CARPET INSTITUTE OF AUSTRALIA LIMITED

Version 1.0

ECS

Low VOC Certification Technical Specifications

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Administered by the Carpet Institute of Australia Limited
ABN 11 006 829 303

PO Box 7172, St Kilda Road, Melbourne 3004
Tel: (03) 9804 5559
info@carpetoz.com.au • www.carpetinstitute.com.au

Introduction

Indoor air quality is an ever-important issue in our health. We spend up to 90% of our time indoors and are exposed to many chemical products emitted from building materials as well as personal care products.

Any product using this label has low Volatile Organic Compounds and low toxicity with a clear disclosure of ingredients.

The Environmental Certification Scheme (ECS) provides a framework to assess and certify the good environmental performance of building fit-out products. This Volatile Organic Compound (VOC) Certification standard addresses the emissions of VOCs from products during the initial post-manufacture phase and after a specified conditioning period, as relevant to indoor air quality. The scope of this standard covers VOC emissions from the point of manufacture, measured as emission factors (µg/h/m^2) for specified chemicals of concern, in accordance with recognized testing standards.

VOCs can be present in the air as they have a significant vapour pressure at ambient temperature. The limits set for VOC emissions relate directly to their human toxicity as measured by the Reference Exposure Level, REL[1].

The scope of this standard also involves the public declaration of product ingredients to provide transparency to consumers.

VOC emission limit certification: A building product that does not exceed the maximum allowable VOC emission factors for specified chemicals of concern, as verified through standardized testing, ensuring minimal impact on indoor air quality.

Declarations provided in the required format will be evaluated by the Carpet Institute's Australian Carpet Classification Scheme (ACCS) panel, utilizing the same systems as for other ECS performance labels. The ACCS panel serves as an independent authority with expertise in products and environmental standards to verify VOC emission claims.

The Carpet Institute of Australia Ltd. acts as the secretary for the VOC Certification standard.

VOC labelling scope

The ECS Low VOC certification system can apply to all building products that can practically have an impact on indoor air quality from VOC emissions of the product. These emissions need to be relatable to the indoor air quality of the building they are contained by. This is defined by the emissions per unit of product surface area, the air movement through the indoor air space and the dimensions or volume of the room. These factors and their use are defined in the measurement standards used – nominally ISO 10580 and ISO 16000 series.

Performance Requirements Summary

The following performance criteria must be achieved and verified for the ECS VOC Certification to be awarded:

Criterion	Description	Green Building Council (RPVs)
2	VOC Emissions Compliance	3
3	Ingredient Disclosure	1
4	Total	4

(1) https://oehha.ca.gov/air/general-info/oehha-acute-8-hour-and-chronic-reference-exposure-level-rel-summary

Criteria

1. Fit for Purpose (non-toxic)

The product must comply with relevant industry standards for performance and suitability in its intended application, as outlined in national or international standards (e.g., ISO, EN, ASTM, or AS/NZS). Specific requirements vary by product type but must align with accepted industry standards and chemical components of the product must be registered with the Australian Inventory of Industrial Chemicals (AIIC).

2. VOC Emissions Compliance

Licensees must demonstrate that VOC emissions from the product meet the maximum emission factors, or modelled indoor air criteria for chemicals of concern, as specified in the Table: VOC Emissions Limits. Testing must be conducted by a NATA-registered laboratory or equivalent, following a relevant standard:

Summary of standards and conditioning periods

- 1-3 Days: ISO 10580 and ISO 16000-9 (initial testing for flooring products, wall and ceiling systems and other building products) OR
- 10–14 Days: CDPH V1.2, ASTM D5116/D6670 (building products and furniture) OR
- 28 Days: ISO 10580 and ISO 16000-9 (long-term emissions for flooring products, wall and ceiling systems and other building products).

Acceptable certifications such as CDPH Standard 01350, GUT PRODIS, CRI Green Label Plus may be submitted as evidence of compliance. The licensee must provide a test report as per Schedule 1 – Declaration of Compliance - Product Emissions.

3. Ingredient Disclosure

Licensees must publicly declare the product's components to a level of 0.1% (1000 ppm) by weight, using chemical names and CAS numbers as listed in the Safety Data Sheets (SDS) for each material. Declarations must follow the format in Schedule 2 - Declaration of Compliance – Ingredient Disclosure. The ACCS administration will conduct random checks to verify accuracy.

SCHEDULE 1 – DECLARATION OF COMPLIANCE – PRODUCT EMISSIONS

Instructions for Completing the Declaration

- VOC emissions declarations must be made using the form provided.
- The product name, construction, and company name must be filled in on the front sheet.
- A responsible company representative must verify that the VOC emissions comply with the maximum emission factors for the product at production with a 24-hour to a 28 day conditioning period.
- Test reports from a NATA-registered laboratory (or equivalent) must be attached, detailing emission factors for each chemical of concern and the total VOC emissions.
- Alternative certifications (e.g., CDPH Section 1350, CRI – Green Label Plus, GUT PRODIS) may be submitted as evidence of compliance.
- Declarations must be submitted in electronic form as a PDF through the ECS portal.

