



# GS-11

## Green Seal™ Environmental Standard for Paints and Coatings

**Second Edition**  
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THE MARK OF ENVIRONMENTAL RESPONSIBILITY

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Green Seal, Inc., developed these Environmental Standards to provide purchasers and manufacturers or service providers with specifications and to enable Green Seal, Inc., to certify products and services for compliance. Use of these standards by others to certify or evaluate compliance is expressly prohibited.

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## **GREEN SEAL**

Green Seal is a non-profit organization devoted to environmental standard setting, product certification, and public education. Green Seal's mission is to work towards environmental sustainability by identifying and promoting environmentally responsible products, purchasing, and production. Through its standard setting, certification and education programs, Green Seal:

- identifies products that are designed and manufactured in an environmentally responsible manner;
- offers scientific analyses to help consumers make educated purchasing decisions regarding environmental impacts;
- ensures consumers that any product bearing the Green Seal Certification Mark has earned the right to use it; and
- encourages manufacturers to develop new products that are significantly less damaging to the environment than their predecessors.

The intent of Green Seal's environmental requirements is to reduce, to the extent technologically and economically feasible, the environmental impacts associated with the manufacture, use and disposal of products. Set on a category-by-category basis, Environmental Standards focus on significant opportunities to reduce a product's environmental impact.

Green Seal offers certification to all products covered by its Standards. Manufacturers may submit their products for evaluation by Green Seal. Those which comply with Green Seal's requirements may be authorized to use the Green Seal Certification Mark on products and in product advertising. Manufacturers authorized to use the Green Seal Certification Mark on their product are subject to an ongoing program of testing, inspection, and enforcement.

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## FOREWORD

**A. Certification.** This Environmental Standard contains the basic requirements for certain products (as defined in the Scope section below) to be certified by Green Seal™ and for their manufacturers to receive authorization to use the Green Seal Certification Mark on products and their packaging, and in product advertising. The requirements are based on an assessment of the environmental impacts of product manufacture, use, and disposal and reflect information and advice obtained from industry, trade associations, users, government officials, environmental and other public interest organizations, and others with relevant expertise. These requirements are subject to revision as further experience and investigation may show is necessary or desirable.

**B. Compliance with the Standard.** Compliance with this Standard is one of the conditions of certification of a product by Green Seal.

**C. Compliance with Government Rules.** In order to be authorized to use the Green Seal Certification Mark, the manufacturer of the certified product must disclose all governmental allegations or determinations of violation of federal, state, or local environmental laws or regulations with respect to facilities in which the product is manufactured. Certification will be denied any product manufactured in violation of environmental laws or regulations if, in Green Seal's judgment, such violations indicate that the environmental impacts of the product significantly exceed those contemplated in the setting of the standard.

**D. Limitations on Purpose of Standard.** Green Seal's Standards provide basic criteria to promote environmental quality. Provisions for product safety have not been included in this Standard because government agencies and other national standard-setting organizations establish and enforce safety requirements.

**E. Substantially Equivalent Products.** Products that are substantially similar to those covered by this standard in terms of function and environmental impact may be evaluated and certified by Green Seal against the intent of the requirements of this standard.

**F. Unanticipated Environmental Impacts.** A product which complies with this Standard will not necessarily be certified by Green Seal if, when examined and tested, it is found to have other features which significantly increase its impact on the environment. In such a situation, Green Seal will ordinarily amend its standards to account for the unanticipated environmental impacts.

**G. Certification Agreement and Green Seal Rules.** In order to be authorized to apply the Green Seal Certification Mark to a product or its packaging, or to use the Green Seal Certification Mark in product advertising, the manufacturer of the product must (1) undergo an initial product evaluation to determine that the product complies with Green Seal's requirements, (2) sign a Green Seal Certification Agreement that, among other things, defines how and where the Green Seal may be used, (3) pay fees to cover the

costs of testing and monitoring, (4) agree to an ongoing program of factory inspections and product testing, and (5) comply with the requirements found in the most recent version of "Rules Governing the Use of the Green Seal Certification Mark."

