

## **PART 1 - GENERAL**

### **1.1 GENERAL INSTRUCTIONS**

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

### **1.2 RELATED SECTIONS**

- .1 01 47 19 – IAQ: During Construction
- .2 01 47 15 – Sustainable Requirements: Construction
- .3 01 74 21 – Construction Waste Management

### **1.3 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

### **1.4 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 Carpet Pad Adhesive: an adhesive used for the installation of a carpet pad (or cushion) beneath a carpet.
- .10 Ceramic Tile Adhesive: an adhesive used for the installation of ceramic tile or porcelain tile products.
- .11 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.
- .12 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.
- .13 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.
- .14 Coating: applied to beautify, protect, or provide a barrier to a surface.
- .15 Concrete-Curing Compounds: coatings formulated for or applied to freshly poured concrete to retard the evaporation of water.
- .16 Contact Adhesive: an adhesive applied to two separate surfaces, allowed to dry, and brought together for adhesion and bonding with subsequent pressure.
- .17 Corner Guard Adhesive: an adhesive used during the installation of corner guard, which is generally made of vinyl or rubber and installed vertically on the outer corners of walls
- .18 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
- .19 Drywall Adhesive: an adhesive used during the installation of gypsum dry wall to studs or solid surfaces.
- .20 Dry-Fog Coatings: formulated only for spray application so that when sprayed, overspray droplets dry before falling on floors and other surfaces.
- .21 Faux Finishing Coatings: glazes designed for wet-in-wet techniques used as a stain or glaze to create artistic effects, including but not limited to, dirt, old age, smoke damage, and simulated marble and wood grain.
- .22 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.
- .23 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.

- .24 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.
- .25 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.
- .26 High-Temperature Industrial Maintenance Coatings: industrial maintenance coatings formulated for or applied to substrates exposed continuously or intermittently to temperatures above 400°F.
- .27 Indoor Adhesive, Sealant, or Sealant Primer: an adhesive or sealant product applied on-site, inside the building's weatherproofing system.
- .28 Indoor Paints or Coating Products: applied inside a building's weatherproofing system
- .29 Industrial Maintenance Coatings: Includes primers, sealers, undercoaters, intermediate coatings and topcoats, formulated for or applied to substrates, including floors, which are exposed to either:
  - A. Immersion in water, wastewater, chemical solutions or chronic exposure of interior surfaces to moisture condensation.
  - B. Acute or chronic exposure to corrosive, caustic or acidic agents, or similar chemicals, chemical fumes, chemical mixtures, or solutions
  - C. Repeated exposure to temperatures in excess of 250°F
  - D. Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial solvents, cleaners or scouring agents
- .30 Interior of the Building: all space and materials that are located, or will be located, within the building's weatherproofing system.
- .31 Lacquers: clear or pigmented wood finishes, including clear lacquer sanding sealers, formulated with nitrocellulose or synthetic resins to dry by evaporation without chemical reaction.
- .32 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.
- .33 Magnesite Cement Coatings: coatings formulated for or applied to magnesite cement decking to protect the magnesite cement substrate from erosion by water.
- .34 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).
- .35 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.
- .36 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.

- .37 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.
- .38 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.
- .39 Off-gassing: the emission of volatile organic compounds (VOC's) from synthetic and natural products.
- .40 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.
- .41 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.
- .42 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.
- .43 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.
- .44 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.
- .45 Porcelain Tile Adhesive: an adhesive used for the installation of ceramic tile or porcelain tile products.
- .46 Porous Materials: have tiny openings, often microscopic, which can absorb or discharge fluids. Examples include wood, fabric, paper, corrugated paperboard, and plastic foam.
- .47 Porous Material Substrate Adhesive (except wood): where no other definitions or substrate specific materials apply, this VOC limit shall govern product selection.
- .48 Primer: applied to a substrate to improve adhesion of subsequently applied coats.
- .49 Polyvinyl Chloride (PVC): this plastic is a polymer of the chlorinated vinyl monomer that contains 57 percent chlorine.
- .50 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.
- .51 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.

