 to 300 square feet per gallon. In addition, by tying up chalky residue, and by penetrating

form oil residue, the solvent primers actually reduce the need for recoating due to premature coating failure by adhesive failure. The fresh, green concrete can be coated immediately with this specialty solvent-borne primer, while a latex or waterborne primer would be used after 30 days, often tying up an entire construction project.

Product Performance

For "tilt-up" concrete, or formed-in-place concrete, we recommend specialty solvent primers to prevent failures by form oils, residual silicones or other release agents. We have seen massive failures, even recently, where latex coatings were placed over residual form oils, or previously sealed (silane/siloxane) surfaces (see enclosed photographs). The same is true for chalky surfaces and for highly alkaline surfaces. The chemistry of the primer must be suitable for the substrate on which it is being used. Waterborne systems cannot stand the highly alkaline surfaces of new concrete. Solvent borne primers, such as Tex•Cote®'s XL-70® Masonry Primer are formulated to penetrate chalky surfaces or form oils, and are chemically balanced to resist the alkaline surfaces.

Economic Impact

The modification of this definition to the Specialty Primer Category would be to include products for highly alkaline surfaces and for penetrating form oils would not add a significant amount of VOC's, but would reduce the economic hardship to building contractors, occupants and owners. We have seen many cases where latex primers peel off the wall, even after the contractor has done an exceptional job of pressure washing the walls. Once the latex primer disbonds, the wall must be cleaned again, and recoated. Often, the topcoat has already been applied as well. This results in an economic hardship for the contractor, the coating manufacturer, as well as the building owner.

There is also the problem of additional VOC's being released in the atmosphere. If a waterbased primer is used, at 200 grams per liter, and applied twice, the result is more VOC's released than if a specialty primer was used.

Recommendation

We recommend the modified definition to the "Specialty Primer" category to the OTC rule, for primers specifically for use on concrete, plaster, wood and other masonry surfaces, where chalky conditions, or for highly alkaline cement, plaster, and other cementitious surfaces may be present. The primer sub-category would have a VOC level of 350 grams/liter.

ANTI-GRAFFITI COATINGS

Anti-Graffiti coatings are used on top of paints, coatings or murals to protect the film underneath. A sacrificial system will typically be reapplied every one to three washings. Our high performance urethane coating lasts for ten to fifteen washings. Eliminating the need for successive recoating also eliminates VOC emissions not only from the subsequent application of an anti-graffiti coating, but also because there is no need to repaint when the coating is protected by a hard, permanent anti-graffiti system.

Performance Based Coating

Tex•Cote® Anti-Graffiti Coatings have been used successfully since the Los Angeles Olympics. The system was approved by the City of Los Angeles, and since that time has been specified by architects and school districts to protect walls and murals. In OTC states, we have been selling the anti-graffiti coating system to protect walls in many areas, but have had particularly good success in New York City, Long Island, Washington, DC and Boston. The two-part urethane system cures within a few hours, protecting the wall or mural from marking pens, or spray paint almost immediately. Testing to date of waterbased systems has shown a minimum of a 2-day cure time before the coating resists spray paint or marking pens. Even then, some stains are not fully removed when Methyl Ethyl Ketone is used to clean the walls.

Technology

Tex-Cote® Graffiti Gard® III is a “permanent” solvent-borne, high performance urethane anti-graffiti coating that can be washed between ten to fifteen times before it is no longer effective. Sacrificial anti-graffiti coatings (waterborne) usually last one to three washings before they must be replaced. The high performance urethane system is the best to date in film forming abilities, and early resistance to graffiti. For the most part, anti-graffiti coatings are used not only to protect walls, eliminating the need to recoat, but also protect surfaces that cannot be repainted, such as murals.

Unique Properties

The performance difference, the cost of replacing the waterborne anti-graffiti coating, and the additional VOC's released in replacement of the coatings are all reasons to allow a higher VOC category for anti-graffiti coatings at 600 grams/liter which is consistent with the federal AIM Rule. In addition, the quantity of these protective coatings is low – only 333 gallons were sold in the OTC region in 2000.

