

*** WORKING GROUP PRELIMINARY DRAFT ***

*** FOR DISCUSSION PURPOSES ONLY ***

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7/24/13

PROPOSED AMENDED RULE 1168. ADHESIVE AND SEALANT APPLICATIONS

(a) Purpose and Applicability

The purpose of this rule is to reduce emissions of volatile organic compounds (VOCs), and toxic air contaminants, and stratospheric ozone-depleting compounds to eliminate emissions of chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene from the application of adhesives, adhesive bonding primers, adhesive primers, and sealants, sealant primers, or any other primers. This rule applies to all commercial and industrial sales, storage and applications of adhesives, adhesive bonding primers, adhesive primers, and sealants, sealant primers, or any other primers, unless otherwise specifically exempted by this rule.

(b) Definitions

For the purpose of this rule, the following definitions shall apply:

- (1) ACRYLIC is a thermoplastic or thermoset polymer or a copolymer of acrylic acid, methacrylic acid, esters of these acids, or acrylonitrile.
- (2) ACRYLONITRILE-BUTADIENE-STYRENE (ABS) plastic is made by reacting monomers of acrylonitrile, butadiene, and styrene and is normally identified with an ABS marking.
- (3) ADHESIVE is any substance that is used to bond one surface to another surface by attachment. Adhesives include adhesive bonding primers, adhesive primers, adhesive primers for plastics, and any other primer.
- ~~(4) ADHESIVE BONDING PRIMER is an adhesive applied to a surface to improve the bond of subsequent adhesives and sometimes to inhibit corrosion.~~
- ~~(5) ADHESIVE PRIMER is a coating applied to a substrate, prior to the application of an adhesive, to provide a bonding surface.~~
- ~~(6) ADHESIVE PRIMER FOR PLASTIC is a material applied to a plastic substrate before applying an adhesive in order to obtain better adhesion.~~

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- ~~(7) — ADHESIVE PROMOTER is a coating applied to a substrate in a monomolecular thickness to promote wetting and form a chemical bond with the subsequently applied material.~~
- ~~(8) — ADHESIVE SOLID is the nonvolatile portion of an adhesive that remains after heating a sample of the material at 110°C for one hour.~~
- (94) AEROSOL ADHESIVE means any adhesive packaged as an aerosol product in which the spray mechanism is permanently housed in a nonrefillable can designed for hand-held application without the need for ancillary hoses or spray equipment. Aerosol adhesives include special purpose spray adhesives, mist spray adhesives, and web spray adhesives, as defined by the California Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, beginning at Section 94507.
- ~~(10) — AEROSOL SPRAY CAN is a hand held, pressurized, non-refillable container which expels adhesives from the container in a finely divided spray when a valve on the container is depressed.~~
- ~~(11) — AEROSPACE COMPONENT is the fabricated part, assembly of parts, or completed unit of any aircraft or space vehicle (excluding tires), and includes models, mock-ups, prototypes, and test coupons.~~
- ~~(12) — AIRCRAFT means any machine designed to travel through the air, without leaving the earth's atmosphere, whether heavier or lighter than air, including airplanes, balloons, dirigibles, helicopters, and missiles.~~
- ~~(13) — AIRCRAFT TIRE REPAIR is the repair and retreading of used tires used on aircraft. This includes the repair of damage to the tire casing, removal of old tread rubber and tread reinforcing materials, and application of new tread and tread reinforcing materials.~~
- (5) ARCHITECTURAL APPURTENANCE is any accessory to a stationary structure, including, but not limited to: hand railings, cabinets, bathroom and kitchen fixtures, fences, rain-gutters and down-spouts, window screens, lamp-posts, heating and air conditioning equipment, other mechanical equipment, large fixed stationary tools, signs, motion picture and television production sets, and concrete forms.
- (146) ARCHITECTURAL APPLICATION is the use of an adhesive, or sealant, ~~or adhesive or sealant primer~~ on stationary structures, including mobile

homes, and their appurtenances. ~~Appurtenances to an architectural structure include, but are not limited to: hand railings, cabinets, bathroom and kitchen fixtures, fences, rain gutters and downspouts, and windows.~~

~~(15) ARCHITECTURAL SEALANT OR SEALANT PRIMER is any sealant or sealant primer applied to stationary structures, including mobile homes, and their appurtenances. Appurtenances to an architectural structure include, but are not limited to: hand railings, cabinets, bathroom and kitchen fixtures, fences, rain gutters and downspouts, and windows.~~

(167) CARPET PAD ADHESIVE is an adhesive used for the installation of a carpet pad (or cushion) beneath a carpet.

(178) CERAMIC TILE ADHESIVE is an adhesive used for the installation of ceramic tile products.

(189) CERAMIC TILES ~~are~~ is a ceramic surfacing unit made from clay or a mixture of clay and other materials.

