

DUNN-EDWARDS® AWARDED LEED® GOLD CERTIFICATION FROM THE U.S. GREEN BUILDING COUNCIL



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New Paint Factory is World's First LEED Certified



Dunn-Edwards has been awarded the coveted LEED Gold certification from the U.S. Green Building Council for its new manufacturing facility. Located in Phoenix, the 336,000-sq. ft. plant was custom designed to be the greenest and most efficient in the coatings industry, and is the world's first LEED-certified paint factory. The ultra-modern building encompasses manufacturing, product development, quality control laboratories, a distribution center, retail outlet and office space.

The facility incorporates innovative, energy-efficient equipment and protocols, such as unique high-efficiency process equipment with integrated dust-suppression technology (so that no particulates are emitted to ambient air) and advanced wastewater recycling techniques to conserve water. All systems are classified as ultra-low discharge, meaning that waste generation is virtually eliminated.

Dunn-Edwards is considered one of the most environmentally-friendly paint manufacturers and an industry leader in eco-efficient principles – all part of its greener by design™ philosophy. For example, throughout Dunn-Edwards operations, the company focuses on initiatives such as energy efficiency, waste minimization, recycling, emissions reduction, and health and safety protection. This leads to manufacturing paint that is more eco-friendly while taking steps to conserve energy and material resources, and to reduce waste in the physical environment.

Demonstrating that small changes can add up to big eco-savings, the company eliminated cardboard boxes for packaging one-gallon containers and now uses recyclable heat shrink wrap. Dunn-Edwards is the only paint plant in the United States using this packaging alternative. This amounts to a reduction of cardboard consumption by one million boxes, which equates to approximately 250 tons of cardboard per year.

Dunn-Edwards has long been a leader dedicated to the green principle of eco-efficiency, which is defined as the ability to satisfy human needs in ways that minimize adverse impacts on energy and material resources, environmental quality, and human health and safety. The new LEED Gold certified manufacturing facility is yet another example of this commitment.

For more information about Dunn-Edwards Corporation's commitment to being greener by design™, visit dunnedwards.com.





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USING THIS GUIDE

Who this guide is for:

This guide was developed by Dunn-Edwards for architects and designers who are developing projects with a green focus. Buildings that are designed to be eco-efficient and healthy are not merely a trend—they are an important element of our future, and the focus on green building appears to be increasing.

Much of the terminology is often used interchangeably, but there are unique differences in the programs and rating systems. This guide will help both the novice and the expert better understand these programs, and how Dunn-Edwards products can be used in the various specifications.

For easy use, here's how we've organized the sections:

- Section 1** **Environmental Responsibility** This section explains our commitment to environmental responsibility as part of our history, corporate philosophy, and plan for moving into the future. Manufacturing exclusively EG-Free products (without Ethylene Glycol or any other toxic air contaminants) supports this major initiative.

- Section 2** **Green Seal and LEED® Products** This section of LEED® qualified Dunn-Edwards interior products will help design professionals interested in the LEED® program.

- Section 3** **LEED® for Schools/ CHPS** This section provides information about how the LEED® program works in California as part of the CHPS initiative. Learn about Section 01350, read the actual specification language, and know which Dunn-Edwards products were lab tested to qualify for this program.

- Section 4** **Green Wise® Certification** This section includes a list of Green Wise® certified products manufactured by Dunn-Edwards.

- Section 5** **Low-Odor/Zero VOC Products** This section includes a list of Interior Low-Odor and Low- or Zero VOC products manufactured by Dunn-Edwards.

- Section 6** **Recycled Products** This section includes Recover®, a line of recycled paints distributed by Dunn-Edwards.

Be sure to call on your Dunn-Edwards Representative with any painting questions or needs, no matter what size your projects may be.

Information in this manual is accurate at the time of printing. To obtain the most current product recommendations and information, visit our website at dunnedwards.com or consult your Dunn-Edwards Representative.



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A PROFILE IN ENVIRONMENTAL RESPONSIBILITY



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Dunn-Edwards Corporation enjoys a reputation in the paint industry as a manufacturer of superior architectural coatings. We use the highest quality raw materials, product formulations, and manufacturing processes to achieve and maintain this status. We believe, however, that our **pursuit of excellence must include preservation of environmental quality and protection of human health and safety.**

Dunn-Edwards Corporation has always maintained a commitment to full compliance with all health and safety laws and environmental regulations. Beyond strict compliance with legal mandates, we have **voluntarily initiated responsible policies to safeguard the health and safety of our workers and customers, and the quality of our shared environment.**

For example, Dunn-Edwards invests heavily in research and development efforts aimed at producing the highest quality paint and coatings possible under regulatory restrictions and our own moral commitment. Our efforts **focus on minimizing or eliminating the use of potentially hazardous ingredients.** Following are some accomplishments of these efforts:

- ★ During the early 1950s, after having already phased out most uses of white lead pigment, Dunn-Edwards discontinued from our product line the last remaining lead-based paint (an exterior wood primer). The Federal Consumer Products Safety Commission did not ban residential use of lead-containing paints until 1978.
- ★ Near the end of the 1970s, Dunn-Edwards reformulated products to eliminate completely the use of biocides containing mercury. U.S. EPA did not impose a limited ban on mercury biocides until 1990. At that time, Dunn-Edwards was one of only two paint manufacturers approved as a supplier of mercury-free coatings to county agencies in California.
- ★ In the mid-1980s, Dunn-Edwards replaced ethylene glycol (a toxic solvent widely used in latex paints) with propylene glycol, which performs just as well. Unlike ethylene glycol, however, propylene glycol is non-toxic and, in fact, is FDA-approved for use in foods, beverages, cosmetics, toiletries, and medicines.
- ★ All products currently manufactured by Dunn-Edwards contain no asbestos or chromates, nor any known carcinogen or reproductive toxicant as an intended ingredient.

In our factory operations, Dunn-Edwards engages in a comprehensive recycling program that is mandated by management and supported by employees. Our recycling policy evolved out of a realization that discarding waste is not only uneconomical, but also potentially unhealthy and unaesthetic. We currently **recycle over 95 percent of our process wastestream.** This has been accomplished through the following process modifications:

- ★ Manufacturing procedures are continually evaluated for opportunities to reduce or eliminate generation of process waste. For example: Our recent installation of a custom slurry system using aqueous pigment suspensions to replace most dry powdered pigments has significantly reduced fugitive dust emissions from our factory.
- ★ Reusable bulk containers have replaced, as much as possible, disposable sacks of powdered pigments. This reduces packaging waste, improves efficiency, and minimizes loss of powdered pigments.
- ★ High-efficiency process equipment that handles powder pigments includes an integrated dust capture function, so that 100% of the pigment is used in product and there are no particle emissions.
- ★ Similar products are scheduled for sequential production, to reduce generation of wastewater from rinsing of tanks and process equipment.
- ★ Both process water and rinse solvents are segregated according to color, for reuse in manufacturing subsequent products.
- ★ All tanks and vats are kept tightly closed, or their contents covered with a layer of compatible liquid, to prevent the formation of paint "skins."
- ★ Use of on-site raw material storage tanks and returnable semi-bulk containers has dramatically reduced the number of metal and fiber drums to be sent from our factory for disposal or reconditioning.

In addition to these procedures, we also crush empty metal containers and send them to a smelter for use in new steel products. We separate computer paper, cardboard boxes and pigment bags for recycling off-site—we even repair and reuse old wooden pallets to minimize trash. We have set the goal of becoming a “zero-discharge” facility.

Dunn-Edwards Corporation has also **assumed environmental responsibility in areas beyond the formulation and production of quality coatings**, such as the following:

- ★ Dunn-Edwards was the first paint manufacturer to publish a comprehensive catalogue of Material Safety Data Sheets, indexed by both product code and product name, to provide an easy-to-use, single source of health and safety information on our entire product line.
- ★ Dunn-Edwards voluntarily removed all underground storage tanks from our store locations, thereby eliminating the possibility of soil or groundwater contamination due to potential leakage of petroleum distillates (paint thinner).
- ★ In the greater Los Angeles metropolitan area, Dunn-Edwards has initiated, and maintained for several years, a program of “off-hours” distribution to our local stores. This helps to relieve traffic congestion on Southern California freeways, and reduces vehicular air pollution.
- ★ As part of a cooperative venture with a small paint recycling company, Dunn-Edwards has formulated and distributes a line of recycled latex paint products under the brand name Recover. This provides a good quality, low-cost latex paint while conserving material and energy resources.
- ★ Working cooperatively with the South Coast Air Quality Management District and the California Air Resources Board, Dunn-Edwards has promoted the development of innovative approaches to regulating architectural coatings, including an Averaging Compliance Option. This approach allows manufacturers greater flexibility in meeting VOC content limits while keeping high performance specialty coatings available to users.
- ★ Dunn-Edwards has sponsored scientific research on VOC issues as part of NARSTO, an international program to study the formation and control of ground-level ozone, a component of urban smog. We also strongly support efforts to provide sound scientific analysis of regulations affecting the formulation or use of paint and coatings, with the object of achieving maximum environmental benefit at minimum cost to society.
- ★ Dunn-Edwards, along with the American Coatings Association, has initiated a scientific research project involving the Environmental Research Institute at the University of California, Riverside. The project will develop, for the first time ever, a comprehensive assessment of the environmental impacts of making and using architectural coatings. Life-cycle analysis of impacts to all environmental media—not just air quality—will be included. Research results will be used to guide future development of the most eco-efficient coatings possible.

For more information, contact the Environmental Affairs Department of Dunn-Edwards Corporation at 1-800-537-4098, Extension 2663.



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ECO-EFFICIENCY

Eco-efficiency, n., the ability to satisfy human needs in ways that minimize adverse impacts on energy and material resources, environmental quality, and human health and safety.

Eco-Efficiency is More Than Just Low VOC Content

Architectural coatings have long been regulated to limit their Volatile Organic Compound (VOC) solvent content, with the intention of improving air quality. VOCs, in the presence of nitrogen oxides from combustion, may promote the formation of ozone, a key component of urban smog. VOC content has become the primary indicator of environmental acceptability for coatings – but this approach has serious limitations.

Current regulations limit the VOC content of coatings without regard to “reactivity,” which is the ability to promote ozone formation. Different VOCs have different degrees of reactivity – some VOCs may be up to 100 times more reactive than others. Taking VOC reactivity into account, along with performance factors such as coverage and durability, is necessary to better quantify the eco-efficiency of coatings. Dunn-Edwards is the first paint company to voluntarily label its products with reactivity-adjusted VOC (“RAVOC”) values.

Full assessment of eco-efficiency requires “life-cycle analysis” to identify potential impacts on a broad range of environmental criteria. These would include not only air quality but energy and material resource consumption, water quality, solid waste disposal, ecological quality, and human health and safety. Surprisingly to some, the most eco-efficient coatings are not necessarily the lowest in VOC content.

Paint and Coatings are Inherently Eco-Efficient Products

Paint and coatings beautify, protect, and preserve the surfaces to which they are applied, thereby conserving energy and material resources, and improving the visual quality of our environment.

- ★ Exterior coatings resist the damaging effects of wind, rain and sunlight, preventing the deterioration of wood, metal and masonry substrates so that buildings last longer and require less maintenance.
- ★ Exterior coatings contribute to energy efficiency and air quality improvement through raising the albedo (light reflectance) of surfaces, thus reducing the “urban heat island” effect.
- ★ Interior coatings resist soiling, staining, wear, and abrasion of contact surfaces, helping to keep residences and workplaces clean and sanitary, and improving the efficiency of lighting.

Performance is the Key to Eco-Efficiency of Paint and Coatings

The performance of paint is key to maximizing environmental benefits while minimizing total ecological burdens. Product life cycle analysis shows that high performance – especially in terms of coverage (amount of material required per application) and durability (length of service life before re-application) – prevents wasteful and inefficient use of energy and material resources from start to finish in the life cycle of coatings.

Dunn-Edwards Corporation Aims at Improving Eco-Efficiency

Dunn-Edwards Corporation invests heavily in research and development efforts aimed at producing the most eco-efficient paint and coatings possible. We do this by pursuing every opportunity for cost-effective performance improvements. At the same time, we seek to avoid the use of potentially toxic ingredients and to reduce VOC content to the lowest level that will achieve optimal coverage and durability.



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EG-FREE® PAINT

Why use EG-FREE® Paint?

Ethylene Glycol (EG) is a solvent used in many paints and colorants, and is **listed as a hazardous air pollutant and toxic air contaminant** under many federal and state regulations. A colorless, odorless liquid, EG and its vapors can be toxic to humans. Exposure may cause irritation to skin, eyes, nose, throat and lungs, and allergic reactions are possible. Overexposure to EG could lead to nausea, vomiting, drowsiness, and respiratory impairment. And repeated overexposure can permanently damage the liver and kidneys.

In 1983, Dunn-Edwards Corporation was one of the **first in the paint industry to voluntarily replace EG with Propylene Glycol**, a safer, more environmentally-friendly ingredient, in the water-based paints we manufacture. Propylene Glycol is non-toxic and is even FDA-approved for use in foods, beverages, medicines, cosmetics, and toiletries. Studies have shown that paint containing Propylene Glycol has the same performance and durability as paint containing EG.

Because our paint is applied to protect and beautify hotels, homes, apartments, offices, schools, and hospitals, Dunn-Edwards reaffirms its long-standing commitment to EG-Free paint products that help protect the well-being of our contractors, their customers, and the environment.



Look for this symbol exclusively on Dunn-Edwards water-based products.
All the water-based paints we manufacture are EG-Free.

FREQUENTLY ASKED QUESTIONS ABOUT VOC



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What is a “VOC”?

A VOC is a “Volatile Organic Compound” – the way a chemist uses that phrase, the word “volatile” describes a liquid that evaporates at room temperature, and the word “organic” means it is a compound that contains carbon. Thousands of different VOCs, some natural and some man-made, can be found in the air. Most natural VOCs are emitted from biogenic sources such as trees and vegetation. The primary man-made sources of VOCs are motor vehicle exhaust, unburned gasoline, and solvents.

On the continental scale, over 60% of the VOCs emitted into the atmosphere come from natural sources. Emissions from architectural coatings account for less than 1% of total VOCs. In paint and coatings, VOCs are used as solvents, or thinners, that work with the resin – the part that binds together all the ingredients of the paint and sticks them on to the wall – to get good performance and durability. “VOC content” means the weight of VOC per volume of product, and is usually measured as grams per liter (g/L).

VOC is not a technical term, however; it is a regulatory term that varies in meaning across countries, state and local jurisdictions, and regulated products. In general, VOCs are regulated with the intention of improving outdoor air quality in smoggy urban areas, because they may contribute to the formation of ozone – a main ingredient of smog. But – what may be regarded as a VOC for one purpose, in one place and time, may not be regarded as a VOC for another purpose, or in another place and time.

When is a VOC not a VOC?

The simple answer to this question is: It all depends. At the federal level, a VOC is not counted as a VOC if U.S. EPA designates it as an “exempt compound” after it is proved to be “negligibly reactive” – which means it has no more ozone forming potential than the low-reactive compound ethane. An exempt compound is still volatile, still contains carbon, and has some degree of reactivity – it just doesn't count as a VOC. At the state and local levels, sometimes a VOC is an exempt compound in one jurisdiction, but not in another jurisdiction; or a VOC may be exempt for one purpose, but not for another purpose in the same jurisdiction.

Throughout the United States, a VOC is excluded from the calculation of VOC content for consumer products (except for paint!) if it is a “low vapor pressure compound” – which means it has a vapor pressure no greater than 0.1 mm Hg @ 20°C. A low vapor pressure compound may be volatile, still contains carbon, and may be more reactive than ethane – but it doesn't figure in the calculation of VOC content for consumer products. In the European Union, a VOC is not regarded as a VOC if it has an initial boiling point above 250°C (482°F). This is why Texanol (a common latex paint co-solvent) is not regulated as a VOC in the European Union, although it is regulated in the United States.

So what does “Zero VOC” mean?

The phrase “Zero VOC” can be used to mean a number of different things when describing the VOC content of products – which is not a problem, so long as the meaning is clearly defined whenever the phrase is used. For example, Zero VOC can mean:

- ★ VOC content at “Non-Detect” levels, as determined experimentally by EPA Test Method 24. Unfortunately, this test method (although the “official” method) is widely recognized as being very unreliable for waterborne coatings with VOC contents below 100 g/L. To achieve “Non-Detect” levels, a company may literally run EPA Test Method 24 as many times as it takes to generate a zero or negative number.
- ★ VOC content near “Non-Detect” levels, as determined experimentally by test method ASTM D 6886. This test method is far more accurate than EPA Method 24 – so accurate, in fact, that it can detect residual trace amounts of VOC in all “Zero VOC” paints. Trace amounts of VOC can even be found in tap water. Dunn-Edwards is one of the few paint companies using this test method to determine VOC content – as shown on labels and product information sheets for our ultra premium Low Odor / Zero VOC paint line, Everest®.
- ★ No VOC content, as calculated from product formulation data. This is an acceptable alternative to EPA Method 24 for purposes of labeling products with their Maximum VOC Content, as required under various regulations. If this varies from test results of EPA Method 24, however, EPA regards the variance as proof that the product formulation data was incomplete or erroneous.

★ Material VOC content at or below 5 g/L. This is based on an interpretation of the SCAQMD (South Coast Air Quality Management District) Rule 314 exemption for “Zero VOC equivalent” coatings.

★ No VOC used in the solvent component of a resin/solvent system. This is the basis for how Dunn-Edwards defines “Zero VOC” to mean “no organic solvents added.” (Trace amounts of VOC – up to 5 g/L – may be present as residual components of other ingredients.) This is consistent with the goal of paint regulation: to reduce the amount of organic solvent in resin/solvent systems. The development of resins that perform well without VOC has been, and continues to be, the greatest challenge to coatings technology. Achieving high-performance coatings with no added organic solvent – such as our Everest line – is therefore an accomplishment worthy of recognition.

What does “Low VOC” or “Ultra-Low VOC” mean?

Prior to regulation, typical solventborne paints had VOC contents up to 450 g/L, and typical waterborne paints had VOC contents up to 250 g/L. Given that historical context, and the VOC reductions made possible by technological advancements in the paint industry, Dunn-Edwards uses the phrase “Low VOC” to describe any coating with a VOC content at or below 150 g/L (except for Ultra-Low VOC and Zero VOC coatings). Also, Dunn-Edwards uses the phrase “Ultra-Low VOC” to describe any coating with a VOC content at or below 50 g/L (except for Zero VOC coatings). Because VOCs are the main source of odor in paint, lower VOC products have less odor.

But aren’t VOCs toxic?

Many different compounds are considered “VOC” – some VOCs are toxic, and other VOCs are not. All of Dunn-Edwards latex paints are Zero Toxic – they contain no toxic air contaminants or hazardous air pollutants of any kind. While most other paint manufacturers continue to use ethylene glycol (EG) – a designated toxic compound – as a cosolvent in latex paints, all Dunn-Edwards products are “EG-Free.” Where needed, Dunn-Edwards substitutes propylene glycol, a non-toxic alternative that is also used in foods, cosmetics, and pharmaceuticals.

RAVOC: REACTIVITY ADJUSTED VOC CONTENT



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What is RAVOC?

Paint and coatings have long been regulated to limit their VOC content, with the intention of improving outdoor air quality. When VOCs evaporate into the air, while nitrogen oxides from combustion are present, they may promote the formation of ozone, a main ingredient of urban smog. VOC content has become the primary indicator of environmental acceptability for coatings. This approach, however, has serious limitations because it does not consider VOC reactivity.

“Reactivity” means the ability of a VOC to promote ozone formation. Thousands of different VOCs may be present in the air. Different VOCs have different degrees of reactivity – some may be up to 100 times more reactive than others. Current regulations place limits on the amount of VOC in coatings, without regard to reactivity (beyond exempting a few compounds that are designated as “negligibly reactive”). Consequently, VOC content alone says very little about the potential air quality impact of a coating. Reactivity-adjusted VOC content (RAVOC) ratings are a much better way to measure VOC. Dunn-Edwards is now revising product labels to include RAVOC ratings along with standard VOC content.

How does RAVOC work?

RAVOC ratings adjust the VOC content to reflect the potential air quality impacts of the specific VOCs used, relative to the average mix of all VOCs in the air. For example: If the VOC content of a product is 100 g/L, and the RAVOC rating is 50 g/L, this tells you that the VOCs used in this product have only half the air quality impact of an equivalent amount of average VOCs. RAVOC ratings are calculated using Maximum Incremental Reactivity (MIR) values developed by Dr. William P.L. Carter at the University of California, Riverside. The validity and usefulness of MIR values are widely accepted in the scientific community, and both U.S. EPA and the California Air Resources Board have used MIR values in reactivity-based rules for aerosol coatings.

Are RAVOC ratings required for paint?

No, RAVOC ratings are not required on paint labels at this time. Dunn-Edwards, however, voluntarily provides this information to better inform consumers about the relative air quality impacts of different product choices. We believe that the disclosure of RAVOC ratings will, over time, become a standard practice in the paint industry.



Look for this symbol on Dunn-Edwards manufactured products.

