

## **1 General**

### **1.1 GENERAL INSTRUCTIONS**

- .1 Read and be governed by Conditions of the Contract and Sections of Division 01 - General Requirements.

### **1.2 REFERENCES**

- .1 South Coast Air Quality Management District (SCAQMD)
  - .1 Amendment to South Coast Rule 1168, VOC Limits, effective January 7, 2005.
    - .1 Rule 1168, VOC Limits, effective date of July 1, 2005.
  - .2 Rule 1113, VOC Limits, effective date of January 1, 2004.
- .2 Green Seal Standard
  - .1 GS-36, Commercial Adhesives, VOC Limits, effective October 19, 2000
  - .2 GS-11, Paints, VOC Limits, First Edition, May 20, 1993
  - .3 GC-03, Anti-Corrosive Paints, VOC Limits, Second Edition, January 7, 1997

### **1.3 DEFINITIONS**

- .1 Acrylonitrile-butadiene-styrene (ABS): a plastic made by reacting monomers of acrylonitrile, butadiene, and styrene and is normally identified with an ABS marking.
  - .2 Adhesive: any substance that is used to bond one surface to another by attachment. Adhesives include bonding primers, adhesive primers, and adhesive primers for plastics.
  - .3 Adhesive Primer for Plastic: a material applied to a plastic substrate before applying an adhesive in order to obtain better adhesion.
  - .4 Anti-corrosive / Anti-rust Paints: coatings formulated and recommended for use in preventing the corrosion of ferrous metal substrates.
  - .5 Architectural Nonporous Sealant Primer: substance used as a sealant primer on nonporous materials
  - .6 Architectural porous sealant primer: substance used as a sealant on porous materials.
  - .7 Architectural Sealant: sealants applied to ducting, hand railings, cabinets, bathroom fixtures, kitchen fixtures, windows or other architectural features.
  - .8 Bond Breakers: applied between layers of concrete to prevent the freshly poured top layer of concrete from bonding to the substrate over which it is poured.
  - .9 Clear Brushing Lacquer: clear wood finishes, excluding clear lacquer sanding sealers, formulated with nitrocellulose or synthetic resins to dry by solvent evaporation without chemical reaction and to provide a solid, protective film.
  - .10 Clear Wood Finishes: clear and semi-transparent coatings, including lacquers and varnishes, applied to wood substrates, including floors, to provide a transparent or translucent solid film.
  - .11 Chlorinated Polyvinyl Chloride (CPVC): plastic is a polymer of the chlorinated polyvinyl monomer that contains 67% chlorine and is normally identified with a CPVC marking.
  - .12 Coating: applied to beautify, protect, or provide a barrier to a surface.
  - .13 Concrete-Curing Compounds: coatings formulated for or applied to freshly poured concrete to retard the evaporation of water.
  - .14 Contact Adhesive: an adhesive applied to two separate surfaces, allowed to dry, and brought together for adhesion and bonding with subsequent pressure.
  - .15 Cove Base Adhesive: an adhesive used during the installation of cove base (or wall base), which is generally made of vinyl or rubber and installed horizontally on a wall
  - .16 Drywall Adhesive: an adhesive used during the installation of gypsum dry wall to studs or solid surfaces.
  - .17 Flat Paints and Coatings: Paints and coatings that register a gloss of less than 15 on an 85-degree meter or less than 5 on a 60-degree meter.
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- .18 Fiberglass Substrate Adhesive: if no other definitions within this specification apply and the mentioned substrates do apply, the associated VOC limit shall govern product selection.
  - .19 Floor Coatings: opaque coatings that are formulated for or applied to flooring; and clear coatings formulated for or applied to concrete flooring, but do not include Industrial Maintenance Coatings.
  - .20 Graphic Arts (sign) Coatings: Sign paints (excluding structural components) formulated for hand-application by artists using brush or roller techniques to murals, including lettering enamels, poster colours, copy blockers and bulletin enamels.
  - .21 High-Temperature Industrial Maintenance Coatings: industrial maintenance coatings formulated for or applied to substrates exposed continuously or intermittently to temperatures above 400°F.
