



May 12, 2008

Balloting Summary and Issuance of Green Seal Environmental Standard for Paints and Coatings (GS-11) 2nd Edition

In 2007, Green Seal began the revision of Environmental Standard for Paints and Coatings (GS-11), announcing the scoping in May 2007. As part of the revision, the standard for Anti-Corrosive Paints (GC-3) will be *incorporated* into the Paints Standard (GS-11). Registered stakeholders were invited to review the 3rd draft of the final revised standard and 10 votes were submitted. The results were 6 affirmative and 4 negative.

Green Seal reviewed all the comments provided during the final balloting and determined that there was no sustained opposition for any single issue in the standard or for the standard itself. Thus, the standard was approved based on substantial majority of affirmative votes. However, based on the comments Green Seal will be reviewing high-gloss paints in 12 months to ensure that that sub-category is effectively included in the standard. For the other comments submitted, Green Seal believes adequate responses to these comments have been provided during other versions of the drafting of the revision throughout the process and no additional responses or modifications to the last draft of the revised standard are required.

Green Seal is herein issuing the 2nd Edition of the Environmental Standard for Paints and Coatings (GS-11) as of May 12, 2008. For transparency, below are the comments received during the final balloting period. Any identifying remarks or reference to the commenter have been removed.

By participating in Green Seal's standard setting process, the following organizations that submitted comments played an important role in Green Seal's effort to encourage the design, manufacture and end use of environmentally superior products. Their assistance and involvement is greatly appreciated.

California Air Resources Board (CARB)
California Office of Environmental Health Hazard Assessment (OEHHA)
Endurance Building Systems
Kelly-Moore
National Paint & Coatings Association (NPCA)
PPG Industries
Rohm-Haas
Sico
Stonhard
Ultimate Coatings

Comment:

I still believe that the phrases "...using 280 degrees C as a specified limit" and "...but must use 280 degrees C as a marker" in Section 4.4 should be deleted as suggested last time. Those phrases could now be repeated with language such as "...with VOC being defined as in Section 2.24."

Comment:

Though we appreciate the opportunities given to comment on draft for Standard GS-11, and welcome some changes made to the final draft our reason for voting no in second draft remains the same for this draft as well as we consider the 400 cycle of scrub with ASTM method with shim for a flat finish is achievable only with compromise of other environmentally important properties such as VOC increase.

Comment:

[---] again thanks Green Seal for the opportunity to vote and to provide additional input on the Revised GS-11 Paints Standard. However, as the [---] representing the [---] industry we will have to vote "NO" for the third time. In reviewing the 3rd draft of the standard, there are several issues that compel us to vote "NO" once again. The key issues are as follows:

2.7 & 2.13- Flat and Non-Flat Definitions

The proposed expansion of the flat and non-flat definitions to include readings on an 85 degree meter create a loophole of ambiguity. As defined, flat coatings must be less than 15 on an 85 degree meter OR less than 5 on a 60 degree meter; non-flat coatings must be 15 or greater on an 85 degree meter OR 5 or greater on a 60 degree meter. Some flat enamels with high side-sheen have 15 or greater on an 85 degree meter AND less than 5 on a 60 degree meter -- which means that these coatings are both flat and non-flat under the proposed definitions. Most coating rules define non-flats as having 15 or greater on an 85 degree meter AND 5 or greater on a 60 degree meter. This would prevent any possible overlap between the two definitions.

2.10- Ingredient Definition

Section 2.10 defines an ingredient as "Any constituent of a product that is intentionally added or known to be a contaminant that comprises at least 0.01% by weight of the product." [---] believes the phrase "or known to be a contaminant" should be removed from the definition. We request that the definition be written as follows: "Any constituent of a product that is intentionally added that comprises at least 0.01% by weight of the product." Furthermore, the concentration level of 0.01% by weight, included in the definition of "ingredient" is inappropriately stringent. Paint manufacturers typically have access to information (from MSDSs) on the constituents of raw materials only to the level of 1% by weight, or 0.1% for carcinogens. The question of "known contaminants" has not been adequately addressed or rationalized in this standard, particularly in light of the current trade practice that defaults to 0.1% for carcinogens.

2.24- VOC Definition

The VOC definition was appropriately revised in the 3rd draft to include the US definition, but the boiling point cutoff remains at 280°C instead of 250°C. This boiling point change in the European VOC definition is arbitrary and capricious and is an attempt to blur the distinction between toxics and VOCs. [---] strongly opposes this definition. [---] requests that the 2.24 VOC definition be changed to the following:

Any organic compound which participates in atmospheric photochemical reactions as defined by the U.S. Environmental Protection Agency in 40 CFR §51.100 (s) and has an initial boiling point lower than or equal to 250°C measured at standard conditions of temperature and pressure.

