



eco-INSTITUT Germany GmbH

Laborprüfung

Laboratory testing

Zertifizierung

Certification



EVALUATION

for eco-INSTITUT-Label Certification



eco-INSTITUT Germany GmbH

Laborprüfung
Laboratory testing
Zertifizierung
Certification



Report N° 56822-A001-A002-eIL-G

Test objective:

Certification according to eco-INSTITUT-Label-criteria

Scope of certification:

FERMACELL Estrich-Element ohne Holzfaserkaschierung /
FERMACELL Dry Flooring Element
FERMACELL Estrich-Element mit Holzfaserkaschierung /
FERMACELL Dry Flooring Element + wood fibre insulation

Certification holder:

James Hardie Europe GmbH
Bennigsen-Platz 1
DE-40474 Düsseldorf

Test period:

21/10/2021 - 14/12/2021

Date of report:

24/01/2022

Number of pages of report:

10

Certification body:

eco-INSTITUT Germany GmbH, Köln

Test objective fulfilled:



Note:

The report immediately loses its validity upon changes to the composition or the production method of the certified product. The publication of extracts of the report requires the prior written approval of eco-INSTITUT Germany GmbH. More information at www.eco-institut.de/en/advertising

Summary evaluation

The products **FERMACELL Estrich-Element mit Holzfaserkaschierung / FERMACELL Dry Flooring Element + wood fibre insulation; Adhesive: Supplier 2** and **FERMACELL Estrich-Element ohne Holzfaserkaschierung / FERMACELL Dry Flooring Element; Adhesive: Supplier 5** were submitted to an ecological product examination on behalf of **James Hardie Europe GmbH** for the acquisition of the eco-INSTITUT-Label.

The requirements specified in the certification scheme and in the test criteria are met.

As a result of the successful ecological product examination the

eco-INSTITUT-Label



is awarded for the product:

**FERMACELL Estrich-Element ohne Holzfaserkaschierung /
FERMACELL Dry Flooring Element**

for a period of one year.

Certification number

ID 0509 - 13701 - 008

Test report Number

56822-001-002-L

56822-001-002-eIL-G

Validity

07/2022



is awarded for the product:

**FERMACELL Estrich-Element mit Holzfaserkaschierung /
FERMACELL Dry Flooring Element + wood fibre insulation**

for a period of one year.

Certification number

ID 0509 - 13701 - 009

Test report Number

56822-001-002-L

56822-001-002-eIL-G

Validity

07/2022

After expiration of the year it is possible to acquire the eco-INSTITUT-Label for another one year period. For this a pre-certification review and a laboratory test will be accomplished according to the latest eco-INSTITUT-Label test criteria.

Cologne, 24/01/2022

A handwritten signature in black ink, appearing to read "M. A. Dobaj", with a long, sweeping flourish extending from the end.

Marc-Anton Dobaj, M.Sc. Crystalline Materials
(Project Manager, responsible for the evaluation)

Cologne, 24/01/2022

A handwritten signature in black ink, appearing to read "N. Rasch", with a long, sweeping flourish extending from the end.

Nora Rasch
(Project Manager, responsible for the certification)

Expert evaluation

The products **FERMACELL Estrich-Element mit Holzfaserkaschierung / FERMACELL Dry Flooring Element + wood fibre insulation; Adhesive: Supplier 2** and **FERMACELL Estrich-Element ohne Holzfaserkaschierung / FERMACELL Dry Flooring Element; Adhesive: Supplier 5** were submitted to laboratory tests on behalf of **James Hardie Europe GmbH** for an ecological product examination according to the eco-INSTITUT-Label test criteria for mineral building products (status: May 2021).

The basic requirements specified in the test criteria are met. The special requirements specified in the test criteria are met.

Representatively the materials listed in the test reports 56822-A001-L and 56822-A002-L dated 15/12/2021 under the overview of samples were examined in the laboratory.