(1910) 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.

~~(20) COATING SOLID is the nonvolatile portion of a coating that remains after heating a sample of the material at 110°C for one hour.~~

~~(21) COMPUTER DISKETTE MANUFACTURING is the process where the fold-over flaps are glued to the body of a vinyl jacket.~~

(2211) CONTACT ADHESIVE is an adhesive applied to two separate surfaces, allowed to dry before the two surfaces are placed in contact with each other, and ~~brought together for adhesion and bonding with subsequent pressure~~ forms an immediate bond after both adhesive-coated surfaces are placed in full contact with each other.

~~(2312) COVE BASE ADHESIVE is an adhesive used during the installation of cove base (or wall base), which is generally made of vinyl or rubber, on a wall or vertical surface at floor level a flooring trim unit, generally made of vinyl or rubber, having a concave radius on one edge and a convex radius on the opposite edge that is used in forming a junction between the bottom wall course and the floor to to form an inside corner.~~

(2413) CYANOACRYLATE ADHESIVE is ~~a single component reactive diluent~~ an acrylic adhesive that contains at least ~~85~~ 95 percent by weight

ethyl, methyl, methoxymethyl or other functional groupings of cyanoacrylate.

- (14) DIP COAT is a method of applying adhesives or sealants to a substrate by submersion into and removal from a bath.
- (~~25~~15) DRY WALL ADHESIVE is an adhesive used during the installation of gypsum dry wall to studs or solid surfaces.
- (16) ELECTROSTATIC APPLICATION is spray method where the atomized adhesive or sealant droplets are charged and subsequently deposited on the substrate by electrostatic attraction.
- (~~26~~17) EXEMPT COMPOUNDS are as defined in Rule 102.
- (~~27~~18) FACILITY means any permit unit or grouping of permit units or other air contaminant-emitting activities which are located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control). Such above-described groupings, if not contiguous, but connected only by land carrying a pipeline, shall not be considered one facility.
- (~~28~~19) FIBERGLASS is fine filaments of glass.
- (20) FLOW COAT is a type of application equipment that coats an object by flowing a stream of adhesive or sealant over the object and draining off any excess product.
- (~~29~~21) FOAM is a rigid or spongy cellular mass with gas bubbles dispersed throughout.
- (22) FOAM SEALANT is a foam used to fill and form a durable, airtight, water-resistant seal to common building substrates such as wood, brick, concrete, foam board and plastics. Foam sealant includes insulating foam.
- (~~30~~23) GLUE is a hard gelatin obtained from hides, tendons, cartilage, bones, or other parts of animals.
- (~~31~~24) GRAMS OF VOC PER LITER OF ADHESIVE OR SEALANT, LESS WATER AND LESS EXEMPT COMPOUNDS is the weight of VOC per combined volume of VOC and adhesive or sealant solids, and can be calculated by the following equation:

Grams of VOC per Liter of Adhesive or Sealant, Less Water and Less

$$\text{Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_s - V_w - V_{es}}$$

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Where: W_s = weight of volatile compounds, in grams
 W_w = weight of water, in grams
 W_{es} = weight of exempt compounds, in grams
 V_m = volume of material, in liters
 V_w = volume of water, in liters
 V_{es} = volume of exempt compounds, in liters

For adhesives or sealants that contain reactive diluents, the VOC content of the adhesive or sealant is determined after curing. The grams of VOC per liter of any adhesive or sealant, except a low solids adhesive or sealant shall be calculated by the following equation:

Grams of VOC per Liter of Adhesive or Sealant, Less Water and Less

$$\text{Exempt Compounds} = \frac{W_{rs} - W_{rw} - W_{res}}{V_{rm} - V_{rw} - V_{res}}$$

Where: W_{rs} = weight of volatile compounds not consumed during curing, in grams
 W_{rw} = weight of water not consumed during curing, in grams
 W_{res} = weight of exempt compounds not consumed during curing, in grams
 V_m = volume of material prior to reaction, in liters
 V_{rw} = volume of water not consumed during curing, in liters
 V_{res} = volume of exempt compounds not consumed during curing, in liters

~~(3225)~~ GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material, to be used for a low-solids adhesive or sealant, and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: W_s = weight of volatile compounds, in grams
 W_w = weight of water, in grams
 W_{es} = weight of exempt compounds, in grams
 V_m = volume of material, in liters

