EnviroSpec
Verification Services

VOC Content Validation for Green Star NZ and Homestar

C2 Concrete Sealer Products

Green Star NZ - V3 Materials Framework

The Green Star NZ V3 Technical manual states that VOC emissions can be demonstrated through the provision of test results showing compliance to a recognised Ecolabel or a recognised Indoor Air Quality Scheme.

Green Tag is noted as an approved ecolabel for Applied Coatings (Refer to NZGBC approved ecolabel and IAQ schemes diagram, available to download from the NZGBC website)

The GreenTag Technical Manual includes a VOC emission criteria section for Paints and Coatings and states:

"The coating shall comply with the TVOC content as required by the most current version of GBCA Green Star requirements currently as follows (or other country based GBC rating tool requirements, e.g. LEEDv4):
The TVOC content of the 'ready-to-use' paint shall be theoretically calculated as the sum total of the VOCs of each of the raw material components comprising the paint. Where the TVOC content of individual components is not known, it must be determined experimentally by one of the following testing methods as appropriate:

- *ISO Method 17895 (2005), for a material with a presumed VOC content <1%;*
- *ISO Method 11890-2 (2013), for a material with a presumed VOC <15%;*
- *ISO Method 11890-1 (2007), for a material with a presumed VOC content >15%;*

OR

- ***ASTM D3960, which is comprised of four individual testing procedures that measures TVOC (D2369) as well as density (D1475), water content (D4017), but not excluding exempt compounds (D4457)."***

The VOC emissions limits in GreenTag for ***" 1 and 2 pack performance coatings for floors"*** is set at 140g/L.

The VOC datasheets C2 Concrete Sealer Products state that the content calculation has been done in accordance with ASTM D3960 and the results vary between 0g/L and 100g/L, thus complying with the methodology and limits set in the approved GreenTag ecolabel framework.

The results therefore demonstrate with current NZGBC V3 Materials requirements for Low VOC emissions in this product category.

Green Star Technical Manual -

		applied to the stone or ceramic will need to comply with the VOC requirements set out in the Credit.
Option 4	Eco-label OR	Where a product holds a third-party verified eco-label, this product may be deemed to comply with VOC requirements. Eco-labels generally specify maximum permissible VOC content within a particular product type. Eco-labels deemed compliant for this credit can be found on the NZGBC website (www.nzgbc.org.nz)
	IAQ Scheme OR	Indoor Air Quality Schemes test the *emission* rates of VOCs. Products certified with a recognised IAQ Scheme are deemed to comply with the criteria. For a list of recognised IAQ schemes, refer to the NZGBC website (www.nzgbc.org.nz)
	Data Sheets /Test Results	Project teams may demonstrate through the provision of product data sheets or test results that a particular product meets the VOC *content or emission* requirements of a recognised Eco-label or the *emission* requirements of a recognised IAQ scheme. Where test results are provided, a test report from a competent laboratory comparing the VOC limits of the product as measured against the limits set by the recognised label/ scheme(s) is acceptable to show compliance as long as the units of measure are the same. If VOC levels are determined by laboratory testing, the supporting information must include the test report from a laboratory competent to complete the relevant test method. Laboratories may demonstrate their competency by being accredited or registered to ISO/IEC 17025 from International Accreditation New Zealand (IANZ) or other recognised accreditation agency (e.g. NATA in Australia).

Extract from NZGBC Recognised ecolabels and IAQ schemes compliance table

Recognised Eco-labels and Indoor Air Quality Schemes

Issued	Changes
8-Sep-15	First Release
29-Sep-15	updated to include homestar, responsible sourcing, SMART, and further IAQ schemes recognised for EWP

The following table lists recognised ecolabels for the Materials Credits in Green Star'2009 and Green Star v3. This list will be updated to add programs as they become elig
Products and Materials for which Eco-labels are an accepted method of compliance are listed across the top row (shaded grey).
Eco-labels and their level of recognition (A, B or C) are listed down the first column (shaded green). If the eco-label automatically fulfils the VOC compliance requirements
Recgonised Indoor Air Quality Shemes are listed in the first column below eco-labels (shaded yellow). These can be used to demonstrate compliance with VOC or Formald

	Adhesives & Sealants	Applied Coatings	VOC Compliance	Ceilings	
Green Star 2009 Credits	IEQ-3 / MAT-J	IEQ 3 & MAT-3		IEQ-3 / MAT-B / MAT-K	MAT-7
Green Star v3 Credits	MAT-4	MAT- 3 & MAT-4		MAT-4	MAT-7
Homestar Credits	MAT-2	MAT-1 & MAT-2		MAT-1	MAT-1
ECO-LABELS					
Environmental Choice New Zealand ECNZ		●		●	
Level A Recognition		EC-07-15 - Paints	Y	EC-46-15 - Interior Lining Products	EC-43-1 Concret EC-51-1 EC-42-1 and Por
GreenTag GreenRate	●	●		●	
Level A Recognition	GreenRate v3.2 Level A	GreenRate v3.2 Level A	Y	GreenRate v3.2 Level A	
Level B Recognition	GreenRate v3.2 Level B	GreenRate v3.2 Level B	Y	GreenRate v3.2 Level B	
Level C Recognition	GreenRate v3.2 Level C	GreenRate v3.2 Level C	Y	GreenRate v3.2 Level C	
Good Environmental Choice Australia GECA		●			
Level A Recognition		GECA PCv2.2i-2012 - 'Paints and Coatings'	Y		

GreenTag - Paints and Coatings Supplementary Standard

ii. Emissions to Air: Indoor

VOCs:

The minimum standard for any Level A, B or C8 Certified product is equivalent or less than the following emission levels for the various uses noted below:

Paint shall comply with the TVOC content as required by the most current version of GBCA Green Star requirements currently as follows (or other country based GBC rating tool requirements, e.g. LEEDv4):

The TVOC content of the 'ready-to-use' paint shall be **theoretically calculated** as the sum total of the VOCs of each of the raw material components comprising the paint. Where the TVOC content of individual components is not known, it must be determined experimentally by one of the following testing methods as appropriate:

- ISO Method 17895 (2005), for a material with a presumed VOC content <1%;
- ISO Method 11890-2 (2013), for a material with a presumed VOC <15%;
- ISO Method 11890-1 (2007), for a material with a presumed VOC content >15%;

OR

- ASTM D3960, which is comprised of four individual testing procedures that measures TVOC (D2369) as well as density (D1475), water content (D4017), but not excluding exempt compounds (D4457).

The product(s) must comply with the following table:

Table 7.9.1: Max Paints and Coatings TVOC content

Product Type/Sub Category	(g/L of ready-to-use product)
Interior walls and ceiling paints, all sheens	16
One and two pack performance coatings for floors	140
Any solvent-based coatings whose purpose is not covered in table	200
Trim, varnishes and wood stains	75
Primers, sealers and prep coats	65