  - .22 Indoor Adhesive, Sealant, or Sealant Primer: an adhesive or sealant product applied on-site, inside the building's weatherproofing system.
  - .23 Indoor Paints or Coating Products: applied inside a building's weatherproofing system
  - .24 Industrial Maintenance Coatings: Includes primers, sealers, undercoaters, intermediate coatings and topcoats, formulated for or applied to substrates, including floors, which are exposed to either:
    - .1 Immersion in water, wastewater, chemical solutions or chronic exposure of interior surfaces to moisture condensation.
    - .2 Acute or chronic exposure to corrosive, caustic or acidic agents, or similar chemicals, chemical fumes, chemical mixtures, or solutions.
    - .3 Repeated exposure to temperatures in excess of 250°F.
    - .4 Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial solvents, cleaners or scouring agents.
  - .25 Interior of the Building: all space and materials that are located, or will be located, within the building's weatherproofing system.
  - .26 Lacquers: clear or pigmented wood finishes, including clear lacquer sanding sealers, formulated with nitrocellulose or synthetic resins to dry by evaporation without chemical reaction.
  - .27 Low-Solids Coatings: coatings containing one pound or less of solids per gallon of material. VOC levels for Low-Solids Coatings are measures in grams of VOC per litre of material, including water.
  - .28 Mastic Coatings: formulated to cover holes and minor cracks and to conceal surface irregularities, and applied in a thickness of at least 10 mils (dry, single coat).
  - .29 Metal to Metal Substrate: if no other definitions within this specification apply and the mentioned substrates do apply, the associated VOC limit shall govern product selection.
  - .30 Multi-purpose Construction Adhesive: any adhesive to be used for the installation or repair of various construction materials, including but not limited to: drywall, subfloor, panel, fibreglass reinforced plastic (FRP), ceiling tile, and acoustic tile.
  - .31 Non-flat Paints and Coatings: Paints and coatings that are not defined under any other definition in this specification and that register a gloss of 5 or greater on a 60 degree meter and a gloss of 15 or greater on an 85 degree meter.
  - .32 Nonporous Sealant: substance used as a sealant on nonporous materials. Nonporous materials, such as plastic and metal, do not have opening in which fluids may be absorbed or discharged.
  - .33 Off-gassing: the emission of volatile organic compounds (VOC's) from synthetic and natural products.
  - .34 Paint: a 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 application to interior or exterior surfaces of residential, commercial, institutional, or industrial buildings.
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- .35 Panel Adhesive: an adhesive used for the installation of plywood, pre-decorated hardboard (or tileboard), fiberglass reinforced plastic, and similar pre-decorated or non-decorated panels to studs or solid surfaces.
  - .36 Plastic Foam Substrate Adhesives: if no other definitions within this specification apply and the mentioned substrates do apply, the associated VOC limit shall govern product selection.
  - .37 Plastic Cement Welding: the use of adhesives made of resins and solvent which are used to dissolve the surfaces of plastic, except ABS, CPVC, and PVC plastic, to form a bond between mating surfaces.
  - .38 Pre-treatment Wash Primers: coatings which contain a minimum of 0.5% acid, by weight, applied directly to bare metal surfaces to provide necessary surface etching.
  - .39 Porous Materials: have tiny openings, often microscopic, which can absorb or discharge fluids. Examples include wood, fabric, paper, corrugated paperboard, and plastic foam.
  - .40 Porous Material Substrate Adhesive (except wood): where no other definitions or substrate specific materials apply, this VOC limit shall govern product selection.
  - .41 Primer: applied to a substrate to improve adhesion of subsequently applied coats.
  - .42 Polyvinyl Chloride (PVC): this plastic is a polymer of the chlorinated vinyl monomer that contains 57 percent chlorine.
