itecons

Rua Pedro Hispano, s/n
3030-289 Coimbra

Tel: (+351) 239 79 89 49
itecons@itecons.uc.pt
www.itecons.uc.pt

Designated according to Article 29 of Regulation (EU) No 305/2011

Member of EOTA
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European Technical Assessment

ETA 22/0578
of 23/09/2022

English version prepared by Itecons

General Part

Technical Assessment Body issuing the European Technical Assessment: Itecons - Instituto de Investigação e Desenvolvimento Tecnológico para a Construção, Energia, Ambiente e Sustentabilidade	
Trade name of the construction product	Stravifloor Mat-F3e Stravifloor Mat-F4.5e
Product family to which the construction product belongs	Rubber fibre mat to be used for impact sound insulation Product area code: 04
Manufacturer	CDM Stravitec Reutenbeek 9-11 3090 OVERIJSE Belgium www.cdm.eu
Manufacturing plant	Reutenbeek 9-11 3090 OVERIJSE Belgium
This European Technical Assessment contains	9 pages
This European Technical Assessment is issued in accordance with regulation (EU) No 305/2011, on the basis of	EAD 040048-01-0502 *Rubber fibre mat to be used for impact sound insulation*

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Specific parts

1. Technical description of the product

The products under assessment - Stravifloor Mat-F3e and Stravifloor Mat-F4.5e - are rubber mats for impact sound insulation. These resilient acoustic underlays are made of agglomerated recycled SBR (Styrene Butadiene Rubber) with PU (polyurethane) elastomer bonding agent.

The products assessed in this ETA are produced with the dimensions and density listed in Table 1.

Table 1: Dimensions and density of Stravifloor Mat-F3e and Stravifloor Mat-F4.5e

Characteristic	Stravifloor Mat-F3e	Stravifloor Mat-F4.5e
Thickness [mm]	3	4.5
Length [mm]	10 000	7 000
Width [mm]	1 000	1 000
Density [kg/m^3]	880	

2. Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

2.1. Intended use

The rubber fibre mats Stravifloor Mat-F3e and Stravifloor Mat-F4.5e are used for the improvement of impact sound insulation of floors.

The rubber fibre mats Stravifloor Mat-F3e and Stravifloor Mat-F4.5e are for use under floating screed or comparable build-ups on solid slabs, underfloor heating systems, wood/ laminate flooring, vinyl and/or carpet tiles, ceramic/ porcelain tiles and carpeted floors.

The assessment of the rubber fibre mats Stravifloor Mat-F3e and Stravifloor Mat-F4.5e applies only when the product is used internally in building structures where they are protected from wetting and weathering, such as residential homes, hospitality, retail, healthcare, housing, education, etc.

The mats are loose-laid on the sufficiently flat solid floor slab. The mats are protected by a suitable foil or the joints between the mats are covered with a suitable adhesive tape before the screed or other floor finish will be built in. When used under screed floors, the manufacturer shall ensure the screed mass per unit area is appropriate for that of the insulation material.

The rubber mat joints are closely installed. The mats are fixed using a suitable adhesive tape to ensure that no gaps occur. Appropriate insulating edge strips are used on rising walls in order to avoid sonic bridges.

The provisions made in this European Technical Assessment are based on an assumed working life of 25 years as minimum according to the EAD, provided that the conditions lay down for the installation, packaging, transport and storage as well as appropriate use, maintenance and repair are met. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but

are to be regarded only as a mean for choosing the right product in relation to the expected economically reasonable working life of the works.

3. Performance of the product and references to the methods used for its assessment

The assessment of Stravifloor Mat-F3e and Stravifloor Mat-F4.5e according to the Basic Work Requirements (BWR) was carried out in compliance with EAD 040048-01-0502 .

3.1. Performance of the assembled system (kit)

3.1.1. Mechanical resistance and stability (BWR 1)

Not relevant.

3.1.2. Safety in case of fire (BWR 2)

3.1.2.1. Reaction to fire

The reaction to fire was tested according to ISO 11925-2:2020 and classified according to EN 13501-1:2018. The Stravifloor Mat-F3e and Stravifloor Mat-F4.5e rubber fibre mats meet the requirements of class E.

3.1.3. Hygiene, health and the environment (BWR 3)

3.1.3.1. Content, emission and/or release of dangerous substances

The content emission and/or release of dangerous substances was assessed taking into account the release scenario applicable: IA2 (product with indirect contact to indoor air but possible impact on indoor air).

3.1.3.1.1. SVOC and VOC

The emission of volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) was assessed according to EN 16516. The loading factor considered was L = 0.4 m^2/m^3. The results are presented in Table 2.