- (~~3326~~) HAND APPLICATION METHODS is the application of an adhesive or sealant using by manually hand held equipment. Such equipment includes paint brush, hand roller, trowel, spatula, dauber, rag, sponges, and mechanically- and/or pneumatic-driven syringes ~~without provided there is~~ no atomization of the adhesive or sealant materials.
- (~~3427~~) HIGH-VOLUME, LOW-PRESSURE (HVLP) SPRAY is equipment used to ~~spray apply a adhesives or sealants coating~~ by means of a spray gun that is designed to be operated and that is ~~that~~ operatesd between 0.1 and 10 pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns.
- (~~3528~~) INDOOR CARPET ADHESIVE is an adhesive used during the installation of a carpet that is in an enclosure and is not exposed to ambient weather conditions during normal use.
- (29) INSULATING FOAM is polymer-containing material injected into wall cavities to provide thermal resistance and sound reduction.
- (~~3630~~) LIGHT CURABLE ADHESIVES and SEALANTS are single-component reactive adhesives and sealants that cure upon exposure to visible-light, ultra-violet light or to an electron beam.
- (~~3731~~) LOW-SOLIDS ADHESIVE is any adhesive that contains which has less than one pound of solids per gallon of material (or 120 grams of solids per liter of material).
- ~~(38) — LOW SOLIDS ADHESIVE PRIMER is an adhesive primer which has less than one pound of solids per gallon of material (or 120 grams of solids per liter of material).~~
- (32) MARINE APPURTENANCE is a wood boardwalk, deck, dock, fender, lock gate or other wooden structure specified for the marine environment.
- (~~3933~~) MARINE DECK SEALANT is any sealant that is to be applied to wooden marine decks of ships, boats, and their appurtenances and is specified for the marine environment.
- (~~4034~~) MARINE DECK SEALANT PRIMER is any sealant primer that is to be applied to wooden marine decks of ships, boats, and their appurtenances and is specified for the marine environment.
- (~~4135~~) MODIFIED BITUMINOUS PRIMER consist of bituminous materials, and a high flash solvent used to prepare a surface by (1) improving the

adhesion and (2) absorbing dust from the surface for adhesive, or flashing cement bitumen membrane.

- (4236) MODIFIED BITUMINOUS MATERIALS are materials obtained from natural deposit of asphalt or residues from the distillation of crude oil petroleum or coal which consist mainly of hydrocarbons, and include, but are not limited to, asphalt, tar, pitch, and asphalt tile that are soluble in carbon disulfide.
- (4337) MULTIPURPOSE CONSTRUCTION ADHESIVE is any adhesive to be used for the installation or repair of various construction materials, including but not limited to: drywall, subfloor, panel, fiberglass reinforced plastic (FRP), ceiling tile, and acoustical tile.
- ~~(44) —NONMEMBRANE ROOF ADHESIVE is any adhesive to be used for the installation or repair of nonmembrane roofs. — This category includes plastic or asphalt roof cement, asphalt roof coatings, and cold application cement.~~
- ~~(45) —NONMEMBRANE ROOF SEALANT is any sealant to be used for installation or repair of nonmembrane roofs. — This category includes plastic or asphalt roof cement, asphalt roof coatings, and cold application cement.~~
- (4638) ORTHOTICS AND PROSTHETICS are medical devices designed and fabricated to address human neuromuscular and structural skeletal problems in order to activate, supplement, or replace weakened, atrophied, or missing limbs.
- (4739) OUTDOOR CARPET ADHESIVE is an adhesive used during the installation of carpet that is not in an enclosure and is exposed to ambient weather conditions during normal use.
- (4840) PANEL ADHESIVE is 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.
- (4941) PERCENT VOC BY WEIGHT is the ratio of the weight of the VOC to the weight of the material, expressed as a percentage of VOC by weight. The percent VOC by weight can be calculated as follows:

$$\% \text{ VOC weight} = \frac{W_v}{W} \times 100$$

Where: W_v = weight of the VOCs, in grams

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W = weight of material, in grams

- ~~(5042)~~ PERSON is ~~any individual, firm, association, organization, partnership, business, trust, corporation, company, contractor, supplier, installer, user or owner, or any state or local governmental agency or public district or any other officer or employee thereof. Person also means the United States or its agencies to the extent authorized by Federal laws defined in Rule 102.~~
- (5143) PLASTIC CEMENT WELDING is the use of adhesives made of resins and solvents which are used to dissolve the surfaces of plastic, except ABS, CPVC, and PVC plastic, to form a bond between mating surfaces.
- ~~(5244)~~ PLASTIC FOAM is a foam constructed of plastics.
- (5345) PLASTICS are synthetic materials chemically formed by the polymerization of organic (carbon-based) substances. Plastics are usually compounded with modifiers, extenders, and/or reinforcers. They are capable of being molded, extruded, cast into various shapes and films or drawn into filaments and are used to produce pipe, solid sheet, film, or bulk products.
- ~~(54) POLYCARBONATE is a thermoplastic resin derived from bisphenol A and phosgene, a linear polyester of carbonic acid, dihydroxy compound and any carbonate diester, or by ester interchange.~~
- ~~(55) POLYETHYLENE TEREPHALATE (PET, PETE) is a thermoplastic polyester formed from ethylene glycol by direct esterification or by catalyzed ester exchange between ethylene glycol and dimethyl terephthalate.~~
- ~~(56) POLYETHYLENE TEREPHALATE GLYCOL (PETG) is a glycol modified polyethylene terephthalate.~~
- ~~(57) POLYURETHANE FOAMS are plastic foams, as defined in "Whittington's Dictionary of Plastics," page 329, and may be either rigid or flexible.~~
- (5846) POLYVINYL CHLORIDE (PVC) plastic is a polymer of the chlorinated vinyl monomer that contains 57 percent chlorine.
- (5947) POROUS MATERIAL is a substance which has tiny openings, often microscopic, in which fluids may be absorbed or discharged. Such