What is LEED®?

LEED (Leadership in Energy and Environmental Design) is a green building rating system created by individuals representing all segments of the building industry who are members of the United States Green Building Council. It is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings, and seeks to establish common standards of measurement, recognize environmental leadership in the building industry, and raise consumer awareness of green building benefits. The program awards points to various aspects of a design project, including paint. With enough points, a project can be LEED certified. For more information, go to www.usgbc.org/leed.

How is this done?

In the LEED rating system, there are numerous ways you can earn points. The most applicable one regarding paint is the category titled, **Indoor Environmental Quality**, Credit 4.2 *Low-Emitting Materials: Paints & Coatings*. Refer to page 14 in this manual for an explanation of Credit 4.2.

Points may also be earned in the **Materials and Resources** category. See Credit 4.1 *Recycled Content*.

Note the distinction that an individual product cannot be LEED certified. Using interior paints and coatings that meet the criteria of IEQ Credit 4.2 will earn one point toward the entire project being LEED certified.

Dunn-Edwards has many products that are LEED Compliant, and they are listed later in this section, along with the finish schedule showing the proper surface application of each.



GS-11 STANDARD

Paints (GS-11)

First Edition May 20, 1993
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1. Scope

This Standard establishes environmental requirements for paints. The standard does not include stains, clear finishes, or paints sold in aerosol cans.

2. Definitions.

For the purpose of this Standard, the following definitions apply.

- 2.1 Paints:** Liquid, liquefiable or mastic composition that is converted to a solid protective, decorative, or functional adherent film after application as a thin layer. These coatings are intended for on-site application to interior or exterior surfaces of residential, commercial, institutional, or industrial buildings¹.
- 2.2 Volatile Organic Compounds (VOCs):** Compounds as defined by U. S. Environmental Protection Agency (EPA) in 40 CFR § 51.100 (s), (s) (1).
- 2.3 Aromatic Compounds:** Hydrocarbon compounds containing one or more 6-carbon benzene rings in the molecular structure.

3. Product-Specific Performance Requirements.

3.1 Interior Topcoats. Products intended for interior opaque topcoat use shall meet the following requirements.

3.1.1 Scrubbability (Abrasion Resistance). The product shall demonstrate at least 100 cycles (200 separate strokes) before failure, as determined by American Society for Testing and Materials (ASTM) D2486-89, *Standard Test Method for Scrub Resistance of Interior Latex Flat Wall Paints*.

3.1.2 Hiding Power (Opacity). The product shall demonstrate a minimum 0.95 contrast ratio at 400 square feet per gallon as determined by ASTM D2805-88, *Standard Test Method for Hiding Power of Paints by Reflectometry*. Compliance will be determined by testing a white paint having a minimum 80% reflectance.

3.1.3 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 ²	5 minimum rating
Non-Flat	7 minimum rating

3.2 Exterior Topcoats. Products intended for exterior opaque topcoat use shall meet the following requirements.

3.2.1 Hiding Power (Opacity). The product shall demonstrate a minimum 0.95 contrast ratio at 400 square feet per gallon as determined by ASTM D2805-88, *Standard Test Method for Hiding Power of Paints by Reflectometry*. Compliance will be determined by testing a white paint having a minimum 80% reflectance.

4. Product-Specific Environmental Requirements.

4.1 Chemical Component Limitations.

4.1.1 VOCs. The VOC concentrations of the product shall not exceed those listed below as determined by U. S. Environmental Protection Agency (EPA) Reference Test Method 24 (Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coatings), Code of Federal Regulations Title 40, Part 60, Appendix A.

The calculation of VOC shall exclude water and tinting color added at the point of sale.

Interior Coatings:

<i>Coating Type</i>	<i>VOC weight in grams/liter of product minus water</i>
Non-Flat ³	150
Flat	50

Exterior Coatings:

<i>Coating Type</i>	<i>VOC weight in grams/liter of product minus water</i>
Non-Flat ⁴	200
Flat	100

4.1.2 Aromatic Compounds. The product must contain no more than 1.0% by weight of the sum total of 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.

4.2 Chemical Component Restrictions. The manufacturer shall demonstrate that the following chemical compounds are not used as ingredients in the manufacture of the product.

4.2.1 Halomethanes

methylene chloride

4.2.2 Chlorinated ethanes

1,1,1-trichloroethane

4.2.3 Aromatic solvents

benzene

toluene (methylbenzene)

ethylbenzene

4.2.4 Chlorinated ethylenes

vinyl chloride

4.2.5 Polynuclear aromatics

naphthalene

4.2.6 Chlorobenzenes

1,2-dichlorobenzene

4.2.7 Phthalate esters

di (2-ethylhexyl) phthalate

butyl benzyl phthalate

di-n-butyl phthalate

di-n-octyl phthalate

diethyl phthalate

dimethyl phthalate

4.2.8 Miscellaneous semi-volatile organics

isophorone

4.2.9 Metals and their compounds

antimony

cadmium

hexavalent chromium

lead

mercury

4.2.10 Preservatives (antifouling agents)

formaldehyde

4.2.11 Ketones

methyl ethyl ketone

methyl isobutyl ketone

4.2.12 Miscellaneous volatile organics

acrolein

acrylonitrile

5. Packaging Requirements.

5.1 Toxics in Packaging.

- 5.1.1** The manufacturer shall demonstrate that paint cans and their components are not fabricated with lead.

Appendix: Labeling Requirements for Certification by Green Seal

Unless otherwise approved in writing by Green Seal, the following labeling requirements shall apply:

1. The Green Seal Certification Mark must appear on the packaging.
2. Whenever the certification mark appears on a package or product, the product or package must contain a description of the basis for the certification. The description shall be in a location, style, and typeface that are easily readable by the consumer. The description shall read as follows:
This product meets Green Seal environmental standards for volatile organic compounds (VOCs) and other ingredients.
3. The packaging shall be accompanied by a brief statement discouraging disposal into drains and encouraging consultation with local authorities for disposal requirements or recycling opportunities.
4. Paints which have been formulated without VOCs shall be designated Class A and may contain a special designation to that effect on the label.

Notes:

1. ASTM D16-91, *Standard Terminology Relating to Paint, Varnish, Lacquer, and Related Products*. Stains and clear finishes, which are included in the ASTM definition, are not covered by this standard.
2. If the manufacturer has not characterized the paint as to gloss, the specular gloss level at 60° will be determined. Flat paints are those which register less than 5 and non-flat paints are those which register a 5 or greater. The gloss reading will be determined by ASTM D523-89, *Standard Test Method for Specular Gloss*.
3. See note #2.
4. See note #2.

IEQ Credit 4.2: Low-Emitting Materials: Paints & Coatings

1 Point

Intent

To reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

Requirements

Paints and coatings used on the interior of the building (i.e., inside of the weatherproofing system and applied on-site) must comply with the following criteria as applicable to the project scope:

- Architectural paints and coatings applied to interior walls and ceilings must not exceed the volatile organic compound (VOC) content limits established in Green Seal Standard GS-11, Paints, First Edition, May 20, 1993.
- Anti-corrosive and anti-rust paints applied to interior ferrous metal substrates must not exceed the VOC content limit of 250 g/L established in Green Seal Standard GC-03, Anti-Corrosive Paints, 2nd Edition, January 7, 1997.
- Clear wood finishes, floor coatings, stains, primers, and shellacs applied to interior elements must not exceed the VOC content limits established in South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, rules in effect on January 1, 2004.

Potential Technologies & Strategies

Specify low-VOC paints and coatings in construction documents. Ensure that VOC limits are clearly stated in each section of the specifications where paints and coatings are addressed. Track the VOC content of all interior paints and coatings during construction.

Conforms to LEED 2009 IEQ Credit 4.2



INTERIOR COATINGS

PRIMERS		
BLOCK-IT® Premium	Interior/Exterior Stain-Blocking Primer (50 g/L)	BIPR00
BLOC-RUST® Premium, Red Oxide	Interior/Exterior Rust Preventative Metal Primer (40 g/L)	BRPR00-RO
BLOC-RUST® Premium, White	Interior/Exterior Rust Preventative Metal Primer (40 g/L)	BRPR00-WH
EFF-STOP® Premium	Interior/Exterior Masonry Primer/Sealer (20 g/L)	ESPR00
EFF-STOP® Select	Interior/Exterior Masonry Primer/Sealer (50 g/L)	ESSL00
FLEX-PRIME® Select	Interior/Exterior Masonry Primer (75 g/L)	FPSL00
INTER-KOTE® Premium	Zero VOC Interior Acrylic Enamel Undercoater (2 g/L)	IKPR00
Smooth BLOCFIL™ Premium	Interior/Exterior Concrete Block Filler (65 g/L)	SBPR00
Smooth BLOCFIL™ Select	Interior/Exterior Concrete Block Filler (50 g/L)	SBSL00
ULTRA-GRIP® Premium	Interior/Exterior Multi-Surface Primer (50 g/L)	UGPR00
ULTRA-GRIP® Select	Interior/Exterior Multi-Surface Primer (2 g/L)	UGSL00
VINYLASTIC® Plus	Interior Wall Sealer (95 g/L)	VNPL00
VINYLASTIC® Premium	Interior Wall Sealer (5 g/L)	VNPR00
VINYLASTIC® Select	Interior Wall Sealer (4 g/L)	VNSL00
FLATS		
ACOUSTIKOTE®	Latex Flat Ceiling Paint (0 g/L)	W 615
ACRI-WALL® Flat	Low Odor/Zero VOC Interior Flat Concentrate (2 g/L)	ACWC10
ACRI-WALL® Flat	Low Odor/Zero VOC Interior Flat Ready-To-Use (2 g/L)	ACWL10
AQUAFALL® Flat	Latex Dry Fall Flat (30 g/L)	AQUA10
EVEREST® Flat	Low Odor/Zero VOC Interior Flat Paint (2 g/L)	EVER10
QUIK-WALL® Flat	Interior Flat Paint (15 g/L)	QKWL10
SPARTAWALL® Flat	Interior Flat Paint (15 g/L)	SWLL10
SPARTAZERO® Flat	Low Odor/Zero VOC Interior Flat Paint (2 g/L)	SZR010
SUPERWALL® Flat	Interior Flat Concentrate (15 g/L)	SWLC10
SUPERWALL® Flat	Interior Flat Ready-To-Use (20 g/L)	SWLR10
SUPREMA® Flat	Interior Flat Paint (40 g/L)	SPMA10
VERSAFLAT®	Interior/Exterior Flat Paint (35 g/L)	W 6240
ULTRA-SCRUB® Flat	Interior Flat Paint (50 g/l)	ULSB10

(continued)

NON-FLATS		
AQUAFALL® Eggshell	Latex Dry Fall Eggshell (60 g/L)	AQUA30
AQUAFALL® Low Sheen	Latex Dry Fall Low Sheen (50 g/L)	AQUA40
ACRI-WALL® Eggshell	Low Odor/Zero VOC Interior Eggshell (2 g/L)	ACWL30
ACRI-WALL® Semi-Gloss	Low Odor/Zero VOC Interior Semi-Gloss (2 g/L)	ACWL50
EVEREST® Velvet	Low Odor/Zero VOC Interior Velvet Paint (2 g/L)	EVER20
EVEREST® Eggshell	Low Odor/Zero VOC Interior Eggshell Paint (2 g/L)	EVER30
EVEREST® Semi-Gloss	Low Odor/Zero VOC Interior Semi-Gloss Paint (2 g/L)	EVER50
SUPREMA® Velvet	Interior Velvet Paint (50 g/L)	SPMA20
SUPREMA® Eggshell	Interior Eggshell Paint (20 g/L)	SPMA30
SUPREMA® Low Sheen	Interior Low Sheen Paint (40 g/L)	SPMA40
SUPREMA® Semi-Gloss	Interior Semi-Gloss Paint (40 g/L)	SPMA50
SPARTAWALL® Velvet	Interior Velvet Paint (50 g/L)	SWLL20
SPARTAWALL® Eggshell	Interior Eggshell Paint (50 g/L)	SWLL30
SPARTAWALL® Low Sheen	Interior Low Sheen Paint (50 g/L)	SWLL40
SPARTAWALL® Semi-Gloss	Interior Semi-Gloss Paint (50 g/L)	SWLL50
SPARTAZERO® Velvet	Low Odor/Zero VOC Interior Velvet (2 g/L)	SZR020
SPARTAZERO® Eggshell	Low Odor/Zero VOC Interior Eggshell (2 g/L)	SZR030
SPARTAZERO® Semi-Gloss	Low Odor/Zero VOC Interior Semi-Gloss (2 g/L)	SZR050
SUPREMA® SEMI-GLOSS	Interior Semi-Gloss Paint (50 g/L)	SPMA50
VERSAWALL® Velvet	Interior/Exterior Latex Flat Enamel (50 g/L)	W 6230E
VERSASATIN® Low Sheen	Interior/Exterior Latex Low Sheen Paint (50 g/L)	W 6250E
VERSAGLO® Semi-Gloss	Interior/Exterior Latex Semi-Gloss Paint (50 g/L)	W 6160E
VERSAGLOSS® Gloss	Interior/Exterior Latex Gloss Paint (50 g/L)	W 6220E

* Paints and coatings may be classified as “Zero VOC” if they contain none of the VOC solvents that are added to conventional latex paints. Trace amounts of VOC may be present as residual components of other ingredients. Some compounds detected as VOC under laboratory test methods using high heat may not be volatile under normal ambient conditions.

- Please remember to check dunnedwards.com for the most up-to-date product information sheets.

SECTION 09 90 00: PAINTING & COATING LEED®



THE #1 CHOICE OF
PAINTING PROFESSIONALS®

PART 1 - GENERAL

1.01 SUMMARY:

- A. Section Includes: Painting and finishing of all interior items and surfaces, unless otherwise indicated or listed under exclusions below:
1. Paint all exposed surfaces, except as otherwise indicated, whether or not colors are designated.
 2. Include field painting of exposed exterior and interior plumbing, mechanical and electrical work, except as indicated below.
 3. Paint exterior stucco where indicated on Drawings.
- B. Work Included:
1. The intent and requirements of this section is that all work, items and surfaces which are normally painted and finished in a building of this type and quality, shall be so included in this contract, whether or not said work, item or surface is specifically called out and included in the schedules and notes on the drawings, or is, or is not, specifically mentioned in these specifications.
- C. The following general categories of work and items that are included under other sections shall not be a part of this section:
1. Shop prime painting of structural and miscellaneous iron or steel.
 2. Shop prime painting of hollow metal work.
 3. Shop finished work and items.
- D. The Room Finish Schedules indicated on the drawings indicate the location of interior room surfaces to be painted or finished. The Schedule's indications are general and do not necessarily define the detail requirements. Include all detailed refinements and further instructions as may be given for the required complete finishing of all spaces and rooms.

1.02 SUBMITTALS:

- A. Product Data: Submit complete manufacturer's descriptive literature with LEED® information highlighted and specifications in accordance with the provisions of Section 01 30 00.
1. Materials List: Submit complete lists of materials proposed for use, giving the manufacturer's name, catalog number, and catalog cut for each item when applicable. When required, provide a list of paint and coating materials proposed for use, which equates such materials with the design-basis products specified.
 2. Provide LEED® data on all paints and coatings used in the work.
- B. Samples: In accordance with provisions of Section 01 30 00, submit, on 8-1/2 inch by 11 inch hardboard, samples of each color, gloss, texture, and material selected by the Architect from standard colors available for the coatings required.
1. For natural and stained finishes, provide sample on each type and quality of wood used on the project.
- C. Manufacturer's Instructions: Submit the manufacturer's current recommended methods of installation, including relevant limitations, safety and environmental cautions, application rates, and composition analysis.

1.03 QUALITY ASSURANCE:

- A. Regulatory Requirements: Comply with applicable codes and regulations of governmental agencies having jurisdiction, including those having jurisdiction over airborne emissions and industrial waste disposal. Where those requirements conflict with this Specification, comply with the more stringent provisions. Regulatory changes may affect the formulation, availability, or use of specified coatings. Confirm availability of coatings to be used prior to job going out to bid and before start of painting project.
 - 1. Comply with the current applicable regulations of the California Air Resources Board (CARB), the local AQMD, and the Environmental Protection Agency (EPA).
- B. Field Sample: When and as directed by the Architect, apply one complete coating system for each color, gloss and texture required. When approved, the sample panel areas will be deemed incorporated into the Work and will serve as the standards by which the subsequent Work of this Section will be judged.

1.04 DELIVERY, STORAGE, AND HANDLING:

- A. Storage and Protection: Use all means necessary to protect the materials of this Section before, during, and after installation.
- B. Deliver materials to job site in new, original, and unopened containers bearing manufacturer's name and trade name. Store where directed in accordance with manufacturer's instructions.

1.05 PROJECT CONDITIONS:

- A. Do not apply exterior materials during fog, rain or mist, or when inclement weather is expected within the dry time specified by the manufacturer. No exterior or interior painting shall be done until the surfaces are thoroughly dry and cured. Do not apply paint when temperature is below 50° F. Avoid painting surfaces when exposed to direct sunlight.

PART 2 - PRODUCTS

2.01 MANUFACTURERS:

- A. Manufacturer's catalog names and number of paint types in this Section herein are based on products of Dunn-Edwards Corporation and are the standard of quality against which the Architect will judge equivalency. The quantity of titanium dioxide, the use of clays, aluminum silicate, talc and the purity of acrylic materials are a few of the criteria which will be used by the Architect in determining equivalency of materials.

2.02 MATERIALS:

- A. Paints: Provide ready-mixed, except field-catalyzed coatings. Pigments must be fully ground, maintaining soft paste consistency, capable of being readily and uniformly dispersed into a complete homogeneous mixture. Paints must have good flowing and brushing properties and be capable of drying or curing free of streaks and sags.
- B. Accessory Materials: Linseed oil, shellac, solvents, and other materials not specified but required to achieve required finishes must be of high quality and approved by manufacturer.
- C. Colors will be selected from color chip samples provided by manufacturer of paint system approved for use. Match approved samples for color, texture and coverage.

- D. Low-Emitting Materials: VOC emissions from paints and coatings must not exceed the VOC and chemical component limits of Green Seal's GS-11 Standard and LEED® requirements.
- E. Clear Wood Finishes, floor coatings, stains, shellacs, and sealers applied to interior elements will not exceed the VOC content limits established in California's South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, rules in effect on January 1, 2004.

2.03 MIXES:

- A. Mix, prepare, and store painting and finishing materials in accordance with manufacturer's directions.

PART 3 - EXECUTION

3.01 EXAMINATION:

- A. Examine surfaces to be painted before beginning painting work. Work of other trades that has been left or installed in a condition not suitable to receive paint, stain, and other specified finish must be repaired or corrected by the applicable trade before painting. Painting of defective or unsuitable surface implies acceptance of the surfaces.
- B. Beware of a condition known as critical lighting. This condition causes shadows that accentuate even the slightest surface variations. A pigmented sealer will provide tooth for succeeding decorative coating, but does not equalize smoothness or surface texture. Any corrective action to drywall must be done by the drywall contractor prior to decorating.

3.02 PROTECTION:

- A. Protect previously installed Work and materials, which may be affected by Work of this Section.
 - 1. Protect prefinished surfaces, lawns, shrubbery and adjacent surfaces against paint and damage.
 - 2. Furnish sufficient drop cloths, shields, and protective equipment to prevent spray or splatter from fouling surfaces not being painted.
 - 3. Protect surfaces, equipment, and fixtures from damage resulting from use of fixed, movable and hanging scaffolding, planking, and staging.
- B. Provide WET PAINT signs, barricades, and other devices required to protect newly finished surfaces. Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations.

3.03 PREPARATION:

- A. Perform preparation and cleaning procedures in strict accordance with coating manufacturer's instructions for each substrate condition.
- B. Concrete and masonry surfaces must be dry, clean, and free of dirt, efflorescence, encrustation, and other foreign matter. Glazed surfaces on concrete must be roughened or etched to uniform texture.
- C. Ferrous metal shall be cleaned of oil, grease, and foreign matter with solvent. Prime within 3 hours after preparation.
- D. Sand and scrape metal to remove loose primer and rust.

- E. Solvent clean galvanized metal and then treat with an etching-type solution if recommended by the finish manufacturer. Prime cleaned and treated galvanized metal the same day that cleaning has been performed.
- F. Remove dust, grit and foreign matter from wood surfaces. Sand surfaces and dust clean. Spot coat knots, pitch streaks, and sappy section with pigmented stain sealer when surfaces are to be painted. Fill nail holes, cracks, and other defects after priming and spot prime repairs when fully cured.
- G. Remove hardware and accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not-to-be-finish painted, or provide surface-applied protection. Reinstall removed items upon completion of Work in each area.
- H. Existing surfaces to be recoated must be thoroughly cleaned and deglossed by sanding or other means prior to painting. Spot prime patched and bare areas with same primer as specified for new work.
- I. Thoroughly back paint all surfaces of exterior and interior finish lumber and millwork, including doors and window frames, trim, and cabinetwork that will be concealed after installation. Back paint items to be painted or enameled with the priming coat. Use a clear sealer for back priming where transparent finish is required.
- J. Bare and covered pipes, ducts, hangers, exposed steel and ironwork, and primed metal surfaces of equipment installed under mechanical and electrical work must be cleaned prior to priming.
- K. Preparation of other surfaces shall be performed following specific recommendations of the coatings manufacturer.
- L. Bond breakers and curing agents must be removed and the surface cleaned before primers, sealers or finish paints can be applied.
- M. All drywall surfaces must be completely dry and dust free before painting. Skim coated drywall must be sealed with an alkyd based sealer or a waterborne sealer recommended by the paint manufacturer for this surface. Use the appropriate light or medium tack masking tape.