Economic Impact

Without the use of anti-graffiti coatings, walls are continually recoated to get rid of graffiti painted on the walls. In low-income areas, businesses as well as the government try to make their buildings more aesthetically pleasing. Many towns go to the expense of putting expensive and extremely attractive murals in the lower income areas. There are many examples I can think of in the OTC states, many on the Am-Trak route. Anti-graffiti coatings can be used to protect these murals. The high cost of many water-borne systems makes it impossible for art foundations to afford to use an anti-graffiti coating. The higher VOC anti-graffiti coatings can provide longer term protection than water-borne systems, and they are much more affordable for use in low income areas.

Also, without the use of anti-graffiti coatings, the walls need to be recoated more often. I know of several businesses in low-income areas that repaint their buildings once a week as a

routine maintenance item. The VOC's from this practice far exceed the VOC's of the use of anti-graffiti coating applied once every three to five years.

Recommendation

The use of anti-graffiti coatings is typically done in low-income areas, or to protect murals from vandalism. Our anti-graffiti coating is sold for less than half the amount as other waterborne coatings. These waterborne coatings are considered too expensive to be used in most projects. With the extremely low volume used in anti-graffiti coatings, less than 0.01% nationwide, raising the limits to 600 grams/liter would have minimal impact on the total VOC's in the region.

CONCRETE MASONRY PENETRATING SEALERS

OTC DEFINITION:

The current OTC definition for "Waterproofing concrete/masonry sealer" means a clear or pigmented film-forming coating that is labeled or formulated for sealing concrete and masonry to provide resistance against water, alkalis, acids, ultraviolet light and staining.

RECOMMENDED DEFINITION:

The recommended definition is: "Waterproofing concrete/ masonry sealers means a clear or pigmented film-forming **or non film-forming** coating that is labeled or formulated for sealing concrete and masonry to provide resistance against water, alkalis, acids, ultraviolet light and staining."

Penetrating Masonry Sealers are clear sealers, typically silanes and siloxanes that are used to seal the concrete or masonry by creating a chemical bond between the substrate and the polymer. Very strong hydrogen bonding occurs, and acts to repel water from the surface of the wall or deck, but allows water vapor to escape from behind the surface. These products are not film forming sealers, but are reactive polymers that become part of the substrate.

Performance Based Coating

These clear masonry sealers are required to pass numerous tests to be added to Department of Transportation Specifications. NCHRP 244, Series II testing for the reduction of chloride ion intrusion into the concrete or masonry must be passed with these materials. In addition, extended weathering testing is required, as well as ASTM C672, Water Absorption Performance testing, and ASTM E-96, Water Vapor Permeability. Each set of tests costs about \$12,000 per product, and requires approximately six months testing time before a product can receive an approval.

Technology

As stated before, these clear, penetrating sealers are typically silanes or polysiloxanes, complex polymers, with a silicone backbone, which form hydrogen bonds with the substrate

in an alkaline environment. Tex•Cote® Rainstopper® sealers impregnate the substrate, sealing not only the surface, but penetrating deep into the substrate. Once cured, the appearance of the substrate is not affected, which is why it is often used in decorative brick or concrete. However, if water splashes on the surface, as in a rainstorm, the water will be repelled, the clear, penetrating sealer protecting the surface of the brick. In addition, these sealers also make it more difficult for chemical staining (such as iron from water) or dirt or mildew to attack the substrate.

Because the use of silanes and siloxanes is a chemical reaction, even water-borne penetrating non-film forming sealers give off fairly high VOC's by the alcohols given off by the chemical reaction. This unique system of penetrating sealers is an important category for not only the commercial and public sectors, but also Department of Transportation use of these sealers is extensive.

Unique Properties

The use of a solvent carrier aids the system by allowing deeper penetration into the substrate. Waterborne technology has not been time proven, but many are not warranted for more than a year. The use of the Rainstopper® solvent-borne silane or siloxane clear penetrating sealers have a typical lifespan of seven to ten years. The use of these materials can add years of life to a brick, stucco, block, concrete or limestone structure.