The results documented in the test report were evaluated as follows.¹

Internal sample number: | 56822-A001

Test parameters	Result	Limit Value	Within limits [yes/no]
Emission analysis			
Measurement time: 3 days after test chamber loading			
TVOC (total volatile organic compounds including SVOC with LCI)	250 µg/m³	≤ 3000 µg/m³	yes
CMR 1: VOC (incl. VVOC and SVOC) with the following categorisations: Regulation (EC) No. 1272/2008: Category Carc. 1A and 1B, Muta. 1A and 1B, Repr. 1A and 1B; TRGS 905: K1A, K1B, M1A, M1B, R1A, R1B; IARC: Group 1 and 2A; DFG (MAK list): Categories III1, III2 (Sum)	< 1 µg/m³	≤ 1 µg/m³	yes
Measurement time: 28 days after test chamber loading			
CMR 1: VOC (incl. VVOC and SVOC) with the following categorisations: Regulation (EC) No. 1272/2008: Category Carc. 1A and 1B, Muta. 1A and 1B, Repr. 1A and 1B; TRGS 905: K1A, K1B, M1A, M1B, R1A, R1B; IARC: Group 1 and 2A; DFG (MAK list): Categories III1, III2 (Sum)	< 1 µg/m³	≤ 1 µg/m³	yes

¹ If a measurement result that slightly exceeds the specification is assessed as “not fulfilled”, this is based on the agreement of the “shared risk of measurement uncertainty (shared risk approach)”. According to this, the probability that the statement is correct is $\geq 50\%$. Similarly, a result slightly below the specification value also only has a probability of $\geq 50\%$ of being compliant. I.e., the risk of making a false negative statement regarding the fulfilment of the specification is just as high as the risk of making a false positive statement (more information at https://www.eco-institut.de/en/2019/07/measurement_uncertainty/).

Test parameters	Result	Limit Value	Within limits [yes/no]
Emission analysis			
CMR 2: VOC (incl. VVOC and SVOC) with the following categorisations: Regulation (EC) No. 1272/2008: Category Carc. 2, Muta. 2, Repr. 2; TRGS 905: K2, M2, R2; IARC: Group 2B; DFG (MAK list): Category III3 (Sum)	13 µg/m³	≤ 50 µg/m³	yes
TVOC (total volatile organic compounds including SVOC with LCI)	80 µg/m³	≤ 300 µg/m³	yes
TSVOC (total semi-volatile organic compounds)	< 1 µg/m³	≤ 100 µg/m³	yes
VOC (Sum) without LCI	2 µg/m³	≤ 100 µg/m³	yes
Sensitising compounds with the following categorisations: DFG (MAK list): Category IV; Regulation (EC) No. 1272/2008: skin sensitising, respiratory sensitising; TRGS 907 (Sum)	8 µg/m³	≤ 100 µg/m³	yes
Bicyclic terpenes (Sum)	< 1 µg/m³	≤ 200 µg/m³	yes
C9 – C14 Alkanes / Isoalkanes (Sum)	19 µg/m³	≤ 200 µg/m³	yes
C4 – C11 Aldehydes, acyclic, aliphatic (Sum)	3 µg/m³	≤ 100 µg/m³	yes
C6 – C15 Alkyl benzenes (Sum)	< 1 µg/m³	≤ 100 µg/m³	yes
Cresols (Sum)	< 1 µg/m³	≤ 5 µg/m³	yes
Xylene (Sum)	< 1 µg/m³	≤ 100 µg/m³	yes
VOC (individual substances):			
Formaldehyde	8 µg/m³	≤ 24 µg/m³	yes
Acetaldehyde	3 µg/m³	≤ 24 µg/m³	yes
Ethyl acetate (VVOC)	< 1 µg/m³	≤ 600 µg/m³	yes
Phenol	2 µg/m³	≤ 20 µg/m³	yes
Methylisothiazolinone (MIT)	< 1 µg/m³	≤ 1 µg/m³	yes
Octylisothiazolinone (OIT)	< 1 µg/m³	≤ 1 µg/m³	yes
Benzaldehyde	< 1 µg/m³	≤ 20 µg/m³	yes
2-Ethyl-1-hexanol	2 µg/m³	≤ 100 µg/m³	yes
Ethylen glycol monobutylether	< 1 µg/m³	≤ 100 µg/m³	yes
2-Hexoxyethanol	< 1 µg/m³	≤ 100 µg/m³	yes
Benzothiazole ¹⁾	< 1 µg/m³	≤ 15 µg/m³	yes
2-Butoxyethyl acetate	< 1 µg/m³	≤ 200 µg/m³	yes
2-Phenoxyethanol	< 1 µg/m³	≤ 30 µg/m³	yes
Propylene glycol (Propane-1,2-diol)	< 1 µg/m³	≤ 60 µg/m³	yes
R-Value	0.17	≤ 1.0	yes

