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CLASSIFICATION REPORT

fire resistance for loadbearing element: "PIR ROOF COVERING PANEL 80 mm", type: "Self – supporting double metal faced (trapezoidal external face) insulating sandwich panel with PIR high index (polyisocyanurate) foam insulating core between, total thickness 80 mm", mounted under angle at 0°, under a load approx. 30 kg/m², manufacturer METALLEMPORIKI TH. MAKRIS S.A., 6th km Larissa – Sikurio, 41500 Larissa, Greece, according to BAS EN 1365-2: 2015 - Fire resistance tests for loadbearing elements - Part 2: Floors and roofs

03-017CR/24

CLASSIFICATION FIRE RESISTANCE IN ACCORDANCE WITH BAS EN 13501-2:2017

Customer: METALLEMPORIKI TH. MAKRIS S.A., 6th km Larissa – Sikurio, 41500 Larissa, Greece

Issued by: Istraživačko razvojni centar d.o.o. Istočno Sarajevo, ul. Vuka Karadžića 30, 71123 Istočno Sarajevo, Bosnia and Herzegovina - „INZAlab“ – Ispitna laboratorija, ul. Vitomira Lukića 12a, 71000 Sarajevo, Bosnia and Herzegovina

Product name: "PIR ROOF COVERING PANEL 80 mm"

Product type: "Self – supporting, double skin metal faced (trapezoidal external face) insulating sandwich panel with PIR high index (polyisocyanurate) foam insulating core between, with nominal thickness of 80 mm"

Classification report No.: 03-017CR/24

Issue date: 10.06.2024.

Basis BAS EN 1365-2:2015 Fire resistance tests for loadbearing elements - Part 2: Floors and roofs
BAS EN 13501-2:2017- Fire classification of construction products and building elements - Part 2: Classification using data from fire resistance tests, excluding ventilation services

Instructions for use This Fire Resistance classification report defines the classification of a building element through the product designation in accordance with the methods specified in BAS EN 13501-2: 2017. This document is not a type approval, nor is it a certification.

Validity Data and results refer only to the tested and described sample.

Content This report consists of a total of six (6) pages.

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1 Introduction

This classification report defines classification fire resistance assigned to building element: "PIR ROOF COVERING PANEL 80 MM", type: "Self – supporting, double skin metal faced (trapezoidal external face) insulating sandwich panel with PIR high index (polyisocyanurate) foam insulating core between, with nominal thickness of 80 mm", mounted under angle at 0°, under a load approx. 30 kg/m², manufacturer METALLEMPORIKI TH. MAKRIS S.A., 6th km Larissa – Sikurio, 41500, Greece, based on the Test Report, No.: **03-017/24** of 10.06.2024., issued by Istraživačko razvojni centar d.o.o. Istočno Sarajevo, ul. Vuka Karadžića 30, 71123 Istočno Sarajevo, Bosnia and Herzegovina - „INZAlab“ – Ispitna laboratorija, ul. Vitomira Lukića 12a, 71000 Sarajevo, Bosnia and Herzegovina, in accordance with procedures defined in the standard BAS EN 13501-2:2017.

2 Basic information on the classified product

2.1 General

Building element: PIR ROOF COVERING PANEL 80 MM, type: "Self – supporting, double skin metal faced (trapezoidal external face) insulating sandwich panel with PIR high index (polyisocyanurate) foam insulating core between, with nominal thickness of 80 mm", mounted under angle at 0°, under a load approx. 30 kg/m², manufacturer METALLEMPORIKI TH. MAKRIS S.A., 6th km Larissa – Sikurio, 41500, Greece, is defined in accordance with procedures as a compact wall of fire resistance.

2.2 Product description

Building element: PIR ROOF COVERING PANEL 80 MM, type: "Self – supporting, double skin metal faced (trapezoidal external face) insulating sandwich panel with PIR high index (polyisocyanurate) foam insulating core between, with nominal thickness of 80 mm", mounted under angle at 0°, under a load approx. 30 kg/m², manufacturer METALLEMPORIKI TH. MAKRIS S.A., 6th km Larissa – Sikurio, 41500, Greece, details are described in the test report No. **03-017/24** of 10.06.2024, issued by „Istraživačko razvojni centar d.o.o. Istočno Sarajevo, ul. Vuka Karadžića 30, 71123 Istočno Sarajevo, Bosnia and Herzegovina - „INZAlab“ – Ispitna laboratorija, ul. Vitomira Lukića 12a, 71000 Sarajevo, Bosnia and Herzegovina, as defined in item 3.1 of this report.

Sample Dimensions:	4900 x 3900 x 80 mm (length x width x thickness) Sample consists four (4) panels.
Sample number:	One (1).
Panel dimension:	Three (3) panel plates - (4900 x 1000 x 80 mm) and – one (1) panel plate (4900 x 900 x 80 mm). Four panel plates compiled into one sample. Note: Sample on inside is tested for effect standard fire inside. White colour of sheet steel (25 µm) – interior and exterior side. Roof system with ribs, distance 250 mm between ribs (top of panel). Quality of sheet steel DX51D+ Z100 (EN 10346 and EN 10143). PIR (polyisocyanurate); 80 mm thickness.
Colour*	
Type of sheet profiling*:	
Isolation core*:	
Steel formwork thickness on the bottom of panel (interior side)*:	0,50 mm (side exposed to fire).
Steel formwork thickness on the top of panel (exterior side)*:	0,50 (side non- exposed to fire).
Material density*:	40 kg/m ³ (±2).
Load*:	Approx 30 kg/m ² ; The complete sample tested for resistance to fire under a load 576 kg, i.e. approx. 30 kg/m ² (approx. 0,29 kN/m ²)
Test angle*:	0°.
Span:	1370 mm.
Documentation:	Attached to the Test Report 03-017/24 .