ECONOMIC IMPACT

Many people consider brick and masonry long-term surfaces. In fact, unless they are protected with a sealer, they weather and age fairly rapidly. A lot of expense goes into making decorative concrete structures. A paint or film forming sealer will change the look of the structure. Non-film forming sealers, which are still relatively lower VOC's, do not necessarily change the look of the structure. They do protect the surface from rain, UV, chemical attack, stains, etc. The use of these penetrating non-film forming sealers saves money – not only by extending the life of the concrete, masonry, brick or limestone, but also in the reduced maintenance of the building. These products are also widely used by State and local DOT's to seal bridge decks or concrete in critical areas. The products do not impact the stopping distance of automobiles, but they do lengthen the life of the concrete surfaces.

Recommendation

We recommend the **addition** of the words “**or non-film forming**” sealers to the waterproofing concrete/masonry sealer category so that all concrete and masonry sealers are included in this category. We believe it was the intent to have these materials included. However, the way the category is worded makes it sound as though only film-forming sealers are allowed.

CONCLUSION

We respectfully request that you include these two sub-categories at 400 grams/liter for the Concrete Protective Coatings Category and 600 grams/liter for the Anti-Graffiti Coatings Category. These are very unique coating categories that will never represent large volume emissions of volatile organic content within your region. In addition, we ask that the definitions be changed for Specialty Primers to include the addition of primers specifically for use on concrete, plaster, wood and other masonry surfaces, where chalky conditions, or where highly alkaline cement, plaster, and other cementitious surfaces may be present. We also request the addition of clear, penetrating non-film forming sealers to the waterproofing concrete/masonry sealer category.

Please contact me regarding any additional information necessary to have these subcategories included in the OTC's Model Rule. We would be happy to put you in touch with our chemists, if necessary, to answer any questions you may have. I would appreciate the OTC informing Textured Coatings of America, Inc. of whether you intend to include these categories in your Draft AIM Model Rule.

Sincerely,

Jay A. Haines
President/CEO

PROSOCO'S COMMENTS

This correspondence serves as PROSOCO's formal, written comment for Delaware's Proposed Architectural and Industrial Maintenance (AIM) Coatings Regulation Number 41, dated June 26, 2001. This comment addresses our specific concerns regarding definitions, technology limitations, and category VOC limitations.

By way of introduction, PROSOCO is a small, family-owned company based in Lawrence, Kansas. We are the leading manufacturer of new masonry and restoration specialty cleaning products for masonry and associated materials of construction in the United States. We pride ourselves on being a 'one stop shop' for the masonry construction, restoration and preservation trade. As such, we offer a full line of specialty products used to preserve and enhance the beauty and integrity of our built environment. The majority of these products are classified as architectural coatings.

PROSOCO supports EPA's effort to provide a uniform framework for AIM volatile organic compound (VOC) regulation in the United States. As a member company of the National Paints and Coatings Association (NPCA) and a small business, we are concerned about the proliferation of state regulations that deviate from the uniform national standard. It appears that there is no adequate basis for the deviation in the proposed Regulation # 41 in the number of category definitions or the change from the federally promulgated category VOC limitations to more stringent limits.

This regulation appears to be a quick fix that simply adopts California's Suggested Control Measure (SCM) rather than being evolved through a rationale rule making process. As NPCA states in its comment, the Northeast Ozone Transport Commission (OTC) has failed to consider that the SCM was created for a region with an entirely different climate and set of coatings performance considerations. We support NPCA's assertion that Delaware has not put adequate thought into promulgation of standards that consider technological limitations in coatings chemistry or real world conditions in the use of construction specialty products.