  - .43 Quick-Dry Enamels: non-flat, high gloss coatings which can be applied by brush or roller between 60°F and 80°F. Set-to-touch in two hours or less, dry-hard in eight hours or less, tack-free in four hours or less.
  - .44 Quick-Dry Primers: applied to a surface to provide a firm bond between the substrate and subsequent coats. Dry-to-touch in one-half hour and can be recoated in two hours.
  - .45 Sanding Sealers: clear wood coatings formulated for or applied to bare wood for sanding and to seal the wood for subsequent application of coatings.
  - .46 Sealant: has adhesive properties and is formulated primarily to fill, seal, or waterproof gaps or joints between two surfaces. Sealants include all types of caulks.
  - .47 Sealant Primer: applied to a substrate, prior to the application of a sealant, to enhance the bonding surface.
  - .48 Sealers: coatings applied to either block materials from penetrating into or leaching out of a substrate, to prevent subsequent coatings from being absorbed by the substrate, or to prevent harm to subsequent coatings by materials in the substrate.
  - .49 Shellac: clear or pigmented coatings formulated solely with the resinous secretions of the lac insect. Shellacs are formulated to dry by evaporation without a chemical reaction providing a quick-drying, solid, protective film for priming and sealing stains and odours; and for wood finishing excluding floors.
  - .50 Special Purpose Contact Adhesive: a contact adhesive that is used to bond all of the following substrates to any surface: melamine covered board, metal, unsupported vinyl, Teflon, ultra-high molecular weight polyethylene, rubber and wood veneer 1/16 inch or less in thickness.
  - .51 Specialty Primers: Formulated to seal substrates which have fire, smoke or water damage.
  - .52 Stains: opaque or semi-transparent coatings which are formulated to change the colour but not conceal the grain pattern or texture.
  - .53 Structural Glazing Adhesive: any adhesive used to adhere glass, ceramic, metal, stone, or composite panels to exterior building frames.
  - .54 Structural Wood Member Adhesive: an adhesive used for the construction of any load bearing joints in wooden joists, trusses, or beams.
  - .55 Subfloor Adhesive: Used for the installation of subflooring material over floor joists.
  - .56 Substrate Specific Applications: For adhesives, adhesive bonding primers, or any other primer not regulated by VOC limits and categories established in this specification, substrate specific VOC limits will apply.
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- .57 Undercoaters: coatings formulated for or applied to substrates to provide a smooth surface for subsequent coats.
- .58 Varnishes: clear wood finishes formulated with various resins to dry by chemical reaction.
- .59 VCT: means vinyl composition tile and is a material made from thermoplastic resins, fillers and pigments.
- .60 Volatile Organic Compounds (VOC's): carbon compounds that participate in atmospheric photochemical reactions (excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides and carbonates, and ammonium carbonate). The compounds vaporize at normal room temperatures.
- .61 Waterproofing Concrete / Masonry Sealers: clear or pigmented sealers that are formulated for sealing concrete and masonry to provide resistance against water, alkalis, acids, ultraviolet light, and staining.
- .62 Wood Preservatives: coatings formulated to protect wood from decay or insect attack by the addition of a wood preservative chemical.
- .63 Wood Substrate Adhesive: if no other definitions within this specification apply and the mentioned substrates do apply, the associated VOC limit shall govern product selection.
- .64 Waterproofing Sealers: coatings which are formulated for the primary purpose of preventing penetration of porous substrates by water.
- .65 Weatherproofing System: protects the building from exterior environment (wind and water) and is defined as the air barrier within the wall and roof assemblies.
- .66 Zinc-Rich IM Coatings: primers formulated to contain a minimum of 65 percent metallic zinc powder (zinc dust) by weight of total solids for application to metal substrates.

