

CLASSIFICATION OF REACTION TO FIRE PERFORMANCE IN ACCORDANCE WITH EN 13501-1:2018

Classification no.	2022-Efectis-R001486(E)
Sponsor	Unisol Paneel BV Cilinderweg 25 2371 DZ ROELOFARENDVSVEEN THE NETHERLANDS
Product name	Unisol EPS sandwich panel
Prepared by	Efectis Nederland BV
Notified body no.	1234
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1. INTRODUCTION

This classification report defines the classification assigned to **Unisol EPS sandwich panel** in accordance with the procedures given in EN 13501-1:2018.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The product, **Unisol EPS sandwich panel**, is defined as a wall and ceiling panel.

2.2 MANUFACTURER

Unisol Paneel BV
Cilinderweg 25
2371 DZ ROELOFARENDVSVEEN
THE NETHERLANDS

2.3 PRODUCT DESCRIPTION

Product description:

Sandwich panels with 0.55 mm thick steel outer plates (facing), equal seams and profiling at the front and rear (symmetrical);

- 1 EPS core type EPS 60 with a density of 15 kg/m³, colour white;
- 2 The nominal tested thickness of the specimen was 50 and 200 mm;
- 3 The panels have been tested with vertical seams;
- 4 The panel has been tested as a flat panel, but is also available with a 'standard', 'Box' or 'micro-lined' finish.

The Sandwich panels have been tested with coating CHW117 Polyvinyl chloride film with a layer thickness of 120 µm (210 g/m²) and a PCS value of 3.2 MJ/m². This is the most critical coating variant in the Unisol program (see appendix 'PCS values coating' with an overview of available coating variants).

The panels are finished at the top and bottom with a steel profile:

- Sandwich panel 60 - 200 mm fitted with a 1 mm thick U-profile respectively 60 x 50 x 60 and 60 x 200 x 60mm
- Corner profile 60 x 60 mm

The profile is mounted with blind rivet 1261 GWD 4.8X12 steel (c.t.c. ≤ 700 mm).

3. STANDARDS, REPORTS, RESULTS AND CRITERIA IN SUPPORT OF THIS CLASSIFICATION

3.1 APPLICABLE (PRODUCT) STANDARDS

EN ISO 11925-2:2020	Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test
EN 13823:2020	Reaction to fire tests for building products - Building products, excluding floorings exposed to the thermal attack by a single burning item

EN 15715:2009	Thermal insulation products - Instructions for mounting and fixing for reaction to fire testing - Factory made products
EN 13238:2010	Reaction to fire tests for building products - Conditioning procedures and general rules for selection of substrates
EN 13501-1:2018	Fire classification of construction products and building elements Part 1: Classification using data from reaction to fire tests
EN14509:2013	Self-supporting metal sandwich panels - Factory products - Specifications

3.2 REPORTS

Name of Laboratories	Name of sponsor	Report ref. no.	Test method
Efectis Nederland BV THE NETHERLANDS	Unisol Paneel BV THE NETHERLANDS	2022-Efectis-R01484 2022-Efectis-R01485	EN ISO 11925-2:2020 EN 13823:2020

3.3 TEST RESULTS

Test method and test number	Parameter	No. tests	Results	
			Continuous parameter – maximum	Compliance with parameters
EN ISO 11925-2				
Surface flame Impingement 50 mm	Fs ≤150 mm	6	25	-
	Ignition of filter paper		-	Compliant
Edge flame Impingement 50 mm	Fs ≤150 mm	6	25	-
	Ignition of filter paper		-	Compliant
Side flame Impingement 50 mm	Fs ≤150 mm	6	40	-
	Ignition of filter paper		-	Compliant
Surface flame Impingement 200 mm cut to 50 mm	Fs ≤150 mm	2	25	-
	Ignition of filter paper		-	Compliant
Edge flame Impingement 200 mm cut to 50 mm	Fs ≤150 mm	2	25	-
	Ignition of filter paper		-	Compliant
Side flame Impingement 200 mm cut to 50 mm	Fs ≤150 mm	2	30	-
	Ignition of filter paper		-	Compliant

Test method and test number	Parameter	No. tests	Results	
			Continuous parameter – mean (m)	Compliance with parameters
EN 13823				
50 mm	FIGRA _{0.2MJ} [W/s]	3	53	-
	FIGRA _{0.4MJ} [W/s]		53	-
	THR _{600s} [MJ]		2.2	-
	LFS < edge		-	Compliant
	SMOGRA [m ² /s ²]		12.5	-
	TSP _{600s} [m ²]		45	-
	Flaming debris - flaming ≤ 10 s - flaming > 10 s		- -	Compliant Compliant
200 mm	FIGRA _{0.2MJ} [W/s]	1	60	-
	FIGRA _{0.4MJ} [W/s]		60	-
	THR _{600s} [MJ]		2.6	-
	LFS < edge		-	Compliant
	SMOGRA [m ² /s ²]		12.5	-
	TSP _{600s} [m ²]		40	-
	Flaming debris - flaming ≤ 10 s - flaming > 10 s		- -	Compliant Compliant