3.04 APPLICATION:

- A. Apply painting and finishing materials in accordance with the manufacturer's submittals, as approved. Use applicators and techniques best suited for the material and surfaces to which applied.
 - 1. Specified are the minimum number of coats that are to be applied. Apply additional coats when undercoats, stains or other conditions show through final paint coat, until paint film is of uniform finish, color and appearance.
 - 2. Tint slightly all undercoats to approximate the color of the finish coat.
- B. Apply each material at not less than the manufacturer's recommended spreading rate:
 - 1. Provide a total dry film thickness of not less than 1.2 mils for each required coat.
- C. Apply prime coat to material, which is required to be painted or finished.
- D. Finish exterior doors on tops, bottoms, and edges same as exterior faces, after fitting.

E. Sand lightly and dust clean between succeeding coats.

3.05 CLEANING, TOUCH-UP AND REFINISHING:

- A. Carefully remove all spattering, spots, and blemishes caused by work under this Section from surfaces throughout the project.
- B. Upon completion of painting work, remove all rubbish, paint cans, and accumulated materials resulting from work in each space or room. All areas must be left in a clean, orderly condition.
- C. Runs, sags, misses, holidays, stains, and other defects in the painted surfaces, including inadequate coverage and mil thickness, must be satisfactorily touched up, or refinished, or repainted as necessary.

3.06 FINISH SCHEDULE

- A. Apply the following finishes to the surfaces specified and/or as on the finish schedule on the drawings. Apply all materials in accordance with manufacturer’s instructions on properly prepared surfaces and foundation coats. All intermediate undercoats must be tinted to approximate the final color.
 - 1. Architect will issue a color schedule prior to start of painting to designate the various colors and locations required for the work.

INTERIOR SYSTEMS

Gypsum Board				
Acrylic Copolymer/Modified Copolymer or Acrylic Copolymer/Acrylic or Acrylic Copolymer/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic Copolymer	1	VINYLASTIC Plus (VNPL00) Interior Latex Wall Sealer	
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	53
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Low Sheen			SPARTAWALL (SWLL40) Interior Low Sheen Paint	43
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	54
Gloss			SPARTASHIELD (SSHL60) Interior/Exterior 100% Acrylic Gloss Paint	114

Gypsum Board				
Zero VOC				
Acrylic/Modified Copolymer or Acrylic or Acrylic/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Select (UGSL00) Interior/Exterior Multi-Surface Primer	149
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	143
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	147

Gypsum Board				
<i>Zero VOC</i>				
Acrylic/100% Acrylic System				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Select (UGSL00) Interior/Exterior Multi-Surface Primer	149
Flat	100% Acrylic	2 & 3	EVEREST (EVER10) Low-Odor/Zero-VOC Interior Flat Paint	143
Velvet			EVEREST (EVER20) Low-Odor/Zero-VOC Interior Velvet Paint	145
Eggshell			EVEREST (EVER30) Low-Odor/Zero-VOC Interior Eggshell Paint	44
Semi-Gloss			EVEREST (EVER50) Low-Odor/Zero-VOC Interior Semi-Gloss Paint	147

Masonry Plaster				
<i>100% Acrylic/Modified Copolymer or 100% Acrylic/Acrylic or 100% Acrylic Systems</i>				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	100% Acrylic	1	EFF-STOP Select (ESSL00) Interior/Exterior Masonry Primer/Sealer	50
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	53
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Low Sheen			SPARTAWALL (SWLL40) Interior Low Sheen Paint	43
Semi-Gloss	100% Acrylic	SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	54	
Gloss		SPARTASHIELD (SSHL60) Interior/Exterior 100% Acrylic Gloss Paint	114	

Masonry Plaster				
<i>Zero VOC</i>				
Modified Copolymer or Modified Copolymer/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Select (UGSL00) Interior/Exterior Multi-Surface Primer	149
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	143
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	147

Masonry Plaster				
<i>Zero VOC</i>				
Acrylic/100% Acrylic System				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Select (UGSL00) Interior/Exterior Multi-Surface Primer	149
Flat	100% Acrylic	2 & 3	EVEREST (EVER10) Low-Odor/Zero-VOC Interior Flat Paint	143
Velvet			EVEREST (EVER20) Low-Odor/Zero-VOC Interior Velvet Paint	145
Eggshell			EVEREST (EVER30) Low-Odor/Zero-VOC Interior Eggshell Paint	44
Semi-Gloss			EVEREST (EVER50) Low-Odor/Zero-VOC Interior Semi-Gloss Paint	147

Concrete Block (CMU) without Block Filler				
Acrylic/Modified Copolymer or Acrylic or Acrylic/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	VINYLASTIC Plus (VNPL00) Interior Latex Wall Sealer	
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	53
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Low Sheen			SPARTAWALL (SWLL40) Interior Low Sheen Paint	43
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	54
Gloss			SPARTASHIELD (SSHL60) Interior/Exterior 100% Acrylic Gloss Paint	114

Concrete Block (CMU) without Block Filler				
Zero VOC				
Acrylic/Modified Copolymer or Acrylic or Acrylic/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Select (UGSL00) Interior/Exterior Multi-Surface Primer	149
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	143
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	147

Concrete Block (CMU) without Block Filler				
Zero VOC				
Acrylic/100% Acrylic System				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Select (UGSL00) Interior/Exterior Multi-Surface Primer	149
Flat	100% Acrylic	2 & 3	EVEREST (EVER10) Low-Odor/Zero-VOC Interior Flat Paint	143
Velvet			EVEREST (EVER20) Low-Odor/Zero-VOC Interior Velvet Paint	145
Eggshell			EVEREST (EVER30) Low-Odor/Zero-VOC Interior Eggshell Paint	44
Semi-Gloss			EVEREST (EVER50) Low-Odor/Zero-VOC Interior Semi-Gloss Paint	147

Concrete Block (CMU) with Block Filler				
Modified Copolymer or Modified Copolymer/Acrylic or Modified Copolymer/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Modified Copolymer	1	Smooth BLOCFIL Select (SBSL00)	4
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	53
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Low Sheen			SPARTAWALL (SWLL40) Interior Low Sheen Paint	43
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	54
Gloss			SPARTASHIELD (SSHL60) Interior/Exterior 100% Acrylic Gloss Paint	114

Concrete Block (CMU) with Block Filler				
<i>Premium Zero VOC Finish Coat</i>				
Modified Copolymer or Modified Copolymer/Acrylic or Modified Copolymer/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Modified Copolymer	1	Smooth BLOCFIL Select (SBSL00)	4
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	143
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	147

Concrete Block (CMU) with Block Filler				
<i>Ultra Premium Zero VOC Finish Coat</i>				
Modified Copolymer/100% Acrylic System				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Modified Copolymer	1	Smooth BLOCFIL Select (SBSL00)	4
Flat	100% Acrylic	2 & 3	EVEREST (EVER10) Low-Odor/Zero-VOC Interior Flat Paint	143
Velvet			EVEREST (EVER20) Low-Odor/Zero-VOC Interior Velvet Paint	145
Eggshell			EVEREST (EVER30) Low-Odor/Zero-VOC Interior Eggshell Paint	44
Semi-Gloss			EVEREST (EVER50) Low-Odor/Zero-VOC Interior Semi-Gloss Paint	147

Wood				
Acrylic/Modified Copolymer or Acrylic or Acrylic/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Premium (UGPR00) Interior/Exterior Multi-Purpose Primer	17
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	53
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Low Sheen			SPARTAWALL (SWLL40) Interior Low Sheen Paint	43
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	54
Gloss			SPARTASHIELD (SSHL60) Interior/Exterior 100% Acrylic Gloss Paint	114

Wood				
<i>Zero VOC</i>				
Acrylic/Modified Copolymer or Acrylic or Acrylic/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Select (UGSL00) Interior/Exterior Multi-Surface Primer	149
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	143
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	147

Wood <i>Zero VOC</i> Acrylic/100% Acrylic System				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Select (UGSL00) Interior/Exterior Multi-Surface Primer	149
Flat	100% Acrylic	2 & 3	EVEREST (EVER10) Low-Odor/Zero-VOC Interior Flat Paint	143
Velvet			EVEREST (EVER20) Low-Odor/Zero-VOC Interior Velvet Paint	145
Eggshell			EVEREST (EVER30) Low-Odor/Zero-VOC Interior Eggshell Paint	44
Semi-Gloss			EVEREST (EVER50) Low-Odor/Zero-VOC Interior Semi-Gloss Paint	147

Metal Ferrous <i>Acrylic/Modified Copolymer or Acrylic or Acrylic/100% Acrylic Systems</i>				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	VINYLASTIC Plus (VNPL00) Interior Latex Wall Sealer	
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	53
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Low Sheen			SPARTAWALL (SWLL40) Interior Low Sheen Paint	43
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	54
Gloss			SPARTASHIELD (SSHL60) Interior/Exterior 100% Acrylic Gloss Paint	114

Metal Ferrous <i>Premium Zero VOC Finish Coat</i> <i>Acrylic/Modified Copolymer or Acrylic or Acrylic/100% Acrylic Systems</i>				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRASHIELD (ULMS00) Interior/Exterior Multi-Surface Primer	
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	143
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	147

Metal Ferrous <i>Ultra Premium Zero VOC Finish Coat</i> <i>Acrylic/100% Acrylic System</i>				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRASHIELD (ULMS00) Interior/Exterior Multi-Surface Primer	
Flat	100% Acrylic	2 & 3	EVEREST (EVER10) Low-Odor/Zero-VOC Interior Flat Paint	143
Velvet			EVEREST (EVER20) Low-Odor/Zero-VOC Interior Velvet Paint	145
Eggshell			EVEREST (EVER30) Low-Odor/Zero-VOC Interior Eggshell Paint	44
Semi-Gloss			EVEREST (EVER50) Low-Odor/Zero-VOC Interior Semi-Gloss Paint	147

Metal Non-Ferrous				
Acrylic/Modified Copolymer or Acrylic or Acrylic/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Premium (UGPR00) Interior/Exterior Multi-Purpose Primer	17
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	53
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Low Sheen			SPARTAWALL (SWLL40) Interior Low Sheen Paint	43
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	54
Gloss			SPARTASHIELD (SSHL60) Interior/Exterior 100% Acrylic Gloss Paint	114
<i>Notes: New galvanized metal should be pre-treated with Supreme Chemical Metal Clean & Etch (ME01)</i>				

Metal Non-Ferrous				
Premium Zero VOC Finish				
Acrylic/Modified Copolymer or Acrylic or Acrylic/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRASHIELD (ULMS00) Interior/Exterior Multi-Surface Primer	
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	143
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	147
<i>Notes: New galvanized metal should be pre-treated with Supreme Chemical Metal Clean & Etch (ME01)</i>				

Metal Non-Ferrous				
Ultra Premium Zero VOC Finish Coat				
Acrylic/100% Acrylic System				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRASHIELD (ULMS00) Interior/Exterior Multi-Surface Primer	
Flat	100% Acrylic	2 & 3	EVEREST (EVER10) Low-Odor/Zero-VOC Interior Flat Paint	143
Velvet			EVEREST (EVER20) Low-Odor/Zero-VOC Interior Velvet Paint	145
Eggshell			EVEREST (EVER30) Low-Odor/Zero-VOC Interior Eggshell Paint	44
Semi-Gloss			EVEREST (EVER50) Low-Odor/Zero-VOC Interior Semi-Gloss Paint	147
<i>Notes: New galvanized metal should be pre-treated with Supreme Chemical Metal Clean & Etch (ME01)</i>				

END OF SECTION

DISCLAIMER

The information contained herein does not replace or supersede relevant statutes and regulations. This information is based upon the statutes and regulations in effect as of the date of this document. Interested parties should keep apprised of subsequent changes to relevant statutes and regulations.

LEED® Supplement for California state facilities

Created by the State's Sustainable Building Task Force, this document is designed to be used in conjunction with the LEED Green Building System. It provides information on the California codes, policies, and practices, and it raises the minimum performance standards of various sustainable building elements to levels higher than those established by LEED®.

What is CHPS?

The Collaborative for High Performance Schools, CHPS (often pronounced “chips”), aims to increase the energy efficiency of schools in California by marketing information, services, and incentive programs directly to school districts and designers. The goal is to facilitate the design of high performance schools: environments that are not only energy efficient, but also healthy, comfortable, well lit, and containing the amenities needed for a quality education. More information can be found at www.chps.net.

How is this done?

The CHPS Criteria explicitly defines a High Performance School through performance standards. The system provides a convenient means of identifying a High Performance School and publishes a Best Practices Manual, which is a standard reference for high performance school design in California. Volume I (Planning) is directed to school districts and includes the necessary design planning strategies to build a high performance school. In order to qualify as a CHPS school, it is necessary to attain at least 28 points from the CHPS criteria.

What is Section 01350?

This is the model specification that ensures building materials protect the health of building occupants. Designers can achieve points within the CHPS criteria by using these low-emitting products. It is not required by law, but provides best practice guidance. Products listed under Section 09 90 00 (Paint and Coatings) referred to in Section 01350 (Special Procedures) must be tested and approved by a certified independent laboratory.

The following Dunn-Edwards products are approved for listing in Section 01350 of the CHPS program. To download and print certification letters, please visit www.chps.net.

PRIMERS/SEALERS		
Smooth BLOCFIL™ Select	Interior/Exterior Concrete Block Filler (75 g/L)	SBSL00
BLOCK-IT® Premium	Interior/Exterior Stain-Blocking Primer (50 g/L)	BIPR00
BLOC-RUST® Premium	Interior/Exterior Rust Preventative Metal Primer (30 g/L)	BRPR00
EFF-STOP® Select	Interior/Exterior Masonry Primer/Sealer (50 g/L)	ESSL00
ULTRA-GRIP® Premium	Acrylic Multi-Purpose Primer (50 g/L)	UGPR00
VINYLASTIC® Premium	Interior Wall Sealer (50 g/L)	VNPR00
VINYLASTIC® Select	Interior Wall Sealer (20 g/L)	VNSL00
FLAT		
EVEREST® Flat	Low-Odor/Zero VOC Interior Flat Paint (2 g/L)	EVER10
SPARTAWALL® Flat	Interior Flat Paint (15 g/L)	SWLL10
SPARTAZERO® Flat	Low-Odor/Zero VOC Interior Flat Paint (2 g/L)	SZR010

(continued)

NON-FLAT		
EVEREST® Velvet	Low-Odor/Zero VOC Interior Velvet Paint (2 g/L)	EVER20
EVEREST® Eggshell	Low-Odor/Zero VOC Interior Eggshell Paint (2 g/L)	EVER30
EVEREST® Semi-Gloss	Low-Odor/Zero VOC Interior Semi-Gloss Paint (2 g/L)	EVER50
SPARTAWALL® Eggshell	Interior EGGSHELL Paint (50 g/L)	SWLL30
SPARTAWALL® Semi-Gloss	Interior Semi-Gloss Paint (50 g/L)	SWLL50
SPARTAZERO® Velvet	Low-Odor/Zero VOC Interior Velvet Paint (2 g/L)	SZR020
SPARTAZERO® Eggshell	Low-Odor/Zero VOC Interior Eggshell Paint (2 g/L)	SZR030
SPARTAZERO® Semi-Gloss	Low-Odor/Zero VOC Interior Semi-Gloss Paint (2 g/L)	SZR050

* Paints and coatings may be classified as “Zero VOC” if they contain none of the VOC solvents that are added to conventional latex paints. Trace amounts of VOC may be present as residual components of other ingredients. Some compounds detected as VOC under laboratory test methods using high heat may not be volatile under normal ambient conditions.

- Please remember to check dunnedwards.com for the most up-to-date product information sheets.

SECTION 01350: SPECIAL ENVIRONMENTAL REQUIREMENTS



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PART 1 - GENERAL (Note 1)

1.1 SUMMARY

- A. Section Includes Special Environmental Requirements: Work includes special environmental, sustainable, and “green” building practices related to energy conservation and efficiency, indoor air quality, and resource efficiency, including the following:
 - 1. Special Requirements:
 - a. Require practices to ensure healthy indoor air quality in final project.
 - b. Maximize use of durable products.
 - c. Maximize use of products easy to maintain, repair, and that can be cleaned using non-toxic substances.
 - d. Maximize recycled content in materials, products, and systems.
 - e. Require use of wood that is certified sustainably harvested by the Forest Stewardship Council (FSC).
 - f. Maximize use of reusable and recyclable packaging.
 - g. Maximize use of products with low embodied energy (production, manufacturing, and transportation).
 - 2. Construction team is required to comply with sustainable building practices during construction and when considering materials for substitutions. Refer to Article 1.2 – Design Requirements.
- B. Related Requirements:

Refer to Specification sections for special environmental requirements for specific products.

 - 1. Section 01565: Site Waste Management Program.
 - 2. Section 01600: Product Requirements.
 - 3. Section 01810: Building Commissioning.
 - 4. Section 01820: System Demonstration.

1.2 DESIGN REQUIREMENTS (Note 2)

- A. General: Owner has established with design team general environmental goals for design and for construction of Project; Contractor, subcontractors, suppliers, and manufacturers (construction team) are encouraged to participate where possible to realize Owner’s environmental goals.
 - 1. Intent is for environmental goals to be achieved in a manner that ultimately provides safe and healthy environment for building occupants with minimal impact on local, regional and global environment.
 - 2. Contract Documents are not intended to limit alternative means of achieving environmental goals.
 - a. Suggestions from construction team for implementing goals are encouraged.
 - b. Team approach is encouraged.
- B. Environmental Goals:
 - 1. Refer to specific Specifications sections for more detailed construction requirements related to specific materials and systems.
 - a. Energy Efficiency (Operations Throughout Project Life): Materials and systems are

- intended to maximize energy efficiency for operation of Project throughout service life (substantial completion to ultimate disposition – reuse, recycling, or demolition).
- b. Indoor Environmental and Air Quality: Materials are selected and processes specified, such as preconditioning and temporary ventilation, to maximize healthy indoor air quality. Cleaning, surface coating, and renewal or replacement of interior materials should be feasible with lowest practical use of toxic, irritating, or odorous compounds. Ventilation system design, construction, and commissioning ensure adequate outside air supply under all anticipated conditions of use. Documentation of system design assumptions is included in Project Manuals to enable building operators and management to use and modify the system as required to provide continued assurance of indoor air quality. Additionally, materials are selected to provide appropriate indoor environmental qualities such as good acoustics and lighting.
 - c. Resource Efficiency (Project Construction): Materials and systems are to maximize environmentally-benign construction techniques, including construction waste recycling, reusable delivery packaging, and reusability of selected materials.
- C. Energy Conservation: Maximize energy conservation strategies in order to reduce life-cycle energy requirements.
1. Reduce undesirable heat gain and heat loss through exterior envelope.
 2. Use daylight as the primary lighting source in classrooms and supplement with integrated and energy-efficient electrical lighting systems.
 3. Choose equipment with high-end energy performance characteristics, including lighting, HVAC systems, appliances, and office equipment.
 4. Where appropriate, use thermal storage strategies such as thermal mass of building or ground to minimize total energy consumption.
 5. Design mechanical systems for efficient operation throughout the typical operating range, from minimum to peak load.
- D. Sustainable Site Planning and Landscape:
1. Maximize erosion and sedimentation control.
 2. Minimize site disturbance.
 3. Maximize planted areas.
 4. Reduce heat islands.
 5. Where possible, reduce or eliminate light pollution from site lighting. (*Note 3*)
 6. Reduce or eliminate use of pesticides.
 7. Rely on indigenous, dry, or xeriscape planting. Maintain existing planting on site to reduce costs.
 8. Implement seasonal plant and soil maintenance schedule to maintain healthy soil and landscaping.
 9. Maximize stormwater runoff.
 10. Reduce water use with water efficient irrigation systems and local vegetation.
- E. Durable Materials:
1. Select materials with longest useful service life.
 2. Select materials that deteriorate minimally under installed conditions, exposures, and uses.
 3. Select materials with surfaces that require minimal or no refinishing or resurfacing.
 4. Select materials with protective coating requirements that do not involve frequent application of toxic or odorous components for materials that require surface renewal or protection
 5. Select materials that can be re-used after their service life in this building.
 6. Select materials that can be recycled at the end of their useful lives for materials that cannot be re-used.