Definition of "Waterproofing concrete/masonry sealer"

We are concerned that the definition for this category is poorly written and could easily be misinterpreted as a result. Such misinterpretation would have a distinct, deleterious effect on our business, as projects may be lost in the specification process. The definition for "Waterproofing concrete/masonry sealer" in the proposed Regulation reads as follows:

"Waterproofing concrete/masonry sealer means a clear or pigmented film-forming coating that is labeled and formulated for sealing concrete and masonry to provide resistance against water, alkalis, acids, ultraviolet light and staining."

PROSOCO has been manufacturing penetrating water repellents that meet the traditional definition of waterproofing sealers and treatments as set forth in the USEPA definition found in the National VOC Emission Standards for Architectural Coatings (40 CFR 59.400). The definition is very similar to those used historically in air quality management districts nationwide since the 1980s. As you may recall, the definition reads as follows:

“Waterproofing sealer and treatment means a coating formulated and recommended for application to a porous substrate for the primary purpose of preventing the penetration of water.”

While the above definition is quite clear in the range of product technologies covered, we are concerned that the wording of the Regulation #41 definition will cause confusion in the regulated community and among enforcing agencies. An improper reading and interpretation of the definition could lead some to believe that only film-forming products are included in the category. While these are important materials with legitimate applications and capabilities, there is a host of waterproofing products that are specifically designed for concrete and masonry substrates that intentionally preserve the desirable traits of the construction materials while not forming a film.

We believe it is unfair and anti-competitive to intentionally or unintentionally exclude penetrating water repellents from the category definition as it may be argued at a later date that they should be included in a different, more restrictive category. The definition appears to be clumsily worded, as it is inconceivable that penetrating treatments were intentionally excluded. It should be pointed out that a clear water repellent can either be penetrating or film forming. Regardless, the definition must be reworded to make the intent of the regulations clear for regulators, the regulated community and the architects, engineers and other individuals that specify this type of product.

We respectfully request that the definition be amended to clarify the intent to cover penetrating water repellents. The amended definition would read as follows:

Waterproofing concrete/ masonry sealer means a clear or pigmented film-forming or *penetrating* coating that is labeled and formulated for sealing concrete and masonry to provide resistance against water, alkalis, acids, ultraviolet light and staining.

Alternatively, the words “film forming” could be deleted from the definition, which would then imply that both terms are included. For the sake of clarity, it appears that addition of the words “or penetrating” is the obvious preferred alternative.

Technology and Use Limitations

PROSOCO agrees that it is possible to create effective water repellent products for masonry and concrete that meets the 400 g/L limitation set forth for this category. We manufacture a range of water carried, low solids products with VOC contents as low as 205 g/L. However, there are certain natural stone substrates that current low VOC resin technologies are simply unable to adequately treat. Additionally, subsequent reapplication of water repellents over previously treated surfaces is simply not possible with a water carried formulation as the previous treatment will obviously repel the carrier. Only resin systems carried in organic solvents are capable of recoating treated substrates, and the range of currently available exempt solvents are incompatible with available resin technologies. We also share NPCA's concerns that Regulation 41 does not adequately address the needs of construction contractors to work in cool weather or consider the performance decline that certain low VOC formulations will have in certain circumstances.

As previously stated, there is a distinct need for organic solvent carried water repellents. The basic chemistries of silane and siloxane based penetrating water repellents are, in some cases, incompatible with the limited range of currently listed VOC exempt solvents. While it is true that some products for some applications can be formulated with acetone or a similar exempt solvent, there are other substrates where such a product would dry and cure too slowly or rapidly, or penetration into the substrate is inadequate. The end result is impaired performance potential for darkening or altering the substrate's appearance.

There are particular problems in formulating effective water repellents for calcareous substrates. Most penetrating water repellents for natural stone are based on ethyl silicates. This resin system bonds at a molecular level with silica grains in the rock matrix. In calcareous substrates, and even some concrete block, there is not enough free silica to create effective bonds. Therefore, a different chemistry is required. Our experience over the last 15 years indicates that a combination of ethyl silicate and silane resin in a compatible, organic solvent carrier is required to treat these substrates. Unfortunately, there is no way to combine these resin systems in an aqueous carrier as they would cure in the container. This is a prime example of limitations of current technology for specialty products that is uniformly ignored when promulgating rules such as Regulation #41.

