

**FIRE RESISTANCE EXPERT JUDGEMENT REPORT
WITH CLASSIFICATION FIRES-JR-011-12-NURE Edition 2**

Wall made of sandwich panels KS1000 TL100 IPN, PIR core, 100 mm thick

This is an electronic version of a classification report which was made as a copy of classification report officially issued in a paper form. The electronic version of a classification report shall be used only for informative purpose. Any information listed in this classification report is the property of the sponsor and shall not be used or published without written permission. Contents of this file may only be modified by the editor i.e. FIRES, s.r.o., Batizovce. Sponsor is allowed to publish this classification report in parts only with written permission of the editor.

FIRE RESISTANCE EXPERT JUDGEMENT REPORT WITH CLASSIFICATION

FIRES-JR-011-12-NURE
Edition 2

Name of the product: Wall made of sandwich panels KS1000 TL100 IPN, PIR core, 100 mm thick

Sponsor: Kingspan Sp. Z o.o.
ul. Przemysłowa 20,
27-300 Lipsko
Poland

Prepared by: FIRES, s.r.o.
Approved Body No. SK01
Osloboditeľov 282
059 35 Batizovce
Slovak Republic

Notified Body No.: 1396

Task No.: PR-12-0045

Date of issue: 12. 05. 2015

Reports: 3
Copy No.: 2

Distribution list:

Copy No. 1 FIRES, s. r. o., Osloboditeľov 282, 059 35 Batizovce, Slovak Republic
(electronic version)
Copy No. 2 Kingspan Sp. Z o.o., ul. Przemysłowa 20, 27-300 Lipsko, Poland
(electronic version)
Copy No. 3 Kingspan Sp. Z o.o., ul. Przemysłowa 20, 27-300 Lipsko, Poland

This expert judgement report consists of 5 pages and may only be used or reproduced in its entirety.



1. INTRODUCTION

This expert judgement report with classification defines the resistance to fire classification assigned to element Wall made of sandwich panels KS1000 TL100 IPN, PIR core, 100 mm thick in accordance with the classes given in EN 13501-2 + A1: 2009.

This expert judgement report defines field of application which is outside the field of direct application according test standard or outside the field of extended application according to relevant extended application standard. This expert judgement expresses the opinion of the FIRES and is based on the experience or internal rules of FIRES.

This classification report is a second edition of the classification report FIRES-JR-011-12-NURE, issued by FIRES, s.r.o. on 09. 02. 2012 valid until 09. 02. 2017 and was elaborated in order to correct the mistake at product description in clause No. 2.2. This report supersedes all its previous editions.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The element, Wall made of sandwich panels KS1000 TL100 IPN, PIR core, 100 mm thick, is defined as a non-loadbearing wall with fire separating function used as either partition or external wall acc. to EN 14509.

2.2 PRODUCT DESCRIPTION

Non-loadbearing wall is made of horizontally or vertically oriented sandwich panels KS1000 TL100 IPN, PIR core, 100 mm thick with symmetrical joints.

Dimensions

modular panel width	1000 mm
panel thickness	100 mm
overlap of joints	21,5 mm

Panel core

Polyisocyanurate foam type IPN and IPN2, with bulk density of $40 \pm 4 \text{ kg/m}^3$ (manufacturer: Kingspan).

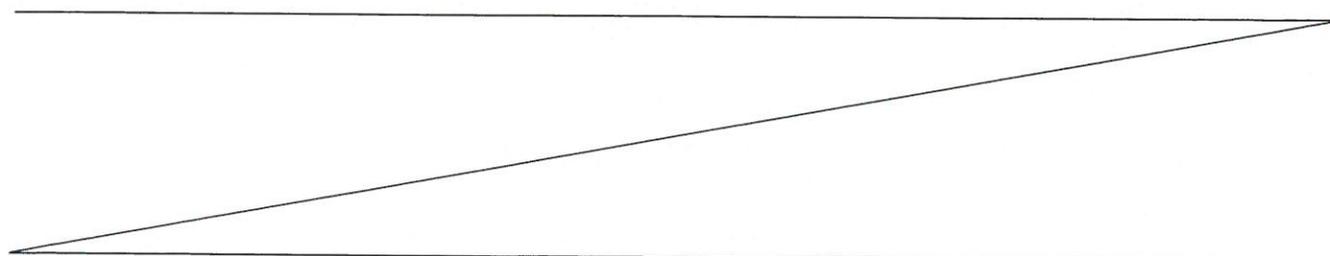
Panel covering

- exterior steel sheet 0,6 mm thick, grade of steel 220GD (manufacturer: U. S. steel) with PES coat 25 μm thick, profile geometry: B;
- interior steel sheet 0,4 mm thick, grade of steel 220GD (manufacturer: U. S. steel) with PES coat 25 μm thick, profile geometry: B;

More detailed information about product construction is shown in drawings of the test report.