materials include, but are not limited to, wood, fabric, paper, corrugated paperboard, and plastic foam.

- (6048) PRIMER is a film-forming material applied to a substrate-surface to improve adhesion of-increase adhesive or film bond strength, promote wetting, or form a chemical bond with the subsequently applied adhesive or sealant. Primer includes bonding primers and promoters.
- ~~(61) PROPELLANT is a fluid under pressure which expels the contents of a container when a valve is opened.~~
- (6249) REACTIVE DILUENT is a liquid which is a VOC during application and one in which, through chemical and/or physical reactions, such as polymerization, 20 percent or more of the VOC becomes an integral part of a finished material the adhesive or sealant.
- (50) REINFORCED PLASTIC COMPOSITE is a composite material consisting of plastic reinforced with fibers.
- (6351) ROADWAY SEALANT is any sealant to be applied to ~~public~~-streets, highways, and other surfaces, including but not limited to curbs, berms, driveways, and parking lots.
- (6452) ROLL COATER is a series of mechanical rollers that form a thin coating or adhesive film on the surface roller, which is applied to a substrate by moving the substrate underneath the roller.
- (53) RUBBER is any natural or manmade substrate, including but not limited to, styrene-butadiene, polychloroprene (neoprene), butyl, nitrile, chlorosulfonated polyethylene and ethylene propylene diene terpolymer.
- (6554) RUBBER FLOORING ADHESIVE is an adhesive that is used for the installation of flooring material in which both the back and the top surface are made of synthetic rubber, and which may be in sheet or tile form.
- ~~(66) RUBBER FOAM is a foam constructed of natural or synthetic rubber.~~
- (6755) SEALANT is any material with adhesive properties that is formulated primarily to fill, seal, or waterproof gaps or joints between two surfaces. Sealants include sealant primers and caulks.
- ~~(68) SEALANT PRIMER is any product applied to a substrate, prior to the application of a sealant, to enhance the bonding surface.~~
- (6956) SHOE REPAIR, LUGGAGE AND HANDBAG ADHESIVE is an adhesive used to repair worn, torn or otherwise damaged uppers, soles, and heels of shoes, or for making repairs to luggage and handbags.

(~~7057~~) SHEET-APPLIED RUBBER LINING OPERATION is 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.

(~~7158~~) SINGLE-PLY ROOF MEMBRANE ADHESIVE is any adhesive sealant to be used for the installation or repair of single-ply roof membrane. Installation includes, but is not limited to attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes, or ducts that protrude through the membrane.

(~~7259~~) SINGLE-PLY ROOF MEMBRANE SEALANT is any sealant to be used for the installation or repair of single-ply roof membrane to the edge of the roof and applying flashings to vents, pipes, or ducts that protrude through the membrane.

(~~7360~~) SOLVENT WELDING is the softening of the surfaces of two substrates by wetting them with solvents and/or adhesives, and joining them together through a chemical and/or physical reaction(s) to form a fused union.

~~(74) —SPACE VEHICLE is a vehicle designed to travel beyond Earth's atmosphere.~~

(~~7561~~) SPECIAL PURPOSE CONTACT ADHESIVE is 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.

(~~7662~~) STRUCTURAL GLAZING ADHESIVE is any adhesive to be used to adhere glass, ceramic, metal, stone, or composite panels to exterior building frames.

(~~7763~~) STRUCTURAL WOOD MEMBER ADHESIVE is an adhesive used for the construction of any load bearing joints in wooden joists, trusses, or beams.

(~~7864~~) SUBFLOOR ADHESIVE is an adhesive used for the installation of subflooring material over floor joists.

(~~7965~~) THIN METAL LAMINATING is a process of bonding multiple layers of metal to metal or metal to plastic in the production of electronic or magnetic components in which the thickness of the bond line(s) is less than 0.25 mil.

