

Complex of Research Laboratories
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Laboratory of Fire Tests (LP)

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AB 023

**Classification Report in a Scope of Roof Resistance to an Influence of
External Fire for the Product**
Roof made of boards of trading name LS-TECH-R25 M-0

6011.6/11/R01NK

for

Owner of the Classification Report

L.S. Tech-Homes Sp. z o.o.
ul. Korna 7/4
43-300 Bielsko-Biała

Contract no: 6011/11/R01NK**1 Introduction**

This classification report gives classification for a roof made of boards of trading name LS-TECH-R25 M-0 according to the procedure presented in PN-EN 13501-5+A1:2009.

2 Description of the roof/ roof covering

The roof made of boards of trading name LS-TECH-R25 M-0 with steel roofing tile covering and a vapour barrier membrane.

Boards of trading name LS-TECH-R25 M-0 250 mm thick consists of a styrofoam core of density about 20 kg/m³. The inner cladding is a board of trading name MgO Green-LS-TECH 11 mm thick. The outer cladding is the OSB board 12 mm thick. The claddings of boards LS-TECH-R25 M-0 are joined with the core by polyurethane glue. The joints between boards LS-TECH-R25 M-0 are made by flat bars of the OSB board 130 mm wide and 12 mm thick and they are screwed additionally by fasteners in spacing each 340 mm.

The details of the board joint construction are given in the annex to the classification. On the OSB board cladding there is a vapour barrier membrane about 1,5 mm thick, then a construction of wooden tile battens and counter-tile battens is fixed by screws. Steel roofing tile of a metal sheet about 0,5 mm thick is fixed to the construction by sheet metal screws. Boards LS-TECH-R25 M-0 are produced by firm L.S. Tech-Homes Sp. z o.o.

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3. Reports of tests and results constituting basis of the classification

3.1 Test reports

Laboratory name	Client's name	Test Report Number	Metoda badawcza
ITB Laboratory of Fire Tests	L.S. Tech-Homes Sp. z o.o.	LP10-6011/11/R01 NK	PN-ENV 1187:2004 (test 1)

3.2 Test results for roof made of boards LS-TECH-R25 M-O 250 mm thick.

Parameter	Criteria	Sample test results			Conformity
		1	2	3	
Internal fire spread upwards	< 0.700 m	0,0	0,0	0,0	Yes
External fire spread upwards	< 0.700 m	0,0	0,0	0,0	Yes
Internal fire spread downwards	< 0.600 m	0,0	0,0	0,0	Yes
External fire spread downwards	< 0.600 m	0,0	0,0	0,0	Yes
Maximum inner burnt length	< 0.800 m	0,0	0,0	0,0	Yes
Maximum outer burnt length	< 0.800 m	0,0	0,0	0,0	Yes
Burning drops/peel-offs from the exposed side	No	No	No	No	Yes
Burning drops/peel-offs from the bottom	No	No	No	No	Yes
Single holes	< 25 mm ²	Lack	Lack	Lack	Yes
Sum of total holes	< 4500 mm ²	0,0	0,0	0,0	Yes
Lateral fire spread	To the edge*	No	No	No	Yes
Inner glowing combustion	No	No	No	No	Yes
Promień rozprzestrzeniania ognia (dachy płaskie)	< 0.200 m	<i>no applicable</i>	<i>no applicable</i>	<i>no applicable</i>	<i>no applicable</i>

* - measurement zone edges

Test conditions: Air temperature: 11,3°C

Tests were conducted at the roof pitch 15° and 45°

4 Classification and an application scope

4.1 References

The classification was determined according to PN-EN 13501-5+A1:2009.

4.2 Classification

The roof made of boards LS-TECH-R25 M-0 in the system described in point 2 of this classification report was classified in a scope of the external fire resistance as follows:

$$B_{\text{roof}}(t_1)$$

This classification is valid for end applications according to the technical conditions, which buildings and their location should meet and like for a "flame retardant" element acc. Ordinance of the Minister of Infrastructure dated 12th April 2002 (Journal of Law No 75 of 15th June 2002, item 690 as amended).

4.3 Application scope

This classification is valid for the following conditions:

- 1) The roof made of boards LS-TECH-R25 M-0 in the system described in point 2 of this classification report.
- 2) The roof made of boards LS-TECH-R25 M-0 of any pitch in the system described in point 2 of this classification report
- 3) The roof made of boards LS-TECH-R25 M-0 in the system described in point 2 of this classification report with steel roofing tile or metal sheet covering of the minimal thickness 0,5 mm with paint coatings, of which a calorific value does not exceed 8 MJ/m² and vapour permeable membranes and vapour-tight foils 1,5 mm thick.

5 Limitations

5.1 Validity

Classification is valid for three years that is until 22.11.2014, provided there are no changes of the composition and the production technology.

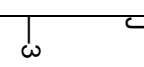
5.2 Restrictions

The classification can be copied only by the Client as the whole including the annexes without comments, abbreviations or changes.