- F. Resource Efficient Materials: Use resource efficient materials; consider energy use over life cycle of material including harvesting, mining, manufacturing, transport, installation, use, operations, recycling and disposal.
1. Where possible and allowable by the Agency and Code with jurisdiction over the project, re-use existing building materials to the extent feasible within design concept expressed in Contract Documents.
 2. Select materials that efficiently use resources such as energy, water, and component materials.
 3. Use construction practices such as material reduction and dimensional planning that maximize efficient use of resources and materials.
 4. Provide materials that utilize recycled content to maximum degree possible without being detrimental to product performance or indoor air quality.
 5. Where possible and feasible, provide for non-destructive removal and re-use of materials after their service life in this building.
 6. Select materials that use less embodied energy to manufacture.
 - a. Exceptions might include materials that result in net energy conservation during their useful life in building and building's life cycle.
 7. Select materials that conserve energy during building operations.
 8. Where possible, select materials harvested and manufactured regionally, within a 500-mile radius of the project site.
- G. Scarce, Irreplaceable, and Endangered Resources:
1. Select materials from abundant resources.
 - a. For natural resources, determine abundance based on ratio of removal rate from existing stocks to natural replacement/renewal rate, where this information is available.
 - b. For mineral resources, determine abundance based on ratio of removal rate from terrestrial storage minus amount re-entering commerce through recycling or resource recovery compared to total in terrestrial storage, where this information is available.
 2. Select renewable materials, and materials which can be replenished.
 3. Select materials that create minimal or no damage to natural habitats and natural environment.
 4. Select materials that can be easily refinished, repaired or refurbished to extend their useful life.
- H. Pollution: Select materials that generate least amount of pollution during mining, manufacturing, transport, installation, use, and disposal.
1. Avoid materials that emit greenhouse gases
 2. Avoid materials that require energy intensive extraction, manufacturing, processing, transport, installation, maintenance, or removal.
 3. Avoid materials that contain ozone-depleting chemicals (e.g., CFCs or HCFCs).
 4. Avoid materials that emit potentially harmful volatile organic chemicals (VOCs), as described in Article 2.2.
 5. Employ construction practices that minimize dust production and combustion by-products.
 6. Avoid materials that can leach harmful chemicals into groundwater; do not allow potentially harmful chemicals to enter sewers or storm drains.
 7. Protect soil against erosion and topsoil depletion.
 8. Minimize noise generation during construction; screen mechanical equipment to block noise.
 9. Select materials that can be reused or recycled and materials with significant percentage of recycled content; conform with or exceed specified Project recycled content percentages for individual materials; avoid materials difficult to recycle.
 10. Protect natural habitats; restore natural habitats where feasible within scope of Project.

- I. Wood Products:
 - 1. Use woods from Forest Stewardship Council (FSC) accredited certified sustainably harvested sources, and verify that the material itself is FSC-certified.
 - 2. Composite wood products with high-recycled content, which meet the indoor air quality data requirements, are acceptable. *(Note 4)*
- J. Water Efficiency:
 - 1. Reduce the use of municipally supplied potable water.
 - 2. Reduce dependence on municipal stormwater system for plumbing fixtures and irrigation. Eliminate irrigation or use micro-irrigation. Use no moisture sensors or clock timers on irrigation systems.
 - 3. Maintain natural aquifer conditions.
 - 4. Consider roofwater or groundwater collection systems.
 - 5. Consider graywater collection system for irrigation systems.
 - 6. Commission irrigation, graywater, roofwater collection systems. Provide measurement and verification for these systems. Train maintenance staff on performance of all water collection and distribution systems.

1.3 SUBMITTALS

- A. Resource Efficient Product Data:
 - 1. Environmental Issues Data: Submit following information, including manufacturer’s certifications, verifying information, and test data, where Specifications sections require data relating to environmental issues including but not limited to:
 - a. Project Recyclability: Submit information to assist Owner and Contractor in recycling materials involved in shipping, handling, and delivery, and for temporary materials necessary for installation of products.
 - b. Recycled Content: Submit information regarding product post industrial recycled and post consumer recycled content.
 - 1) Use the “Recycled Content Certification Form”, attached as Appendix A to this Section, signed by a corporate officer (i.e., Chairman of the Board, President, Vice President, Secretary, or similar position of authority). *(Note 5)*
 - c. Product Recyclability: Submit information regarding product and product’s component’s recyclability including potential sources accepting recyclable materials.
 - d. Provide certification for all wood products provided by a Forest Stewardship Council (FSC) accredited certifier.
 - e. Provide final certification of well-managed* forest of origin to provide final documentation of FSC-certified sustainably harvested status: Acceptable wood “certified sustainably harvested” certifications shall include:
 - 1) Wood supplier’s certificate issued by one of the Forest Stewardship Council-accredited certifying agencies, such as SmartWood (802-434-5491) or Scientific Certification Systems (510-832-1415);
 - 2) Supplier’s invoice detailing the quantities of certified wood products for project;
 - 3) Letter from one of a certifying agency corroborating that the products on the wood supplier’s invoice originate from FSC-certified well-managed forests. *(Note 6)*
- B. Indoor Air Quality (IAQ) Data: *(Note 7)*
 - 1. Environmental Issues: Submit emission test data produced by acceptable testing laboratory listed in Quality Assurance Article for materials as required in each specific Specification Section.
 - a. Laboratory reports shall contain emissions test data on VOCs including total VOCs

(TVOC), specific individual VOCs, formaldehyde and other aldehydes as described in this Specification Section.

- b. In special cases it may be necessary to identify other specific chemicals for listing based on known quantity present or on known odor, irritation or toxicity.
 - c. Identify all VOCs emitted by each material as required in these Specifications.
 - d. Specific test conditions and requirements are set forth in this Section. For required tests, submit documentation of sample acquisition, handling, and test specimen preparation, as well as test conditions, methods, and procedures. The tests consist of a ten-day conditioning period followed by a 96-h test period.
 - 1) Samples collected during the test period at 24, 48, and 96 hours shall be analyzed for TVOC and formaldehyde. *(Note 8)*
 - 2) VOC samples collected at 96 hours shall be identified and quantified for all compounds that are Chemicals of Concern on lists in Article 2.
2. Cleaning and Maintenance Products: Provide data on manufacturers' recommended maintenance, cleaning, refinishing and disposal procedures for materials and products. These procedures are for final Contractor cleaning of the project prior to substantial completion and for provided materials and products as required by the specific specification sections.
- a. Where chemical products are recommended for these procedures, provide documentation to indicate that no component present in the cleaning product at more than 1% of the total mass of the cleaning product is a carcinogen or reproductive toxicant as defined in the lists in this specification section.
 - b. For purposes of reporting, identification of product VOC contents shall not be limited to those regulated under Clean Air Act (CAA) but shall also include compounds exempted from the CAA definition and listing of VOCs.
 - c. California EPA and local air district definitions of VOCs based on CAA are not sufficient, as they exempt compounds based on non-reactivity for outdoor air pollution control, but still important for indoor air quality.
 - d. Avoid cleaning products containing alpha-pinene, d-limonene or other unsaturated carbon double bond alkenes due to chemical reactions with ozone to form aldehydes, acidic aerosols, and ultra fine particulate matter in indoor air. For State buildings, DGS has published specifications for Environmentally Preferable Janitorial Chemicals and a list of cleaning/maintenance products meeting these specifications. Both are available on the internet at: <http://www.ciwmb.ca.gov/greenbuilding/Specs/Janitorial/Janitorial.doc> and <http://www.resd.dgs.ca.gov/BPM/lists.htm>. *(Note 9)*
- C. Certificates:
1. Environmental Issues Certifications:
 - a. Submit documentation certifying accuracy of post-industrial and post-consumer recycled content, and recyclability.
 - b. Prior to Final Completion, submit certificate signed by corporate officer (i.e., Chairman of the Board, President, Vice President, Secretary, or similar position of authority) of contractor, subcontractor, supplier, vendor, installer or manufacturer, provided they are primarily responsible for manufacture of product, indicating:
 - 1) Post-industrial and post-consumer recycled content of materials installed are same as those required by Project requirements.
 - 2) Product recyclability of materials installed are same as those required by Project requirements.
 - 3) Indoor air quality requirements. Certification shall state products and materials provided are essentially same, and contain essentially same components as products and materials tested.
 - c. Comply with requirements specified in Section 01770 – Closeout Procedures.

- D. Closeout Submittals: Submit data relating to environmental issues.
 - 1. Submit environmental product certifications, in two forms:
 - a. Two CD-ROMs organized by CSI 16 Division Format.
 - b. Four three-ring binders organized by CSI 16 Division Format with Table of Contents and with dividers for each division.

1.4 QUALITY ASSURANCE

- A. Environmental Project Management and Coordination: Contractor to identify one person on Contractor's staff to be responsible for environmental issues compliance and coordination.
 - 1. Experience: Environmental project manager to have experience relating to sustainable building construction.
 - 2. Responsibilities: Carefully review Contract Documents for environmental issues, coordinate work of trades, subcontractors, and suppliers; instruct workers relating to environmental issues; and oversee Project Environmental Goals.
 - 3. Meetings: Discuss Environmental Goals at the following meetings.
 - a. Pre-construction meetings.
 - b. Pre-installation meetings.
 - c. Regularly scheduled job-site meetings.
 - d. Special sustainability issues meetings.
- B. Environmental Issues Criteria: Comply with requirements listed in various Specification sections.
- C. Acceptable Indoor Air Emissions Testing Laboratories: *(Note 10)*
 - 1. Berkeley Analytical Associates; 815 Harbour Way South, Suite 6, Richmond, California 94804; telephone 510.236.2325; fax 510.236.2335; e-mail **berkeleyanalytical@att.net**.
 - 2. Air Quality Sciences, Inc.; 1337 Capital Circle, Atlanta, Georgia 30067; telephone 770.933.0638; fax 770.933.0641; e-mail **aqs@mindspring.com**.
 - 3. Other Laboratories:
 - a. Selection of testing laboratories shall include assessment of prior experience in conducting indoor source emissions tests.
 - b. Many laboratories participate in and are certified by American Industrial Hygiene Association laboratory accreditation program. **<http://www.aiha.org/>**
 - 1) These laboratories are accredited to do analysis for hazards at levels of concern for industrial workplaces and are not necessarily accredited, organized, or able to perform analysis for chemicals and particulate matter at concentrations of concern for indoor air.
 - c. The proposed laboratory shall be an independent company or organization not related to manufacturer of product to be tested.
 - d. Submit documentation on proposed laboratory for review and approval by Owner.
- D. Indoor Air Emissions Tests: *(Note 11)*
 - 1. Provide environmental chamber test data from tests based on ASTM Standard D5116-97, Guide for Small Scale Environmental Chamber Determination of Organic Emissions from Indoor Materials/Products. (Refer to ASTM, Annual Book of Standards, Volume 11.03. West Conshohocken, PA: American Society for Testing and Materials. **<http://www.astm.org>**)
 - 2. Tests shall be conducted according to guidance contained in ASTM Standard D5116-97 on material test specimens pre-conditioned in clean air prior to testing.
 - a. Review test specimen collection, documentation, collection, preparation and shipping procedures with testing laboratory prior to preparing and shipping sample.

- b. Test specimens shall be packaged in the normal manner at the factory and shipped directly to testing laboratory by the manufacturer. For materials that are not packaged in convenient consumer units, alternate procedures to preserve the chemical integrity of the specimen are required. Obtain test laboratory procedure sheet covering the handling and shipping of materials. If such information is not provided by the laboratory, then wrap the specimen in a manner that will eliminate direct contact with air or packaging materials other than an inert air barrier such as foil or laboratory grade plastic sheet wrapping material.
 - c. Conditioning: Condition all test specimens for ten days in clean air. Clean air should be free from the Chemicals of Concern listed in Article 2. Hold in clean vessels approximately the size of the test chambers and ventilated at the same air flow rate to be used in the test period. Suspend or place specimens on wire racks so that air freely circulates around all sides during the conditioning period. The air temperature and relative humidity during the conditioning period shall be $23\pm 2^{\circ}\text{C}$ and $50\pm 10\%$ RH. Otherwise, the material must be held in an environmental chamber for the entire period.
 - d. For wet-applied products and material assemblies, a realistic test specimen shall be prepared using the substrate material on which it will be applied in the building. Alternately, it may be necessary to use a substrate material that closely simulates the actual building substrate.
 - e. For material assemblies (e.g., floor and wall systems where the finish material is placed over a substrate, either with or without the use of adhesives), individual components of the assembly system shall be tested separately. If all components meet the emissions criteria established herein, no further testing shall be required. For assemblies where one component, such as a floor or wall covering adhesive, does not meet the criteria, the assembled system may be tested with specimen preparation following the manufacturer's recommended procedures for application of wet components and assembly of the system. If there is a difference between the manufacturer's recommended procedures and procedures required by the project specifications, the project specifications shall be followed.
 - f. Wall and other types of paints shall be tested according to the specifications for the particular material. For example, if two coats are to be applied over a primer coat, then the test specimen shall be prepared accordingly, dried between coats per manufacturer's label instructions, and tested as a complete assembly after required conditioning. The total quantity of paint applied shall be reported based on the weight of the assembly immediately before and after the application of each coat.
3. The maximum concentration for any chemical emitted at 96 hours in emissions tests shall not result in a modeled indoor air concentration greater than 1/2 the chronic inhalation REL concentration of California Office of Environmental Health Hazard Assessment (OEHHA) Chronic Reference Exposure Limit (REL), with the exception of formaldehyde, which is discussed separately below.
 4. Formaldehyde: No single product shall contribute more than one half (1/2) the OEHHA staff recommended indoor air limit of $33\ \mu\text{g}/\text{m}^3$ (27 ppb) for formaldehyde. The calculated concentration of formaldehyde shall not exceed $16.5\ \mu\text{g}/\text{m}^3$. Same modeling procedure as described above shall be used for formaldehyde. This concentration limit shall apply to all building and occupancy types. (*Note 12*)
 5. Construction adhesives used in Work shall comply with following requirement: No component present in adhesive at more than 1% of total mass of adhesive shall be a carcinogen or reproductive toxicant as defined in the lists in this specification section.
 6. Provide calculations of modeled concentrations based on emissions test results.
 - a. Calculations shall be submitted with all other documentation. This requires the calculation of emission factors based on emissions tests, then application of the

emission factors, product loading factors in the building, and building parameters in a steady state mass-balance model. The model assumes zero outdoor concentrations, perfect mixing and no sink effects. Alternatively, follow procedures in ASTM D5116-97 and submit assumptions and calculations.

- b. The concentration of a compound in the building shall be calculated using the following Equation:

$$\text{Concentration} = \frac{(\text{Emission factor}) * (\text{Loading factor})}{(\text{Air change rate})}$$

For this equation, the units are: $\mu\text{g}/\text{m}^3 = \frac{(\mu\text{g}/\text{m}^2 \text{ hr}) * (\text{m}^2/\text{m}^3)}{(\text{h}^{-1})}$

This can be simplified as follows:

$$\text{Concentration} = \frac{\text{Emission rate}}{\text{Air change rate}}$$

Note that the weekly average air change rate must be used in the calculations of concentrations of contaminants.

- c. Calculation of emission rate. Determine the emission rate by multiplying the emission factor by the amount of the material to be used in the building or air handler zone being evaluated. Multiply the emission factor by the area of the material in the building zone being assessed. Note that in some cases a length or mass may be the appropriate unit for emission factor that must then be multiplied by the length or mass of the emission source.
- d. Provide to the laboratory the total area of the zone being assessed by consulting the Contract Documents or the design engineer, to identify the total area served by the air handler that serves the area(s) within it where the material will be applied. If the material is used in multiple zones, then calculations shall be made to determine the concentration in the zone with the highest loading ratio of material to volume or material to weekly average minimum air change rate, whichever is greater.
- e. Provide to the laboratory the volume of the space served by the air handler by multiplying the floor area by the floor-to-floor clear height (top of finish floor to bottom of structure of floor above) and multiply by 0.9 (to take account of the portion of the volume that is occupied by solid objects). This value represents the ventilated volume for purposes of the calculations required here.
- f. Determine the air change rate by dividing the volume of outside air introduced into the space per hour by the ventilated volume of the space.
- g. Determine the weekly average air change rate by adding the minimum design air change rate during ventilation system operating hours times the number of hours the system is operated to an assumed air change rate from infiltration during ventilation system non-operational hours times the number of hours the system is off; then divide the total by the number of hours in a week, (168). Where no values are available from the design documents, use default values as follows:
- 1) Offices:
 - a) Where design data are not available to calculate the weekly average air change rate, the modeling shall assume a weekly average air change rate for office buildings of 0.75 air changes per hour (ach). This “default” office air exchange rate is based on a typical weekly State office building 55

- hour operating schedule and an assumed off-hours air change rate of 0.3 ach (assumed air change rate during normal operating hours is in excess of 1.0 per hour).
- b) Where specific information is available, the project specific data should be used to calculate the weekly average air change rate. A default building air change rate of 0.2 per hour during non-HVAC operations should be used.
- 2) Schools:
 - a) Modeling shall assume weekly average air change rate for school buildings of 0.9 per hour. This air change rate is based on an assumed 40 hours per week of ventilation system operation at 3.0 ach and 128 hours per week of 0.2 ach through infiltration.
 - b) Where specific information is available, the project specific data should be used to calculate the weekly average air change rate. A default building air exchange rate of 0.2 per hour during non-HVAC operations should be used.
 - 3) Other building types or occupancy types: Use ASHRAE Standard 62.1999 default occupant densities and ventilation rates for hours of operation and 0.2 ach for non operating hours unless actual rates are known, in which case the actual rates and hours of operation are to be used.
7. Environmental Chamber Testing: Indoor Air Emissions Testing Laboratories may use a range of acceptable loading ratios in order to make use of various size chambers, since these are not standardized across laboratories. Loading ratios ranging from 0.25 m²/m³ to 0.45 m²/m³ will be acceptable.
 - a. For dry products, loading ratios within reasonable limits are not critical for determining emission factors; conditioning of test specimens prior to testing will reduce or eliminate differences that may occur in unconditioned samples due to evaporation-limited emissions and sink effects from absorption of VOCs during final stages of manufacturing or while in packaging during transport to and storage at the laboratory.
 - b. Higher loading ratios lower the expected emission factor; however, the relationship is not linear, especially at higher concentrations. Therefore, where strong formaldehyde or other chemical sources are known or expected to be present, loading ratios should be selected to represent a median value for the plausible range of actual building loading ratios.
 - c. Loading ratios used shall be included in test report.
 - d. Contractors shall provide to product manufacturers information on actual quantity of material to be used in Project. The product manufacturers will then forward this information to Indoor Air Emissions Testing Laboratory so loading ratios can be adjusted toward actual loading ratio of Project. However, for most low-emitting materials used in construction, actual loading ratio will not significantly affect emission rates except for strong formaldehyde sources—primarily products using urea-formaldehyde resins. (*Note 13*)
 8. Sample Preparation Requirements:
 - a. Substrates for environmental chamber emissions tests of individual products or materials (materials tested separately):
 - 1) Dry solid sheet type products:
 - a) Sheet stainless steel or aluminum tray to provide tight fit at edges and reduce emissions from edge of material specimen. If material does not fit very snugly, then use aluminized, low-emitting, clean room tape to seal edges.
 - 2) Dry fabric type products:
 - a) No substrate necessary.
 - 3) Wet products such as adhesives and sealers:

- a) Sheet stainless steel, aluminum, or glass unless product is to be applied to gypsum board or other highly absorbent material. If substrate is a highly absorbent material, use a sample of the substrate pre-conditioned for 24 hours to the temperature and humidity of the test chamber.
- 4) Substrates for specific products:
 - a) Composite wood products (Section 06400): sample to be suspended or supported in chamber with all edges exposed and no edge masking.
 - b) Gypsum Board (Section 09260): no substrate (testing required ONLY if recycled content gypsum board or if water resistant types are used).
 - c) Acoustical Ceiling Panels (Section 09510): no substrate, sample to be suspended or supported in chamber with no edge masking.
 - d) Resilient flooring (Section 09650): stainless steel tray, fitted tightly so that only the upper surface is exposed. Alternately, cover back of flooring with sheet stainless steel and seal edges with low-VOC emitting aluminized clean room tape so only wear surface of flooring is exposed.
 - e) Carpet Tile and Broadloom Carpet (Section 09680): stainless steel tray, fitted tightly so that only the upper surface is exposed.
 - f) Flat and eggshell Paints (Section 09900): 5/8" gypsum board.
 - g) Semi-gloss paints (Section 09900): Where applied to metal, use sheet stainless steel. Where applied to gypsum board, use gypsum board conditioned as described in subsection (c) below.
 - h) Joint Sealers (Section 07900): Steel channel 0.64 cm by 0.64 cm by 25.4 cm Channel shall be filled with sealant.
- b. Substrates for environmental chamber emissions tests of assemblies of products or materials (materials tested in an assembly):
 - 1) Laminates or wood veneers applied with adhesives (Section 06400): Medium density fiberboard (MDF).
 - 2) Resilient flooring applied with adhesives (Section 09650): Sheet stainless steel or glass plate.
 - 3) Carpet Tile/Broadloom Carpet applied with adhesives and adhesives (Section 09685/Section 09680): Sheet stainless steel or glass plate.
 - 4) Wall Coverings applied with adhesives (Section 09700 Series): 5/8" gypsum board. Prior to preparation of the test specimen, gypsum board substrate shall be pre-conditioned for at least 24 hours at $23 \pm 2^{\circ}\text{C}$ and $50 \pm 10\%$ RH while ventilated with clean air. (Ventilation rate is not important.)
- c. Protocol for Paint Testing: Preparation and handling of paint test specimen.
 - 1) Flat and Eggshell Paints:
 - a) Apply paints to 5/8" thick gypsum board. Hold Gypsum board substrate for at least 24 hours at $23 \pm 2^{\circ}\text{C}$ and $50 \pm 10\%$ RH while ventilated with clean air. Accurately weigh substrate just prior to painting, mask borders to avoid paint dripping on edges and leave center area for paint. Alternative approaches to protecting the edges are acceptable and shall be reported if used.
 - b) Apply paint using standardized roller procedure that simulates application of paint in building. For most wall paint applications use a 4" wide 3/8" nap roller intended for smooth surfaces.
 - c) Stir paint in container and transfer 100 mL of paint to heavy-duty aluminum foil disposable tray.
 - d) Saturate roller cover with paint by running back and forth in tray.
 - e) Apply paint to substrate using four strokes, two in vertical direction and two in horizontal direction, so entire area is uniformly covered.
 - f) Remove tape from substrate and re-weigh substrate.