3.51- Fade Resistance

There are 2 key issues with respect to the original text 3.5.1. on Fade Resistance that we feel should be addressed.

For a Delta E to be meaningful three parameters must be defined: The color difference equation used (such as DE2000); the CIE standard observer (2 degree or 10 degree), and; the illuminant (such as D65 or D50). Without this specificity, the evaluator will have to make assumptions about the parameters resulting in a lack of standardization.

1) The standard should define the methodology in the determining the color difference parameter ΔE by quoting the following relevant ASTM standards:

- defining the "Spectrophotometric Measurement Method" using the ASTM E1331 "Standard Test Method for Reflectance Factor and Color by Spectrophotometry Using Hemispherical Geometry"
- defining the "Method of Tristimulus Conversion" using the ASTM E308 "Standard Practice for Computing the Colors of Objects by Using the CIE System"
- defining the "Type of Color Difference Equation" using the ASTM D2244 "Standard Test Method for Calculation of Color Differences From Instrumentally Measured Color Co-ordinates"

2) On defining the color difference parameter ΔE in item (1), we feel there should be some justification as to the use of the acceptability tolerance for the quantity $\Delta E < 5$ of 1000 hours as different parameters lead to different quantities of ΔE . By clearly defining the methodology it may be determined that a $\Delta E < 5$ of 1000 may or may not be a reasonable value to determine performance.

3.8- Reflective Roof Coatings

Based upon our review of the comments previously received, it is apparent that the original GS-11 standard never intended to include roof coatings. It would appear that Green Seal is now expanding upon the original version of the standard, without a reasonable justification for doing so. The incorporation of reflective roof coatings into this standard creates conflicts with existing standards and codes, including Energy Star and California's Title 24 Energy Code.

In addition, bituminous coatings, including emulsions, have been written out of the standard, even though they have distinct environmental and functional advantages in the roofing market place. Furthermore, aluminum coatings that presently meet DOE/EPA

Energy Star Roofing Program standards and/or are rated by the Cool Roof Rating Council are written out of this Green Seal Standard, even though these coatings are already in compliance with other environmentally friendly energy efficient standards.

4.1- Compound Prohibitions

[---] believes it is inappropriate for the Green Seal comments document to claim that Green Seal will regard trace amounts of crystalline silica as allowable, without a change in the actual language of the standard. Also, the restrictions on the use of liquid colorant dispersions of carbon black is completely unreasonable.

4.4- VOC Content Limit

As discussed above, using 280°C instead of 250°C as the VOC marker is inappropriate and arbitrary. Also, for concrete masonry coatings, 50 g/l flat is an unattainable standard due substrate variability in terms of alkali stability, porosity and surface finish among other issues.

4.5- Effective as of January 1, 2010, Colorant added to the Point of Sale VOC content Limit

Paint manufacturers have no control or knowledge of the VOC content of coatings tinted at the point of sale. All VOC requirements applicable to tinted paints should be deleted from the standard. [---] hopes that Green Seal will carefully examine the issues that have lead our organization to vote “NO” on the 2nd Draft of the Final GS-11 Revised Paints Standard on behalf of our membership. If there are any questions concerning our comments, please do not hesitate to contact us.

Comment:

Thank you for the opportunity to provide additional input on the Revised GS-11 Paints Standard. We are voting NO based on the following key issues:

2.10 Ingredient Definition: We believe the phrase “or known to be a contaminant” should be stricken from the definition. In addition, the level of 0.01% by weight is inappropriately stringent. Typically, access to this information is from Material Safety Data Sheets, which list the level at 0.1% for carcinogens.

Section 3 Product Specific Performance Requirements: We have issues with many of the product specific performance requirements listed in Section 3.0. Many of the definitions contain extensive performance requirements that would filter out about two-thirds of complying “Green Products” that are truly “Fit for Purpose”.

4.1 Compound Prohibitions: In addition to the exemption for titanium dioxide and carbon black, the following should be added: Green Seal confirms that crystalline silica that is detected in a paint formula as a result of trace quartz contamination in mined extender pigments such as calcium carbonate would be exempt under the compound prohibition criterion.

4.4 Volatile Organic Compound (VOC) Content Limit: To be consistent with current VOC regulations, the VOC limits should be determined by the U.S. Environmental Protection Agency (EPA) Reference Test Method 24 (Determination of Volatile Matter Content, Density Volume Solids, and Weight Solids of Surface Coatings), Code of Federal Regulations Title 40, Part 60, Appendix A.

4.5: Effective as of January 1, 2010, Colorant Added at the Point-of-Sale VOC Content Limit: The VOC level of the Flat Topcoat with colorant added at the point-of-sale should be 150 g/L. This will allow for the level of colorants necessary to tint dark colors in Neutral/Accent Base products.