#### **1.4 SUBMITTALS**

- .1 All products governed under this specification must be reviewed by the Departmental Representative and stamped as approved prior to products arriving on site.
  - .1 As indicated by references to this specification and related specification sections.
  - .2 Submit manufacturer letters, technical data sheets and/or MSDS (Material Safety Data Sheets, inclusive of the following information:
    - .1 VOC contents in g/L format.
    - .2 Description of applications and intended uses.

## **2 Products**

### **2.1 GENERAL**

- .1 All adhesives, sealants, paints and coatings used on the interior of the building (i.e., inboard side of the weatherproofing system and applied on-site) must comply with the requirements of this specification regardless of the project's stage of construction (i.e., prior to building close-in).
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VOC Limits for Adhesives (g/L, Less Water)		VOC Limits for Coatings (g/L, Less Water)	
<b>Architectural Applications</b>	<b>Limit (g/L)</b>	<b>Product Type</b>	<b>Limit (g/L)</b>
Carpet Adhesives	50	Flat Paint	50
Carpet Pad Adhesives	50	Non-Flat Paint	150
Wood Flooring Adhesives	100	Anti-Corrosive / Anti-Rust Paint	250
Rubber Floor Adhesives	60	Bond Breakers	350
Subfloor Adhesives	50	Clear Wood Finishes: Lacquer	550
Porcelain / Ceramic Tile Adhesives	65	Clear Wood Finishes: Sanding Sealers	350
VCT & Asphalt Tile Adhesives	50	Clear Wood Finishes: Varnish	350
Drywall & Panel Adhesives	50	Clear Brushing Lacquers	680
Cove Base Adhesives	50	Concrete-Curing Compounds	350
Corner Guard Adhesives	50	Dry-Fog Coatings	400
Multipurpose Construction Adhesives	70	Floor Coatings	100
Structural Glazing Adhesives / Sealants	100	Fire Proofing Exterior Coatings	350
<b>Substrate Specific Applications</b>	<b>Limit (g/L)</b>	Fire Retardant Coatings, Clear	650
Metal to Metal	30	Fire Retardant Coatings, Pigmented	350
Plastic Foams	50	Graphic Arts (sign) Coatings	500
Porus Material (except wood)	50	High-Temp. Industrial Maintenance Coatings	420
Wood Flooring Adhesives	30	Industrial Maintenance Coatings	250
Fibreglass	80	Japans / Faux Finishing Coatings	350
<b>Specialty Applications</b>	<b>Limit (g/L)</b>	Magnesite Cement Coatings	450
PVC Welding	510	Mastic Coatings	300
CPVC Welding	490	Metallic Pigmented Coatings	500
ABS Welding	325	Multi-Color Coatings	250
Plastic Cement Welding	250	Pigmented Lacquer	550
Adhesive Primer for Plastic	550	Pre-Treatment Wash Primers	420
Contact Adhesive	80	Primers, Sealers, and Undercoaters	200
Special Purpose Contact Adhesive	250	Quick-Dry Enamels	250
Structural Wood Member Adhesive	140	Quick-Dry Primers, Sealers, and Undercoaters	200
Sheet Applied Rubber Lining Operations	850	Recycled Coatings	250
<b>Aerosol Spray Adhesives (VOC's by Weight)</b>	<b>Limit (%)</b>	Roof Coatings	250
Mist	65%	Roof Primers, Bituminous	350
Web	55%	Shellac: Clear	730
General Purpose	70%	Shellac: Pigmented	550
<b>VOC Limits for Sealants (g/L, Less Water)</b>		Specialty Primers	350
<b>Sealants</b>	<b>Limit (g/L)</b>	Stain	250
Architectural	250	Swimming Pool Coatings (New or Repairs)	340
Structural Glazing Adhesive / Sealant	100	Traffic Coating	150
<b>VOC Limits for Sealant Primers (g/L, Less Water)</b>		Waterproofing Sealers	250
<b>Sealant Primers</b>	<b>Limit (g/L)</b>	Waterproofing Concrete / Masonry Sealers	400
Architectural, non-porous	250	Wood Preservatives	350
Architectural, porous	775	Zinc-Rich IM Primers	340

### 3 Execution

#### 3.1 General

- .1 The definitions in this specification have been provided in order to assist with the categorization of products being used on this project.
- .1 VOC limits established in the above tables will regulate which products have

acceptable emissions and can be applied on the inboard side of the weatherproofing system.

- .1 Products that meet any of the above definitions are required to be submitted for review.
  - .1 If a distinction cannot be made between categories, or whether a product is required to be submitted for review, the product will be forwarded to the Departmental Representative for guidance.
- .2 Product compliance is measured using g/L format.
  - .1 Pigments are not required to be included when calculating product VOC contents.
  - .2 Test methods used to establish product VOC contents do not form part of these specification requirements, so long as:
    - .1 Test methods to include VOC in g/L, less water.

**END OF SECTION**

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