- g) Difference in weight determines amount of applied paint and coverage in grams of wet paint per square meter of substrate surface.
 - h) Place substrate on 6" by 6" piece of sheet stainless steel to cover entirely the back surface. Attach substrate to stainless steel with strips of low VOC aluminized clean room tape so only painted surface is exposed. For a blank specimen, similarly prepare an unpainted piece of gypsum. Alternate procedures to cover unpainted surfaces of gypsum board may be used and must be adequately described in the laboratory report if used.
 - i) Place sample in conditioning environment immediately and hold for ten days.
 - j) Where multiple coats, which may include primer, are being tested, apply paints and follow manufacturers' instructions for drying time between coats. Report weight of test specimen prior to and after each coat of paint is applied. Hold specimen in conditioning environment between coats. The ten-day conditioning period begins after application of final coat. Apply semi-gloss paint to clean steel sheet following same procedure as above for "flat and eggshell paints." No tape should be used. Sheet should be weighed immediately before and after painting.
9. Chemical Analyses:
- a. VOC Analysis: Make multi-point calibrations using pure compounds whenever such compounds are available from commercial suppliers (such as Aldrich Chemical Company, Sigma Aldrich). Quantitative analyses performed using surrogate compounds shall be indicated in reported test results. Identify EPA and ASTM standard methods and practices, and testing laboratory calibration procedures, which should include a calibration at least once every three (3) months.
 - b. Formaldehyde and Acetaldehyde Analysis: Formaldehyde and Acetaldehyde analysis shall be performed following ASTM Standard D 5197 "Standard Test Method for Formaldehyde and other Carbonyl Compounds in Air (Active Sampler Methodology)."
10. Reporting Requirements: In addition to reporting requirement stated elsewhere in Specifications, reports shall include: (a) all compounds emitted from sample that are on the most recent Chronic Reference Exposure Level list as published by the California Office of Environmental Health Hazard Assessment and listed in their website at http://www.oehha.org/air/chronic_rels/allChrels.html, (b) all compounds on the California Proposition 65 list, and (c) all compounds on the California Toxic Air Contaminant list. In addition, the ten most abundant compounds shall be reported separately if not listed on any of these lists. For these compounds, report following:
- a. measured chamber concentrations at each required time point.
 - b. calculated emission factors.
 - c. calculated building concentrations and assumptions used to make calculation.
- (Note 14)*
- E. State Agency Buy Recycled Campaign (SABRC) Recycled Content: Implement the SABRC recycled-content goals for specific building products, including but not limited to: *(Note 15)*
- 1. Paper products;
 - 2. Glass products (windows, glazing, fiberglass, tile, construction blocks, loose-grain abrasives);
 - 3. Plastic products (carpet, plastic lumber, furniture made from plastic, fencing, parking bumpers, toilet partitions, entry mats, signage, sheet plastic and other plastic-containing building products);
 - 4. Solvents;
 - 5. Tire-derived products (entry mats, resilient flooring, wheelchair and other ramps, playground surfacing, parking bumpers, speed bumps, tree ties, road surfacing);

6. Steel products (structural steel, steel framing, architectural metal, reinforcing bars, sheet metal, metal siding, metal roofing, lockers, toilet partitions, office furniture for filing and storage);
7. Paint (allowed only in exterior installations);
8. Compost.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Packaging: Deliver materials in recyclable or in reusable packaging such as cardboard, wood, paper, or reusable blankets, which will be reclaimed by supplier or manufacturer for recycling.
 1. General: Minimize packaging materials to maximum extent possible while still ensuring protection of materials during delivery, storage, and handling.
 - a. Unacceptable Packaging Materials: Polyurethane, polyisocyanate, polystyrene, polyethylene, and similar plastic materials such as “foam” plastics and “shrink-fit” plastics.
 2. Reusable Blankets: Deliver and store materials in reusable blankets and mats reclaimed by manufacturers or suppliers for reuse where program exists or where program can be developed for such reuse.
 3. Pallets: Where pallets are used, suppliers shall be responsible to ensure pallets are removed from site for reuse or for recycling.
 4. Corrugated Cardboard and Paper: Where paper products are used, recycle as part of construction waste management recycling program, or return to material’s manufacturer for use by manufacturer or supplier.
 5. Sealants, Paint, Primers, Adhesives, and Coating Containers: Return to supplier or manufacturer for reuse where such program is available.

1.6 PROJECT CONDITIONS

- A. No smoking will be permitted in indoor Project site locations, as per California Labor Code (Section 400-6413.5).
- B. Certifications:
 1. Environmental Product Certification:
 - a. Include manufacturer certification indicating product contains maximum recycled content possible without being detrimental to product performance.
 - b. Include certification indicating cleaning materials comply with requirements of these Specifications.
- C. Construction Ventilation and Preconditioning:
 1. Temporary Construction Ventilation: Maintain sufficient temporary ventilation of areas where materials are being used that emit VOCs. Maintain ventilation continuously during installation, and until emissions dissipate after installation. If continuous ventilation is not possible via building’s HVAC system(s) then ventilation shall be supplied via open windows and temporary fans, sufficient to provide no less than three air changes per hour.
 - a. Period after installation shall be sufficient to dissipate odors and elevated concentrations of VOCs. Where no specific period is stated in these Specifications, a time period of 72 hours shall be used.
 - b. Ventilate areas directly to outside; ventilation to other enclosed areas is not acceptable.

2. During dust producing activities (e.g. drywall installation and finishing) turn ventilation system off, and openings in supply and return HVAC system shall be protected from dust infiltration. Provide temporary ventilation as required.
 3. Preconditioning: Prior to installation, allow products which have odors and significant VOC emissions to off-gas in dry, well-ventilated space for 14 calendar days to allow for reasonable dissipation of odors and emissions prior to delivery to Project site.
 - a. Condition products without containers and packaging to maximize off-gassing of VOCs.
 - b. Condition products in ventilated warehouse or other building. Comply with substitution requirements for consideration of other locations.
- D. Protection:
1. Moisture Stains: Materials with evidence of moisture damage, including stains, are not acceptable, including both stored and installed materials; immediately remove from site and properly dispose. Take special care to prevent accumulation of moisture on installed materials and within packaging during delivery, storage, and handling to prevent development of molds and mildew on packaging and on products.
 - a. Immediately remove from site and properly dispose of materials showing signs of mold and signs of mildew, including materials with moisture stains.
 - b. Replace moldy materials with new, undamaged materials.
 2. Ducts: Seal ducts during transportation, delivery, and construction to prevent accumulation of construction dust and construction debris inside ducts.

1.7 SEQUENCING

- A. Environmental Issues:
1. On-Site Application: Where odorous and/or high VOC emitting products are applied on-site, apply prior to installation of porous and fibrous materials. Where this is not possible, protect porous materials with polyethylene vapor retarders.
 2. Complete interior finish material installation no less than fourteen (14) days prior to Substantial Completion to allow for building flush out.

PART 2 - PRODUCTS

2.1 CHEMICALS OF CONCERN

- A. Chemicals of Concern are those chemicals listed below as toxic air contaminants, carcinogens, teratogens, reproductive toxins, and chemicals with established Chronic Reference Exposure Levels (REL):
- B. Carcinogens: Chemicals listed as probable or known human carcinogens in the latest published edition of the following two lists:
1. California Environmental Protection Agency, Air Resources Board (ARB), list of Toxic Air Contaminants (California Air Toxics). <http://www.arb.ca.gov/toxics/summary/summary.htm>
 2. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA), Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html.
- C. Reproductive Toxicants: Chemicals known to cause reproductive toxicity including birth defects or other reproductive harm in the latest published edition of the following list: California Environmental Protection Agency, Office of Environmental Health Hazard

Assessment (OEHHA), Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html.

- D. Chemicals with established Chronic Reference Exposure Levels (REL): Chronic RELs have been developed for 65 hazardous airborne substances as of January 2001. A chronic REL is an airborne concentration level that would pose no significant health risk to individuals indefinitely exposed to that level. RELs are based solely on health considerations, and are developed from the best available data in the scientific literature. The California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA) establishes and publishes RELs. (Note 16)

Table 1. Chronic Reference Exposure Levels for organic chemicals with possible indoor sources, based on the California OEHHA list as of September 2002 (The most recent list shall be used for this specification as published at http://www.oehha.org/air/chronic_rels/allChrels.html).

	Substance (CAS #)	Listed in CAPCOA (1993)	Chronic Inhalation REL ($\mu\text{g}/\text{m}^3$)	Hazard Index Target(s)	Human Data
1	Acetaldehyde* (75-07-0)	<input checked="" type="checkbox"/>	9	Respiratory system	
2	Acrolein (107-02-8)	<input checked="" type="checkbox"/>	0.06	Respiratory system; eyes	
3	Acrylonitrile (107-13-1)	<input checked="" type="checkbox"/>	5	Respiratory system	
4	Ammonia (7664-41-7)	<input checked="" type="checkbox"/>	200	Respiratory system	<input checked="" type="checkbox"/>
5	Arsenic (7440-38-2) & arsenic compounds	<input checked="" type="checkbox"/>	0.03	Development; Cardiovascular system; Nervous system	
6	Benzene (71-43-2)	<input checked="" type="checkbox"/>	60	Hematopoietic system; development; nervous system	<input checked="" type="checkbox"/>
7	Beryllium (7440-41-7) and beryllium compounds	<input checked="" type="checkbox"/>	0.007	Respiratory system; immune system	<input checked="" type="checkbox"/>
8	Butadiene (106-99-0)		20	Reproductive system	
9	Cadmium (7440-43-9) & cad- mium compounds	<input checked="" type="checkbox"/>	0.02	Kidney; respiratory system	<input checked="" type="checkbox"/>
10	Carbon tetrachloride (56-23-5)	<input checked="" type="checkbox"/>	40	Alimentary system; development; nervous system	
11	Carbon disulfide (75-15-0)		800	Nervous system; reproductive system	<input checked="" type="checkbox"/>
12	Chlorinated dioxins (1746-01-6) & diben- zofurans (5120-73-19)	<input checked="" type="checkbox"/>	0.00004	Alimentary system (liver); repro- ductive system; development; endocrine system; respiratory system; hematopoietic system	
13	Chlorine (7782-50-5)	<input checked="" type="checkbox"/>	0.2	Respiratory system	

14	<u>Chlorine dioxide</u> (10049-04-4)		0.6	Respiratory system	
15	<u>Chlorobenzene</u> (108-90-7)	<input checked="" type="checkbox"/>	1000	Alimentary system; kidney; reproductive system	
16	<u>Chloroform</u> (67-66-3)	<input checked="" type="checkbox"/>	300	Alimentary system; kidney; development	
17	<u>Chloropicrin</u> (76-06-2)	<input checked="" type="checkbox"/>	0.4	Respiratory system	
18	<u>Chromium hexavalent:</u> soluble except chro- mic trioxide	<input checked="" type="checkbox"/>	0.2	Respiratory system	
19	<u>Chromic trioxide</u> (as chromic acid mist)	<input checked="" type="checkbox"/>	0.002	Respiratory system	<input checked="" type="checkbox"/>
20	<u>Cresol mixtures</u> (1319- 77-3)	<input checked="" type="checkbox"/>	600	Nervous system	
21	<u>Dichlorobenzene (1,4-)</u> (106-46-7)	<input checked="" type="checkbox"/>	800	Nervous system; respiratory sys- tem; alimentary system; kidney	
22	<u>Dichloroethylene (1,1)</u> (75-35-4)	<input checked="" type="checkbox"/>	70	Alimentary system	
23	<u>Diesel Exhaust*</u>		5	Respiratory system	
24	<u>Diethanolamine</u> (111-42-2)		3	Cardiovascular system; nervous system	
25	<u>Dimethylformamide</u> (N,N-) (68-12-2)		80	Alimentary system ; respiratory system	<input checked="" type="checkbox"/>
26	<u>Dioxane (1,4-)</u> (123-91-1)	<input checked="" type="checkbox"/>	3,000	Alimentary system; kidney; cardiovascular system	
27	<u>Epichlorohydrin</u> (106-89-8)	<input checked="" type="checkbox"/>	3	Respiratory system; eyes	
28	<u>Epoxybutane (1,2-)</u> (106-88-7)		20	Respiratory system; cardiovascular system	
29	<u>Ethylbenzene</u> (100-41-4)		2,000	Development; alimentary system (liver); kidney; endocrine system	
30	<u>Ethyl chloride</u> (75-00-3)	<input checked="" type="checkbox"/>	30,000	Development; alimentary system	
31	<u>Ethylene dibromide</u> (106-93-4)	<input checked="" type="checkbox"/>	0.8	Reproductive system	<input checked="" type="checkbox"/>
32	<u>Ethylene dichloride</u> (107-06-2)	<input checked="" type="checkbox"/>	400	Alimentary system (liver)	
33	<u>Ethylene glycol</u> (107-21-1)		400	Respiratory system; kidney; development	<input checked="" type="checkbox"/>
34	<u>Ethylene glycol mono- ethyl ether</u> (110-80-5)	<input checked="" type="checkbox"/>	70	Reproductive system; hematopoietic system	
35	<u>Ethylene glycol mono- ethyl ether acetate</u> (111-15-9)	<input checked="" type="checkbox"/>	300	Development	
36	<u>Ethylene glycol mono- methyl ether</u> (109-86-4)	<input checked="" type="checkbox"/>	60	Reproductive system	
37	<u>Ethylene glycol mono- methyl ether acetate</u> (110-49-6)	<input checked="" type="checkbox"/>	90	Reproductive system	

38	<u>Ethylene oxide</u> (75-21-8)	<input checked="" type="checkbox"/>	30	Nervous system	
39	<u>Formaldehyde</u> (50-00-0)	<input checked="" type="checkbox"/>	3	Respiratory system; eyes	<input checked="" type="checkbox"/>
40	<u>Glutaraldehyde</u> (111-30-8)	<input checked="" type="checkbox"/>	0.08	Respiratory system	
41	<u>Hexane (n-)</u> (110-54-3)		7000	Nervous system	
42	<u>Hydrazine</u> (302-01-2)	<input checked="" type="checkbox"/>	0.2	Alimentary system; endocrine system	
43	<u>Hydrogen chloride</u> (7647-01-0)	<input checked="" type="checkbox"/>	9	Respiratory system	
44	<u>Hydrogen cyanide</u> (74-90-8)	<input checked="" type="checkbox"/>	9	Nervous system; endocrine system; cardiovascular system	<input checked="" type="checkbox"/>
45	<u>Hydrogen sulfide</u> (7783-06-4)	<input checked="" type="checkbox"/>	10	Respiratory system	
46	<u>Isophorone</u> (78-59-1)		2000	Development; liver	
47	<u>Isopropanol</u> (67-63-0)		7,000	Kidney; development	
48	<u>Maleic anhydride</u> (108-31-6)	<input checked="" type="checkbox"/>	0.7	Respiratory system	
49	<u>Manganese & manganese compounds</u>	<input checked="" type="checkbox"/>	0.2	Nervous system	<input checked="" type="checkbox"/>
50	<u>Mercury & mercury compounds (inorganic)</u>	<input checked="" type="checkbox"/>	0.09	Nervous system	<input checked="" type="checkbox"/>
51	<u>Methanol</u> (67-56-1)	<input checked="" type="checkbox"/>	4,000	Development	
52	<u>Methyl bromide</u> (74-83-9)	<input checked="" type="checkbox"/>	5	Respiratory system; nervous system; development	
53	<u>Methyl chloroform</u> (71-55-6)	<input checked="" type="checkbox"/>	1,000	Nervous system	
54	<u>Methyl isocyanate</u> (624-83-9)		1	Respiratory system; reproductive system	
55	<u>Methyl t-butyl ether</u> (1634-04-4)		8,000	Kidney; eyes; alimentary system (liver)	
56	<u>Methylene chloride</u> (75-09-2)	<input checked="" type="checkbox"/>	400	Cardiovascular system; nervous system	<input checked="" type="checkbox"/>
57	<u>Methylene dianiline</u> (4,4'-) (101-77-9)	<input checked="" type="checkbox"/>	20	Eyes; alimentary system (hepatotoxicity)	
58	<u>Methylene Diphenyl Isocyanate</u> (101-68-8)		0.7	Respiratory system	
59	<u>Naphthalene</u> (91-20-3)	<input checked="" type="checkbox"/>	9	Respiratory system	
60	<u>Nickel & compounds (except nickel oxide)</u>	<input checked="" type="checkbox"/>	0.05	Respiratory system; hematopoietic system	
61	<u>Nickel oxide</u> (1313-99-1)		0.1	Respiratory system; hematopoietic system	
62	<u>Phenol</u> (108-95-2)	<input checked="" type="checkbox"/>	200	Alimentary system; cardiovascular system; kidney; nervous system	

63	Phosphine (7803-51-2)	<input checked="" type="checkbox"/>	0.8	Respiratory system; alimentary system; nervous system; kidney; hematopoietic system	
64	Phosphoric acid (7664-38-2)		7	Respiratory system	
65	Phthalic anhydride (85-44-9)	<input checked="" type="checkbox"/>	20	Respiratory system	<input checked="" type="checkbox"/>
66	Propylene (115-07-1)		3,000	Respiratory system	
67	Propylene glycol monomethyl ether (107-98-2)		7,000	Alimentary system (liver)	
68	Propylene oxide (75-56-9)	<input checked="" type="checkbox"/>	30	Respiratory system	
69	Selenium and selenium compounds (other than hydrogen selenide)	<input checked="" type="checkbox"/>	20	Alimentary system; cardiovascular system; nervous system	<input checked="" type="checkbox"/>
70	Styrene (100-42-5)	<input checked="" type="checkbox"/>	900	Nervous system	<input checked="" type="checkbox"/>
71	Sulfuric acid (7664-93-9)		1	Respiratory system	
72	Tetrachloroethylene* (perchloroethylene) (127-18-4)	<input checked="" type="checkbox"/>	35	Kidney; alimentary system (liver)	
73	Toluene (108-88-3)	<input checked="" type="checkbox"/>	300	Nervous system; respiratory system; development	
74	Toluene diisocyanates (2,4- & 2,6-)	<input checked="" type="checkbox"/>	0.07	Respiratory system	<input checked="" type="checkbox"/>
75	Trichloroethylene (79-01-6)	<input checked="" type="checkbox"/>	600	Nervous system; eyes	<input checked="" type="checkbox"/>
76	Triethylamine (121-44-8)		200	Eyes	
77	Vinyl acetate (108-05-4)		200	Respiratory system	
78	Xylenes (m-, o-, p-)	<input checked="" type="checkbox"/>	700	Nervous system; respiratory system	<input checked="" type="checkbox"/>

2.2 SUBSTITUTIONS

- A. Substitutions Environmental Issues: Requests for substitutions shall comply with requirements specified in Section 01630 – Product Substitution Procedures, with following additional information required where environmental issues are specified.
1. Indicate each proposed substitution complies with requirements for VOCs.
 2. Owner, in consultation with Architect, reserves right to reject proposed substitutions where data for VOCs is not provided or where emissions of individual VOCs are higher than for specified materials.
 3. Comply with specified recycled content and other environmental requirements.

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

- A. Building Flush Out: Just prior to Substantial Completion, flush out building continuously (i.e., 24 hours per day, seven (7) days a week) using maximum tempered outside air (or maximum amount of outside air while achieving reasonable indoor temperature) for at least fourteen (14) calendar days. If interruptions of more than a few hours are required for testing and balancing purposes, extend flush out period accordingly.
 - 1. When Contractor is required to perform touch-up work, provide temporary construction ventilation during installation and extend building flush-out by a minimum of four (4) days after touch-up installation with maximum tempered outside air for 24 hours per day.
 - 2. If construction schedule permits, extend flush-out period beyond 15 days.
 - 3. Return ventilation system to normal operation following flush-out period to minimize energy consumption.