2.3 PRODUCT FIXING

Panels are fixed to the steel profiles by steel self-drilling screws JT3-D-12H-5,5/6,3 x 135, 2 pieces on each panels edge in spacing of 1000 mm.





3. TEST REPORTS AND EXTENDED APPLICATION REPORTS IN SUPPORT OF CLASSIFICATION

3.1 TEST REPORTS AND EXTENDED APPLICATION REPORTS

No.	Name of laboratory	Name of sponsor	Test report No.	Date of the test	Test method
[1]	PAVÚS a.s., Praha, ČR	Kingspan a.s. Hradec Králové Česka republika	Pr-09-2.055	27. 05. 2009	ČSN EN 1364 -1

[1] Test specimens were conditioned according to EN 1363-1 before the fire resistance test

3.2 TEST RESULTS

No./ Test method	Parameter	Results	
[1] STN EN 1363-1	applied load	-	
	supporting construction	250 mm thick aerated concrete blocks with bulk density of 500 kg.m ⁻³	
	temperature curve	standard temperature time curve	
	loadbearing capacity	-	
	integrity	cotton pad	62 minutes no failure
		gap gauges	62 minutes no failure
		sustained flaming	62 minutes no failure
	thermal insulation	average temperature	62 minutes no failure
		maximum temperature	34 minutes
	radiation		62 minutes no failure

[1] The test was discontinued in 63rd minute at the request of test sponsor.

4. CHANGES OF THE PRODUCT OR END USE CONDITIONS OUTSIDE OF THE FIELD OF DIRECT OR EXTENDED APPLICATION

Following changes of the product or end use conditions were permitted:

- Using of the panels Kingspan KS1000 TL100 IPN without sealing tape Bauseal.

5. ARGUMENTS IN FAVOR OF THE EXTENSION

- The wall made of the sandwich panels Kingspan KS1000 TL100 IPN was tested with sealing tape inside the joints of the panels on external specimen side. Sealing tape Bauseal (illbruck Bau-Technik GmbH) is based on flame retardant polyurethane foam and it has no influence to fire resistance (acc. TZÚS 0800/246/11, issued by TZÚS, Praha 04. 11. 2011). This sealing tape is used to prevent water penetration.

6. CLASSIFICATION AND FIELD OF APPLICATION

6.1 REFERENCE OF CLASSIFICATION

Classification of partition has been carried out in accordance with classes defined in clause 7.5.2 of EN 13501-2 + A1: 2009.

Classification of external wall has been carried out in accordance with classes defined in 7.5.3 of EN 13501-2 + A1: 2009.



6.2 CLASSIFICATION

6.2.1 CLASSIFICATION OF PARTITION

The element, Wall made of sandwich panels KS1000 TL100 IPN, PIR core, 100 mm thick, is classified according to the following combinations of performance parameters and classes as appropriate.

**Fire resistance classification:
E 60 / EI 30 / EW 60**

6.2.2 CLASSIFICATION OF EXTERNAL WALL

The element, Wall made of sandwich panels KS1000 TL100 IPN, PIR core, 100 mm thick, is classified according to the following combinations of performance parameters and classes as appropriate.

**Fire resistance classification:
E 60 (i↔o) / EI 30 (i↔o) / EW 60 (i↔o)**

6.3 FIELD OF APPLICATION

This classification is valid for the following end use applications:

Metal facings	changes in thickness of metal facing is allowed up to ± 50%;
	changes in geometry of metal facing is allowed;
	all grades of normal steel can be used;
Core	density of core can be changed in the range of ± 10%;
	the same chemical system and blowing agent shall be preserved;
Panel orientations	vertical or horizontal orientation of sandwich panels is allowed;
Change of the dimensions	decrease in the panels width is allowed;
	maximum 20% increase in the panels width is allowed;
	increase in the thickness of panel core is allowed;
	in case of wall made of horizontally oriented sandwich panels: <ul style="list-style-type: none"> - the height of the wall can be increased on condition that each panel is fixed to the bearing structure in such a way that the load is not accumulated from above to the lower parts of the wall; - the width of the wall can be increased on condition that individual panels of the wall are fixed to the (vertically oriented) load-bearing profiles (supports) in maximum span of 4 000 mm provided that expansion allowances are increased pro-rata;
	in case of wall made of vertically oriented sandwich panels: <ul style="list-style-type: none"> - the length (width) of the wall can be increased without restriction; - the height of the wall can be increased on condition that individual panels of the wall are fixed to the (horizontally oriented) load-bearing profiles (supports) in maximum span of 4 000 mm provided that expansion allowances are increased pro-rata;
Span length	decrease in distance between supports is allowed (< 3 000 mm).



7. LIMITATIONS

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

The classification is valid until 09. 02. 2017 provided that the product, field of application and standards and regulations are not changed.

Approved:

Signed:

Ing. Štefan Rástocký
leader of the testing laboratory



Bc. Dávid Šubert
technician of the testing laboratory

Mestercamp