**H. Disclaimer of Liability.** Green Seal™, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. Green Seal shall not incur any obligations or liability for damages, including consequential damages, arising out of or in connection with the interpretation of, reliance upon, or any other use of this Standard.

**I. Care in Testing.** Many tests required by Green Seal's Standards involve safety considerations. Adequate safeguards for personnel and property should be employed in conducting such tests.

**J. Referenced Standards.** Standards referenced in this document may have been superseded by a later edition, and it is intended that the most recent edition of all referenced standards be used in determining compliance of a product with this standard.

**K. Labeling Requirements.** This standard neither modifies nor supersedes government labeling requirements. Labeling language which varies in form from the requirements of this section may be used with the written approval of Green Seal.

## GREEN SEAL™ ENVIRONMENTAL STANDARD FOR PAINTS AND COATINGS (GS-11)

### *Until May 12, 2009:*

- *Products previously certified under the original GS-11 (issued 1993) and GC-3 (issued 1997) will need to be verified that they meet the requirements in the revision of GS-11 (issued 2008) by the above date. Any products that have yet to be verified to meet the requirements in the revision of GS-11 will be identified as such on the Green Seal web site, [www.greenseal.org](http://www.greenseal.org). Certifications under the original GS-11 and GC-3 and the revision of GS-11 will be valid during this time.*
- *Purchasing specifications and other specifications citing GS-11 should refer to the revision of GS-11.*
- *GC-3 is included in the revision of GS-11 and any references to GC-3 should be to the revision of GS-11.*

### 1.0 SCOPE

This standard establishes environmental requirements for paints and coatings. The standard includes wall, anti-corrosive, and reflective coatings, floor paints and primers and undercoats. The standard does not include stains<sup>1</sup>, clear finishes, recycled (consolidated or reprocessed) latex paint, specialty (industrial, marine or automotive) coatings, or paint sold in aerosol cans.

### 2.0 DEFINITIONS

**2.1. Anti-Corrosive Coating:** A coating formulated and recommended for use in preventing the corrosion of metal substrates.

**2.2. Carcinogen:** A chemical listed as a known, probable, reasonably anticipated, or possible human carcinogen by the International Agency for Research on Cancer (IARC) (Groups 1, 2A, and 2B), the National Toxicology Program (NTP) (Groups 1 and 2), the U.S. Environmental Protection Agency (EPA) Integrated Risk Information System (IRIS) (weight-of-evidence classifications A, B1, B2, and C, carcinogenic, likely to be carcinogenic, and suggestive evidence of carcinogenicity or carcinogen potential), or the Occupational Safety and Health Administration (OSHA).

**2.3. Coating:** Liquid, liquefiable, or mastic composition that is converted to a solid adherent film after application to a substrate as a thin layer and is used for decorating, protecting, identifying or to serve some functional purpose such as the filling or concealing of surface irregularities or the modification of light and heat radiation characteristics and is intended for on-site application to interior or exterior surfaces of residential, commercial, institutional or industrial buildings. For the purposes of this standard, the definition of paint or coating does not

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<sup>1</sup> **Stain** is defined under ASTM D16-03, Standard Terminology for Paint, Related Coatings, Materials, and Applications as “a penetrating composition that changes the color of a surface, usually transparent and leaving practically no surface film”.

include stains, clear finishes, recycled latex paint, specialty (industrial, marine or automotive) coatings or paint sold in aerosol cans.

**2.4. Colorant:** Concentrated color (dyes or pigments) that can be added to finished paints or coatings to make specific colors. Unless specified otherwise, it is the maximum amount of colorant recommended for use by the manufacturer.