* Data obtained by the Customer. The testing laboratory disclaims any responsibility for data received from the Customer.

3 Test reports, test and analysis results to support classification

3.1 Test reports

The following Test Report, test results and analyzes were submitted as a basis for this classification:

Laboratoy name	Customer	Report number, issue date and testing date	Test method
Istraživačko razvojni centar d.o.o. Istočno Sarajevo, ul. Vuka Karadžića 30, 71123 Istočno Sarajevo, Bosnia and Herzegovina - „INZAlab“ – Ispitna laboratorija, ul. Vitomira Lukića 12a, 71000 Sarajevo, Bosnia and Herzegovina	METALLEMPORIKI TH. MAKRIS S.A., 6th km Larissa – Sikurio, 41500, Greece	03-017/24 10.06.2024. (28.05.2024.)	BAS EN 1365-2: 2015

3.2 Test results

Criteria	Result
E - cotton test (not applied)	31 minutes
E - crack measurement $\Phi 6\text{mm}$ (not applied)	31 minutes
E - crack measurement $\Phi 25\text{mm}$ (not applied)	31 minutes
E - flame >10s	31 minutes
I - thermal insulation (average)	31 minutes
I - thermal insulation (maximum)	31 minutes
Deformation	31 minutes

Load: approx 30 kg/m².

Test angle: 0°.

Range: 1370 mm.

Limiting deflection = 46,92 mm - is not exceed the criterion: $D = L^2 / (400 \cdot d)$.

Limiting deflection speed = 5,84 mm/min – is not exceeded the criterion: $dD/dt = L^2 / (9000 \cdot d)$.

4 Classification and field of application

4.1. Classification references

This classification has been carried out in accordance with point 7 of the norm BAS EN 13501-2: 2017.

4.2. Classification

Building element: PIR ROOF COVERING PANEL 80 MM, type: "Self – supporting, double skin metal faced (trapezoidal external face) insulating sandwich panel with PIR high index (polyisocyanurate) foam insulating core between, total thickness 80 mm, mounted under angle at 0°, under a load approx. 30 kg/m², manufacturer METALLEMPORIKI TH. MAKRIS S.A., 6th km Larissa – Sikurio, 41500, Greece, can be classified according following combinations performance parameters and class as needed:

R	E	I	W		t	-	M	S	C	IncSlow	sn	ef	r
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In view of the submitted classification test, the following assignments are given to the test unit:

Classification resistance to fire:

RE 20 / RE 30

REI 15 / REI 20 / REI 30

4.3 Field of direct application

Field of direct application for building element: PIR ROOF COVERING PANEL 80 MM, type: "Self – supporting, double skin metal faced (trapezoidal external face) insulating sandwich panel with PIR high index (polyisocyanurate) foam insulating core between, total thickness 80 mm, mounted under angle at 0°, under a load approx. 30 kg/m², manufacturer METALLEMPORIKI TH. MAKRIS S.A., 6th km Larissa – Sikurio, 41500, Greece, according to BAS EN 1365-2:2015 is as follows:

4.3.1 General

The test results are directly applicable to a similar untested floor or roof provided the following is true:

a) With respect to the structural building member:

- The maximum moments and shear forces, which when calculated on the same basis as the test load, shall not be greater than those tested.

b) With respect to the ceiling system (if they were included in the test sample):

- The size of panels of the ceiling lining may be increased by a maximum of 5% but limited to a maximum of 50 mm. The length of the grid members can be increased accordingly.

- The total area occupied by fixtures and fittings relative to the area of the ceiling lining is not increased and maximum tested opening in the lining is not exceeded.

c) With respect to the cavity (if they were included in the test sample):

- The height of the cavity h and the minimum distance d between the ceiling and the structural members are equal to or greater than those tested.

- No material is added to the cavity unless the same amount (in terms of both weight and fire load) of material was included in the test specimen.

d) with respect to the inclination of roof constructions:

- For trussed rafter roof construction, the inclination of the bottom member (chord) is equal to its tested inclination with a tolerance of $\pm 5^\circ$.

- For roofs incorporating one or more purlins, tested at an inclination angle of $\leq 10^\circ$, the results are valid for installation in practice under an angle from 0° up to 80°.

- For apex or monopitch roof construction as defined in 6.3.2 b) to standard BAS EN 1365-2:2015, the inclination is $\pm 15^\circ$ in accordance with Table 1.

Table 1 - Inclination for apex or monopitch roofs

Tested at α from the horizontal	Valid for installation in practice
$\leq 10^\circ$ (nominally 'horizontal')	0° up to 15°
30°	15° up to 45°
Any other angles	$\pm 10^\circ$ from the angle tested up to a limit of 80°

This Report details the method of construction, the test conditions and the results obtained when the specific element of construction described was tested following the procedure outlined in standard BAS EN 1363-1, and where appropriate in standard BAS EN 1363-2. Any significant deviation with respect to size, constructional details, loads, stresses, edge or end conditions other than those allowed under the field of direct application in the test method is not covered by this Report.

5 Limitations

This classification document does not constitute a type approval or product certification.

SIGNED:
Technical manager


Senid Osmanković, MA Mech. Eng.



APPROVED:
Laboratory manager


Senad Džanko, El. Eng.