To assume that one VOC standard can adequately address all masonry specialty technologies and applications is a fallacy. In this case, the proposed rule is technology forcing without regard to whether technology can actually be adapted. Further, to base the standard on a regional model created for totally different climatic conditions is unjustified and shows a lack of consideration for local reality.

Regarding climate, we agree with NPCA that the regulation does not address regional needs of the contracting community. In the normal masonry construction cycle, water repellents and other protective treatments are the last items installed. Typically, this task occurs in the fall or even into the beginning of winter. While water carried products may have adequate performance characteristics when properly installed, their basic chemistry limits the temperature at which they may be stored and applied. Cure time also limits application flexibility during typically rainy transitional seasons. Organic solvent carried solutions are necessary because of their ability to dry more rapidly and resist freeze/thaw effects. We would like to reiterate NPCA's position that application of such materials would typically occur during seasons where ozone formation is not as critical a concern.

As a manufacturer and supplier of masonry specialty products, we would also like to point out that, in general, specifiers do not chose organic solvent carried solutions over water carried, low VOC products unless the project conditions or substrates drive the decision. Quite simply, the low VOC products are safer to use and cause less concerns for safety of other trades and building occupants. A prudent architect will specify the safest, most effective product for the job simply because of liability and logistical issues. The organic solvent carried products exist because of a distinct need in the marketplace.

For all of the reasons listed above, we believe that the VOC limit for the waterproofing concrete/masonry sealer category should be set at the levels mandated by the USEPA at 600 g/L instead of the more restrictive 400 g/L level. The national rule was well considered and negotiated over a ten-year period and took into account as many technological and practical considerations as possible. It recognized that many of the regulated categories represent specialty, niche products that contribute a small fraction of ozone precursors as compared to high volume coatings or other sources. We support NPCA's assertion that the current proposed Regulation #41 has not received an adequate level of diligence or consideration.

If Delaware and the OTC chose to adopt the more restrictive 400 g/L standard, we believe that a manageable program for use of non-compliant, specialty coatings must be devised and utilized.

We appreciate this opportunity to comment on the proposed regulation and look forward to reviewing a substantive response from your agency.

Sincerely,

Dwayne M. Fuhlhage
Regulatory Compliance Manager

Cc: Board of Directors
Charles F. Speer, Esquire
OTC State Contacts
File



July 31, 2000

Attention : Jim Sell (NPCA)

From: Jean-Yves Gourlay
 Technical Director
 Samuel Cabot Inc.

Re: Comments about new lower VOC 's proposed by OTC.

- 1- It is puzzling that a national EPA rule was not even given a chance, since it was introduced in 1999. This commission owes us a study showing the effects of the implementation of this present EPA VOC reduction. The burden should be on them to prove that some reduction has been achieved, otherwise could it prove once and for all that they are chasing the wrong party. (AIM emissions are known to contribute only 2% of the total emissions). As business people, we cannot endorse programs that will divide the nation again.
- 2- As a Chemist formulating paints, coatings, satins and varnishes for OEM and AIM since 1973, I wonder what logic is used when establishing these VOC limits. I noticed that this proposition has brought " Stains " in one category down from 550 to 250 g/l for Semi-Transparent stains and from 350 to 250 g/l for Opaque stains. Oil-based stains have very little in common with paints. For them to penetrate the wood, solvent is necessary. Increasing their solid contents to over 80% will negate this property leading to film build and peeling. Flow (due to higher viscosity) over rough surface cannot be achieved either, leading to excessive film build, poor dry and lack of porosity. Stains adhere better to wood than paint because they penetrate the wood, become part of the wood, expand and contract with the wood unlike paints which needs a primer and forms a hard impermeable film with no flexibility and prone to peeling in harsh winter conditions prevailing in the North East (Sorry for the OTC assumptions and liberal use of the California CARB background work).
- 3- In this proposed ruling, this commission is also ignoring the role of primers by bringing them from 350 to 200 g/l. As for stains, penetration and bonding to wood or any substrate for that matter insure the life cycle of the top-coat. For their information, in tannin bleed or any water extractive control, water-based primer have not even come close to the blocking properties of oil/alkyd primers.
- 4- If the intend is to eliminate Solvent-based in favor of Water-based coatings, then this commission will have to be reminded that with the present VOC calculation (where water has to be removed first) they are already eliminating Acrylic coatings which require coalescent in amount greater than the 100 and 150 g/l for Flats and 150 g/l for non-Flats, leading to inferior paints that cracks, is picking dirt and blocks when applied to doors and windows.