The maximum allowable emission factors for chemicals of concern are detailed in the following table:

VOC Emission Limits (24-hour / 28 day - µg/h/m^2)

Volatile Organic Compound	EF limit 24 hour µg/h/m^2	EF limit 28 day µg/h/m^2	Room concentration limit µg/ m3
Acetaldehyde	20	20	11
Acetophenone	300	300	160
Benzene	10	10	5
Butylated Hydroxy Toluene	300	300	160
Caprolactam	120	120	64
Chloro-benzene	937	937	500
Chloroform	281	281	150
Dichloroethylene (1,1)	66	66	35
2-Ethylhexanoic Acid	46	46	25
Formaldehyde	10	10	5
1-Methyl-2-Pyrrolidone	300	300	160
Naphthalene	20	20	11
Nonanal	24	24	13
Octanal	24	24	13
4-Phenylcyclohexene	50	50	27
Styrene	410	410	219
Trichloroethylene	562	562	300
Toluene	280	280	150
Vinyl Acetate	100	100	53
2-Ethyl-1-Hexanol	50	50	27
Hydrocarbons (C10–C14)	300	300	160
Vinyl Cyclohexene	85	85	44
Xylenes	50	50	27
Maximum Total VOC	500	500	267

Table: VOC emissions criteria

Testing must be undertaken according to the test method: ISO 10580:2010 Resilient, textile and laminate floor coverings – Test method for volatile organic compound (VOC) emissions or (ISO 16000 Part 9).

A 24-hour emission rate for VOC emissions immediately after manufacture or import unpacking should be undertaken. The VOC emission factors can also be determined after a 28-day laboratory conditioning period. The emission rate is measured as an emission factor (EF) in micro grams per square metre of product per hour. This is calculated as a room concentration for a standard office room with a volume of 30.6 m^3, a floor area of 11.2 m^2 and an air exchange rate of 0.68h^{-1} with a conversion factor of 0.54 (h/m).

The licensee shall provide a relevant test report from a NATA registered laboratory provided as per the declaration in Schedule 1 – Product Emissions provided in the ECS VOC Guidance Manual.

Registered Product Name:	Product Description:	
ACCS Label Number (if applicable):		
Company Name:		
I confirm that all performance requirements of the VOC emissions criterion have been fully met.		
Licensee Declaration by:	Position:	Date:

VOC Emissions Test Data

Chemical of Concern	Emission Factor (µg/h/m^2)	Compliant (Y/N)
[List chemicals specific to product type, e.g., Acetaldehyde, Benzene, etc.]	Listed in attached report	
Total VOC		

Attachments:

- Test report from NATA-registered laboratory or equivalent.
- Alternative certification (if applicable, e.g., CDPH Section 1350, GUT PRODIS, or CRI Green Label Plus).

Notes

- The VOC certification focuses on emissions immediately post-manufacture (24-hour testing) to reflect worst case real-world indoor air quality impacts and 28 days to indicate longer term occupancy performance.
- The maximum total VOC emission factor of 500 µg/h/m^2 applies across all product types to ensure consistency.
- Licensees are responsible for ensuring that testing adheres to the latest versions of ISO 10580:2010 or ISO 16000-9:2016, as applicable.
- The ACCS panel reserves the right to request additional testing or documentation to verify compliance.
- Labels are valid for a three-year period (unless product composition has changed)

SCHEDULE 2 – DECLARATION OF COMPLIANCE – INGREDIENT DISCLOSURE

Registered product quality name:	Product construction:	
Product reference number:		
Company Name:		
I confirm that all the performance requirements of the Ingredient Disclosure criterion have been fully met.		
Licensee declaration by:	Position:	Date:

Material Content

Material	Weight %
TOTAL	100.0%

SCHEDULE 2 – DECLARATION OF COMPLIANCE – INGREDIENT DISCLOSURE

Registered name _____

ACCS label number (if applicable)_____

Company Name _____

Chemical content sourced from Safety Data Sheets (SDS)
(All chemicals listed on the SDS of each of the raw materials must be considered in this declaration and the chemicals must be registered with the AIIC)

Material Content

Chemical Name	CAS number	Weight %	Chemical compliant (AIIC)

Please attach copies of relevant test reports and SDS (safety data sheets).
AIIC = Australian inventory of industrial chemicals

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PO Box 7172, St Kilda Road, Melbourne 3004
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info@carpetoz.com.au • www.carpetinstitute.com.au

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