Table 2: Emissions of volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) after 28 days of exposure

Essential characteristic	Performance
Content, emission and/or release dangerous substances	
	Concentration after 28 days (µg/m^3)
TVOC	≤ 1000
TSVOC	≤ 100
R	≤ 1
CMR	≤ 1
Substance	Concentration after 28 days (µg/m^3)
Formaldehyde	≤ 100
Acetaldehyde	≤ 200
Toluene	≤ 300
Note: The R-value is the sum of all ratios Ri for all volatile organic substances with known LCL value and therefore dimensionless. – CMR stands for carcinogenic, mutagenic or toxic for reproduction (CMR) VOCs	

3.1.3.1.2. PAH and B[a]P

The specific organic compounds polyaromatic hydrocarbons (PAH) and Benzo(a)pyrene (B[a]P) were determined according to AfPS GS 2014:01.

The test results are presented in Table 3.

Table 3: Content of specific organic compounds PAH and Benzo(a)pyrene (B[a]P)

Parameter	Content of specific organic compounds PAH and B[a]P (mg/kg)	Parameter	Content of specific organic compounds PAH and B[a]P (mg/kg)
Benzo(a)pyrene	< 0.2	Indeno(1,2,3-cd)pyrene	< 0.2
Benzo(e)pyren	< 0.2	Acenaphthylene	< 0.2
Benzo(a)anthracene	< 0.2	Acenaphthene	< 0.2
Benzo(b)fluoranthene	< 0.2	Fluorene	< 0.2
Benzo(j)fluoranthene	< 0.2	Phenanthrene	< 0.2
Benzo(k)fluoranthene	< 0.2	Pyrene	< 0.2
Chrysen	< 0.2	Anthracene	< 0.2
Dibenzo(a,h)anthracen	< 0.2	Fluoranthene	< 0.2
Benzo(g,h,i)perylene	< 0.2	Naphthalene	< 0.2

3.1.3.1.3. Nitrosamines

The content of nitrosamines was determined according DIK-Method: AA-3.3.1.4 “Analytical method for the determination of N-nitrosamines, version 1, 2022-01”.

The results are presented in Table 4.

Table 4: Results of Nitrosamines after 3 days and 28 days of exposure

Nitrosamines	Results after 3 days (µg/m³)	Results after 28 days (µg/m³)
N-nitrosodibutylamine (NDBA)	< 0.030	< 0.030
N-nitrosodiethylamine (NDEA)	< 0.020	< 0.020
N-nitrosodimethylamine (NDMA)	0.025	< 0.020
N-nitrosodipropylamine (NDPA)	< 0.020	< 0.020
N-nitrosomorpholine (NMOR)	< 0.020	< 0.020
N-nitrosopiperidine (NPIP)	< 0.020	< 0.020
N-nitrosopyrrolidine (NPYR)	< 0.020	< 0.020
N-nitrosodi-i-propylamine (NDiPA)	< 0.030	< 0.030
N-nitrosomethylethylamine (NMEA)	< 0.030	< 0.030

3.1.4. Safety and accessibility in use (BWR 4)

Not relevant.

3.1.5. Protection against noise (BWR 5)

3.1.5.1. Dynamic stiffness

The dynamic stiffness was tested according to ISO 9052-1:1989 and ISO 7626-5:2019. The maximum value of the apparent dynamic stiffness S' for Stravifloor Mat-F3e and Stravifloor Mat-F4.5e is presented in Table 5.

Table 5: Dynamic stiffness

Product	Maximum dynamic stiffness s' (MN/m^3)
Stravifloor Mat-F3e	179
Stravifloor Mat-F4.5e	152

3.1.5.2. Impact sound reduction

The impact sound reduction ΔL by floor coverings was tested according to ISO 10140-1:2016, ISO 10140-3:2010, ISO 10140-3:2010/Amd.1:2015, ISO 10140-4:2010 and ISO 717-2:2013. The assessed build up and results are presented in Table 6.

Table 6: Impact sound reduction

Product	Assessed build up	Assessed AL_w
Stravifloor Mat-F3e	Screed: Individual luxury vinyl tile (LVT) floor covering planks with nominal dimensions of 1219 mm x 228 mm x 8.5 mm (length x width x thickness) Resilient layer: Stravifloor Mat-F3e Base: reinforced concrete slab of thickness 140mm	$\Delta L_w \geq 19$ dB
	Screed: laminate floor covering planks with nominal dimensions of 2175 mm x 243 mm x 12 mm (length x width x thickness) Resilient layer: Stravifloor Mat-F3e Base: reinforced concrete slab of thickness 140mm	$\Delta L_w \geq 17$ dB
	Screed: ceramic tiles with nominal dimensions of 600 mm x 600 mm x 9 mm (length x width x thickness), spaced 5 mm apart glued with epoxy adhesive, with curing time of 24h, using a notched trowel 6 mm thick Resilient layer: Stravifloor Mat-F3e Base: reinforced concrete slab of thickness 140mm	$\Delta L_w \geq 17$ dB
Stravifloor Mat-F4.5e	Screed: Individual luxury vinyl tile (LVT) floor covering planks with nominal dimensions of 1219 mm x 228 mm x 8.5 mm (length x width x thickness) Resilient layer: Stravifloor Mat-F4.5e Base: reinforced concrete slab of thickness 140mm	$\Delta L_w \geq 19$ dB
	Screed: laminate floor covering planks with nominal dimensions of 2175 mm x 243 mm x 12 mm (length x width x thickness) Resilient layer: Stravifloor Mat-F4.5e Base: reinforced concrete slab of thickness 140mm	$\Delta L_w \geq 17$ dB
	Screed: ceramic tiles with nominal dimensions of 600 mm x 600 mm x 9 mm (length x width x thickness), spaced 5 mm apart glued with epoxy adhesive, with curing time of 24h, using a notched trowel 6 mm thick Resilient layer: Stravifloor Mat-F4.5e Base: reinforced concrete slab of thickness 140mm	$\Delta L_w \geq 19$ dB