3.4 CLASSIFICATION CRITERIA

Fire classification of construction products and building elements Excluding floorings and linear pipe thermal insulation products			
Classification criteria			
Class	B	C	D
Test method(s)			
EN ISO 11925-2 Exposure = 30 s	F _s ≤ 150 mm within 60 s Ignition of the paper in EN ISO 11925-2 results in a d2 classification.		
EN 13823	FIGRA _{0.2 MJ} ≤ 120 W/s LFS < edge of specimen THR _{600s} ≤ 7.5 MJ	FIGRA _{0.4 MJ} ≤ 250 W/s LFS < edge of specimen THR _{600s} ≤ 15 MJ	FIGRA _{0.4 MJ} ≤ 750 W/s
Additional classification			
Smoke production	s1 = SMOGRA ≤ 30 m ² /s ² and TSP _{600s} ≤ 50 m ² ; s2 = SMOGRA ≤ 180 m ² /s ² and TSP _{600s} ≤ 200 m ² ; s3 = not s1 or s2		
Flaming Droplets/particles	d0 = no flaming droplets/ particles in EN 13823 within 600 s ; d1 = no flaming droplets/ particles persisting longer than 10 s in EN 13823 within 600 s ; d2 = not d0 or d1.		

4. CLASSIFICATION AND FIELD OF APPLICATION

4.1 REFERENCE OF CLASSIFICATION

This classification has been carried out in accordance with clause 11 of EN 13501-1:2018.

4.2 CLASSIFICATION

The product, **Unisol EPS sandwichpanel**, in relation to its reaction to fire behaviour is classified:

B

The additional classification in relation to smoke production is:

s1

The additional classification in relation to flaming droplets / particles is:

d0

Reaction to fire classification: B – s1, d0

4.3 FIELD OF APPLICATION

This classification is valid for the following product parameters:

Thickness	50-300 mm
EPS	Type EPS-60 Density 15 kg/m ³ ± 15 %
Other properties	All coatings with a PCS value ≤ 4 MJ/m ² (combination of layer thickness and energy content).

This classification is valid for the following end use applications:

Application	Free standing
Methods and means of fixing	Finish the open sides with U-profiles in accordance with the description.
Joints	Vertically
Other aspects of end use conditions	Front and end sides of panels finished with steel U-profile, thickness 1 mm, height 60 mm, width is panel thickness, corners with corner profiles. Surface profiling < 5 mm. Similar panel joints with a minimum overlap of 15 mm. Facing thickness 0.55-1.1mm. Closed surface, no openings or gaps between components

4.4 DURATION OF THE VALIDITY OF THIS CLASSIFICATION REPORT

Consult classification standard and national laws and regulations for limitations on the period of validity of the classification.

5. LIMITATIONS

This classification document does not represent type approval or certification of the product.

The classification assigned to the product in this report is appropriate to a declaration of conformity by the manufacturer within the context of system 3 **Assessment and Verification of Consistency of Performance (AVCP)** and **CE marking** under the **Construction Products Regulation**.

The manufacturer has made a declaration, which is held on file. This confirms that the product's design requires no specific processes, procedures or stages (e.g. no addition of flame-retardants, limitation of organic content, or addition of fillers) that are aimed at enhancing the fire performance in order to obtain the classification achieved. As a consequence the manufacturer has concluded that system 3 AVCP is appropriate.

The test laboratory has, therefore, played no part in sampling the product for the test, although it holds appropriate references, supplied by the manufacturer, to provide for traceability of the samples tested.



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This report is an English translation of the original Dutch-language Efectis report 2022-Efectis-R001486. If the Dutch and English versions can be interpreted differently, then the original Dutch report is decisive.

APPENDIX: PRODUCT CONSTRUCTION

The technical drawings illustrate the construction of the Unisol EPS panel, showing various profile options and their dimensions:

- Profiling: Standaard (UNI)**: Shows a standard profile with dimensions 76, 107, 20, 0.5, 20, 62, 35, 0.4.
- Profiling: Box-profiel**: Shows a box profile with dimensions 62, 35, 0.4.
- Profiling: Micro-profiel**: Shows a micro-profile with dimensions 19, 15, 15, 15, 15, 15, 15, 15, 15, 15, 15, 15, 15.
- Profiling: Vlak**: Shows a flat profile with dimensions 19, 15, 15, 15, 15, 15, 15, 15, 15, 15, 15, 15, 15.

