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CLASSIFICATION REPORT OF FIRE RESISTANCE

Subject of classification:

Loadbearing floors and roofs with fire-separating function according to ČSN EN 13501-2:2017, clause 7.3.3

Report No.:

PK2-03-22-013-E-0

Product name:

**Wooden ceiling construction made of load-bearing panels
Novatop Element 160 mm - type A2, REI30**

Sponsor:

AGROP NOVA, a.s.
Ptenský Dvorek 99
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Czech Republic

Prepared by:

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Notified Body 1391
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1 INTRODUCTION

- 1.1 This classification report defines the resistance to fire classification assigned to 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.

2 DETAILS OF CLASSIFIED ELEMENT

2.1 General

Element - *wooden ceiling construction made of load-bearing panels Novatop Element 160 mm - type A2, REI30* - is defined as a loadbearing ceiling construction with a fire separating function considering the characteristics of the properties stated in clause 5 of ČSN EN 13501-2:2017.

2.2 Description

The subject matter of the classification is the wooden ceiling construction made of load-bearing panels Novatop Element 160 mm - type A2, REI30. Panels are made of SWP boards (manufacturer AGROP NOVA a.s.). SWP boards are multilayer boards with density of 490 kg/m³ and consists of glued lamellas made of coniferous sawn timber dried to 8 ±2% (larch tree 12%). Each layer of the boards is made of lamellas made of solid wood.

Total ceiling dimensions are 3000 x 4500 x 160 mm (width x length x thickness).

- ◆ Composition of the panel with tongue on the top (top to bottom):
 - the top cover is made of one 27 mm thick SWP board with dimensions 4500 x 2130 mm, the board extends 30 mm over the longitudinal timber, i.e. the side of the panel - it forms the tongue for connection with the next panel;
 - construction of the load-bearing timbers:
 - SWP boards with a height of 106 mm and length of 2090 mm at a maximum spacing of 800 mm are used as transverse timbers, 7 timbers are used per 4.5 m of panel length, i.e. one front face of the panel is covered with a SWP board of 60 mm thickness and all other timbers are made of SWP boards of 42 mm thickness, the transverse timbers are provided with cut-outs for crossing with the longitudinal timbers;
 - SWP boards with a height of 106 mm and a length of 4500 mm at a maximum spacing of 340 mm are used as longitudinal timbers, 7 timbers per 2.1 m of panel width are used, i.e. the side of the panel without tongue is covered with SWP board 60 mm thick, all other timbers are made of SWP boards 27 mm thick;
 - the bottom cover is made of one SWP board 27 mm thick with dimensions 4500 x 2100 mm.
- ◆ Composition of the panel with grooves from the top (top to bottom):
 - the top cover is made of one 27 mm thick SWP board with dimensions 4500 x 860 mm, the board is 30 mm smaller to create the longitudinal groove for the connection to the next panel;
 - construction of the load-bearing timbers:
 - SWP boards with a height of 106 mm and length of 890 mm at a maximum spacing of 800 mm are used as transverse timbers, 7 timbers are used per 4.5 m of panel length, i.e. one front face of the panel is covered with a SWP board of 60 mm thickness and all other timbers are made of SWP boards of 42 mm thickness, the transverse timbers are provided with cut-outs for crossing with the longitudinal timbers;
 - SWP boards with a height of 106 mm and a length of 4500 mm at a maximum spacing of 340 mm are used as longitudinal timbers, 4 timbers per 0.9 m of panel width are used, i.e. both sides of the panel are covered with SWP boards 60 mm thick, two internal timbers are made of SWP boards 27 mm thick;
 - the bottom cover is made of one SWP board 27 mm thick with dimensions 4500 x 900 mm.
 - all parts of the panels are glued together using Jowapur[®] polyurethane adhesive type 681.20 (manufacturer Jowat SE);
 - all wooden parts of the panels are without coating; panel cavities without filling.
- ◆ Longitudinal joint between panels (tongue and groove):
 - tongue is formed by extending the upper SWP board over the edge of the panel by 30 mm, when the panels are pushed together the tongue extends 20 mm over the groove of the second panel, after the panels are pushed together there remains a longitudinal gap of approx. 10 mm width on the upper surface and between the side longitudinal timbers of the panels due to the dragging of the bottom SWP boards of both panels by approx. 5 mm over their side timbers;

- PROMASEAL[®] LX 10 mm intumescent tape 1.8 mm thick (manufacturer Promat s.r.o.) is glued on the panel with a groove, the tape is glued into the milled groove along the entire upper edge of the bottom SWP board;
- panels are connected to each other in the longitudinal joint - screws TX40 with disc head \varnothing 8x100 mm (supplier VALENTA ZT s.r.o.) are diagonally drilled through top surface tongue to groove, 10 pieces of screws in spacings of max. 500 mm are used.

