



PAVUS, a.s.
AUTHORIZED BODY 216
NOTIFIED BODY 1391
ACCREDITED CERTIFICATION BODY FOR
PRODUCTS N° 3041

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REACTION TO FIRE CLASSIFICATION REPORT

The object of classification: *Construction products excluding floorings and linear pipe thermal insulation products*
in accordance with CSN EN 13501-1+A1:2010, clause 11

Issue number:

PK1-01-07-010-E-1

Product name and type:

Fibre-cement corrugated sheets - type B9 (profile 177/51) - painted

Sponsor:

Cembrit a.s.
*Lidická 302
266 38 Beroun 3 - Závodí
Czech Republic*

Issuing organization:

PAVUS, a.s.
*Authorized Body 216
Notified Body 1391
Accredited certification body for products No 3041
- Accreditation issued by Czech Accreditation Institute, Public Service Company
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1. INTRODUCTION

- 1.1. This Classification Report specifies classification method for the product *Fibre-cement corrugated sheets - type B9 (profile 177/51) -painted* in conformity with the procedures set forth in ČSN EN 13501-1+A1:2010.
- 1.2. This Classification Report has 5 pages and it can be used or reproduced as a whole only.
- 1.3. This Classification Report substitutes and disturbs the Classification Report No. PK1-01-07-010-E-0 of 2007-01-29.

2. DETAILS OF CLASSIFIED PRODUCT

2.1. General

The product – *Fibre-cement corrugated sheets - type B9 (profile 177/51) - painted* is made by the company *Cembrit a.s., závod Šumperk*. It is used as roofing and cladding.

2.2. Product description

- Fibre-cement sheets with the back side coated by Transparent CMO - coating of the back side, the face side coated by the grey paint and Transparent CMO - primer.
- Thickness: (6,5 ±0,6) mm
- Density: minimally 1 350 kg/m³
- Organic content of unpainted sheet: c. 4,5 % of the mass

Specimen composition:

Fibre-cement corrugated sheet was fixed by standard attaching set (self-drilling screw ø 6 mm, bitumen sealing washer, aluminium washer) to the timber frame with the thickness 50 mm. The specimen was as described in clause 7.5.2.2.2 EN 494: 2004/prA2:2006.

3. REPORTS AND RESULTS IN SUPPORT OF THIS CLASSIFICATION

3.1. Reports

Name of the Laboratory Address Accreditation number	Name of sponsor of the Test Report	Report number Date of issue	Test method
PAVUS, a. s. Veselí nad Lužnicí AZL č. 1026	Cembrit a.s. Lidická 302 266 38 Beroun 3 - Závodí Czech Republic	Pr-06-1.201 2006-12-18	ČSN EN 13823
		Pr-07-1.005 2007-01-25	ČSN EN ISO 1182
		Pr-07-1.007 2007-01-24	ČSN EN ISO 1716
		Pr-06-1.185 2006-09-19	ČSN EN ISO 1716
		Pr-06-1.266 2006-12-20	ČSN EN ISO 1716
		Pr-06-1.267 2006-12-20	ČSN EN ISO 1716

3.2 Test results

Test method and test number	Parameter	Number of tests	Výsledky	
			Continuous parameter-mean	Compliance with parameters
ČSN EN 13823 Pr-06-1.201 Product as total	FIGRA _{0,2MJ} (W/s)	3	7.5	≤ 20 (A1)
	THR _{600s} (MJ)		0.7	≤ 4.0 (A1)
	LFS < edge of specimen		-	yes (A1)
	SMOGRA (m ² /s ²)		2.7	≤ 30 (s1)
	TSP _{600s} (m ²)		49.3	≤ 50 (s1)
	Non-occurring of flaming droplets/particles		-	yes (d0)
ČSN EN ISO 1182 Pr-07-1.005 Fibre cement board	Δ T (°C)	5	10.7	≤ 30 (A1)
	Δ m (%)		18.95	≤ 50 (A1)
	t _f (s)		0	0 (A1)
ČSN EN ISO 1716 Pr-07-1.007 Fibre cement board	Q _{PCS} (MJ/kg)	3	0.79	≤ 2.0 (A1)
ČSN EN ISO 1716 Pr-06-1.185 Outside grey colour	Q _{PCS} (MJ/kg)	3	21.05	-
	Q _{PCS} (MJ/m ²)		1.38	≤ 2.0 (A1)
ČSN EN ISO 1716 Pr-06-1.266 Primer	Q _{PCS} (MJ/kg)	3	26.92	-
	Q _{PCS} (MJ/m ²)		0.39	≤ 2.0 (A1)
ČSN EN ISO 1716 Pr-06-1.267 Back side painting	Q _{PCS} (MJ/kg)	3	35.59	-
	Q _{PCS} (MJ/m ²)		0.75	≤ 2.0 (A1)
ČSN EN ISO 1716 Product as total	Q _{PCS} (MJ/kg)	-	0.97	≤ 2.0 (A1)