**2.5. DFT:** Dry film thickness.

**2.6. Elastomeric Reflective Wall Coatings:** A coating that is designed and intended for the modification of light and heat radiation characteristics and has elastic properties and can stretch in the summertime heat and return to its original shape without damage<sup>2</sup> with a DFT of 17 dry mils or greater.

**2.7. Flat:** Paint or coating whose specular gloss registers less than 15 on an 85-degree meter or less than 5 on a 60-degree meter according to ASTM Method D 523–89, Standard Test Method for Specular Gloss.

**2.8. Floor Paint:** Opaque coatings that are formulated for or applied to flooring surfaces that have a DFT of 10 mils (0.25mm) or less and are applied by roller or brush. For the purposes of this standard, floor paints do not include epoxy or urethane flooring systems that include coarse aggregates, color chips or flakes as part of a multi-part flooring system. Floor paints also do not include floor finishes which are defined as any product that leaves a protective wax, polymer or resin coating that is designed to be periodically removed and reapplied.

**2.9. Hazardous Air Pollutant (HAP):** Any compound listed by the U.S. EPA in the Clean Air Act Section 112(b) (1) as a hazardous air pollutant.

**2.10. Ingredient:** 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.

**2.11. Intentional Introduction:** The act of deliberately utilizing a material in the formation of a package or packaging component where its continued presence is desired in the final package or packaging component to provide a specific characteristic, appearance, or quality.

**2.12. Mutagen:** A chemical that meets the criteria for category 1, chemicals known to induce heritable mutations or to be regarded as if they induce heritable mutations in the germ cells of humans, under the Harmonized System for the Classification Of Chemicals Which Cause Mutations in Germ Cells (United Nations Economic Commission for Europe, Globally Harmonized System of Classification and Labeling of Chemicals).

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<sup>2</sup> From the U.S. EPA Heat Island Effect Glossary.



**2.13. Non-Flat:** Paint or coating whose specular gloss registers 15 or greater on an 85-degree meter or 5 or greater on a 60-degree meter according to ASTM Method D 523–89, Standard Test Method for Specular Gloss Paint.

**2.14. Non-Elastomeric Reflective Wall Coatings:** Latex and thermoplastic coatings designed and intended for the modification of light and heat radiation characteristics with a DFT of 5 dry mils or greater.

**2.15. Ozone-Depleting Compounds:** A compound with an ozone-depletion potential greater than 0.01 (CFC 11=1) according to the U.S. EPA list of Class I and Class II Ozone-Depleting Substances.

**2.16. Paint:** A pigmented coating. See definition for **Coating**.

**2.17. Product:** Product produced by manufacturer and does not include additives added at the point-of-sale.

**2.18. Primer or Undercoat:** Coating that is formulated and recommended for one or more of the following purposes: to provide a firm bond between the substrate and a subsequent coating; to prevent a subsequent coating from being absorbed into the substrate; to prevent harm to a subsequent coating from materials in the substrate or to provide a smooth surface for application of a subsequent coating.

**2.19. Recovered Material:** Material that has been recovered from or otherwise diverted from the waste generated after a material manufacturing process. Recovered material may include post-consumer material, cuttings, trimmings, obsolete inventories, and rejected unused stock, but does not include material capable of being re-used within the process that generated it.

**2.20. Reflective Roof Coating:** A non-bituminous coating labeled and formulated for application to roofs for the primary purpose of reflecting ultraviolet light or reflecting solar radiation.

**2.21. Reproductive Toxin:** A chemical listed as a reproductive toxin (including developmental, female, and male toxins) by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (California Code of Regulations, Title 22, Division 2, Subdivision 1, Chapter 3, Sections 1200, et. Seq.).

**2.22. Topcoat:** The outermost layer of a paint or coating system.

**2.23. Volatile Aromatic Compound:** Any hydrocarbon compound containing one or more 6-carbon benzene rings in the molecular structure with an initial boiling point lower than or equal to 280°C measured at standard conditions of temperature and pressure.