Static design and load:

- ◆ plain beam with a span of 4.3 m;
- ◆ loads substituting the uniform continuous load of 1.7 kN/m²;
- ◆ internal forces from loads applied to the plain beam 1 m wide:
 - at mid-span of the construction $M_{\max} = 3,929$ kN.m
 - in the supports $Q_a = Q_b = 3.655$ kN

The manufacturer of the tested element is *AGROP NOVA, a.s.*

Detailed description of the product with drawings is in the Test Report No. Pr-22-2.204 issued on 24th November 2022.

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	Name of sponsor	Test report No Date of the fire test Date of issue	Test standard and date
<i>PAVUS, a. s.</i> <i>Veselí nad Lužnicí</i> <i>AZL No. 1026</i> <i>Czech Republic</i>	<i>AGROP NOVA, a.s.</i> <i>Ptenský Dvorek 99</i> <i>79843 Ptení</i> <i>Czech Republic</i>	<i>Pr-22-2.204</i> <i>2022-10-27</i> <i>2022-11-24</i>	<i>ČSN EN 1365-2:2017</i>

3.2 Tests results

Test method Test report No Date of issue	Parameter	
<i>ČSN EN 1365-2</i> <i>Pr-22-2.204</i> <i>2022-11-24</i>	Fire scenario	<i>Standard temperature / time curve</i>
	Direction of fire exposure	<i>from below</i>
	Applied load	<i>Static loads replacing the uniform continuous load of 1.7 kN/m²</i>
	Supporting conditions	<i>Simple beam of span 4300 mm</i>
	Loadbearing capacity (R)	
	- deflection	<i>40 minut</i>
	- rate of deflection	<i>40 minut</i>
	Integrity (E)	
	- cotton pad	<i>40 minut</i> ¹⁾
	- gap gauges	<i>40 minut</i> ¹⁾
	- sustained flaming	<i>40 minut</i> ¹⁾
	Insulation (I)	
	- average temperature	<i>40 minut</i> ¹⁾
	- maximum temperature	<i>40 minut</i> ¹⁾

¹⁾ The performance criteria "integrity" and "insulation" shall automatically be assumed not to be satisfied when the "loadbearing capacity" criterion ceases to be satisfied (according to ČSN EN 1363-1:2021 cl. 11.4.1).

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 ČSN EN 13501-2:2017. The test was performed according to ČSN EN 1365-2:2017, the test method and test conditions met the requirements of ČSN EN 1365-2:2015.

4.2 Classification

Element - wooden ceiling construction made of load-bearing panels **Novatop Element 160 mm - typ A2, REI30** - is classified according to the following combinations of performance parameters and classes.

Classification of fire resistance:

REI 30 / RE 30

thermal exposure from below

4.3 Field of application

This classification applies to the following final use applications in accordance with EN 1365-2. The test results can be directly applied to similar untested ceiling structures provided the following applies:

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, see Article 2.2 of this document.

with respect to the cavity:

- The height of the cavity and the minimum distance between the ceiling and the structural members are equal to or greater than those tested.
- No combustible or insulating material is added to the cavity (load-bearing wooden profiles) unless the same amount (in terms of both weight and fire load) of material was included in the test specimen.

with respect to the inclination of roof constructions:

- The results of the elements tested with an inclination $\leq 10^\circ$ may be applied for an inclination of $0^\circ + 15^\circ$.

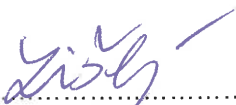
5 LIMITATIONS

This classification is valid unless the conditions, under which it was issued, have been changed (i.e., until the materials used, the composition or design of the product or the technical regulations relating to the product change).

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

This Classification Report does not represent type approval or certification of the product.

Elaborated by:



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