

# **CRADLE TO CRADLE CERTIFIED® VERSION 4.1**

## **VOLATILE ORGANIC COMPOUND (VOC) CONTENT LIMITS**

## Demonstrating Low VOC Content

The VOC content related provisions (including both limits and testing requirements) of one of the following standards or an equivalent must be used to demonstrate low VOC content, as applicable, to meet the Silver level requirement in Material Health:

1. For architectural coatings/wet-applied products:
  - a. South Coast Air Quality Management District (SCAQMD) Rule 1113 (03 June 2011 and amendments).
  - b. South Coast Air Quality Management District (SCAQMD) Rule 1168 (06 October 2017 and amendments).
  - c. European Decopaint Directive (2004/42/EC).
  - d. Free of solvents, as defined in TRGS 610 (January 2011).
2. Programs that are listed as acceptable for the VOC Content evaluation requirements, see the list “LEED v4 EQ Credit Low-Emitting Materials Third Party Certifications and Labels” - June 2017 or later version.
3. BREEAM International New Construction 2016 Technical Standard, section “Hea 02 Indoor Air Quality,” Table 19 “Maximum TVOC content for paints and coatings”.
4. GEV classification criteria for Installation Products, Adhesives and Building Materials to award the EMICODE, sections 2.2 and 2.3.
5. CARB Regulation for Reducing Volatile Organic Compound Emissions from Antiperspirants and Deodorants (Antiperspirants and Deodorants Regulation, 2015).
6. CARB Regulation for Reducing Emissions from Consumer Products (Consumer Products Regulation, 2015). For the purpose of Cradle to Cradle Certified, ethanol and isopropanol do not count towards the limits on VOC content set out in this standard.
7. CARB Regulation for Reducing the Ozone Formed from Aerosol Coating Product Emissions (Aerosol Coating Products Regulation, 2015).
8. CARB Alternative Control Plan Regulation for Consumer Products and Aerosol Coating Products (Alternative Control Plan Regulation, 2015).
9. DGNB System 2018 (or later) ENV 1.2 Local and Environmental Impact, Appendix 1 Criteria Matrix at the following quality levels:
  - a. Decorative paints, primers, etc., for floors (line 2): level 1, 2, 3, or 4.
  - b. Dust binding coatings, etc. (line 3): level 1, 2, 3, or 4.
  - c. Wallpaper paste (line 4): level 1, 2, 3, or 4.
  - d. Coatings for exterior surfaces (line 5): level 1, 2, 3, or 4.
  - e. Installation materials (line 8): level 1, 2, 3, or 4.
  - f. Barrier coatings, seals, and screeds (line 9): level 1, 2, 3, or 4.
  - g. Stone flooring impregnations (line 10): level 4.
  - h. Polyurethane adhesives and silane modified polymers (line 11): level 1, 2, 3, or 4.
  - i. Facade adhesives (line 13): level 3 or 4.
  - j. Fire safety coatings for metal (line 15): level 2, 3, or 4.
  - k. Corrosion protection coatings of load-bearing metal components category C2 (line 16): level 2, 3, or 4.
  - l. Corrosion protection coatings of load-bearing metal components category C3 (line 17): level 1, 2, 3, or 4.
  - m. Corrosion protection coatings of load-bearing metal components category higher than C3 (line 18): level 2, 3, or 4.
  - n. Corrosion protection coatings of non-load-bearing metal components (line 19): level 2, 3, or 4.

- o. Polyurethane coatings (line 20): level 1, 2, 3, or 4.
- p. Wood coatings (line 21): level 3 or 4.
- q. Epoxy coatings (line 23): level 1, 2, 3, or 4.
- r. EP/PU primers (line 24): level 1, 2, 3, or 4.
- s. Wood oils and waxes (line 27): level 2, 3, or 4.
- t. PU system adhesives (line 46): level 2, 3, or 4.

One of the following test methods must be used to quantify VOC content:

- 1. ASTM D2369.
- 2. ASTM D6886.
- 3. SCAQMD method 304.
- 4. SCAQMD method 313.
- 5. CARB method 310.
- 6. EPA method 24.
- 7. ISO 11890-1.
- 8. ISO 11890-2.
- 9. Any testing method proven to be equivalent to any of the above.