1) preliminary, exceeding the limit does not lead to devaluation at present

Test parameters	Result	Limit Value	Within limits [yes/no]
Emission analysis Glycol ethers and Glycol esters			
Measurement time: 28 days after test chamber loading			
Glycols, Glycol ethers, Glycol esters			
Propylene carbonate	14 µg/m³	21 µg/m³	yes

Test parameter	Internal sample number	Result	Limit value	Within limits [yes/no]
Further emission and content analyses				
Phthalates (Softeners, sum) DMP, DEP, DPHP, DBP, BBP, DEHP, DNOP, DIBP, BMEP, DHP, DPP, DIPP, PIPP, DINP, DIDP, DIHP, DHNUP, DEHT	56822-A001	250 mg/kg	≤ 100 mg/kg	yes ²
Terephthalate DEHT	56822-A001	< q.l.	≤ 100 mg/kg	yes
Diisononyl cyclohexane-1,2-dicarboxylate DINCH	56822-A001	< q.l.	≤ 100 mg/kg	yes
AOX (Absorbable organic halogenated compounds)	56822-A001	< q.l.	≤ 1.0 mg/kg	yes
EOX (Extractable organic halogenated compounds)	56822-A001	< q.l.	≤ 2 mg/kg	yes
Isocyanate monomers (parameter only for relevant materials)	56822-A001	< q.l.	≤ 0.001 mg/m³ (TDI, HDI; 24 hours after test chamber loading)	yes
Isocyanate monomers (parameter only for relevant materials)		< q.l.	≤ 0.002 mg/m³ (MDI; 24 hours after test chamber loading)	yes
Odour	56822-A001	Grade 3.3	≤ Grade 4 (3 days after test chamber loading)	yes
		Grade 3.1	≤ Grade 3 (28 days after test chamber loading)	yes

< q.l. = Value below quantification limit

² The exceedance is tolerated under the condition that the parameter is checked again within 6 months.

Internal sample number: | 56822-A002

Test parameters	Result	Limit Value	Within limits [yes/no]
Emission analysis			
Measurement time: 3 days after test chamber loading			
TVOC (total volatile organic compounds including SVOC with LCI)	250 µg/m³	≤ 3000 µg/m³	yes
CMR 1: VOC (incl. VVOC and SVOC) with the following categorisations: Regulation (EC) No. 1272/2008: Category Carc. 1A and 1B, Muta. 1A and 1B, Repr. 1A and 1B; TRGS 905: K1A, K1B, M1A, M1B, R1A, R1B; IARC: Group 1 and 2A; DFG (MAK list): Categories III1, III2 (Sum)	< 1 µg/m³	≤ 1 µg/m³	yes
Measurement time: 28 days after test chamber loading			
CMR 1: VOC (incl. VVOC and SVOC) with the following categorisations: Regulation (EC) No. 1272/2008: Category Carc. 1A and 1B, Muta. 1A and 1B, Repr. 1A and 1B; TRGS 905: K1A, K1B, M1A, M1B, R1A, R1B; IARC: Group 1 and 2A; DFG (MAK list): Categories III1, III2 (Sum)	< 1 µg/m³	≤ 1 µg/m³	yes
CMR 2: VOC (incl. VVOC and SVOC) with the following categorisations: Regulation (EC) No. 1272/2008: Category Carc. 2, Muta. 2, Repr. 2; TRGS 905: K2, M2, R2; IARC: Group 2B; DFG (MAK list): Category III3 (Sum)	26 µg/m³	≤ 50 µg/m³	yes
TVOC (total volatile organic compounds including SVOC with LCI)	150 µg/m³	≤ 300 µg/m³	yes
TSVOC (total semi-volatile organic compounds)	< 1 µg/m³	≤ 100 µg/m³	yes
VOC (Sum) without LCI	6 µg/m³	≤ 100 µg/m³	yes
Sensitising compounds with the following categorisations: DFG (MAK list): Category IV; Regulation (EC) No. 1272/2008: skin sensitising, respiratory sensitising; TRGS 907 (Sum)	22 µg/m³	≤ 100 µg/m³	yes
Bicyclic terpenes (Sum)	1 µg/m³	≤ 200 µg/m³	yes
C9 – C14 Alkanes / Isoalkanes (Sum)	< 1 µg/m³	≤ 200 µg/m³	yes
C4 – C11 Aldehydes, acyclic, aliphatic (Sum)	64 µg/m³	≤ 100 µg/m³	yes
C6 – C15 Alkyl benzenes (Sum)	< 1 µg/m³	≤ 100 µg/m³	yes
Cresols (Sum)	< 1 µg/m³	≤ 5 µg/m³	yes
Xylene (Sum)	< 1 µg/m³	≤ 100 µg/m³	yes