**2.24. Volatile Organic Compound (VOC):** Any organic compound which participates in atmospheric photochemical reactions as defined by the U.S. EPA in 40 CFR §51.100 (s) and has an initial boiling point lower than or equal to 280°C measured at standard conditions of temperature and pressure.

### 3.0 PRODUCT-SPECIFIC PERFORMANCE REQUIREMENTS

**3.1. Paints and Coatings.** All paints and coatings, including primers and undercoats, shall meet the following performance requirements. All tests shall be performed on product produced by the manufacturer and do not include additives at the point-of-sale.

**3.1.1. Adhesion.** The product shall demonstrate a minimum of 50% or better rating for wet and dry adhesion over the intended substrate, except concrete, as determined by ASTM D3359-2 Standard Test Methods for Measuring Adhesion by Tape Test. Products intended to be applied on concrete shall demonstrate 200 psi failure in the concrete as determined by ASTM D7234-05 Standard Test Method for Pull-Off Adhesion Strength of Coatings on Concrete Using Portable Pull-Off Adhesion Testers.

**3.1.2. Applicability (Flow and Leveling).** The product shall demonstrate applicability by either a minimum 6 rating for foaming, leveling, and spatter resistance as determined by ASTM D7073-05 Standard Guide for Application and Evaluation of Brush and Roller Applied Paint Films or a 12-14 minimum drawdown as tested by ASTM D4400-99(2007) Standard Test Method for Sag Resistance of Paints Using a Multinotch Applicator. Floor paints shall demonstrate a minimum 7 rating as determined by ASTM D4062-99(2003) Standard Test Method for Leveling of Paints by Draw-Down Method.

**3.1.3. Hiding Power (Opacity).** The product shall demonstrate a minimum 0.95 contrast ratio at 400 square feet per gallon as determined by ASTM D2805-96a (2003), Standard Test Method for Hiding Power of Paints by Reflectometry. Compliance will be determined on dried film of the un-tinted white paint having a minimum 80% reflectance.

**3.2. Anti-Corrosive Coatings.** In addition to the requirements listed in 3.1, anti-corrosive coatings shall meet the following requirements:

**3.2.1. Corrosion Resistance.** Using manufacturer recommended minimum dry film thickness and application to hot rolled steel panels<sup>3</sup>, the product shall have a minimum rust rating of 9 per SSPC-VIS 2 Standard Method of Evaluating Degree of Rusting on Painted Steel Surfaces after

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<sup>3</sup>The hot rolled steel test panels should adhere to Society for Protective Coatings (SSPC) Paint 23 or Paint 24 specifications. If there is no recommended film thickness, then the DFT of each coat shall be 60 to 90 micrometers (2.5 to 3.5 mils).

300 hours of exposure as determined by ASTM D5894-05 Standard Practice for Cyclic Salt Fog/UV Exposure of Painted Metal, (Alternating Exposures in a Fog/Dry Cabinet and a UV/Condensation Cabinet).

**3.3. Floor Paints.** In addition to the requirements listed in 3.1, floor paints shall meet the following requirements:

**3.3.1. Alkali Resistance.** The product shall show no signs of lifting, wrinkling, disintegration or more than a slight color change after 16 hours exposure to 0.5N sodium hydroxide solution by spot test as determined by ASTM D1308-02(2007) Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes.

**3.3.2. Scrubbability (Abrasion Resistance).** Using a C-17 wheel and 500 gram weight, the product shall demonstrate a wear index of 200 or less as determined by ASTM D4060-07, Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.

**3.4. Interior Topcoats.** In addition to requirements listed in 3.1, interior topcoats shall meet the following requirements:

**3.4.1. Scrubbability (Abrasion Resistance).** Using a shim, the product shall demonstrate 400 scrub cycles before failure per Leneta Calibration Scrub Panel Form P121-C as determined by ASTM D2486-06 Standard Test Method for Scrub Resistance of Interior Latex Flat Wall Paints.