3.1.5.3. Geometry

The length and width of the Stravifloor Mat-F3e and Stravifloor Mat-F4.5e were determined according EN 822:2013. The squareness of the Stravifloor Mat-F3e and Stravifloor Mat-F4.5e was determined

according to EN 824. The results are presented in Table 7.

Table 7: Nominal length and width

Product	Geometry		
	Length (mm)	Width (mm)	Squareness, S_b (mm/m)
Stravifloor Mat-F3e	10000	1000	≤ 5
Stravifloor Mat-F4.5e	7000	1000	≤ 5
Dimensional deviation (acc. To EN 16069 :2012+A1 :2015)	L4	W3	≤ 5

3.1.5.4. Thickness and compressibility

The determination of thickness of the Stravifloor Mat-F3e and Stravifloor Mat-F4.5e was carried out according to EN 12431:2013 the results are presented in Table 8.

Table 8: Thickness and compressibility

Product	Thickness, d_L (mm)	Compressibility, c (mm)
Stravifloor Mat-F3e	≥ 3	≤ 0.2
Stravifloor Mat-F4.5e	≥ 4.5	≤ 0.3

3.1.5.5. Mass per unit area

The mass per unit area of the Stravifloor Mat-F3e and Stravifloor Mat-F4.5e was determined according to EN 1602:2013. The results are presented in Table 9.

Table 9: Mass per unit area

Product	Mass per unit area (g/m^2)
Stravifloor Mat-F3e	2640 ± 5%
Stravifloor Mat-F4.5e	3960 ± 10%

3.1.5.6. Compressive creep

No performance assessed.

3.1.5.7. Compressive strength

The compressive strength of the Stravifloor Mat-F3e and Stravifloor Mat-F4.5e was determined according to EN 826:2013. The results are presented in Table 10.

Table 10: Mass per unit area

Product	Compressive stress at 10%, $\sigma_{10\%}$ (kPa)
Stravifloor Mat-F3e	≥ 5.3
Stravifloor Mat-F4.5e	≥ 38.7

3.1.5.8. Deformation under specified load and temperature

The deformation under specified load and temperature of the Stravifloor Mat-F3e and Stravifloor Mat-F4.5e was determined according to EN 1605:2013 with the following test conditions:

- Compressive load: 40 kPa;
- Temperature and duration:
  - Step A: (23 ± 5) °C / (48 ± 1) h
  - Step B: (70 ± 1) °C / (168 ± 1) h

The results are presented in Table 10.

Table 10: Maximum change of the relative deformation %

Product	Maximum change of the relative deformation, $\Delta\varepsilon^1$ (%)
Stravifloor Mat-F3e	< 5
Stravifloor Mat-F4.5e	

[1]Δε corresponds to the difference between the relative deformation ε1 after step A and ε2 after step B.

3.1.5.9. Resistance to breaking or cracking

The determination of the resistance to breaking or cracking was determined according to EN 14499:2015. The tests showed that cracks longer than 50 mm were not observed on samples of Stravifloor Mat-F3e and Stravifloor Mat-F4.5e. Therefore, the assessment of the Stravifloor Mat-F3e and Stravifloor Mat-F4.5e for resistance to breaking or cracking is: pass.

3.1.6. Energy economy and heat retention (BWR 6)

3.1.6.1. Durability-thermal resistance

The thermal resistance was determined according to EN 12664. The thermal resistance of the rubber fibre mat is 0.18 m^2.°C/W.

4. Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

According to the Decision 2000/273/EC of European Commission the system of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) applicable is 3.

5. Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

The ETA is issued on the basis of agreed data/information, deposited at Itecons, which identifies the product that has been assessed and judged. It is the manufacturer's responsibility to make sure that all those who use the kit are appropriately informed of specific conditions laid down in this ETA.

Changes to the products or their production process should be notified to the Itecons before the changes are introduced. Itecons will decide whether or not such changes affect the ETA and if so whether further assessment or alterations to the ETA shall be necessary.

Issued in Coimbra on 23.09.2022

By

Technical Assessment Unit of

Itecons – Instituto de Investigação e Desenvolvimento Tecnológico para a Construção, Energia, Ambiente e Sustentabilidade

(*Technical Assessment Unit Coordinator*) (Administration)