- (~~8066~~) TIRE REPAIR is the expanding of a hole, tear, fissure, or blemish in a tire casing by grinding or gouging, applying adhesive, and filling the hole or crevice with rubber.
- (~~8167~~) TIRE RETREAD ADHESIVE is any adhesive to be applied to the back of precured tread rubber and to the casing and cushion rubber, or to be used to seal buffed tire casings to prevent oxidation while the tire is being prepared for a new tread.
- (~~8268~~) TOP AND TRIM ADHESIVE is an adhesive used during the installation of automotive and marine trim, including, but not limited to, headliners, vinyl tops, vinyl trim, sunroofs, dash covering, door covering, floor covering, panel covering and upholstery.
- (~~8369~~) TRAFFIC MARKING TAPE is preformed reflective to be applied to public streets, highways, and other surfaces, including but not limited to curbs, berms, driveways, and parking lots.
- (~~8470~~) TRAFFIC MARKING TAPE ADHESIVE PRIMER is any adhesive primer to be applied to surfaces prior to installation of traffic marking tape.
- (~~8571~~) TRANSFER EFFICIENCY is the ratio of the weight or volume of the adhesive or sealant coating solids adhering to an object to the total weight or volume, respectively, of the adhesive or sealant coating solids used in the application process, expressed as a percentage.
- (~~8672~~) VCT means ~~vinyl~~ Vinyl Composition Tile and is a material made from thermoplastic resins, fillers and pigments.
- ~~(87) — VISCOSITY is the internal friction of a liquid that makes it resistant to flow.~~
- (~~8873~~) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102 - Definition of Terms.
- ~~(74) WATERPROOF RESORCINOL GLUE is a two-part, resorcinol-resin-based adhesive used in applications where the bond line must be resistant to conditions of continuous immersion in fresh or salt water.~~
- (~~8975~~) WOOD FLOORING ADHESIVE is an adhesive used to install a wood floor surface, which may be in the form of parquet tiles, wood planks, or strip-wood.

(~~9076~~) WOOD PARQUET FLOORING is wood flooring in tile form constructed of smaller pieces of wood which are joined together in a pattern by the maker to form the tile.

(~~9177~~) WOOD PLANK FLOORING is solid or laminated wood in plank form.

(c) Requirements

(1) Unless otherwise specified in paragraph (c)(2), a person shall not apply any adhesives, ~~adhesive bonding primers, adhesive primers, or any other primer,~~ which ~~have~~has a VOC content in excess of 250 g/L less water and less exempt compounds.

(2) A person shall not apply adhesives, ~~adhesive bonding primers, adhesive primers, or~~ sealants, ~~sealant primers, or any other primer, subject to the provisions of this rule,~~ which ~~have a~~contains VOC ~~content~~ in excess of the limits specified below:

VOC Limit*, Less Water and Less Exempt Compounds ~~in Grams per Liter~~

Architectural Applications	VOC Limits
	Current VOC Limit (g/L)
Indoor Carpet Adhesives	50
Carpet Pad Adhesives	50
Outdoor Carpet Adhesives	150
Wood Flooring Adhesive	100
Rubber Floor Adhesives	60
Subfloor Adhesives	50
Ceramic Tile Adhesives	65
VCT and Asphalt Tile Adhesives	50
Dry Wall and Panel Adhesives	50
Cove Base Adhesives	50
Multipurpose Construction Adhesives	70
Structural Glazing Adhesives	100
Single Ply Roof Membrane Adhesives	250

Specialty Applications	VOC Limits and Effective Dates**
	Current VOC Limit (g/L)
PVC Welding	510
CPVC Welding	490
ABS Welding	325
Plastic Cement Welding	250
Adhesive Primer for Plastic	550
Contact Adhesive	80
Special Purpose Contact Adhesive	250
Tire Retread	100
Adhesive Primer for Traffic Marking Tape	150
Structural Wood Member Adhesive	140
Sheet Applied Rubber Lining Operations	850
Top and Trim Adhesive	250
<u>Waterproof Resourcinol Glue</u>	
<u>Thin Metal Laminating</u>	780

~~** The specified limits remain in effect unless revised limits are listed in subsequent columns.~~

For adhesives, adhesive bonding primers, or any other primer not regulated by the above two tables and applied to the following substrates, the following limits shall apply:

VOC Limit, Less Water and Less Exempt Compounds

Substrate Specific Applications	<u>VOC Limits and Effective Dates</u>
	<u>Current VOC Limit (g/L)</u>
Metal to Metal	30
Plastic Foams	50
Porous Material (except wood)	50
Wood	30
Fiberglass	80
<u>Reinforced Plastic Composite</u>	

If an adhesive is used to bond dissimilar substrates together the adhesive with the highest VOC content shall be allowed.