Certified copies can be issued by ITB Laboratory of Fire Tests only at an application of the report's Owner

5.3 Warning

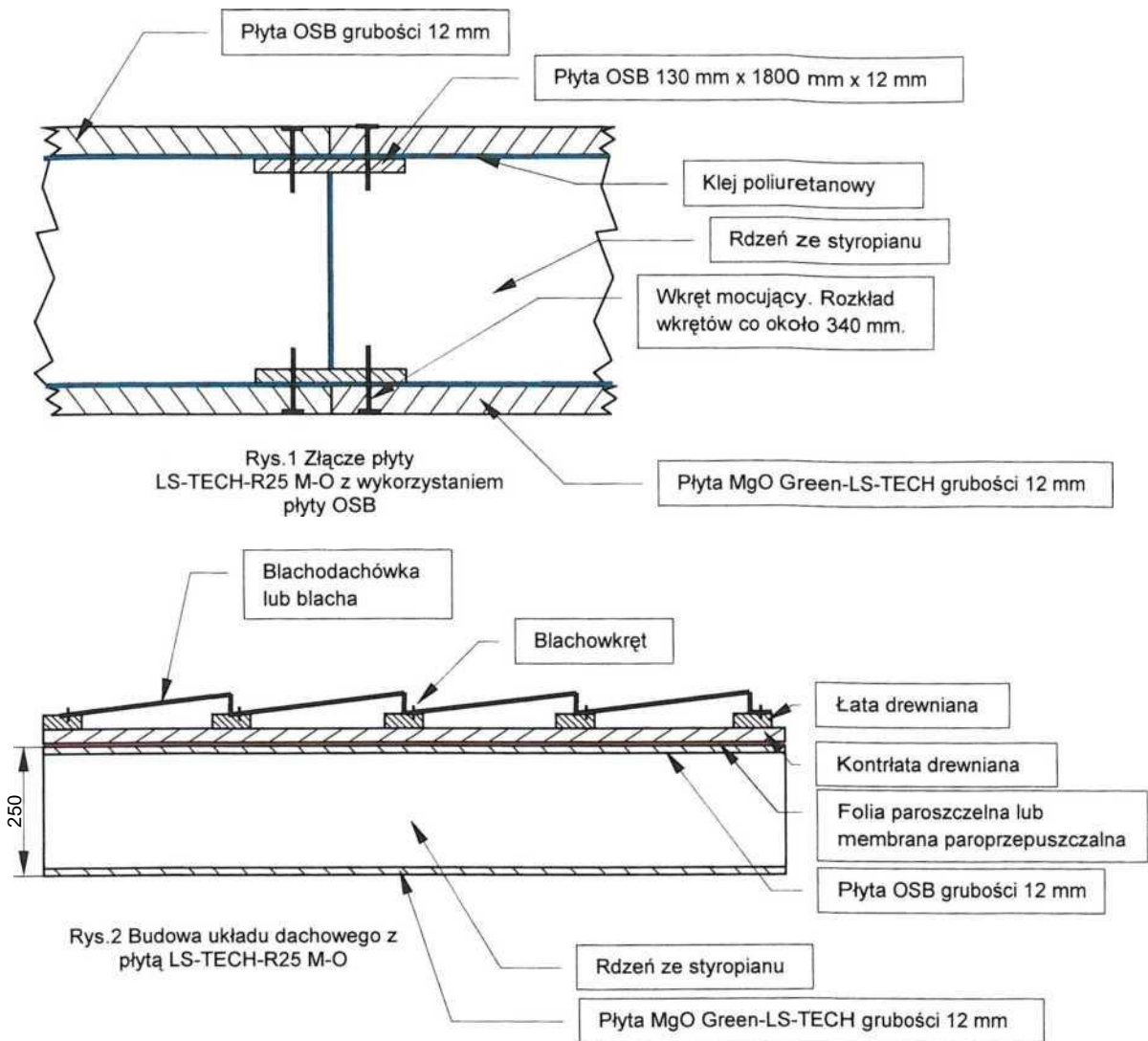
This European standard is not a document of a type of an approval or a certificate.

	Name and surname	Signature*	Date
Prepared by	Bartłomiej Papis		22.11.2011
Checked by	Andrzej Kolbrecki		22.11.2011

* - on behalf of the organization preparing the report

HEAD of Laboratory of Fire Tests

dr Andrzej Borowy



OSB Board 12 mm thick

Board OSB 130 mm x 1800 mm x 12 mm
Polyurethane glue

Styrofoam core

Fixing screw. Spacing of screws about each 340mm

Board MgO Green LS-TECH 12 mm thick

Fig.1 A joint of board LS-TECH-R25 M-O with use of board OSB

Steel roofing tile or metal sheet

Metal sheet screw

Wooden tile batten

Wooden counter-tile batten

Vapour-tight foil or vapour permeable membrane

Styrofoam core

Board MgO Green LS-TECH 12 mm thick

Fig.2 A construction of the roof system with board LS-TECH-R25 M-O