Comment:

3.4.1: Scrubability (Abrasion Resistance)

An exception should be made for Specialty Paints. These include Gloss Paints (paints with gloss >60 at 60 degrees) and Ceiling Paint (and to some extent Primers). These specialty paints are not optimized for scrub resistance but remain uniquely functional. For example for gloss paints, in addition to scrub requirements, manufacturers optimize for other properties such as chemical resistance, adhesion, block and print resistance. As a result, we recommend minimum scrub resistance of 250 cycles for high gloss paints.

Comment:

In the May 21, 2007 Green Seal Scoping Document for GS-11/GC-03 (1993 version), the following issues/questions was asked by Green Seal regarding Section 4.0, Chemical Component Limitations:

Issues to consider: Are the VOC and/or aromatic compound limits effective in protecting human health and environmental effects? Should the VOC and/or aromatic compound limits be modified? Are VOC and/or aromatic compound limits as described still an effective measure of determining the human health and environmental impacts of paints?

We did not see sufficient changes in the VOC content in paint in the present draft that addresses the issues above especially on the protection of human health. Green Seal has stated categorically that its aim is “to develop leadership standards that recognize environmental excellence in products and to reward those manufacturers which go above the minimum statutory and regulatory requirements”. The third draft of GS-11 has made numerous changes to attain key performance criteria while compromising the attainment of certain environment criteria such as the health of occupants especially the most vulnerable population such as the young, the old and the infirm. Green Seal should take into serious considerations the human health impacts from exposure during and after application of paint that are used indoors.

To facility executives, and many home owners, an important factor for a paint is that it is environmentally and occupant friendly. Green Seal excluded certain important chemicals and metals in paints due to their toxicity, but the amount of VOCs in paints (g/L) is important as it relates to health effects and unpleasant odors especially when used indoors. Low VOC or “zero” VOC paints can allow facilities or homes to maintain normal activities during a painting project, especially important in homes, schools, and

medical facilities. We believe the science is already here, where paints with the performance and life cycle criteria as in the latest draft of GS-11, are available with much lower VOCs (g/L) levels requirements.

The comments below are specifically for Section 4.4 Volatile Organic Compounds (VOC) Content Limit:

1. In the 1993 version of GS-11 standard, flat topcoat had a VOC level of 50 g/L and 100 g/L for interior and exterior applications, respectively, excluding water and added colorants. The latest revised draft version of GS-11 has flat topcoat with VOC level of 50 g/L (excluding water and added colorants), and 100 g/L (colorants included, effective January 1, 2010). The present draft did not distinguish between whether the flat topcoat paint is used indoors or outdoors. Flat topcoat paints are common interior coatings, and the present version made no improvement from that used in the last GS-11 standard.
2. MPI's GPS-2 has maximum allowable VOC levels for interior and exterior flat intermediate/topcoats, and interior and exterior non-flat intermediate/ topcoats, all at 50 g/L (exclude water and added colorants). Since July 2007 MPI has started approving products that met the GPS-2 criteria, and there are already many paints that meet this stricter standard. The present version of GS-11 for VOC levels has similarities to MPI's GPS-1, a less stringent standard, which was developed in 2005.

<http://www.specifygreen.com/APL/ProductIdxByMPInum.asp>

3. The GS-11 1993 Standard, the 1999 Aberdeen Proving Ground Study (through a contract with Green Seal), and the web sites of the major paint manufactures show that the VOC levels proposed by GS-11 can easily be attained for interior paints.
4. We disagree with an earlier Green Seal comment that it does not believe it is "neither necessary nor pertinent to establish a tiered system with lower VOC limits. The "zero-VOC claims" will provide additional incentive and distinction in the market for those leaders in the marketplace". We believe that Green Seal should take the leadership role in driving the market towards the "zero" VOC levels. A three-tier system, one with the present VOC levels, one half of that, and one with the "zero" would provide incentives for paint manufacturers to showcase their environmentally friendly paints. At the moment there is no incentives for paint manufacturers to go any lower than what is required by the GS-11 standard if they do not have paints that meet the "zero" claim. We do not believe the "addendum" section is the appropriate place to give recognition of leadership initiative for "zero" VOC paints.
5. A problem with the present VOC limits is that of indoor air quality. The present VOC levels in paints do not provide enough safeguards for short-term exposures especially to many chemicals that could cause health effects (such as triggering or exacerbating an asthmatic attack) during the application and drying phase of painting. The single number that Green Seal is suggesting for the different paint types did not distinguish interior or exterior use paints. The main concern for exterior use is smog and ozone production potential, and for indoors, human health effects (due to the time people spent indoors and the close air systems of most interior spaces). To address the potential human health effects that could

occur for paints that are applied indoors, interior paints should be set at lower VOC levels.