**3.4.2. Washability (Stain Removal).** The product shall demonstrate the following minimum requirements for stain removal as determined by ASTM 4828-91 Mechanical Method, Standard Test Method for Practical Washability of Organic Coatings.

Flat Topcoat	5 minimum rating
Non-Flat Topcoat	7 minimum rating

**3.5. Exterior Topcoats.** In addition to the requirements listed in 3.1, exterior topcoats shall meet the following requirements:

**3.5.1. Fade Resistance.** Using 4 oz of red iron oxide pigment, the product shall demonstrate a minimum durability total color change of  $\Delta E < 5$  of 1000 hours using QUV-A bulbs with a moisture and/or condensation cycle following the guidelines in ASTM G151-06 Standard Practice for Exposing Nonmetallic Materials in Accelerated Test Devices that Use Laboratory Light Source.

**3.5.2. Flexibility.** The product shall show no signs of cracking, peeling or loss of adhesion as determined by ASTM D522-93a (2001) Standard

Test Methods for Mandrel Bend Test of Attached Organic Coatings under the following cure conditions: 3 days air dry followed by 1 week at 50°C.

**3.5.3. Water Resistance.** The product shall show no signs of washing off, lifting or wrinkling as tested by ASTM D1735-04 Standard Practice for Testing Water Resistance of Coatings Using Water Fog Apparatus.

**3.6. Non-Elastomeric Reflective Wall Coatings.** In addition to the requirements in 3.1, non-elastomeric reflective wall coatings shall meet the following requirements:

**3.6.1. Accelerated Weathering.** The product shall show no signs of blistering, chalking, checking, cracking, flaking or loss of adhesion with a maximum change of 10 gloss level units after 500 hrs using QUV-A bulb as measured by ASTM D714-02e1 Standard Test Method for Evaluating Degree of Blistering of Paints.

**3.6.2. Flexibility.** The product shall meet the requirements as listed in Section 3.5.2.

**3.6.3. Solar Reflectance.** The product shall meet the requirements as listed below as determined by ASTM C1549-04 Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer or ASTM E1918-06 Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field.

<b>Characteristic</b>	<b>Performance Specification</b>	
	Light Tones <sup>4</sup>	Dark Tones
Solar Reflectance	Greater than or equal to 0.65	Greater than or equal to 0.40

**3.6.4. Thermal Emittance.** The product shall have a thermal emittance of 75% or more as determined by ASTM C1371-04a Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.

**3.7. Elastomeric Reflective Wall Coatings.** Elastomeric reflective wall coatings shall meet the following requirements:

**3.7.1. Accelerated Weathering.** The product shall show no signs of cracking or checking after 1000 hrs as determined by ASTM G155-05a Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.

<sup>4</sup>Light tones are characterized by the following six color families as defined by the Cool Roof Rating Council (CRRC): Beige/Off-White, Tan, White, Bright White, Pearlescent Silver and Pearlescent Copper. Dark tones are the remaining twelve color families and include reds, blues, browns, greens and black/grays.

**3.7.2. Elongation and Tensile Strength.** The product shall show minimum 100% elongation and minimum 200 psi tensile strength as determined by ASTM D2370-98(2002) Standard Test Method for Tensile Properties of Organic Coatings.

**3.7.3. Flexibility.** The product shall demonstrate ½ mandrel bend at -15°F as determined by ASTM D522-93a (2001) Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings under the following cure conditions: 3 days air dry followed by 1 week at 50°C.

**3.7.4. Fungi Resistance.** The product shall show zero rating as determined by ASTM G21-96(2002) Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.

**3.7.5. Solar Reflectance.** The product shall meet the requirements as listed in Section 3.6.3.

**3.7.6. Thermal Emittance.** The product shall meet the requirements as listed in Section 3.6.4.

**3.8. Reflective Roof Coatings.** Reflective roof coatings shall meet the following requirements:

**3.8.1. Physical Properties.** The product shall meet the requirements in ASTM D6083-05e1 Standard Specification for Liquid Applied Acrylic Coating Used in Roofing.

