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FIRE RESISTANCE CLASSIFICATION REPORT

Subject of classification: *Loadbearing floors and roofs with fire separating function according to ČSN EN 13501-2:2017, cl. 7.3.3*

Identification number:

PK2-03-05-005-E-3

Name and type of element:

Wooden loadbearing roof construction with ceiling made of GKF KNAUF boards

Sponsor:

CIUR a. s.
*Malé náměstí 142/3
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Czech Republic*

Issuing organization:

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*Authorized body 216
Notified body 1391
Accredited certification body for product certification No. 3041
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1. INTRODUCTION

- 1.1. This Classification Report defines the resistance to fire classification assigned to the element in accordance with the procedures given in ČSN EN 13501-2:2017.
- 1.2. This Classification Report consists of 4 pages and may only be used or reproduced in its entirety.
- 1.3. This Classification Report is a translation of the Classification Report No. PK2-03-05-005-C-3 dated December 16th, 2019.

2. DETAILS ON THE CLASSIFIED ELEMENT

2.1. General

The wooden loadbearing roof construction with ceiling made of GKF KNAUF boards has been defined as an element of loadbearing construction with a fire separating function with regards to its parameters of fire resistance mentioned in cl. 5 of ČSN EN 13501-2:2017.

2.2. Description

- ◆ Wooden ceiling construction of 303 mm in total thickness;
- ◆ Loadbearing beams (planks) of 43 x 180 mm, in axial spans of 930 mm (4 pcs / 3000 mm of width);
- ◆ Shutter made of planks 24 mm in thickness nailed to the loadbearing beams; the joints are covered with another board of 100 mm in width;
- ◆ There is a vapour barrier stretched on the lower edge of the beams and the space between the wooden beams is filled with Climatizer Plus blown cellulose insulation of 180 mm in thickness and of 35 kg/m³ in density;
- ◆ Single-layer ceiling grate made of steel CD profiles at a spacing of 500 mm is attached to the beams by means of straight hinges. The profiles are attached to the straight hinges with a pair of KNAUF LN 3.5 x 11 mm screws, the straight hinges are screwed to the beams with KNAUF FN 4.3 x 40 mm screws;
- ◆ The perimeter wall is levelled with the ceiling using strips of GKF KNAUF board of 15 mm in thickness and of 100 mm in width, with the lower edge of the grate matching the perimeter wall and serving as a barrier against the flame penetration into the insulation space;
- ◆ One layer of GKF KNAUF plasterboards of 15 mm in thickness (DF according to ČSN EN 520 + A1, RED Piano as a trade name). The boards are screwed to the profiles with KNAUF TN screws 3.5 x 35 mm at a spacing of 170 mm. The joints between the boards and around the perimeter of the ceiling are filled with KNAUF Uniflott sealant with inserted glass tape. The perimeter gaps around the walls are treated with Trenwandkitt sealant.

Static scheme and loading

- ◆ simple beam, theoretical span 4200 mm;
- ◆ a pair of loads in the thirds of the theoretical span of loadbearing beams deriving a bending moment corresponding to a uniform continuous load of 0.875 kN/m of the beam (without the empty weight of the construction).

Manufacturer of the tested specimen: *CIUR a. s.*

The detailed description of the product including drawing is given in Test Report No. *Pr-05-1.02.088* dated May 20th, 2005.

3. TEST REPORTS / EXTENDED APPLICATION REPORTS AND TEST RESULTS IN SUPPORT OF THE CLASSIFICATION

3.1. Test reports / extended application reports

Name of laboratory Address Accreditation number	Sponsor of the Report	Report number Date of issue	Test method
PAVUS, a. s. Veselí nad Lužnicí ATL No. 1026 Czech Republic	CIUR a. s. Malé náměstí 142/3 110 00 Praha 1 Czech Republic	Pr-05-1.02.088 2005-05-20	ČSN EN 1365-2

3.2. Stress conditions and test results

Test method, Report number Data of issue	Parameter	
ČSN EN 1365-2 Pr-05-1.02.088 2005-05-20	Fire scenario	Standard temperature / time curve
	Direction of fire exposure	From below
	Applied load	A pair of loads – see cl. 2.2
	Supporting conditions	Simple beam, span 4200 mm
	Loadbearing capacity (R)	
	- Limiting deflection	33 minutes
	- Limiting rate of deflection	33 minutes
	Integrity (E)	
	- Cotton pad	33 minutes, no failure ¹⁾
	- Gap gauges	33 minutes, no failure ¹⁾
	- Sustained flaming	31 minutes, no failure ¹⁾
	Insulation (I)	
	- Average temperature	33 minutes, not attained ¹⁾
	- Maximum temperature	33 minutes, not attained ¹⁾

¹⁾ According to ČSN EN 13501-2 cl. 5.2.2.1 and cl. 5.2.3.2 the performance criteria "Integrity" and "Insulation" shall automatically be assumed not to be satisfied when the "loadbearing capacity" criterion ceases to be satisfied.

4. CLASSIFICATION AND FIELD OF APPLICATION

4.1. Reference

This classification has been carried out in accordance with ČSN EN 13501-2:2017 cl. 7.

The test was carried out in accordance with ČSN EN 1365-2:2000 and assessed using ČSN EN 1365-2:2017.

4.2. Classification

The wooden loadbearing roof construction with ceiling made of GKF KNAUF boards has been classified according to the following combinations of performance parameters and fire resistance classes:

REI 30

4.3. Field of application

The results of the fire resistance test of the specimen – **wooden loadbearing roof construction with ceiling made of GKF KNAUF** – can be applied directly to similar construction – in accordance with ČSN EN 13501-2:2017 and ČSN EN 1365-2:2017 – where one or more changes listed below are made and the construction continues to comply with the appropriate design code for its stiffness and stability:

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.

With respect to the cavity:

- The height of the cavity or cavities is equal to or greater than the height tested.
- No combustible or insulating material is added to the cavity unless the same amount (fire load) of combustible or insulating material was included in the test specimen.

With respect to the inclination of roof constructions:

- The results of the elements tested horizontally are valid for installations in practice $0^{\circ} \pm 15^{\circ}$.

5. LIMITATIONS

This classification has been extended on the basis of sponsor declaration that he did not change the production technology and the individual components of the product, nor their suppliers, and the fact that there was no change in the test methodology according to which the tests used for this classification were performed.

The sponsor may request the issuing authority to review the influence of changes to the classification validity.


The time limitation of the validity of this Classification Report is 5 years after the issue date of this Report.


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

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