Sealants	<u>VOC Limits and Effective Dates</u>
	<u>Current VOC Limit (g/L)</u>
Architectural	250
<u>Foam Sealant</u>	
Marine Deck	760
Nonmembrane Roof	300
Roadway	250
Single-Ply Roof Membrane	450
Other	420

Sealant Primers	<u>VOC Limits and Effective Dates</u>
	<u>Current VOC Limit (g/L)</u>
Architectural	
Non Porous	250
Porous	775
Modified Bituminous	500
Marine Deck	760
Other	750

~~*For low solid adhesives or sealants the VOC limit is expressed in grams per liter of material as determined in paragraph (b)(32); for all other adhesives and sealants, VOC limits are expressed as grams of VOC per liter of adhesive or sealant less water and less exempt compounds as determined in paragraph (b)(31).~~

(3) ~~A person shall store or dispose of adhesives, sealants and Containers used to dispose of~~ VOC-laden cloth or paper products used in ~~stripping-cured adhesives or sealants applications shall be in~~ closed containers except when depositing or removing the contents of VOC laden cloth or paper from the container.

~~(4) Solvent Cleaning Operations; storage and disposal of VOC containing materials shall be conducted in accordance with the provisions of Rule 1171 Solvent Cleaning Operations.~~

(4) Solvent cleaning of application equipment, parts, products, tools, machinery, equipment, general work areas, and the storage and disposal of VOC-containing materials used in cleaning operations shall be carried out pursuant to Rule 1171 - Solvent Cleaning Operations.

(5) Transfer Efficiency

A person shall not apply VOC-containing adhesives or sealants unless the adhesive or sealant is applied with properly operating equipment in accordance with operating procedures specified by either the equipment manufacturer or the Executive Officer, ~~Application of adhesives or sealants shall be accomplished only and~~ by the use of one of the following methods:

(A) Electrostatic application; or

(B) Flow coat; or

(C) Dip coat; or

(D) Roll coater; or

(E) High-Volume, Low-Pressure (HVLP) spray; or

(F) Hand application methods; or

(G) Such other adhesive or sealant application methods as are demonstrated to the Executive Officer to be capable of achieving at least 65 percent transfer efficiency a transfer efficiency equivalent or better to the method listed in subparagraph (c)(5)(E) and for which prior written approval of the Executive Officer has been obtained; ~~or.~~

~~(H) — For adhesives and sealants with a viscosity of 200 centipoise or greater, as applied, airless spray, air assisted airless, and air atomized spray may also be used.~~

- (6) A person may comply with the provisions of paragraphs (c)(1), (c)(2), or (c)(5), or all three, by using approved air pollution control equipment, provided that the VOC emissions from such operations and/or materials are reduced by at least 80 percent overall, by weight.
- (7) A person may comply with the provisions of paragraph (c)(1) and paragraph (c)(2) by means of an Alternative Emission Control Plan pursuant to Rule 108.
- (8) If anywhere on the container of any adhesive or sealant, on any sticker or label affixed thereto, or in any sales or advertising literature, any representation is made that the adhesive or sealant may be used for any another source specific rule application, for which there is a lower VOC standard, then the lowest VOC standard shall apply. This provision does not apply to substrate specific adhesive applications.
- (9) The VOC content of adhesives and sealants that are applied with the use of refillable pressurized containers are subject to the VOC limits of this rule.

(10) Effective (TBD), adhesives and sealants subject to this rule shall be labeled as follows:

(A) Each container shall display the maximum VOC content of the adhesive or sealant as applied. VOC content shall be displayed as grams of VOC per liter, excluding water and exempt compounds, or grams of VOC per liter of material for low-solids adhesive products.

(B) Each container shall display a statement of the manufacturer's recommendations regarding thinning, reducing, or mixing with any other VOC containing material. Mixing recommendations shall specify a ratio which results in a compliant, as applied, adhesive or sealant product.

(C) Each container shall display the date of manufacture of the contents or a code indicating the date of manufacture. The manufacturer or supplier shall file with the Executive Officer of the District an explanation of each date code.

(11) Effective (TBD), a person shall not store adhesive or sealant, subject to the provisions of this rule, which contains VOC in excess of the limits specified in paragraphs (c)(1) and (c)(2).

(12) Containers used for mixing or storing VOC-containing adhesives or sealants shall be kept closed at all times except when in use.

(d) Recordkeeping Requirements

Notwithstanding provisions of subdivision (i), records of adhesive or sealant usage shall be maintained pursuant to Rule 109.

(e) Methods of Analysis

(1) The VOC content of cleaning materials and adhesives or sealants shall be determined by using USEPA Reference Method 24 (Determination of Volatile matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coating, Code of Federal Regulations Title 40, Appendix A, utilizing Procedure B of ASTM Method D2369), or the SCAQMD Method 304.