I am extremely disappointed that ignorance rules, unfortunately pushing the emissions higher since maintenance cycles are guaranteed to be shortened.

Yours truly,

JY Gourlay



Mr. Bob Nelson
NPCA

The Valspar Corporation
Consumer Group Laboratory
300 Gilman
Wheeling Il., 60090

Dear Bob,

Below are issues that we at Valspar still have with the proposed OTC rule.

1. Mirroring the South Coast Rule and stating that the needs of the OTC region are the same South Coast is technically false on several counts. A. The weather in the northeast is significantly different than southern California, in rainfall and temperature. The weather differences require our products to have coalescing solvent and glycols in them to insure, especially under marginal weather condition like lower temperature, that the products will perform to stated warranty claims. Lowering the levels of the solvents in paint will lead to more customer complaints – the products will be less “fool-proof”. The freeze thaw cycles per year at a location are an important consideration when formulating paint. The paints need good film formation, a function that the coalescing solvent and glycols promote, to insure good crack resistance on substrates like wood, which are dimensionally unstable when freezing and thawing occurs. B. The technical assessments cited in the South Coast process are flawed in content and conclusions.
2. The rule will essentially outlaw certain “models” of products. An example is alkyd gloss enamels. Alkyd gloss enamels are the standard of this type of product because they have the highest gloss, dry relatively quickly, have good corrosion resistance and have been excepted by a large number of customers (especially contractors). To change the rule from 380 VOC to 250 VOC for gloss products essentially outlaws alkyd enamels; it is impossible to make an enamel that would dry quickly enough and not yellow severely at 250 VOC. The alternative latex gloss products are inferior to the alkyd enamels for the properties stated above. No other product lines, where emissions have been a problem, have been forced into discontinuance. An example would be automobiles. If the automobile industry was treated the same way the paint industry is treated, there would be a proposed rule to outlaw any autos that could not get 40 miles per gallon. Another product would be lawnmowers – no gas lawnmowers – make them all electric.
3. Our industry has not been effective with the regulators of state agencies, it is not from lack of trying. It seems that the agencies are under the gun for cuts in emissions, and even though they ask for comments and data, and we supply it, our recommendations are ignored. This is not acceptable. To add insult to injury, for the OTC to piggyback on the South Coast rule and data fiasco is unbelievable. We must lobby our legislators to look into this problem.

4. It needs to be noted that we do not put VOC's in paint for fun or to create air pollution. We try to optimize the VOC's used because they cost money, and we are in competition and need to be as efficient as possible. The optimization of the VOC's is part of making a product that works, cost effectively, that a consumer will be happy with.
5. For the records sake, we at Valspar have issues with the following items on the suggested table of limits, and feel that significant customer problems will be occurring if we are forced to make inferior products at the suggested VOC's.
 - Enamels at 250 VOC – should be 380 VOC – see above
 - Stains at 250 VOC – should be 550 VOC – high solids solvent stains are an oxymoron, water stains do not work well due to grain raising etc.
 - Flat coatings at 100 – should be 200 VOC – need enough glycol for freeze thaw resistance of the paint and maintain properties, the higher quality products would suffer the most if this comes about, causing customer complaints.
 - Non-flat coatings at 150 – should be 200 VOC – same issue as above in flat coatings. Once again, the best quality paints will suffer do to a decrease in open time effecting flow and leveling, appearance and hiding. We have also found that at less than 150 VOC, latex non-flats have a tendency to “skin” in the can more than paints at 200 VOC. More customer complaints.
 - Varnishes at 350 – should be 450 – Poor dry, application (too thick) and gloss retention are problems with varnishes at 350 VOC. Water alternatives are not as durable and generally are more expensive – more money for less performance
 - Specialty Primers, Sealers, Undercoaters at 350 – should be 400 – we are fighting mother nature to get a stain blocking primer that works and a consumer can apply at 350 VOC.