Additional dimensions and details include:

- Standaard (UNI): 20, 62, 35, 0.4
- Box-profiel: 62, 35, 0.4
- Micro-profiel: 19, 15, 15, 15, 15, 15, 15, 15, 15, 15, 15, 15, 15
- Vlak: 19, 15, 15, 15, 15, 15, 15, 15, 15, 15, 15, 15, 15

Doorsnede EPS paneel (Cross-section of EPS panel):

- Overall width: 1206
- Working width: werkende breedte = 1190
- Height: 40-300
- Steel thickness: staaldikte = 0,55
- Panel thickness: 9
- Flange thickness: 16
- Flange width: 7
- Flange height: 6

Optische profileringen (Optical profiles)

Project: EPS paneel en profileringen			
Klant:	Unisol paneel BV	Ref klant:	EPS paneel
Adres:	Clijdenweg 25	Ref Unisol:	EPS paneel
Postcode:	2371 DZ	Schaal:	12 / 1,5
Plaats:	Roelofarendsveen	Formaat:	A3
Tel nr.:	071-5413510	Maten in:	mm
Unisol Paneel BV Clijdenweg 25, 2371 DZ, Roelofarendsveen		Tel nr.: 071-5413510 info@unisol.nl	
Datum:	13-02-2017	Tekenaar:	OW
Wijziging:		Tek. nr.:	
Tekenaar:		EPS-01	

APPENDIX: PCS VALUE COATING

Report	Colour		Layer description	Layer thickness	PCS value components	PCS value Coating layer
CHW117 et CPW028 rapport de classement RA19-0074	white	external optie 1:	CHW117 Polyvinyl chloride film	210 g/m ² 120 μm	3.2 MJ/m ²	3.2 MJ/m ²
	white	external optie 2:	CPW028 Polyvinyl chloride film	150 g/m ² 120 μm		
	white	internal	Polyester	7 to 12 μm (2 possible references)	0.3 MJ/m ²	0.3 MJ/m ²
Firecert_Estetic Clean RA20-0101	white	external	PET film	21 g/m ² 15 μm	22.6 MJ/kg 0.5 MJ/m ²	1.4 MJ/m ²
			Polyester resin-based finishing paint.	42.4 g/m ² 20 μm	10.8 MJ/kg 0.5 MJ/m ²	
			Polyester resin-based primer	21 g/m ² 15 μm	18.8 MJ/kg 0.4 MJ/m ²	
	white	internal	Polyester resin-based backcoat	7 g/m ² 5 μm	18.8 MJ/kg 0.1 MJ/m ²	0.3 MJ/m ²
			Polyester resin-based backcoat	12 g/m ² 7 μm	13.9 MJ/kg 0.2 MJ/m ²	
Firecert Granite Estetic Standard RA22-0001	Various	external	Finish Polyester	20 μm	25,438 MJ/kg 0,61MJ/m ²	0.7 MJ/m ²
		external	Primer polyester	5 μm	18.8 MJ/kg 0.13 MJ/m ²	0.4 MJ/m ²
		internal	polyester	7 μm	18.8 MJ/kg 0.19 MJ/m ²	
		internal	polyester	8 μm	13.86 MJ/kg 0.19 MJ/m ²	

Report	Colour		Layer description	Layer thickness	PCS value components	PCS value Coating layer
Firecert Granite Farm RA14-0265	various (except metal colours for the Granite® HDX coating)	external	Granite® STANDARD polyester resin-based primer	5 µm	MJ/kg MJ/m ²	External non substantial component (outdoor side - worst case) 1.9 MJ/m ² External - non substantial component (indoor side) 0.8 MJ/m ²
			polyester resinbased finish	20 µm	MJ/kg MJ/m ²	
		external	Granite® HD polyester resin-based primer	5 µm	MJ/kg MJ/m ²	
			polyester resinbased finish	20 µm	MJ/kg MJ/m ²	
		external	polyester resin-Granite® HDS based primer	15 µm	MJ/kg MJ/m ²	
			polyester resinbased finish	20 µm	MJ/kg MJ/m ²	
		external	Granite® HDX consisting of polyurethane resin-based primer	25-30µm	MJ/kg MJ/m ²	
			polyurethane resinbased finish	30 µm	MJ/kg MJ/m ²	
		internal	Granite® STANDARD back coats two polyester resin-based back coats	8+7 µm	MJ/kg MJ/m ²	
		internal	Granite® FARM consisting of two polyester resin-based back coats	15+20 µm	MJ/kg MJ/m ²	
Firecert_Granite HDS RA08-0035	external	polyester-based primer	15 µm	1.3 MJ/m ²	1.3 MJ/m ²	
		polyester-based finishing coat	20 µm			
	internal	two polyester resin-based backcoats	5+7 µm	0.3 MJ/m ²		