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AND CIVIL ENGINEERING
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www.zag.si**CLASSIFICATION REPORT
226/22-530-2-EN**CLASSIFICATION OF FIRE RESISTANCE
PERFORMANCE IN ACCORDANCE WITH
SIST EN 13501-2:2016of a roof made of 150 mm thick mineral wool
self-supporting double skin metal faced insulating
roof panels**MINERAL WOOL ROOF COVERING PANEL
150 mm**Orderer: **METALLEMPORIKI – TH. MAKRIS S.A.,
6th km Larissa-Sikurio, GR-41004 Larissa, Greece**Order/contract: **Offer No. 235/2022/1. 3. 2022**Responsible investigator: **Simon Grum, mag. inž. str.**Head of laboratory: **Friderik Knez, univ. dipl. fiz.**Director: **doc. dr. Aleš Žnidarič, univ. dipl. inž. grad.**Date: **16. 12. 2022**The report was internally reviewed and approved by all listed persons, which is confirmed by the electronic signature. Document authenticity check: www.zag.si/pristnost

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1. Introduction

This classification report defines the resistance to fire classification assigned to a roof made of 150 mm thick mineral wool (MW) self-supporting double skin metal faced insulating panels **MINERAL WOOL ROOF COVERING PANEL 150 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 150 mm thick MW self-supporting double skin metal faced insulating panels **MINERAL WOOL ROOF COVERING PANEL 150 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 150 mm thick MW self-supporting double skin metal faced insulating panel **MINERAL WOOL ROOF COVERING PANEL 150 mm** with 42 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 S250 + Z100, measured thickness 0,5 mm (exposed side);
- adhesive made of two components, VORAMER AA 3042 Polyol and VORACOR CD 526 Isocyanate produced by DOW EUROPE GmbH, application ratio 170 g/m²;
- 150 mm thick mineral wool type rock wool core FIBRANGEО BL-50c (measured density 98 kg/m³, nominal density 100 kg/m³, measured binder content 4,66 %, measured moisture content 0,26 %);
- adhesive made of two components, VORAMER AA 3042 Polyol and VORACOR CE 620 Isocyanate produced by DOW EUROPE GmbH, application ratio 170 g/m²;
- 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 925 g/m².

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

- Fire stopping acrylic Promat Promaseal-A white, with application ratio of at least 19 g per meter of a joint.

2.2.3 Fixing of the panels

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

- 280 mm long steel self-drilling screws 6,3 × 280;
- 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 4,3 × 19 mm are used on both exposed and unexposed side to fix the overlapping joints between the panels on every 430 mm of a joint.

2.2.5 Span

The maximum span between the support beams is 2250 mm.

The roof made of 150 mm thick MW self-supporting double skin metal faced insulating panels **MINERAL WOOL ROOF COVERING PANEL 150 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.	226/22-530-1-EN	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):	241 minutes no failure
	- maximum deflection	241 minutes no failure
	- maximum deflection and rate of deflection	241 minutes no failure
[1]	Integrity (E)	241 minutes no failure
	- sustained flaming on the unexposed side	241 minutes no failure
	- ignition of cotton pad	241 minutes no failure
	- cracks or openings in excess of given dimensions	241 minutes no failure
[1]	Insulation (I)	241 minutes no failure
	- mean temperature rise >140 °C	241 minutes no failure
	- maximum temperature rise >180 °C	241 minutes no failure

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 150 mm thick MW self-supporting double skin metal faced insulating panels **MINERAL WOOL ROOF COVERING PANEL 150 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	180	240
REI	15	20	30	45	60	90	120	180	240

Fire resistance classification: RE 240 / REI 240

4.3 Field of application

This classification is valid for roofs made of 150 mm thick MW self-supporting double skin metal faced insulating panels **MINERAL WOOL ROOF COVERING PANEL 150 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.

5. Limitations

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

	Name	Signature	Date
Person undertaking classification:	Simon Grum, mag. inž. str.		16. 12. 2022
Person authorising this report:	Dominik Gerdej, univ. dipl. inž. str.		16. 12. 2022