**3.8.2. Solar Reflectance.** The product shall meet the requirements as listed below as determined by ASTM C1549-04 Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer or ASTM E1918-06 Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field.

<b>Characteristic</b>	<b>Performance Specification<sup>5</sup></b>	
	<b>Low-Slope Roofs</b>	<b>Steep-Slope Roofs</b>
Initial Solar Reflectance	Greater than or equal to 0.65	Greater than or equal to 0.25

<sup>5</sup> Low-slope roofs are surfaces with a slope of 2:12 inches or less and Steep-slope roofs are surfaces with a slope of greater than 2:12 inches as determined by ASTM E1918-06 Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field.

<b>Characteristic</b>	<b>Performance Specification<sup>5</sup></b>	
Maintenance of Solar Reflectance	Greater than or equal to 0.50 (three years after installation under normal conditions)	Greater than or equal to 0.15 (three years after installation under normal conditions)

**3.8.3. Thermal Emittance.** The product shall have a thermal emittance of 80% or more as determined by ASTM C1371-04a Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.

**3.9. Alternative Performance Requirements.** Alternatively, a product can demonstrate adequate performance through using another scientifically validated test method under controlled and reproducible laboratory conditions if accompanied by justification for the method modification and documented in sufficient detail.

#### **4.0 PRODUCT-SPECIFIC HEALTH AND ENVIRONMENTAL REQUIREMENTS**

**4.1. Compound Prohibitions.** The product shall not contain any ingredients that are carcinogens, mutagens, reproductive toxins, hazardous air pollutants or ozone-depleting compounds. An exception shall be made for titanium dioxide and, for products that are pre-tinted by the manufacturer, carbon black. Carbon black allowed under this exception shall be less than or equal to 1% by weight of the product.<sup>6</sup>

Naturally occurring elements and chlorinated organics, which may be present as a result of chlorination of the water supply, are not considered ingredients if the concentrations are below the applicable maximum contaminant levels in the National Primary Drinking Water Standards found in 40 CFR, Part 141.

**4.2. Specific Compound Prohibitions.** The product shall not contain the following ingredients:

- 1,2-dichlorobenzene
- Alkylphenol ethoxylates (APEs)
- Formaldehyde-donors
- Heavy metals, including lead, mercury, cadmium, hexavalent chromium and antimony in the elemental form or compounds
- Phthalates
- Triphenyl tins (TPT) and tributyl tins (TBT)

<sup>6</sup> Titanium Dioxide: EC Number 236-675-5, CAS Number 13463-67-7

Carbon Black: EC Number 215-609-9, CAS Number 1333-86-4

**4.3. Volatile Aromatic Compound Content Limit.** The product shall contain no more than 0.5% by weight of sum total of volatile aromatic compounds. Testing for the concentration of these compounds will be performed if they are determined to be present in the product during a materials audit.

**4.4. Volatile Organic Compound (VOC) Content Limit.** The VOC concentration of the product shall not exceed those listed below in grams of VOC per liter of product as determined by ASTM D6886-03 Standard Test Method for Speciation of the Volatile Organic Compounds (VOCs) in Low VOC Content Waterborne Air-Dry Coatings by Gas Chromatography using 280°C as a specified limit. Alternatively, International Organization for Standardization (ISO) 11890-2 Paints and varnishes -- Determination of volatile organic compound (VOC) content Part 2: GC/MS method may be used, but must use 280°C as a marker. Another scientifically validated test method may be used if accompanied by justification for the method modification and documented in sufficient detail.

The calculation of VOC shall exclude water and colorants added at the point-of-sale.