Hope this is what you are after. Feel free to share it with whomever you wish. I can provide real data supporting our position on the issues above if you feel it will do some good.

Very truly yours,

Paul S. Sara, Technical Director, Valspar Corporation



PPG Architectural Finishes, Inc.
151 Colfax Street; Springdale, PA 15144

Robert S. Gross
Manager, Environmental Stewardship
Architectural Finishes
(724) 274-3416

August 30, 2001

Robert R. Thompson
Hearing Officer
State of Delaware
DNREC
R&R Building 89 Kings Highway
Dover, DE 19901

Dear Mr. Thompson,

PPG Architectural Finishes, Inc., a wholly owned subsidiary of PPG Industries, Inc. is a global supplier of Architectural Industrial Maintenance (AIM) Coatings. Our review of Delaware's proposed AIM Coatings Regulation No. 41, reveals the lack of a Nuclear Coatings Category that we believe should be included in the regulation.

Our rationale for maintaining the definition and VOC limits for Nuclear Coatings as established in the U.S. EPA National AIM VOC Rule includes:

1. There are a limited number of Nuclear Power Plants in the U.S., approximately 100 including those in the state of Delaware.
2. There are no new nuclear power plants being built, so the market is very limited and will eventually go away as plants are decommissioned.
3. The entire Level I coatings & thinner market is estimated to be less than 20,000 gallons annually.
4. The re-qualification of a coating/system for use in a nuclear power plant can be fairly costly. Depending on the coating's/system's use (Level I, II, or III) the cost can approach \$50,000.
5. When Level I coatings are applied inside of containment areas, the charcoal filters that are in use, capture most if not all of the volatile emissions from the coating.

As your proposed Rule No. 41 exists, any coating sold to the nuclear coating industry would default to the 340 g/l VOC limit of the industrial maintenance category, but would also require re-qualification to assure compliance with the testing criteria of the nuclear coatings industry. Considering the high cost of re-qualifying a system, along with the low volume of product sold, reformulation would be cost prohibitive and would force us out of the nuclear coating market. Also, any newly reformulated products would have to

demonstrate compatibility with the previously applied coatings. For example, testing would have to be conducted to assure adequate adhesion between the different coating systems. If adequate adhesion were not exhibited, the old coatings would potentially have to be removed, adding further cost to the nuclear coatings industry.

We are asking you to review the strict testing criteria required for nuclear coatings as defined by the National AIM Rule, and to also seek the nuclear industry's perspective if these coatings cease to exist. Inclusion of the low volume Nuclear Coatings Category at a VOC limit of 450 g/l, a mere 110 g/l above the Industrial Maintenance VOC limit of 340 g/l, would assure uninterrupted supply of coatings formulated specifically for the nuclear power industry.

Sincerely,

Robert S. Gross

Robert S. Gross

Cc J. Sell, R. Nelson - NPCA

ATTACHMENT L

**NPCA LETTER ON AVERAGING TO US EPA ASSISTANT
ADMINISTRATOR**

August 15, 2001



Assistant Administrator Jeffrey Holmstead
Office of Air and Radiation
United States Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20004

Dear Mr. Holmstead:

I am writing on behalf of the National Paint and Coatings Association (NPCA) to request your assistance to help fashion an effective VOC regulation for architectural and industrial maintenance (AIM) coatings for states in the Northeast Ozone Transport Region (OTR) so they may enjoy additional VOC emission reductions beyond those achieved by the national AIM coatings rule.