3.3 The calculation of the gross heat of combustion for the non-homogeneous product according to ČSN EN ISO 1716

Component of a non-homogeneous product	Mass per unit area* (kg/m ²)	Gross heat of combustion (MJ/kg)	Gross heat of combustion (MJ/m ²)
Grey CMO - primer	0.015	26.92	0.39
Grey colour	0.062	21.05	1.31
Fibre cement board	13.168	0.79	10.40
Grey CMO – back side painting	0.021	35.59	0.75

* Data supplied by the sponsor.

The mass per unit area is:

$$M = M_1 + M_2 + M_3 + M_4 = 0.015 + 0.062 + 13.168 + 0.021 = 13.266 \text{ kg/m}^2$$

The gross heat of combustion (PCS_S) in MJ/m² is:

$$PCS_S = PCS_{S1} + PCS_{S2} + PCS_{S3} + PCS_{S4} + PCS_{S5} = 0.39 + 1.31 + 10.40 + 0.75 = 12.85 \text{ MJ/m}^2$$

The gross heat of combustion (PCS) in MJ/kg is:

$$PCS = PCS_S / M = 12.85 / 13.27 = 0.97 \text{ MJ/kg}$$

The gross heat of combustion of a non-homogeneous product is less than 2.0 MJ/kg, so the product fulfils the criteria of class A1.

The gross heat of combustion of external non-substantial component (Transparent CMO + grey paint) in MJ/m² is:

$$PCS_{ext} = PCS_{S1} + PCS_{S2} = 0.39 + 1.31 = 1.70 \text{ MJ/m}^2$$

The gross heat of combustion of external non-substantial component is less than 2.0 MJ/m², so the external non-substantial component fulfils the criteria of class A1.

4. CLASSIFICATION AND FIELD OF APPLICATION

4.1. Reference of classification

This classification has been carried out in accordance with clause 11, ČSN EN 13501-1+A1:2010.

4.2. Classification

The product – *Fibre-cement corrugated sheets - type B9 (profile 177/51) -painted* - in relation to its reaction to fire behaviour is classified:

Reaction to fire classification: A2 – s1, d0

4.3. Field of application

This classification is valid for the product *Fibre-cement corrugated sheets - type B9 (profile 177/51) - painted* for end use application described in article 2 of this report with following restrictions:

- Primer with mass per unit area $\leq 15 \text{ g/m}^2$ and gross heat of combustion $\leq 26.92 \text{ MJ/kg}$
- Coating of the back side with mass per unit area $\leq 21 \text{ g/m}^2$ and gross heat of combustion $\leq 35.59 \text{ MJ/kg}$
- Paint with mass per unit area $\leq 62 \text{ g/m}^2$ and gross heat of combustion $\leq 21.05 \text{ MJ/kg}$
- Thickness of the product $\geq 5.9 \text{ mm}$
- Mechanical fixing
- Fixed to the wooden construction or construction of class reaction to fire A1 and A2-s1,d0

5. LIMITATIONS

This Classification Report does substitute neither the type approval nor the product certificate.

This classification is valid, unless the conditions, under which it was issued, have been changed. The sponsor may request the issuing authority to review the influence of changes to the classification validity.

Therefore the Testing Laboratory has no part in preparing the product specimens for tests although the Laboratory provides, on manufacturer's request, a suitable certification that the Laboratory took part in monitoring the preparation of specimens for tests.

Elaborated by:

A handwritten signature in blue ink, appearing to read 'Hejná', written over a horizontal dotted line.

Ing. Pavla Hejná
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Ing. Jaroslav Dufek