3.2 CLEANING

- A. Final Cleaning Environmental Issues:
 - 1. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains, and foreign substances; polish transparent and glossy surfaces using cleaning and maintenance products as described in Part 1 of this Section.
 - 2. Clean equipment and fixtures to sanitary condition using cleaning and maintenance products as described in Part 1 of this Section.
 - 3. Vacuum carpeted and soft surfaces with high efficiency particulate arrestor (HEPA) vacuum.
 - 4. If ducts were not sealed during construction, and contain dust or dirt, clean ducts using HEPA vacuum immediately prior to Substantial Completion and prior to using ducts to circulate air. Oil film on sheet metal shall be removed before shipment to site. However, ducts shall be inspected to confirm that no oil film is present. Remove oil.
 - 5. Replace all air filters (i.e., pre and final filters) just prior to Substantial Completion.
 - 6. Remove and properly dispose of recyclable materials using construction waste management program described in Section 01565 – Site Waste Management Program.

3.3 PROTECTION

- A. Environmental Issues:
 - 1. Protect interior materials from water intrusion or penetration; where interior products not intended for wet applications are exposed to moisture, immediately remove from site and dispose of properly.
 - 2. Protect installed products using methods that do not support growth of molds and mildews.
 - a. Immediately remove from site materials with mold and materials with mildew.

END OF SECTION

NOTES FOR SECTION 01350

SPECIAL ENVIRONMENTAL REQUIREMENTS

Note 1:

- 1.1 Section 01350 is one of the most important specification sections in terms of guiding and controlling the environmental impact of a project. It is this general requirements section that sets the tone for the project and informs the environmental requirements of individual specification sections. While an attempt has been made to simplify this specification, it is understood that the issues raised may be new to the Architect, and may appear complex. For this reason, it is recommended that the section be carefully reviewed prior to use, and that it be integrated carefully into the Project Manual Specification. If uncertainty exists, it may be advisable to utilize the services of a Specifications consultant, and an Indoor Air Quality consultant.
- 1.2 The requirements of section 01350 apply to almost all of the specification sections, and these other sections should be coordinated with section 01350.
- 1.3 The Special Environmental Requirements incorporate three major issues:
 - A. Energy conservation and efficiency: Specification Section 01350 references energy conservation and efficiency, and deals specifically with the other two issues.
 - B. Indoor environmental and air quality: Specification section 01350 references the environmental issues, and deals specifically with indoor air quality. Reducing pollutant sources in buildings is probably the most effective method for improving the indoor air quality. This specification section provides a requirement for major materials used inside a building to be submitted for an emissions chamber test prior to installation. Various Chemicals of Concern are listed and the results of the chamber test should be reviewed for conformance with the limits established here. The laboratory write up of the test results will indicate whether the test results meet the specification requirements or not.
 - C. Resource efficient materials and systems: This specification section provides a method for documenting a product's recycled content and is based on the California State Agency "Buy Recycled" Campaign (SABRC). The SABRC must be used for California Department of General Services (DGS) projects (excluding schools), and the documentation requirements have been adapted to conform to specification requirements and for use on other projects as a reporting tool to the Architect and to the project Owner.
- 1.4 Life Cycle Assessment: Life Cycle Assessment (LCA) is needed to assist the Architect in making judgments about the appropriate use of specific materials and systems. Since LCA is not yet sufficiently developed, it is not presented in this specification, but much of the information requested by this section will be helpful in the future when LCA becomes available.

Note 2:

- 2.1 Specification section 01350 article 1.2, Design Requirements is included in this specification specifically to advise the contractor about the design requirements used by the design team in the design of the project and the preparation of the Contract Documents. The Contractor needs access to this information if they decide to propose sustainable building enhancements, or if they decide to propose material and system substitution requests. For substitution requests, the contractor will need to compare the proposed substitution to the specified product and will need to highlight the sustainable building design requirements in their proposals.

- 2.2 Some of the goals noted below may appear to be contradictory, and the project team may need to evaluate and make a selection based on project-specific goals. The design team for each project should evaluate project priorities and goals with the school district as part of the design process prior to preparation of Construction Documents.

Note 3:

- 3.1 For school projects, special care should be taken with lighting design for the sports fields, and to achieve a safe site environment at night.

Note 4:

- 4.1 Specification Section 01350 Article 1.2, I: When using composite wood products that contain post-consumer recycled content, there is a possibility that the final product may contain lead, arsenic, and semi-volatile organic compounds including Pentachlorophenol, Chlordane, and Chlorpyrifos. While there are currently no established safe air concentration limits for these compounds, it is important to recognize that they may present a significant health hazard. Therefore, bulk testing of the product is recommended to show that they are free of contamination. The Project client should be notified of the compound content, as they may be required under CA Proposition 65 to notify building users of the presence of these compounds if such compounds are installed into a building. The architect and the Project client should make a determination whether such products should be installed.

Note 5:

- 5.1 For State funded projects, State agencies are required to comply with the State of California Public Contract Code Sections 10233, 10308.5 and 10354. School projects are not required to comply with these codes; however, the certification form has been adapted for use on school projects.

Note 6:

- 6.1 For FSC accredited certifiers visit <http://fsuc.org/html/index.html>.
- 6.2 *"Well-managed" shall mean forests that are being managed through professionally-administered forestry management and logging plans that ensure regeneration of desired species so that timber growth equals or exceeds harvesting rates in both quantity and quality over the long term. Other considerations include protecting rivers and streams from degradation, minimizing damage to the forest when harvesting, promoting biodiversity, operating in concert with the lawful interests of local populations, and maximizing both the yield and value of the forest products.

Note 7:

- 7.1 It is not practical to request the submission of MSDSs for review by the Architect in design-bid-build construction procurement projects. This information should be requested and reviewed by the Architect in the design phases. Specification Section 01350 Article 1.3, B should contain the following text when using non design-build construction procurement methods. However, the Architect should in all circumstances obtain this information prior to specifying a product:
- "Environmental Issues Data: Furnish material safety data sheets (MSDS) for materials where as required in each specific Specification sections.

- A. All MSDSs submitted must contain specific chemical content data identifying the percent of the total product mass represented by each listed chemical in the MSDS.
- B. Chemicals listed as proprietary or not listed on MSDS shall be separately listed and submitted to Architect for review under a non-disclosure agreement.
- C. Requirements for identified chemicals are not limited to those listed by OSHA as hazardous nor to those present at greater than 1% by weight.”

7.2 Specification Section 01350 Article 1.3 B and D require the contractor to provide Emission Test Data for materials and products. The information requested by this requirement is usually obtained by the General Contractor through the subcontractor and from the product manufacturer. The manufacturer obtains this information from the test laboratory, and both of the testing laboratories listed in this section are experienced at preparing the data in a form usable by the architect. Much of the test description provided in this specification section is given for the benefit of the laboratory.

Note 8:

8.1 The Architect should review the pattern of the decay curve for TVOC and formaldehyde for the duration of the test. The decay curve should be dropping over time. If TVOC and formaldehyde emissions are high and/or if the decay curve is not dropping, temporary ventilation may be needed in the installation area.

Note 9:

9.1 The Architect should compare emissions from maintenance products to those from maintenance products for other materials being considered for the same use for Project, and evaluate. Exclude materials whose maintenance products VOC emissions are in upper half of those compared for same applications.

There is now in draft form a State of California, Department of General Services, Technical Specification For the Evaluation of Environmentally Preferable Janitorial Chemicals. For State funded Projects, excluding schools, it is necessary to refer to these guidelines. Both are available on the internet at: <http://www.ciwmb.ca.gov/greenbuilding/Specs/Janitorial/Janitorial.doc> and <http://www.resd.dgs.ca.gov/BPM/lists.htm>

Note 10:

- 10.1 Indoor air emissions testing laboratories are currently not widely available. The following laboratories are listed for the convenience of the specification user. However, this listing does not imply an endorsement of the laboratories by the authors or by the State of California nor does the absence of a laboratory from the list imply that it would not be acceptable.
- 10.2 The State of California does not currently have a certification process for labs analyzing air samples.
- 10.3 In the future, California’s Department of Health Services (DHS) is planning to certify, accredit, or otherwise approve of those laboratories performing air monitoring analyses as mandated by Senate Bill 2203 (Sher et al., Statutes of 2000). This became effective on January 2, 2001 (California Health and Safety Code Section 100825-100920). The DHS does maintain a list of commercial laboratories without any endorsement or evaluation of the quality of services (Refer to <http://www.cal-iaq.org/FIRMS/>).

Note 11:

- 11.1 Emissions testing provides emission factors for the test specimen under the loading and ventilation used in the test. The emission factor must be used with project-specific product loading and ventilation data to determine whether a material complies with the requirements of this specification. Re-testing is not necessary for different material applications, but new calculations are required.

Note 12:

- 12.1 The OEHHA Chronic REL for Formaldehyde is the goal, but in most cases it cannot be met. Due to its status as an identified carcinogen, a preferred approach to control of formaldehyde concentrations is based on the principle of ALARA, As Low As Reasonably Achievable.
- 12.2 Note that the OEHHA Chronic REL for formaldehyde is approximately the same as the typical concentration in outdoor air. Products containing wood even without formaldehyde-based resins and many common fibrous glass insulation products are made with formaldehyde-based resins, as are many composite wood products. In order not to eliminate many common building products that will inevitably emit some formaldehyde, we have used an alternative concentration limit of 33 $\mu\text{g}/\text{m}^3$ (27 ppb) based on OEHHA's recommended maximum concentration in office environments. Nevertheless, due to formaldehyde's status as a listed carcinogen, it is strongly recommended that the ALARA (As Low As Reasonably Achievable) approach be applied and that 3 $\mu\text{g}/\text{m}^3$ be the goal.

Note 13:

- 13.1 These specifications require that the Contractor provide calculations obtained from the product manufacturer and prepared by the testing laboratory. The Contractor will need to provide to the laboratory the required dimensional information needed for the calculations. Should the architect elect to perform these calculations, he/she may do so using information, design assumptions, and material quantities for the Project.

Note 14:

- 14.1 Specification Section 01350, 1.4, D 10, Reporting Requirements: The items required by the reporting requirements should be included in a submittal and used by the Architect as follows:
- A. Compounds listed on OEHHA list – Reported calculated concentration should be equal to or less than 1/2 the OEHHA regulations.
 - B. Compounds on Proposition 65 list – Report these to the project owner (school district). The Owner is required by law to identify these compounds with a warning sign in the building.
 - C. California Toxic Air Contaminants list – available at <http://www.arb.ca.gov/toxics/toxics.htm> – Report the calculated concentrations of any compounds on this list to the Owner for his information. The Architect should attempt to obtain this information in the design phases if possible, so that timely decisions can be made.

Note 15:

- 15.1 The SABRC is mandatory for State projects, excluding schools, but can be used for all projects as adapted in these specifications as a way to report to the Architect, and a school district, the recycled content of a product.
- 15.2 For updated information on SABRC recycled-content goals, recycled-content categories and reporting procedures, contact Jerry Hart: 1001 I Street, P.O. Box 4025, Sacramento, California 95812-4025, telephone 916.341.6000 or 1501 E. Orangethorpe Ave., Suite 150, Fullerton, California 92831, telephone 714.449.7072, fax 714.449.4780, **www.ciwmb.ca.gov** and **www.ciwmb.ca.gov/BuyRecycled/StateAgency**.

Note 16:

- 16.1 The list of Chronic Inhalation RELs is included in this draft specification for illustrative purposes only. The Architect should use the latest version of the list, copied from the website **http://www.oehha.org/air/chronic_rels/allChrels.html**, when preparing the specifications.
- 16.2 Note that not all Chemicals of Concern are included on the lists at this time and that revisions to the lists will occur from time to time. These revisions may require re-testing of some products, and/or re-evaluating of some products using available test data.

REFERENCES

References for more information:

1. California State Agency Buy Recycled Campaign, The Department of General Services and the Californian Integrated Waste Management Board. **<http://www.ciwmb.ca.gov/BuyRecycled/StateAgency>**
2. Sustainable Building Technical Manual, Green Building Design, Construction and Operations, Chapters 13 and 15 for Indoor Air Quality and Building Commissioning produced by Public Technology Inc. and co-sponsored by the U.S. Green Building Council, Department of Energy, and the U.S. Environmental Protection Agency, 1996.
3. Leon Alevantis, M.S., P.E., Indoor Air Quality Section, Environmental Health Laboratory Branch, Division of Environmental and Occupational Disease Control, California Department of Health Services, Reducing Occupant Exposure to Volatile Organic Compounds (VOCs) from Office Building Construction Materials: Non-Binding Guidelines, July 1996. Available on the web at: **<http://www.cal-iaq.org/VOC/>**
4. LEED® Reference Guide, Leadership in Energy and Environmental Design, Green Building Rating System, version 2.0, May 2000, U.S. Green Building Council. **<http://www.usgbc.org>**.
5. California Proposition 65. *The Safe Drinking Water and Toxic Enforcement Act of 1986*. Available on the internet at **<http://www.oehha.ca.gov/prop65.html>**.
6. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment. 2002. *Air Toxics Hot Spots Program Risk Assessment Guidelines, Part III, Technical Support Document for the Determination of Noncancer Chronic Reference Exposure Levels*, California Environmental Protection Agency, Office of Environmental Health Hazards Assessment, Air

Toxicology and Epidemiology Section, September 2002 (or most recent edition). Available on the internet at: http://www.oehha.org/air/chronic_rels/allChrels.html.

7. State of California, 2001b. *Technical Specification for Environmentally Preferable Janitorial Chemicals – Golden Seal Program*. Available on the internet at: <http://www.ciwmb.ca.gov/greenbuilding/Specs/Janitorial/Janitorial.doc>.
8. State of California, 2002b. *List of Environmentally Preferable Janitorial Chemicals for the Department of General Services*. Available on the internet at: <http://www.resd.dgs.ca.gov/BPM/lists.htm>.

Project Name: _____

RECYCLED CONTENT CERTIFICATION FORM

This form is to be completed by a Corporate Officer of the Product Manufacturer for the General Contractor. The General Contractor must return the certification, completed by each product with recycled content as required by specific Specification Sections. Attach additional sheets if necessary.

GENERAL CONTRACTOR	SUBCONTRACTOR/INSTALLER	PRODUCT MANUFACTURER
Name:	Name:	Name:
Address:	Address:	Address:
Telephone, fax, e-mail:	Telephone, fax, e-mail:	Telephone, fax, e-mail:

Item #	Product Category ^{1&2} (Include if applicable)	Product Description CSI section number ^{3&4} (Needed for all products)	Quantity Bid	Unit of measure	Cost of material, (excluding installation labor)	Weight in pounds	% Virgin Content ⁵	% Post-consumer ⁶	% Post-industrial ⁷	Total % ⁸
As a percent of total weight										
										100
										100
										100
										100
										100
										100

51 Printed Name (a corporate officer) _____ Title _____ Date _____ Signature _____

GENERAL NOTES:

- A. The Public Contract Code Sections listed below apply to California public (DGS) projects only. The required document has been adapted for use on other types of projects, including public schools.
- B. Public Contract Code Sections 10233, 10308.5, and 10354 require all vendors and contractors to certify in writing, under penalty of perjury, to the state agency awarding a contract, the minimum, if not the exact percentage, of post-consumer and post-industrial material in the materials, goods, or supplies offered or used.
- C. Public Contract Code Section 12205(a) requires all state agencies to require all contractors to certify in writing, under penalty of perjury, the minimum, if not the exact percentage, of post-consumer and post-industrial material in the materials, goods, or services provided or used.

NOTES:

- (1) Product Category: (Fill in below, if applicable. This information is used to determine compliance with the State Agency Buy Recycled Campaign.)

1.	Compost/Co-compost	7.	Printing and Writing Papers
2.	Glass Products	8.	Solvents
3.	Lubricating Oils	9.	Steel Products
4.	Paint	10.	Tires
5.	Plastic Products	11.	Tire-derived Products
6.	Paper Products		

- (2) Product category is used for State agency reporting for State projects, excluding public schools. Products that are made from multiple material types should be reported in the product category of the material type representing most of the product. The amount of material used in the product can be measured by weight or volume. If, for instance, a chair is made from steel, aluminum, and plastic and most of the material, either by weight or volume, is plastic, report it as a plastic product. If, however, most of the product, either by weight or volume, is steel, report the product as a steel product.
- (3) Identify the Construction Specifications Institute (CSI) Specification Section number for the product, as indicated in the Project Specifications.
- (4) Below are products preliminarily identified in the Project Specifications as having minimum recycled content requirements. Refer to the Project Specifications for individual sections in the specifications for recycled content level that must be achieved. Recycled content guidelines shall include, but not be limited to, the products below (to be revised for each project):

1.	Parking Bumpers (Section 2760)	11.	Cold-Formed Metal Framing (Section 05400)
2.	Fluid-Applied Waterproofing (Section 07140)	12.	Gypsum board (Sections 09255, 09260, 09265)
3.	Concrete Reinforcement (Section 03200)	13.	Ceramic Tile (Section 09300)
4.	Bentonite Waterproofing (Section 07170)	14.	Acoustical Ceilings (Section 09510)
5.	Structural Steel (Section 05120)	15.	Resilient Flooring (Section 09650)
6.	Metal Decking (Section 05300)	16.	Carpeting (Sections 09682, 09686)
7.	Building Insulation (Section 07210)	17.	Metal Toilet Compartments (Section 10160)
8.	Steel Doors and Frames (Section 08110)	18.	Identifying Devices (Section 10400)
9.	Glazing (Section 08800)	19.	Architectural Woodwork (Section 06400)
10.	Paints and Coatings (Section 09900)		

- (5) Virgin material content is that portion of the product made from non-recycled material, that is, the material is neither post-industrial nor post-consumer material.
- (6) Post-consumer material is defined as “a finished material which would have been disposed of as a solid waste, having completed its life cycle as a consumer item, and does not include manufacturing wastes.” This is material, such as a newspaper, that is read, recycled, and then made into recycled content newsprint or some other recycled product. Post-consumer material is generally any product that is bought by the consumer, used, and then recycled into another product.
- (7) Post-industrial material (also referred to as pre-consumer or secondary material) is defined as “fragments of finished products or finished products of a manufacturing process, which has converted a resource into a commodity of real economic value, but does not include excess virgin resources of the manufacturing process.” This is material, such as newsprint, that is trimmed from a roll in the paper plant that is returned to the beginning of the process to make recycled content newsprint. The material (product) did not get to the consumer before being recycled. Post-industrial material DOES NOT include post-consumer material. FOR EXAMPLE: If a Printing and Writing Paper contained 20% post-consumer material, you would indicate 20 in the post-consumer column and 80 in the virgin column. If the product had 40% secondary material and 20% post-consumer material, you would indicate 40 in the post-industrial column, 20 in the post-consumer column, and 40 in the virgin column.
- (8) The sum of the percentages for virgin, post-consumer, and post-industrial content must equal 100 percent.