(2) The exempt compound's content shall be determined by Methods 302 and 303 in the South Coast Air Quality Management District's (SCAQMD) "Laboratory Methods of Analysis for Enforcement Samples" or ASTM Method D4457-85.

(3) The VOC content of PVC, CPVC, and ABS pipe cements, adhesive primer for plastic shall be determined by Method 316A in the South Coast Air Quality Management District's (SCAQMD) "Laboratory Methods of Analysis for Enforcement Samples."

(4) The VOC content of cyanoacrylate adhesives shall be determined by Method 316B in the South Coast Air Quality Management District's (SCAQMD) "~~Laboratory Methods of Analysis for Enforcement Samples.~~"

(f) Test Methods

(1) The efficiency of the control device and the VOC content measured and calculated as carbon in the control device exhaust gases shall be determined by USEPA'S Test Method 18, or Air Resources Board (ARB) Method 422 for the determination of emissions of Exempt Compounds and USEPA's Test Methods 25, 25A, SCAQMD's Method 25.1, or

SCAQMD Test Method 25.3. (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) for the determination of total organic compound emissions. Emissions determined to exceed any limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of the rule.

- (2) Viscosity will be determined by ASTM D 1084-~~8808~~ Standard Test Methods for Viscosity of Adhesives.
- (3) The following classes of compounds: cyclic, branched, or linear, completely fluorinated alkanes; cyclic, branched, or linear, completely fluorinated ethers with no unsaturations; cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine, will be analyzed as exempt compounds for compliance with subdivision (c), only at such time as manufacturers specify which individual compounds are used in the coating formulations and identify the test methods, which, prior to such analysis, have been approved by the USEPA and the SCAQMD, that can be used to quantify the amounts of each exempt compound.

(g) Prohibition of Specifications

- (1) A person shall not solicit or require any other person to use, in the District, any adhesives or sealants or combination of adhesives or sealants in violation of the requirements of this rule.

~~(2) — The requirements of this paragraph shall apply to all written or oral agreements executed or entered into after July 1, 1989.~~

(h) Prohibition of Sales and Use

- (1) On and after September 1, 2001, except as provided in subdivision (j), paragraphs (c)(6) and (c)(7), no person shall use, supply, sell, or offer for sale an adhesive, or sealant, ~~or adhesive or sealant primer for use~~ in the District that at the time of sale exceeds the applicable VOC limits specified in paragraphs (c)(1) and (c)(2).
- (2) On and after January 1, 2004, no person shall use, supply, sell, or offer for sale an adhesive, or sealant, ~~or adhesive or sealant primer for use~~ in the District that contains chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene.

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* FOR DISCUSSION PURPOSES ONLY ***

- (3) On and after (TBD), no person shall use, supply, sell, or offer for sale an adhesive or sealant in the District that contains Group II exempt compounds listed in Rule 102 in quantities greater than 0.1 percent by weight.
- ~~(34) The prohibition of sales and use as specified in paragraphs (h)(1) and (h)(2) shall not apply to adhesives and sealants shipped, supplied or sold to persons for use outside the District. the following:~~
- ~~(A)—Adhesives and sealants shipped, supplied or sold to persons for use outside the District;~~
- ~~(B)—Any manufacturer of adhesives or sealants, provided that the manufacturer has complied with the labeling requirements of Rule 443.1—Labeling of Materials Containing Organic Solvents, and the product is not sold directly to a user located in the District, or the product was sold to an independent distributor or a sales outlet located in the District that is not a subsidiary of, or under the control of the manufacturer, and was informed in writing by the manufacturer about the compliance status of the product with Rule 1168;~~
- ~~(C)—Adhesives and Sealants that contain less than one percent by weight of methylene chloride; or~~
- ~~(D)—Solvent welding formulations containing methylene chloride used to bond hard acrylic, polycarbonate, and polyethylene terephthalate glycol plastic fabrications, provided:~~
- ~~(i)—The concentration of methylene chloride in any solvent welding formulation does not exceed 60 percent by weight; and~~
- ~~(ii)—The purchase of all solvents welding products does not exceed 20 gallons per calendar year at a single facility, as demonstrated by purchase records and invoices of methylene chloride containing solvent welding formulations. Such records shall be made available to the Executive Officer or his representative upon request.~~
- (5) Any adhesive or sealant that is manufactured prior to the effective date of the applicable limit specified in paragraph (c)(2), and that has a VOC content above that limit (but not above the limit in effect on the date of

manufacture), may be sold, supplied, offered for sale, or applied for up to one year after the specified effective date.

(i) Rule 442 Applicability

Any adhesive, ~~or sealant, adhesive or sealant operation, or person,~~ which is exempt from all or a portion of the VOC limits of this rule, shall comply with the provisions of Rule 442.

