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Ljubljana, 9. 4. 2021

CLASSIFICATION REPORT
No. 194/20–530–6

CLASSIFICATION OF FIRE RESISTANCE PERFORMANCE IN ACCORDANCE WITH SIST EN 13501-2:2016

of a roof made of 100 mm thick mineral wool self-supporting double skin metal faced insulating roof panels

MINERAL WOOL ROOF COVERING PANEL

100 mm

Orderer:	**METALLEMPORIKI – TH. MAKRIS S.A., 6th km Larissa-Sikurio, GR-41004 Larissa**
Order/contract:	**Offer No. 141/2020/10.02.2020**
Responsible investigator:	**Simon Grum, M.Eng.**
Head of laboratory:	**Friderik Knez, B.Sc.**
Director:	**Assist. Prof. Dr. Aleš Žnidarič (Civ. Eng.)**

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1. Introduction

This classification report defines the resistance to fire classification assigned to a roof made of 100 mm thick mineral wool (MW) self-supporting double skin metal faced insulating panels **MINERAL WOOL ROOF COVERING PANEL 100 mm** in accordance with the procedures given in SIST EN 13501-2:2016 (identical to EN 13501-2:2016).

2. Information about the product

2.1 General

The roof made of 100 mm thick MW self-supporting double skin metal faced insulating panels **MINERAL WOOL ROOF COVERING PANEL 100 mm** prevents spread of fire from room of origin to an adjacent building considering resistance to fire performance characteristics stated in Clause 5 and 7.3.3 of SIST EN 13501-2:2016.

2.2 Product description

All dimensions in test report are in millimetres.

2.2.1 Composition of the panel

The composition of 100 mm thick MW self-supporting double skin metal faced insulating panel **MINERAL WOOL ROOF COVERING PANEL 100 mm** with 40 mm high trapeze ribs is fully described below and is the following:

- 25 µm thick polyester coating;
- lightly profiled sheet-steel Zn coated trapeze profiled facing, quality DX51D, measured thickness 0,5 mm (exposed side);
- adhesive made of two components, VORAMER AA 3042 Polyol and VORACOR CE 620 Isocyanate produced by DOW EUROPE GmbH, application ratio 170 g/m^2;
- 96 mm thick mineral wool type rock wool core FIBRANGEO B-001 (measured density 121 kg/m^3, nominal density 110 kg/m^3, measured binder content 6,50 %, measured moisture content 0,51 %)
- adhesive made of two components, VORAMER AA 3042 Polyol and VORACOR CE 620 Isocyanate produced by DOW EUROPE GmbH, application ratio 170 g/m^2;
- lightly profiled sheet-steel Zn coated facing, quality DX51D, measured thickness 0,5 mm (unexposed side);
- 25 µm thick polyester coating.

2.2.2 Sealing materials

All visible MW core joint faces between the panels were covered by means of:

- PROMAT Promastop-CC, with application ratio of at least 2000 g/m^2.

All grooves in steel sheet joints of the panels were covered by means of:

- Fire rated sealant Sikacryl-620 Fire, with application ratio of 275 g per meter of a joint.

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2.2.3 Fixing of the panels

Panels are through-fixed to the support construction by means of:

- 200 mm long steel self-drilling screws 6,3 × 200;
- U shaped steel storm washers are placed under steel self-drilling screws;
- each panel is through-fixed from the unexposed side to each support beam at the top of every trapeze rib;
- the panels are through-fixed between each other from the unexposed side at the overlapping steel sheet joints between the panels;

2.2.4 Joint fixing

Additional joint-stitching self-tapping screws 4,2 × 16 mm are used on both exposed and unexposed side to fix the overlapping joints between the panels on every 250 mm of a joint.

2.2.5 Span

The maximum span between the support beams is 2250 mm.

The roof made of 100 mm thick MW self-supporting double skin metal faced insulating panels **MINERAL WOOL ROOF COVERING PANEL 100 mm** is fully described in the test report provided in support of classification detailed in clause 3.1.

3. Test reports and test results in support of the classification

3.1 Test reports

No	Laboratory	Name of sponsor	Test reports No.	Test method
[1]	ZAG Ljubljana	METALLEMPORIKI – TH. MAKRIS S.A.	194/20-530-5	SIST EN 1365-2:2014 (identical to EN 1365-2:2014)

3.2 Test results

The roof is not symmetrical over its thickness. The trapeze lightly profiled sheet-steel facing is positioned on the unexposed side and the lightly profiled sheet-steel facing is positioned on the exposed side.

Test report	Parameter	Results
[1]	Applied load	300 N/m^2
	Load-bearing capacity (R): - maximum deflection - maximum deflection and rate of deflection	181 minutes no failure 181 minutes no failure 181 minutes no failure
	Integrity (E) - sustained flaming on the unexposed side - ignition of cotton pad - cracks or openings in excess of given dimensions	181 minutes no failure 181 minutes no failure 181 minutes no failure 181 minutes no failure
	Insulation (I) - mean temperature rise >140 °C - maximum temperature rise >180 °C	171 minutes 171 minutes 181 minutes no failure

Test report	Parameter	Results
	Radiation (W) - time to exceed 15 kW/m2	-

4. Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with Clause 7.3.3 of SIST EN 13501-2:2016.

4.2 Classification

The roof made of 100 mm thick MW self-supporting double skin metal faced insulating panels **MINERAL WOOL ROOF COVERING PANEL 100 mm** is classified according to the following combinations of performance parameters and classes as appropriate. No other classification is allowed.

RE		20	30		60	90	120
REI	15	20	30	45	60	90	120

Fire resistance classification: RE 120 / REI 120

4.3 Field of application

This classification is valid for roofs made of 100 mm thick MW self-supporting double skin metal faced insulating panels **MINERAL WOOL ROOF COVERING PANEL 100 mm**.

According to SIST EN 1365-2:2014 are the test results directly applicable to similar untested roof constructions, provided the following is true:

4.3.1 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.

4.3.2 With respect to the inclination of the roof construction:

- For apex or monopitch roof construction the inclination is valid for installation in practice from 0°up to 15°.

Any other changes are not permitted.

For calculation of a load-bearing capacity regarding the distances between the supporting structures, the load-bearing capacity of the unexposed trapeze profiled sheet-steel facing has to be taken into consideration.

Standard SIST EN 1365-2:2014 is identical to EN 1365-2:2014.

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5. Limitations

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

	Name	Signature	Date
Person undertaking classification:	Simon Grum, M.Eng.		9. 4. 2021
Person authorising this report:	Dominik Gerdej, B.Sc.		9. 4. 2021

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