SECTION 09 90 00: PAINTING & COATING CHPS



THE #1 CHOICE OF
PAINTING PROFESSIONALS®

INTERIOR SYSTEMS

Gypsum Board				
<i>Zero VOC</i>				
Acrylic/Modified Copolymer or Acrylic or Acrylic/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Select (UGSL00) Interior/Exterior Multi-Surface Primer	149
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	143
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	147

Gypsum Board				
<i>Zero VOC</i>				
Acrylic/100% Acrylic System				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Select (UGSL00) Interior/Exterior Multi-Surface Primer	149
Flat	100% Acrylic	2 & 3	EVEREST (EVER10) Low-Odor/Zero-VOC Interior Flat Paint	143
Velvet			EVEREST (EVER20) Low-Odor/Zero-VOC Interior Velvet Paint	145
Eggshell			EVEREST (EVER30) Low-Odor/Zero-VOC Interior Eggshell Paint	44
Semi-Gloss			EVEREST (EVER50) Low-Odor/Zero-VOC Interior Semi-Gloss Paint	147

Masonry Plaster				
<i>Zero VOC Finish</i>				
Modified Copolymer or Modified Copolymer/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Premium (UGPR00) Interior/Exterior Multi-Surface Primer	17
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	143
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	147

Masonry Plaster				
<i>Ultra Premium Zero VOC Finish</i>				
Acrylic/100% Acrylic System				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Premium (UGPR00) Interior/Exterior Multi-Surface Primer	17
Flat	100% Acrylic	2 & 3	EVEREST (EVER10) Low-Odor/Zero-VOC Interior Flat Paint	143
Velvet			EVEREST (EVER20) Low-Odor/Zero-VOC Interior Velvet Paint	145
Eggshell			EVEREST (EVER30) Low-Odor/Zero-VOC Interior Eggshell Paint	44
Semi-Gloss			EVEREST (EVER50) Low-Odor/Zero-VOC Interior Semi-Gloss Paint	147

Masonry Plaster				
<i>Zero VOC</i>				
Modified Copolymer or Modified Copolymer/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Select (UGSL00) Interior/Exterior Multi-Surface Primer	149
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	143
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	147

Masonry Plaster				
<i>Zero VOC</i>				
Acrylic/100% Acrylic System				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Select (UGSL00) Interior/Exterior Multi-Surface Primer	149
Flat	100% Acrylic	2 & 3	EVEREST (EVER10) Low-Odor/Zero-VOC Interior Flat Paint	143
Velvet			EVEREST (EVER20) Low-Odor/Zero-VOC Interior Velvet Paint	145
Eggshell			EVEREST (EVER30) Low-Odor/Zero-VOC Interior Eggshell Paint	44
Semi-Gloss			EVEREST (EVER50) Low-Odor/Zero-VOC Interior Semi-Gloss Paint	147

Concrete Block (CMU) without Block Filler				
<i>Premium Zero VOC Finish</i>				
Acrylic/Modified Copolymer or Acrylic or Acrylic/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Premium (UGPR00) Interior/Exterior Multi-Surface Primer	17
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	143
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	147

Concrete Block (CMU) without Block Filler				
<i>Ultra Premium Zero VOC Finish</i>				
Acrylic/100% Acrylic System				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Premium (UGPR00) Interior/Exterior Multi-Surface Primer	17
Flat	100% Acrylic	2 & 3	EVEREST (EVER10) Low-Odor/Zero-VOC Interior Flat Paint	143
Velvet			EVEREST (EVER20) Low-Odor/Zero-VOC Interior Velvet Paint	145
Eggshell			EVEREST (EVER30) Low-Odor/Zero-VOC Interior Eggshell Paint	44
Semi-Gloss			EVEREST (EVER50) Low-Odor/Zero-VOC Interior Semi-Gloss Paint	147

Concrete Block (CMU) without Block Filler

Zero VOC

Acrylic/Modified Copolymer or Acrylic or Acrylic/100% Acrylic Systems

FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Select (UGSL00) Interior/Exterior Multi-Surface Primer	149
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	143
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	147

Concrete Block (CMU) without Block Filler

Zero VOC

Acrylic/100% Acrylic System

FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Select (UGSL00) Interior/Exterior Multi-Surface Primer	149
Flat	100% Acrylic	2 & 3	EVEREST (EVER10) Low-Odor/Zero-VOC Interior Flat Paint	143
Velvet			EVEREST (EVER20) Low-Odor/Zero-VOC Interior Velvet Paint	145
Eggshell			EVEREST (EVER30) Low-Odor/Zero-VOC Interior Eggshell Paint	44
Semi-Gloss			EVEREST (EVER50) Low-Odor/Zero-VOC Interior Semi-Gloss Paint	147

Wood

Premium Zero VOC Finish

Acrylic/Modified Copolymer or Acrylic or Acrylic/100% Acrylic Systems

FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Premium (UGPR00) Interior/Exterior Multi-Surface Primer	39
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	143
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	147

Wood

Ultra Premium Zero VOC Finish

Acrylic/100% Acrylic System

FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Premium (UGPR00) Interior/Exterior Multi-Surface Primer	39
Flat	100% Acrylic	2 & 3	EVEREST (EVER10) Low-Odor/Zero-VOC Interior Flat Paint	143
Velvet			EVEREST (EVER20) Low-Odor/Zero-VOC Interior Velvet Paint	145
Eggshell			EVEREST (EVER30) Low-Odor/Zero-VOC Interior Eggshell Paint	44
Semi-Gloss			EVEREST (EVER50) Low-Odor/Zero-VOC Interior Semi-Gloss Paint	147

Wood				
<i>Zero VOC</i>				
Acrylic/Modified Copolymer or Acrylic or Acrylic/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Select (UGSL00) Interior/Exterior Multi-Surface Primer	149
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	143
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	147

Wood				
<i>Zero VOC</i>				
Acrylic/100% Acrylic System				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Select (UGSL00) Interior/Exterior Multi-Surface Primer	149
Flat	100% Acrylic	2 & 3	EVEREST (EVER10) Low-Odor/Zero-VOC Interior Flat Paint	143
Velvet			EVEREST (EVER20) Low-Odor/Zero-VOC Interior Velvet Paint	145
Eggshell			EVEREST (EVER30) Low-Odor/Zero-VOC Interior Eggshell Paint	44
Semi-Gloss			EVEREST (EVER50) Low-Odor/Zero-VOC Interior Semi-Gloss Paint	147

Metal Ferrous				
<i>Premium Zero VOC Finish</i>				
Acrylic/Modified Copolymer or Acrylic or Acrylic/100% Acrylic Systems				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRA-GRIP Premium (UGPR00) Interior/Exterior Multi-Surface Primer	17
Flat	Modified Copolymer	2 & 3	SPARTAZERO (SZR010) Low Odor/Zero VOC Interior Flat Paint	143
Velvet			SPARTAZERO (SZR020) Low Odor/Zero VOC Interior Velvet Paint	44
Eggshell	Acrylic		SPARTAZERO (SZR030) Low Odor/Zero VOC Interior Eggshell Paint	52
Semi-Gloss	100% Acrylic		SPARTAZERO (SZR050) Low Odor/Zero VOC Interior Semi-Gloss Paint	147

Metal Ferrous				
<i>Ultra Premium Zero VOC Finish Coat</i>				
Acrylic/100% Acrylic System				
FINISH	RESIN TYPE	COAT	FINISH SCHEDULE	MPI
	Acrylic	1	ULTRASHIELD (ULMS00) Interior/Exterior Multi-Surface Primer	
Flat	100% Acrylic	2 & 3	EVEREST (EVER10) Low-Odor/Zero-VOC Interior Flat Paint	143
Velvet			EVEREST (EVER20) Low-Odor/Zero-VOC Interior Velvet Paint	145
Eggshell			EVEREST (EVER30) Low-Odor/Zero-VOC Interior Eggshell Paint	44
Semi-Gloss			EVEREST (EVER50) Low-Odor/Zero-VOC Interior Semi-Gloss Paint	147

SECTION 09 90 00: PAINTING & COATING LOW-ODOR & LOW- OR ZERO VOC SCHEDULE OF FINISHES



THE #1 CHOICE OF
PAINTING PROFESSIONALS®

INTERIOR SYSTEMS

1. Gypsum Board Low-Odor/Zero VOC

- a. Flat, Acrylic/Modified Copolymer System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat SPARTAZERO® FLAT, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR010)
 - Third Coat SPARTAZERO® FLAT, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR010)

- b. Velvet, Acrylic/Modified Copolymer System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat SPARTAZERO® VELVET, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR020)
 - Third Coat SPARTAZERO® VELVET, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR020)

- c. Eggshell, Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat SPARTAZERO® EGGSHELL, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR030)
 - Third Coat SPARTAZERO® EGGSHELL, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR030)

- d. Semi-Gloss, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat SPARTAZERO® SEMI-GLOSS, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR050)
 - Third Coat SPARTAZERO® SEMI-GLOSS, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR050)

- e. Flat, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® FLAT, Low-Odor/Zero VOC Interior Flat Paint (EVER10)
 - Third Coat EVEREST® FLAT, Low-Odor/Zero VOC Interior Flat Paint (EVER10)

- f. Velvet, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® VELVET, Low-Odor/Zero VOC Interior Flat Paint (EVER20)
 - Third Coat EVEREST® VELVET, Low-Odor/Zero VOC Interior Flat Paint (EVER20)

- g. Eggshell, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® EGGSHELL, Low-Odor/Zero VOC Interior Flat Paint (EVER30)
 - Third Coat EVEREST® EGGSHELL, Low-Odor/Zero VOC Interior Flat Paint (EVER30)

- h. Semi-Gloss, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® SEMI-GLOSS, Low-Odor/Zero VOC Interior Flat Paint (EVER50)
 - Third Coat EVEREST® SEMI-GLOSS, Low-Odor/Zero VOC Interior Flat Paint (EVER50)

2. Acoustic Ceiling Low-Odor/Zero VOC

Flat, Acrylic Copolymer System

First Coat ACOUSTIKOTE®, Latex Flat Ceiling Paint (W 615)

Second Coat ACOUSTIKOTE®, Latex Flat Ceiling Paint (W 615)

3. Concrete & Plaster Low-Odor/Zero VOC

a. Flat, Acrylic/Modified Copolymer System

First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)

Second Coat SPARTAZERO® FLAT, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR010)

Third Coat SPARTAZERO® FLAT, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR010)

b. Velvet, Acrylic/Modified Copolymer System

First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)

Second Coat SPARTAZERO® VELVET, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR020)

Third Coat SPARTAZERO® VELVET, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR020)

c. Eggshell, Acrylic System

First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)

Second Coat SPARTAZERO® EGGSHELL, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR030)

Third Coat SPARTAZERO® EGGSHELL, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR030)

d. Semi-Gloss, Acrylic/100% Acrylic System

First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)

Second Coat SPARTAZERO® SEMI-GLOSS, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR050)

Third Coat SPARTAZERO® SEMI-GLOSS, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR050)

e. Flat, Acrylic/100% Acrylic System

First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)

Second Coat EVEREST® FLAT, Low-Odor/Zero VOC Interior Flat Paint (EVER10)

Third Coat EVEREST® FLAT, Low-Odor/Zero VOC Interior Flat Paint (EVER10)

f. Velvet, Acrylic/100% Acrylic System

First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)

Second Coat EVEREST® VELVET, Low-Odor/Zero VOC Interior Flat Paint (EVER20)

Third Coat EVEREST® VELVET, Low-Odor/Zero VOC Interior Flat Paint (EVER20)

g. Eggshell, Acrylic/100% Acrylic System

First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)

Second Coat EVEREST® EGGSHELL, Low-Odor/Zero VOC Interior Flat Paint (EVER30)

Third Coat EVEREST® EGGSHELL, Low-Odor/Zero VOC Interior Flat Paint (EVER30)

h. Semi-Gloss, Acrylic/100% Acrylic System

First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)

Second Coat EVEREST® SEMI-GLOSS, Low-Odor/Zero VOC Interior Flat Paint (EVER50)

Third Coat EVEREST® SEMI-GLOSS, Low-Odor/Zero VOC Interior Flat Paint (EVER50)

4. Masonry (CMU) With Block Filler Low-Odor/Zero VOC Finish Coat

- a. Flat, Modified Copolymer System
 - First Coat CONCRETE BLOCK FILLER, Modified Copolymer Smooth Block Filler (SBSL00)
 - Second Coat SPARTAZERO® FLAT, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR010)
 - Third Coat SPARTAZERO® FLAT, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR010)
- b. Velvet, Modified Copolymer System
 - First Coat CONCRETE BLOCK FILLER, Modified Copolymer Smooth Block Filler (SBSL00)
 - Second Coat SPARTAZERO® VELVET, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR020)
 - Third Coat SPARTAZERO® VELVET, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR020)
- c. Eggshell, Modified Copolymer/Acrylic System
 - First Coat CONCRETE BLOCK FILLER, Modified Copolymer Smooth Block Filler (SBSL00)
 - Second Coat SPARTAZERO® EGGSHELL, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR030)
 - Third Coat SPARTAZERO® EGGSHELL, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR030)
- d. Semi-Gloss, Modified Copolymer/100% Acrylic System
 - First Coat CONCRETE BLOCK FILLER, Modified Copolymer Smooth Block Filler (SBSL00)
 - Second Coat SPARTAZERO® SEMI-GLOSS, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR050)
 - Third Coat SPARTAZERO® SEMI-GLOSS, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR050)
- e. Flat, Modified Copolymer/100% Acrylic System
 - First Coat CONCRETE BLOCK FILLER, Modified Copolymer Smooth Block Filler (SBSL00)
 - Second Coat EVEREST® FLAT, Low-Odor/Zero VOC Interior Flat Paint (EVER10)
 - Third Coat EVEREST® FLAT, Low-Odor/Zero VOC Interior Flat Paint (EVER10)
- f. Velvet, Modified Copolymer/100% Acrylic System
 - First Coat CONCRETE BLOCK FILLER, Modified Copolymer Smooth Block Filler (SBSL00)
 - Second Coat EVEREST® VELVET, Low-Odor/Zero VOC Interior Flat Paint (EVER20)
 - Third Coat EVEREST® VELVET, Low-Odor/Zero VOC Interior Flat Paint (EVER20)
- g. Eggshell, Modified Copolymer/100% Acrylic System
 - First Coat CONCRETE BLOCK FILLER, Modified Copolymer Smooth Block Filler (SBSL00)
 - Second Coat EVEREST® EGGSHELL, Low-Odor/Zero VOC Interior Flat Paint (EVER30)
 - Third Coat EVEREST® EGGSHELL, Low-Odor/Zero VOC Interior Flat Paint (EVER30)
- h. Semi-Gloss, Modified Copolymer/100% Acrylic System
 - First Coat CONCRETE BLOCK FILLER, Modified Copolymer Smooth Block Filler (SBSL00)
 - Second Coat EVEREST® SEMI-GLOSS, Low-Odor/Zero VOC Interior Flat Paint (EVER50)
 - Third Coat EVEREST® SEMI-GLOSS, Low-Odor/Zero VOC Interior Flat Paint (EVER50)

5. Masonry (CMU) Without Block Filler Low-Odor/Zero VOC

- a. Flat, Acrylic/Modified Copolymer System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat SPARTAZERO® FLAT, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR010)
 - Third Coat SPARTAZERO® FLAT, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR010)
- b. Velvet, Acrylic/Modified Copolymer System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat SPARTAZERO® VELVET, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR020)
 - Third Coat SPARTAZERO® VELVET, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR020)

- c. Eggshell, Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat SPARTAZERO® EGGSHELL, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR030)
 - Third Coat SPARTAZERO® EGGSHELL, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR030)

- d. Semi-Gloss, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00-
 - Second Coat SPARTAZERO® SEMI-GLOSS, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR050)
 - Third Coat SPARTAZERO® SEMI-GLOSS, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR050)

- e. Flat, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® FLAT, Low-Odor/Zero VOC Interior Flat Paint (EVER10)
 - Third Coat EVEREST® FLAT, Low-Odor/Zero VOC Interior Flat Paint (EVER10)

- f. Velvet, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® VELVET, Low-Odor/Zero VOC Interior Flat Paint (EVER20)
 - Third Coat EVEREST® VELVET, Low-Odor/Zero VOC Interior Flat Paint (EVER20)

- g. Eggshell, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® EGGSHELL, Low-Odor/Zero VOC Interior Flat Paint (EVER30)
 - Third Coat EVEREST® EGGSHELL, Low-Odor/Zero VOC Interior Flat Paint (EVER30)

- h. Semi-Gloss, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® SEMI-GLOSS, Low-Odor/Zero VOC Interior Flat Paint (EVER50)
 - Third Coat EVEREST® SEMI-GLOSS, Low-Odor/Zero VOC Interior Flat Paint (EVER50)

6. Wood Low-Odor/Zero VOC

- a. Flat, Acrylic/Modified Copolymer System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat SPARTAZERO® FLAT, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR010)
 - Third Coat SPARTAZERO® FLAT, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR010)

- b. Velvet, Acrylic/Modified Copolymer System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat SPARTAZERO® VELVET, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR020)
 - Third Coat SPARTAZERO® VELVET, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR020)

- c. Eggshell, Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat SPARTAZERO® EGGSHELL, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR030)
 - Third Coat SPARTAZERO® EGGSHELL, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR030)

- d. Semi-Gloss, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat SPARTAZERO® SEMI-GLOSS, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR050)
 - Third Coat SPARTAZERO® SEMI-GLOSS, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR050)

- e. Flat, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® FLAT, Low-Odor/Zero VOC Interior Flat Paint (EVER10)
 - Third Coat EVEREST® FLAT, Low-Odor/Zero VOC Interior Flat Paint (EVER10)

- f. Velvet, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® VELVET, Low-Odor/Zero VOC Interior Flat Paint (EVER20)
 - Third Coat EVEREST® VELVET, Low-Odor/Zero VOC Interior Flat Paint (EVER20)

- g. Eggshell, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® EGGSHELL, Low-Odor/Zero VOC Interior Flat Paint (EVER30)
 - Third Coat EVEREST® EGGSHELL, Low-Odor/Zero VOC Interior Flat Paint (EVER30)

- h. Semi-Gloss, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® SEMI-GLOSS, Low-Odor/Zero VOC Interior Flat Paint (EVER50)
 - Third Coat EVEREST® SEMI-GLOSS, Low-Odor/Zero VOC Interior Flat Paint (EVER50)

7. Synthetic Wood Low-Odor/Zero VOC

- a. Flat, Acrylic/Modified Copolymer System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat SPARTAZERO® FLAT, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR010)
 - Third Coat SPARTAZERO® FLAT, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR010)

- b. Velvet, Acrylic/Modified Copolymer System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat SPARTAZERO® VELVET, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR020)
 - Third Coat SPARTAZERO® VELVET, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR020)

- c. Eggshell, Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat SPARTAZERO® EGGSHELL, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR030)
 - Third Coat SPARTAZERO® EGGSHELL, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR030)

- d. Semi-Gloss, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat SPARTAZERO® SEMI-GLOSS, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR050)
 - Third Coat SPARTAZERO® SEMI-GLOSS, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR050)

- e. Flat, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® FLAT, Low-Odor/Zero VOC Interior Flat Paint (EVER10)
 - Third Coat EVEREST® FLAT, Low-Odor/Zero VOC Interior Flat Paint (EVER10)

- f. Velvet, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® VELVET, Low-Odor/Zero VOC Interior Flat Paint (EVER20)
 - Third Coat EVEREST® VELVET, Low-Odor/Zero VOC Interior Flat Paint (EVER20)

- g. Eggshell, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® EGGSHELL, Low-Odor/Zero VOC Interior Flat Paint (EVER30)
 - Third Coat EVEREST® EGGSHELL, Low-Odor/Zero VOC Interior Flat Paint (EVER30)
- h. Semi-Gloss, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® SEMI-GLOSS, Low-Odor/Zero VOC Interior Flat Paint (EVER50)
 - Third Coat EVEREST® SEMI-GLOSS, Low-Odor/Zero VOC Interior Flat Paint (EVER50)

8. Metals: Ferrous & Non Ferrous Low-Odor/Zero VOC Finish Coat

- a. Flat, Acrylic/Modified Copolymer System
 - First Coat ULTRA-GRIP® Premium, Acrylic Multi-Purpose Primer (UGPR00)
 - Second Coat SPARTAZERO® FLAT, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR010)
 - Third Coat SPARTAZERO® FLAT, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR010)
- b. Velvet, Acrylic/Modified Copolymer System
 - First Coat ULTRA-GRIP® Premium, Acrylic Multi-Purpose Primer (UGPR00)
 - Second Coat SPARTAZERO® VELVET, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR020)
 - Third Coat SPARTAZERO® VELVET, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR020)
- c. Eggshell, Acrylic System
 - First Coat ULTRA-GRIP® Premium, Acrylic Multi-Purpose Primer (UGPR00)
 - Second Coat SPARTAZERO® EGGSHELL, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR030)
 - Third Coat SPARTAZERO® EGGSHELL, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR030)
- d. Semi-Gloss, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® Premium, Acrylic Multi-Purpose Primer (UGPR00)
 - Second Coat SPARTAZERO® SEMI-GLOSS, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR050)
 - Third Coat SPARTAZERO® SEMI-GLOSS, Low-Odor/Zero VOC Interior Latex Flat Paint (SZR050)
- e. Flat, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® SELECT, Interior/Exterior Multi-Surface Primer (UGSL00)
 - Second Coat EVEREST® FLAT, Low-Odor/Zero VOC Interior Flat Paint (EVER10)
 - Third Coat EVEREST® FLAT, Low-Odor/Zero VOC Interior Flat Paint (EVER10)
- f. Velvet, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® Premium, Acrylic Multi-Purpose Primer (UGPR00)
 - Second Coat EVEREST® VELVET, Low-Odor/Zero VOC Interior Flat Paint (EVER20)
 - Third Coat EVEREST® VELVET, Low-Odor/Zero VOC Interior Flat Paint (EVER20)
- g. Eggshell, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® Premium, Acrylic Multi-Purpose Primer (UGPR00)
 - Second Coat EVEREST® EGGSHELL, Low-Odor/Zero VOC Interior Flat Paint (EVER30)
 - Third Coat EVEREST® EGGSHELL, Low-Odor/Zero VOC Interior Flat Paint (EVER30)
- h. Semi-Gloss, Acrylic/100% Acrylic System
 - First Coat ULTRA-GRIP® Premium, Acrylic Multi-Purpose Primer (UGPR00)
 - Second Coat EVEREST® SEMI-GLOSS, Low-Odor/Zero VOC Interior Flat Paint (EVER50)
 - Third Coat EVEREST® SEMI-GLOSS, Low-Odor/Zero VOC Interior Flat Paint (EVER50)



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GREEN WISE® CERTIFICATION

What is Green Wise®?

Products bearing the Green Wise certification mark meet or exceed the paint and coatings VOC requirements of LEED® for most applications. Green Wise certified products do not contain certain chemicals which have been determined to be harmful to humans or the environment. For a list of these chemicals, go to www.greenwisepaint.com and see Performance Standards. Green Wise certified products meet or exceed these stringent CRGI green performance criteria.

CRGI is an international organization of paint manufacturers. The CRGI laboratory, staffed with degreed chemists, is recognized the world over for high quality technical work and scientific reporting. Visit www.greenwisepaint.com for further information on the Green Wise standards and to learn more about Coatings Research Group, Inc.



Look for this symbol on Dunn-Edwards Green Wise certified products.