(j) Exemptions

(1) The provisions of paragraph (c)(1) and paragraph (c)(2) shall not apply to the following:

(A) Adhesives used in tire repair; or

(B) Adhesives and/or adhesive application processes in compliance with Rules 1104, 1106, 1128, 1130 and 1130.1.

(2) The provisions of this rule shall not apply to ~~aerospace components~~ adhesive application processes that are subject to Rule 1124.

(3) The provisions of ~~paragraph (e)(5) and~~ subdivision (d) shall not ~~be applied~~ apply to the application of adhesives or sealants ~~that contain~~ with a VOC content less than ~~20-50~~ g/L of VOC per liter ~~of adhesives~~, less water and less exempt compounds.

~~(4) The provisions of this rule shall not apply to any facility that uses less than one pint of total adhesives and sealants in any one day so long as the products were purchased prior to September 15, 2000.~~

~~(5)~~ (4) The provisions of subdivision (c) shall not apply to research and development programs and quality assurance labs, provided that:

(A) A record is kept of:

(i) The date when the adhesives and sealants are used, and the type of application(s); and

(ii) The amount of adhesives and sealants used and the VOC content of such adhesives and sealants; and

(iii) The amount of solvents used and VOC content of such solvents; and

(iv) The manufacturer/suppliers identification and type of material; and

(B) Such records shall be retained in accordance with the provisions of subdivision (e) of this rule.

- ~~(6) — The provisions of paragraph (c)(1) and paragraph (c)(2) shall not apply to a facility that demonstrates that the total volume of non-compliant adhesives, adhesive primers, adhesive bonding primers, sealants, and sealant primers is less than 55 gallons per facility per rolling 12-month period. On and after September 1, 2001, a facility may not use this paragraph to exclude non-compliant adhesives used in architectural applications, contact adhesives, special purpose contact adhesives, and adhesives used on porous substrates.~~
- (75) The provisions of this rule, except paragraphs (h)(2) and (h)(3), shall not apply to adhesives used to glue flowers to parade floats.
- (86) The provisions of subdivision (c) shall not apply to solvent welding operations used in the manufacturing of medical devices.
- (97) ~~The provisions of this rule shall not apply to aerosol Non-compliant aerosol adhesives and primers dispensed from aerosol spray cans products shall not be subject to the provisions of paragraphs (c)(1), (c)(2) or (c)(5) provided that 16 fluid ounces or less are used per day, per facility. The use of such products shall comply with all applicable CARB regulations.~~
- (10) — ~~The provisions of paragraph (c)(1) and paragraph (c)(2) shall not apply to any adhesive used exclusively for thin metal laminating operations, provided that the adhesive contains less than 780 grams of VOC per liter of adhesive, less water and less exempt compounds, as applied, and the facility uses a total of three gallons per day or less of these adhesives.~~
- (118) The provisions of this rule, except paragraphs (c)(10), (h)(2), (h)(3) and subdivision (d), shall not apply to light curable adhesives and sealants with a VOC content no more than 50 grams per liter, less water and less exempt compounds.
- ~~(12) — The provisions of this rule, except paragraph (h)(2), shall not apply to the use of cyanoacrylate adhesives.~~
- (139) The provisions of paragraphs (c)(8), (c)(10) and subdivision (h) this rule shall not apply to adhesives and sealants, which weigh one pound or less or consist of 16 fluid ounces or less, excluding packaging, and are subject to VOC content limits in the California Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, beginning at Section 94507.

~~(14) Until October 1, 2003, the provisions of paragraph (c)(1) and paragraph (c)(2) shall not apply to solvent welding of flexible ductwork, at which time the VOC limit shall be 250 grams per liter, less water and less exempt compounds.~~

~~(15) A person may sell or apply a non-complying VOC-containing or methylene chloride-containing product for one year after the applicable effective date in paragraph (c)(2) for VOC-containing adhesives and sealants, and for one year after the applicable effective date of paragraph (h)(2) or subparagraph (h)(3)(D) for methylene chloride-containing adhesives and sealants, provided:~~

~~(A) The product complies with the previous applicable VOC limit,~~

~~(B) The product was manufactured prior to the effective date, and~~

~~(C) The date of manufacture or a code indicating that date is clearly displayed on the product.~~

~~(1610) The provisions of this rule, except paragraphs (h)(2) and (h)(3), shall not apply to adhesives used to fabricate orthotics and prosthetics under a medical doctor's prescription.~~

~~(1711) The provisions of this rule, except paragraph (h)(2) and (h)(3), shall not apply to shoe repair, luggage and handbag adhesives.~~

~~(12) The provisions of paragraph (c)(5) shall not apply to adhesives and sealants with the following:~~

~~(A) A viscosity of 200 centipoise or greater; or~~

~~(B) A VOC content of less than 20 g/L, less water and exempt compounds.~~