- .52 Rubber Flooring Adhesive: an adhesive that is used for the installation of flooring material in which both the back and the top surface area made of synthetic rubber, and which may be in sheet or tile form.
- .53 Sanding Sealers: clear wood coatings formulated for or applied to bare wood for sanding and to seal the wood for subsequent application of coatings.
- .54 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.
- .55 Sealant Primer: applied to a substrate, prior to the application of a sealant, to enhance the bonding surface.
- .56 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.
- .57 Sheet-applied Rubber Lining Operation: the hand application of sheet rubber lining to metal or plastic substrates in order to protect the underlying substrate from corrosion or abrasion. These operations also include laminating sheet rubber to fabric.
- .58 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.
- .59 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.
- .60 Specialty Primers: Formulated to seal substrates which have fire, smoke or water damage.
- .61 Stains: opaque or semi-transparent coatings which are formulated to change the colour but not conceal the grain pattern or texture.
- .62 Structural Glazing Adhesive: any adhesive used to adhere glass, ceramic, metal, stone, or composite panels to exterior building frames.
- .63 Structural Wood Member Adhesive: an adhesive used for the construction of any load bearing joints in wooden joists, trusses, or beams.
- .64 Subfloor Adhesive: Used for the installation of subflooring material over floor joists.
- .65 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.
- .66 Swimming Pool Coatings: applied to the interior of swimming pools and to resist swimming pool chemicals. Includes repair coatings applied over existing coatings.

- .67 Undercoaters: coatings formulated for or applied to substrates to provide a smooth surface for subsequent coats.
- .68 Varnishes: clear wood finishes formulated with various resins to dry by chemical reaction.
- .69 VCT: means vinyl composition tile and is a material made from thermoplastic resins, fillers and pigments.
- .70 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.
- .71 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.
- .72 Wood Preservatives: coatings formulated to protect wood from decay or insect attack by the addition of a wood preservative chemical.
- .73 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.
- .74 Waterproofing Sealers: coatings which are formulated for the primary purpose of preventing penetration of porous substrates by water.
- .75 Weatherproofing System: protects the building from exterior environment (wind and water) and is defined as the air barrier within the wall and roof assemblies.
- .76 Wood Flooring Adhesive: an adhesive used to install a wood floor surface, which may be in the form of parquet tiles, wood planks, or strip-wood.
- .77 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.

## **1.5 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

## **PART 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).

VOC Limits for Adhesives (g/L, Less Water)		VOC Limits for Coatings (g/L, Less Water)	
Architectural Applications	Limit (g/L)	Product Type	Limit (g/L)
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
Substrate Specific Applications	Limit (g/L)	Fire Retardant Coatings, Clear	650
Metal to Metal	30	Fire Retardant Coatings, Pigmented	350
Plastic Foams	50	Graphic Arts (sign) Coatings	500
Porous Material (except wood)	50	High-Temp. Industrial Maintenance Coatings	420
Wood Flooring Adhesives	30	Industrial Maintenance Coatings	250
Fiberglass	80	Japans / Faux Finishing Coatings	350
Specialty Applications	Limit (g/L)	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
Aerosol Spray Adhesives (VOC's by Weight)	Limit (%)	Roof Coatings	250
Mist	65%	Roof Primers, Bituminous	350
Web	55%	Shellac: Clear	730
General Purpose	70%	Shellac: Pigmented	550
VOC Limits for Sealants (g/L, Less Water)		Specialty Primers	350
Sealants	Limit (g/L)	Stain	250
Architectural	250	Swimming Pool Coatings (New or Repairs)	340
Structural Glazing Adhesive / Sealant	100	Traffic Coating	150
VOC Limits for Sealant Primers (g/L, Less Water)		Waterproofing Sealers	250
Sealant Primers	Limit (g/L)	Waterproofing Concrete / Masonry Sealers	400
Architectural, non-porous	250	Wood Preservatives	350
Architectural, porous	775	Zinc-Rich IM Primers	340

**PART 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**