GREEN WISE® CERTIFIED PRODUCTS LIST



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INTERIOR COATINGS

PRIMERS		
BLOCK-IT® Premium	Interior/Exterior Stain-Blocking Primer (25 g/L)	BIPR00
BLOC-RUST® Premium	Interior/Exterior Rust Preventative Metal Primer (30 g/L)	BRPR00
EFF-STOP® Premium	Interior/Exterior Masonry Primer/Sealer (100 g/L)	ESPR00
EFF-STOP® Select	Interior/Exterior Masonry Primer/Sealer (50 g/L)	ESSL00
FLEX-PRIME® Select	Interior/Exterior Masonry Primer/Sealer (50 g/L)	FPSL00
INTER-KOTE® Premium	Interior Acrylic Enamel Undercoater (50 g/L)	IKPR00
Smooth BLOCFIL™ Premium	Interior/Exterior Concrete Block Filler (65 g/L)	SBPR00
Smooth BLOCFIL™ Select	Interior/Exterior Concrete Block Filler (75 g/L)	SBSL00
ULTRA-GRIP® Premium	Interior/Exterior Multi-Purpose Primer (50 g/L)	UGPR00
ULTRA-GRIP® Select	Low-Odor/Zero VOC Interior Latex Primer (<2 g/L)	UGSL00*
VINYLASTIC® Premium	Interior Wall Sealer (50 g/L)	VNPR00
VINYLASTIC® Select	Interior Wall Sealer (20 g/L)	VNSL00
FLATS		
EVEREST® FLAT	Low-Odor/Zero VOC Interior Latex Flat Paint (<2 g/L)	EVER10*
SPARTAZERO® FLAT	Low-Odor/Zero VOC Interior Latex Flat Paint (<2 g/L)	SZRO10*
SPARTAWALL® FLAT	Interior Flat Paint (20 g/L)	SWLL10
SUPREMA® FLAT	Interior Flat Paint (40 g/L)	SPMA10
NON-FLATS		
AQUAFALL® LOW SHEEN	Latex Dry Fall Low Sheen (50 g/L)	AQUA40
ARISTOWALL™ SEMI-GLOSS	Interior Semi-Gloss Paint (50 g/L)	AWLL50
ARISTOWALL™ GLOSS	Interior Gloss Paint (50 g/L)	AWLL60
EVEREST® EGGSHELL	Low-Odor/Zero VOC Interior Latex Eggshell Paint (<2 g/L)	EVER30*
EVEREST® SEMI-GLOSS	Low-Odor/Zero VOC Interior Latex Semi-Gloss Paint (<2 g/L)	EVER50*
SPARTAWALL® VELVET	Interior Velvet Paint (50 g/L)	SWLL20
SPARTAWALL® EGGSHELL	Interior Eggshell Paint (50 g/L)	SWLL30
SPARTAWALL® LOW SHEEN	Interior Low Sheen Paint (50 g/L)	SWLL40
SPARTAWALL® SEMI-GLOSS	Interior Semi-Gloss Paint (50 g/L)	SWLL50
SPARTAZERO® VELVET	Low-Odor/Zero VOC Interior Latex Velvet Paint (<2 g/L)	SZRO20

(continued)

SPARTAZERO® EGGSHELL	Low-Odor/Zero VOC Interior Latex Eggshell Paint (<2 g/L)	SZR030
SPARTAZERO® SEMI-GLOSS	Low-Odor/Zero VOC Interior Latex Semi-Gloss Paint (<2 g/L)	SZR050
SUPREMA® VELVET	Interior Velvet Paint (50 g/L)	SPMA20
SUPREMA® EGGSHELL	Interior Eggshell Paint (50 g/L)	SPMA30
SUPREMA® LOW SHEEN	Interior Low Sheen Paint (50 g/L)	SPMA40
SUPREMA® SEMI-GLOSS	Interior Semi-Gloss Paint (50 g/L)	SPMA50

EXTERIOR COATINGS

PRIMERS		
BLOCK-IT® Premium	Interior/Exterior Stain Blocking Primer (25 g/L)	BIPR00
BLOC-RUST® Premium	Interior/Exterior Rust Preventative Metal Primer (30 g/L)	BRPR00
EFF-STOP® Premium	Interior/Exterior Masonry Primer/Sealer (100 g/L)	ESPR00
EFF-STOP® Select	Interior/Exterior Masonry Primer/Sealer (50 g/L)	ESSL00
EZ-PRIME® Premium	Exterior Wood Primer (100 g/L)	EZPR00
FLEX-PRIME® Select	Interior/Exterior Flexible Masonry Primer (75 g/L)	FPSL00
Smooth BLOCFIL™ Premium	Interior/Exterior Concrete Block Filler (65 g/L)	SBPR00
Smooth BLOCFIL™ Select	Interior/Exterior Concrete Block Filler (75 g/L)	SBSL00
ULTRA-GRIP® Premium	Interior/Exterior Multi-Purpose Primer (50 g/L)	UGPR00
FLATS		
EVERSHIELD® FLAT	Exterior Flat Paint (50 g/L)	EVSH10
SPARTASHIELD® VA FLAT	Exterior Flat Paint (50 g/L)	SSHV10
SPARTASHIELD® FLAT	Exterior 100% Acrylic Flat Paint (50 g/L)	SSHL10
NON-FLATS		
ACRI-HUES® EGGSHELL	Exterior Eggshell Paint (50 g/L)	ACHS30
ACRI-HUES® SEMI-GLOSS	Exterior Semi-Gloss Paint (50 g/L)	ACHS50
EVERSHIELD® VELVET	Exterior Velvet Paint (50 g/L)	EVSH20
EVERSHIELD® EGGSHELL	Exterior Eggshell Paint (50 g/L)	EVSH30
EVERSHIELD® LOW SHEEN	Exterior Low Sheen Paint (50 g/L)	EVSH40
EVERSHIELD® SEMI-GLOSS	Exterior Semi-Gloss Paint (50 g/L)	EVSH50
EVERSHIELD® GLOSS	Exterior Gloss Paint (50 g/L)	EVSH60
SPARTASHIELD® VELVET	Exterior 100% Acrylic Velvet Paint (50 g/L)	SSHL20
SPARTASHIELD® EGGSHELL	Exterior 100% Acrylic Eggshell Paint (50 g/L)	SSHL30
SPARTASHIELD® LOW SHEEN	Exterior 100% Acrylic Low Sheen Paint (50 g/L)	SSHL40
SPARTASHIELD® SEMI-GLOSS	Exterior 100% Acrylic Semi-Gloss Paint (50 g/L)	SSHL50
SPARTASHIELD® GLOSS	Exterior 100% Acrylic Gloss Paint (50 g/L)	SSHL60

* Paints and coatings may be classified as “Zero VOC” if they contain none of the VOC solvents that are added to conventional latex paints. Trace amounts of VOC may be present as residual components of other ingredients. Some compounds detected as VOC under laboratory test methods using high heat may not be volatile under normal ambient conditions.

- Please remember to check dunnedwards.com for the most up-to-date product information sheets.

GREEN WISE® PERFORMANCE STANDARDS



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Green Wise Interior and Exterior Topcoat Standards

	Foot note		Interior Only	Exterior Only	Interior-Exterior
VOC	1	Flats: ≤ 50 g/l Non-Flats ≤100 g/l	✓	✓	✓
Contrast Ratio	2	0.95 minimum	✓	✓	✓
Y-Reflectance		80% Minimum	✓	✓	✓
Washability	3	Average rating Flats: ≥5 Non-flats: ≥7	✓		✓
Odor	4	Low Odor Min 6	✓		✓
Flexibility	5	No cracking, flaking, or peeling		✓	✓
Accelerated Weathering and Water Resistance	6	No blistering after 24 hours. See durability requirements in Footnote 6 for 500 hrs QUV exposure		✓	✓
Chemical Component Limitations	7	Does not contain chemicals listed on the Prohibitive Substance form.	✓	✓	✓

Green Wise Interior Ceiling Paint Standard

	Notes	Requirements
VOC	1	Flats: ≤ 50 g/L Non-flats: ≤ 100 g/L
Contrast Ratio	2	0.95 minimum
Y-Reflectance		80% minimum
Odor	4	Low odor (Minimum 6)
Chemical Component Limitations	7	Does not contain chemicals listed on the Prohibitive Substance form

**Green Wise Interior and Exterior Primer Standard
(Primers that do not claim Corrosion Resistance)**

	Notes	Requirement	Interior Only	Exterior Only	Interior-Exterior
VOC	1	≤ 100 g/L	✓	✓	✓
Adhesion	8	Minimum 50% adhesion over wood, metal, plastic or other intended substrates after 1 week cure at ambient conditions.	✓	✓	✓
Odor	4	Low odor (Minimum 6)	✓		✓
Flexibility	5	No cracking, flaking, or peeling.		✓	✓
Chemical Component Limitations	7	Does not contain chemicals listed on the Prohibitive Substance form	✓	✓	✓

**Green Wise Anti-Corrosive Interior and Exterior Topcoat Standard
(i.e. Direct To Metal Topcoats)**

	Requirement	Notes	Interior Only	Exterior Only	Interior-Exterior
VOC	≤ 250 g/l	1	✓	✓	✓
Contrast Ratio	0.95 minimum	2	✓	✓	✓
Y-Reflectance	80% Minimum		✓	✓	✓
Odor	Low Odor Minimum 6	4	✓		✓
Flexibility	No cracking, flaking, or peeling	5		✓	✓
Accelerated Weathering and Water Resistance	No blistering after 24 hours. See durability requirements in footnote 6 for 500 hour. QUV exposure	6		✓	✓
Cyclic Prohesion	After one complete cycle of cyclic prohesion- no discoloration and a minimum of ASTM 8 rusting and no more than 8F blisters	9	✓	✓	✓
Adhesion	50% adhesion or better over metal after 1 week cure at ambient conditions.	8	✓	✓	✓
Chemical Component Limitations	Does not contain chemicals listed on the Prohibitive Substance form	7	✓	✓	✓

**Green Wise Anti-Corrosive Interior and Exterior Primer Standard
(i.e. Direct To Metal Primers)**

	Requirement	Notes	Interior	Exterior	Interior-Exterior
VOC	≤ 250 g/L	1	✓	✓	✓
Adhesion	50% adhesion or better over metal after 1 week cure at ambient conditions.	8	✓	✓	✓
Odor	Low odor (Minimum 6)	4	✓		✓
Flexibility	No cracking, flaking, or peeling.	5		✓	✓
Cyclic Prohesion	After one complete cycle of cyclic prohesion- no discoloration and a minimum of ASTM 8 rusting and no more than 8F blisters	9	✓	✓	✓
Chemical Component Limitations	Does not contain chemicals listed on the Prohibitive Substance form	7	✓	✓	✓

Green Wise Interior and Exterior Clear Wood Finishes (Non-Floor Coating)

	Note	Requirement
VOC	1	≤ 350 g/l
Chemical Stain Resistance	11	No blistering, lifting, wrinkling, peeling or discoloration
Adhesion	8	Minimum 50% adhesion after 1 week cure at ambient conditions
Odor	4	Low Odor Minimum 6 for paints that claim interior use
Chemical Component Limitations	7	Does not contain chemicals listed on the Prohibitive Substance form.

Green Wise Interior and Exterior Above and Below Grade Waterproofer

	Note	Requirement
VOC	1	≤ 100 g/L
Hydrostatic Pressure Resistance	12	No blistering, adhesion loss, softening or discoloration and water droplets (max 6) when tested at 10 psi
Wind Driven Rain	13	No visible water leaks and less than 3.2 oz weight gain when tested at 98 m/h
Adhesion	8	50% Adhesion or better over concrete
Odor	4	Low Odor Minimum 6 for paints that claim interior use
Chemical Component Limitations	7	Does not contain chemicals listed on the Prohibitive Substance form

Green Wise Interior/Exterior Wood and/or Concrete Floor Coatings

	Note	Requirement
VOC	1	≤ 100 g/l
Chemical Stain Resistance	11	No blistering, lifting, wrinkling, peeling or discoloration
Adhesion	8	Minimum 50% adhesion after 1 week cure at ambient conditions.
Odor	4	Low Odor Minimum 6 for paints that claim interior use
Chemical Component Limitations	7	Does not contain chemicals listed on the Prohibitive Substance form

Green Wise Interior and Exterior Wood and/or Concrete Stains (Solid Color and Semi-Transparent)

	Note	Requirement
VOC	1	≤ 250 g/l
Chemical Stain Resistance	11	No blistering, lifting, wrinkling, peeling or discoloration
Adhesion	8	Minimum 50% adhesion after 1 week cure at ambient conditions.
Odor	4	Low Odor Minimum 6 for paints that claim interior use
Chemical Component Limitations	7	Does not contain chemicals listed on the Prohibitive Substance form

Green Wise Interior/Exterior Recreational Topcoat Standards

	Notes	Area of Use			Requirement
		Interior Only	Exterior Only	Interior-Exterior	
VOC	1	✓	✓	✓	≤ 100 g/l
Adhesion	8		✓	✓	Minimum 50% adhesion over wood, metal, plastic or other intended substrates after 1 week cure at ambient conditions.
Odor	4	✓		✓	Low Odor Minimum 6
Water Resistance	11		✓	✓	No blistering after 24 hours.
Chemical Component Limitations	7	✓	✓	✓	Does not contain the chemicals listed below as ingredients.

Green Wise Interior/Exterior Recreational Primer Standards

	Notes	Requirement	Interior	Exterior	Interior/Exterior
VOC	1	≤ 100 g/L	✓	✓	✓
Adhesion	8	Minimum 50% adhesion over wood, metal, plastic or other intended substrates after 1 week cure at ambient conditions.	✓	✓	✓
Odor	4	Low odor (Minimum 6)	✓		✓
Flexibility	5	No cracking, flaking, or peeling.		✓	✓
Chemical Component Limitations	7	Does not contain the chemicals listed below as ingredients.	✓	✓	✓

Green Wise High Build Coatings Standards (10)

- These products are similar to conventional coatings except that they are specifically formulated to be applied at a higher film thickness.
- Paint must be evaluated by CRGI and found to meet or exceed all other Green Wise Standards performance requirements for the appropriate Green Wise Product Category with the exception that they would be tested at the spread rate recommended on the product label instead of 7-mil Dow bar.
- The Green Wise Results Form would indicate the film thickness used in product testing.

Green Wise Low Emitting Coatings Standard

- This standard is for coatings which meet emissions requirements of the U.S. Green Building Council LEED 2009 For Schools, and of California Department of Health Services Section 01350. These types of paints are low emitting products that are commonly used in schools, universities or other public places where indoor air quality is a concern.
- Paint must be evaluated by CRGI and found to meet or exceed all other Green Wise Standards performance requirements for the appropriate Green Wise Product Category and not contain any chemical on the Chemical Component Limitations listed on the Green Wise Prohibited Substance Form. This standard does not include California Proposition 65 chemical restrictions.
- All paints and coatings must be tested by a third party laboratory and found to meet the testing and product requirements of the California Department of Public Health Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including the 2004 addendum. This test method is detailed in Section 01350 of the California Department of Public Health Standard. The test report must be submitted to CRGI and show compliance with the California 01350 standard and list the product tested (by name) and batch date of product tested. CRGI can certify only the paints listed as conforming on the third party test report as a low emitting coating. CRGI cannot certify substantially similar or cross filled products that are not listed on the test report as low emitting.
- As with other Green Wise certified products, the Low Emitting Coatings must be tested, including the emissions test, every two years, or upon formulation changes if they occur before the two year period.

Notes:

- (1) VOC: For VOC category determination of Flat and Non-Flat: Flat Paint gloss will be below 5 at 60 degrees or below 15 at 85 degrees. Non-Flat paint will be above or equal to 5 at 60 degrees, or above or equal to 15 at 85 degrees. Measured via EPA Method 24 using Karl Fischer titration.
- (2) Contrast Ratio: CRGI Test Method 27. 7-mil Dow bar.
- (3) Washability: CRGI Test Method 79
- (4) Odor: CRGI Test Method 78
- (5) Flexibility: ASTM 522 93 B Mandrel Bend, ½ inch mandrel. Paint is applied to primed or unprimed aluminum Q-Panel with 7 mil Dow bar. No cracking, flaking or peeling when tested after one week drying under ambient conditions
- (6) Accelerated Weathering: ASTM D 4587 Paint is applied to substrate (primed Leneta birch panel, aluminum Q-Panel, Hardie board) and cured one week under ambient conditions. Panels are placed in QUV with 4 hours condensation, 4 hours UV-A bulb exposure cycle. Panels are examined after 24 hours for early water resistance (no blistering). After 500 hours total exposure, panels must not show blistering, cracking, peeling, flaking, chalking, or a color change greater than 5 Delta E (FMC II).
- (7) The following chemical compounds are not used as ingredients in the manufacture of the listed product: methylene chloride, 1,2 dichlorobenzene, phthalates, isophorone, formaldehyde, methyl ethyl ketone, methyl isobutyl ketone, and the following heavy metals: antimony, cadmium, hexavalent chromium, lead, and mercury.
- (8) Adhesion: ASTM D 3359. Tested over intended substrate after 1 week cure.
- (9) Cyclic Prohesion. ASTM D 5894-05. Paint applied to cold-rolled steel with 7-mil Dow bar and cured for one week prior to testing one complete cycle of prohesion (one week in QUV and one week in Salt Spray). Panel is rated for rusting using ASTM D 610-07.
- (10) All high build products tested at recommended spread rate instead of 7-mil Dow bar.
- (11) Chemical Stain/Water Resistance. ASTM D 1308-02 (7.2). Coating applied with 7-mil Dow bar over intended substrate. After 7 days air-dry, 1 drop of water, isopropyl alcohol and cleaner are applied to a different area of the panel and spots are covered with a watch glass. After 1 hour, droplets are removed with cloth. After 24-hours panel is rated for overall appearance. Panel should show no lifting, blistering, wrinkling, lifting or discoloration.
- (12) Hydrostatic Pressure: Tested by ISO17025 Accredited laboratory for ASTM D 7088 at recommended spread rate.
- (13) Wind Driven Rain. Tested by ISO17025 Accredited laboratory for ASTM D 6904 at recommended spread rate

LOW-ODOR/ZERO VOC PRODUCTS



THE #1 CHOICE OF PAINTING PROFESSIONALS®

PRIMER		
ULTRA-GRIP® Select	Low-Odor/Zero VOC Interior Latex Primer (<2 g/L)	UGSL00*
FLAT		
ACOUSTIKOTE®	Latex Flat Ceiling Paint	W 615*
EVEREST® FLAT	Low-Odor/Zero VOC Interior Latex Flat Paint (<2 g/L)	EVER10*
SPARTAZERO® FLAT	Low-Odor/Zero VOC Interior Latex Flat Paint (<2 g/L)	SZR010
NON-FLATS		
EVEREST® EGGSHELL	Low-Odor/Zero VOC Interior Latex Eggshell Paint (<2 g/L)	EVER30*
EVEREST® SEMI-GLOSS	Low-Odor/Zero VOC Interior Latex Semi-Gloss Paint (<2 g/L)	EVER50*
SPARTAZERO® EGGSHELL	Low-Odor/Zero VOC Interior Latex Eggshell Paint (<2 g/L)	SZR030
SPARTAZERO® SEMI-GLOSS	Low-Odor/Zero VOC Interior Latex Semi-Gloss Paint (<2 g/L)	SZR050

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THE #1 CHOICE OF PAINTING PROFESSIONALS®

RECYCLED PRODUCTS

In November 2000, Dunn-Edwards Corporation and Amazon Environmental, Inc. signed an agreement to launch a cooperative venture for producing and marketing recycled latex paints.

Amazon is Dunn-Edwards' exclusive supplier of recycled latex paints, and Dunn-Edwards is Amazon's exclusive distributor of recycled latex paints, sold under the Recover® brand name in Arizona, California, Nevada, New Mexico, and Texas.

This cooperative venture has allowed each company to focus on its own key strengths and expertise, and to combine their efforts in ways that will greatly expand the availability and use of recycled latex paints.

In California, paint recycling has been spurred by local government Household Hazardous Waste collection programs; approximately 20 to 25 percent of the waste collected consists of leftover (but usable) latex paints.

Recycling is the preferred alternative to disposal, but the volume of recyclable latex paint currently outstrips processing capacity and market development.

Amazon has run its paint recycling operations since 1995.

Amazon accepts recyclable latex paints and chemically similar recyclable materials to produce recycled latex paints and a proprietary latex cement additive. This process achieves 100 percent recycling of all accepted materials.

Before the new agreement, Amazon sold its recycled latex paints primarily to various government agencies and graffiti abatement organizations. This venture has helped expand sales of recycled paints into new markets.

Dunn-Edwards and Amazon collaborate on specifications for recycled latex paint products. Amazon has relationships with county and municipal waste agencies, household waste management contractors, industrial waste generators, and other sources of recyclable latex paint.



RECOVER® PRODUCTS	
RE-F07-2	Recycled Gray Flat Paint
RE-F08-2	Recycled Beige Flat Paint

These are stock colors and come in 2-gallon containers. Other colors are available by special order. Ask for details.