Product Type	VOC level (in g/L)
Flat Topcoat	50
Non-Flat Topcoat	100
Primer or Undercoat	100
Floor Paint	100
Anti Corrosive Coating	250
Reflective Wall Coating	50
Reflective Roof Coating	100

**4.5. Effective as of January 1, 2010, Colorant Added at the Point-of-Sale VOC Content Limit.** The VOC concentration of the product including the colorant added at the point-of-sale shall not exceed those listed below in grams of VOC per liter of product as determined by the methods listed in Section 4.4. Green Seal will apply an average VOC level calculation unless a manufacturer can provide documentation of the colorant(s) VOC levels and specifies that only those colorant(s) tested shall be used with the product.

Product Type	VOC level (in g/L)
Flat Topcoat with colorant added at the point-of-sale	100
Non-Flat Topcoat with colorant added at the point-of-sale	150

Product Type	VOC level (in g/L)
Primer or Undercoat with colorant added at the point-of-sale	150
Floor Paint with colorant added at the point-of-sale	150
Anti Corrosive Coating with colorant added at the point-of-sale	300
Reflective Wall Coating with colorant added at the point-of-sale	100
Reflective Roof Coating with colorant added at the point-of-sale	150

## 5.0 END-OF-LIFE MANAGEMENT

**5.1. Consumer Education.** The manufacturer shall provide information to the consumer through print, online or other accessible media including:

- Instructions for purchasing the appropriate amount of product needed for a specified job.
- Instructions for adequate ventilation during paint application and drying period.
- Instructions on proper use of the product.
- A statement encouraging consultation with local authorities for proper disposal or recycling opportunities for leftover product and packaging.
- If a manufacturer provides a take-back program, instructions on how the product and packaging can be returned.

**5.2.** Leftover paint from the manufacturing process shall be utilized locally and/or domestically where there are existing markets.

## 6.0 PACKAGING REQUIREMENTS

**6.1. Packaging.** The packaging shall contain a minimum of 20% recovered material content. An exception shall be made for packaging that can be recycled as part of a manufacturer take-back program.

**6.2. Heavy Metal Restrictions.** Heavy metals, including lead, mercury, cadmium, and hexavalent chromium, shall not be intentionally introduced. Further, the sum of the concentration levels of these metals present shall not exceed 100 parts per million by weight (0.01%); an exception is allowed for packages that would not exceed this maximum level but for the addition of



recovered materials. Further, intentional introduction does not include the use of one of the metals as a processing aid or intermediate to impart certain chemical or physical changes during manufacturing, where the incidental retention of a residual of that metal in the final package or packaging component is not desired or deliberate, if the final package or packaging component complies with the incidental concentration restrictions of 100 ppm.

**6.3. Other Restrictions.** Phthalates are prohibited from being intentionally introduced; an exception is allowed for packages that would not have added phthalates but for the addition of recovered material.

## 7.0 LABELING REQUIREMENTS

**7.1. Label Requirements.** The manufacturer's label shall include a statement encouraging consultation with local authorities regarding proper disposal or recycling opportunities for leftover product and packaging. The label shall include instructions for appropriate purchasing, adequate ventilation during drying time, and proper use of the product or include a reference to consumer education information by print, online or other accessible media. If the manufacturer provides a take-back program, the label shall include instructions on how the product and packaging can be returned.

**7.2. Certification Mark.** The Green Seal Certification Mark may appear on the product's packaging. The Green Seal Certification Mark shall not be used in conjunction with any modifying terms, phrases, or graphic images that might mislead consumers as to the extent or nature of the certification.

**7.3. Statement of Basis of Certification.** Whenever the certification mark appears on a package, the package shall contain a description of the basis for certification. The description shall be in a location, style, and typeface that are easily readable. Unless otherwise approved in writing by Green Seal, the description shall, as applicable, read:

This product meets the Green Seal™ environmental standard for paints and coatings based on performance requirements and reduced use of hazardous substances and reduced volatile organic compounds (VOCs).