Remark: It is not permitted to publish extracts of this report and the comments on the first page of this report apply.

Test parameters	Result	Limit Value	Within limits [yes/no]
Emission analysis			
VOC (individual substances):			
Formaldehyde	8 µg/m³	≤ 24 µg/m³	yes
Acetaldehyde	10 µg/m³	≤ 24 µg/m³	yes
Ethyl acetate (VVOC)	< 1 µg/m³	≤ 600 µg/m³	yes
Phenol	< 1 µg/m³	≤ 20 µg/m³	yes
Methylisothiazolinone (MIT)	< 1 µg/m³	≤ 1 µg/m³	yes
Octylisothiazolinone (OIT)	< 1 µg/m³	≤ 1 µg/m³	yes
Benzaldehyde	5 µg/m³	≤ 20 µg/m³	yes
2-Ethyl-1-hexanol	6 µg/m³	≤ 100 µg/m³	yes
Ethylen glycol monobutylether	< 1 µg/m³	≤ 100 µg/m³	yes
2-Hexoxyethanol	< 1 µg/m³	≤ 100 µg/m³	yes
Benzothiazole ¹⁾	< 1 µg/m³	≤ 15 µg/m³	yes
2-Butoxyethyl acetate	< 1 µg/m³	≤ 200 µg/m³	yes
2-Phenoxyethanol	< 1 µg/m³	≤ 30 µg/m³	yes
Propylene glycol (Propane-1,2-diol)	< 1 µg/m³	≤ 60 µg/m³	yes
Glycol ethers with insufficient data* (Limit value per single substance):	< 0,005 ppm	< 0,005 ppm	yes
R-Value	0.84	≤ 1.0	yes

1) preliminary, exceeding the limit does not lead to devaluation at present

* cf. Announcement of the Ad-hoc Working Group on Indoor Guidelines of the Indoor Air Hygiene Committee and of the Supreme State Health Authorities:
 Richtwerte für Glykolether und Glykolester in der Innenraumluft, Bundesgesundheitsblatt, February 2013, Volume 56, Issue 2, pp 286-320.



Test parameter	Internal sample number	Result	Limit value	Within limits [yes/no]
Further emission and content analyses				
Phthalates (Softeners, sum) DMP, DEP, DPHP, DBP, BBP, DEHP, DNOP, DIBP, BMEP, DHP, DPP, DIPP, PIPP, DINP, DIDP, DIHP, DHNUP, DEHT	56822-A002	< q.l.	≤ 100 mg/kg	yes
Terephthalate DEHT	56822-A002	< q.l.	≤ 100 mg/kg	yes
Diisononyl cyclohexane-1,2-dicarboxylate DINCH	56822-A002	< q.l.	≤ 100 mg/kg	yes
AOX (Absorbable organic halogenated compounds)	56822-A002	< q.l.	≤ 1.0 mg/kg	yes
EOX (Extractable organic halogenated compounds)	56822-A002	< q.l.	≤ 2 mg/kg	yes
Isocyanate monomers (parameter only for relevant materials)	56822-A002	< q.l.	≤ 0.001 mg/m ³ (TDI, HDI; 24 hours after test chamber loading)	yes
Isocyanate monomers (parameter only for relevant materials)		< q.l.	≤ 0.002 mg/m ³ (MDI; 24 hours after test chamber loading)	yes
Odour	56822-A002	Grade 2.8	≤ Grade 3 (3 days after test chamber loading)	yes

< q.l. = Value below quantification limit

Cologne, 24/01/2022

Marc-Anton Dobaj, M.Sc. Crystalline Materials
(Project Manager)

Attachment:

Test Report N° 56822-A001-L dated 15/12/2021

Test Report N° 56822-A002-L dated 15/12/2021