The model rule currently being considered by the OTR states contains VOC limits largely identical to those adopted by the California Air Resources Board under a Suggested Control Measure for AIM coatings. Many of the VOC restrictions will result in poorer performing and less durable coatings. More importantly, in some cases they will compromise the performance of waterborne coatings which have been developed to replace higher VOC containing solventborne coatings.

We have made a proposal to the OTR states that would achieve approximately 70 percent of the VOC emission reductions that would be obtained under the OTR model rule.

Although the OTR states have accepted a few of our suggestions, there remain important coatings for which our industry believes there is a need for higher VOC limits.

As a partial answer to this impasse we have suggested that an averaging system be recognized similar to the one established by the South Coast Air Quality Management District for its AIM coatings rule, as well as the one established by the OTR in its recommended Consumer Products Model Rule. Under such an averaging program the higher VOC content necessary in certain coatings would be offset by lower VOC containing products. We strongly believe that averaging would enhance the opportunity for a uniform regional approach to VOC emission reductions beyond those achieved by the national rule.

As noted, the OTR's recommended Consumer Products Model Rule contains an averaging program and none of the states have disagreed with this approach in principle. But some state officials have raised practical concerns involving enforceability and administration.



NPCA is prepared to work with the OTR states and the EPA to resolve these enforcement and administrative issues.

Therefore, we would greatly appreciate it if you could meet with us to discuss the feasibility of our suggested averaging program and whether EPA might play a role in administering it to allay some of the states' concerns. Like us, we hope you would see EPA's action here as wholly consistent with Congress' desire to promote regional coordination and national product uniformity in its enacting the ozone transport region program and the uniform consumer products program under 1990 Clean Air Act Amendments.

Sincerely,

J. Andrew Doyle
President

ATTACHMENT M

NPCA LETTER ON AVERAGING TO MR. PETTINGILL

Jim Sell

From: Bob Nelson
Sent: Wednesday, August 29, 2001 2:48
To: Jim Sell
Subject: memo gene pettingill 4-19.doc
April 20, 2001

Gene M. Pettingill
Dept. of Natural Resources and Environmental Control
Division of Air & Waste Management
715 Grantham Lane
New castle, DE 19720

Dear Gene:

Thank you for the update on the status of the AIM rule development in Delaware. This information will be very helpful to us.

I would like to offer some comments on one particular issue which is a major concern to everyone in the industry: the lack of the inclusion of a "Averaging" compliance option in the proposed Delaware AIM rule. NPCA believes that an alternative compliance mechanism similar to the "Averaging Compliance Option" included in the South Coast Air Quality Management District (SCAQMD) Rule 1113 and in the CARB AIM SCM is absolutely necessary if the type of limits that OTC and Delaware are proposing are to be implemented.

The impression that industry was not interested in seeing an averaging provision included in the OTC model rule may have been fostered because of the great deal time and effort that we spent on discussion of the technical feasibility of the individual category VOC limits and not addressing the actual implementation of CARB AIM SCM limits. All during the development of the revised AIM rule in the SCAQMD in 1999 and the CARB AIM SCM last year, NPCA stressed the need for inclusion of a flexible averaging provision. NPCA and its members have worked closely with the SCAQMD and CARB on the development of an extensive "Implementation Guidance Document" for the Rule 1113-averaging compliance option which is currently in effect for "FLAT" coatings in the SCAQMD. We feel that this kind of alternative compliance option is vital if industry is going to be able to continue to provide an adequate variety of AIM products to the public.

We would welcome the opportunity to discuss further with you and other members of the OTC workgroup the inclusion of an averaging provision in the AIM model rule.

am taking your suggestion and contacting Rob Sliwinski about a possible meeting.

Thanks again for the information.

Sincerely

Bob Nelson
Senior Director, Environmental Affairs

8/30/2001

National Paint and Coatings Association

P.S. Please keep me informed on the regulatory schedule for the Consumer Products rule. We also represent manufacturers of consumer caulks, sealants and adhesives, which will be regulated under that rule

8/30/2001