LABORATORIJ ZA TOPLINSKA MJERENJA d.o.o.
(*LABORATORY FOR THERMAL MEASUREMENTS Ltd.*)
Laboratory
Stubička Slatina 26, 49243 Oroslavje, Croatia
Tel. ++385-(0)49-27-40-21, Fax ++385-(0)49-27-40-04;
e-mail: ltm@ltm.hr; web: www.ltm.hr

17025·HAA 1104 TEST

FIRE RESISTANCE CLASSIFICATION REPORT
FOR CONSTRUCTION PRODUCTS ACCORDING TO
HRN EN 13501-2:2023

No. R-4372/19-1 Rev.1 (English version)
Date of issue: 02/07/2024

Sponsor:	IN d.o.o., Međugorska 34b, 88320 Ljubuški, BOSNIA & HERZEGOVINA
Prepared by:	LTM d.o.o. / Laboratory, Stubička Slatina 26, 49243 Oroslavje, CROATIA
Number of notified body:	NB 2483
Product type:	FIRE RESISTANT NON-LOADBEARING WALL MADE OF REINFORCED CONCRETE THERMOPANELS (with vertical joint)
Product name:	**AB - TB26/90/120**
Manufacturer:	IN d.o.o., Međugorska 34b, 88320 Ljubuški, BOSNIA & HERZEGOVINA

This report replaces the classification report R-4372/19-1 dated 24/09/2019

LABORATORIJ ZA TOPLINSKA MJERENJA Stubička Slatina 26 LTM Oroslavje d.o.o.

The laboratory has been accredited by the:	CROATIAN ACCREDITATION AGENCY – HAA
The laboratory has been notified by the:	EUROPEAN COMMISSION (NB)
The laboratory has been approved by the:	MINISTRY OF CONSTRUCTION AND PHYSICAL PLANNING CROATIAN REGISTER OF SHIPPING

INTRODUCTION

This classification report determines the fire resistance of the product specimen, FIRE RESISTANT NON-LOADBEARING WALL MADE OF REINFORCED CONCRETE THERMOPANELS, named **AB - TB26/90/120** in line with procedures specified in the standard HRN EN 13501-2:2023. Standards applied in product testing and evaluation are specified in chapter 2.

1. BASIC DATA OF THE SPECIMEN

1.1 Intended use:

FIRE RESISTANT NON-LOADBEARING WALL MADE OF REINFORCED CONCRETE THERMOPANELS, named **AB - TB26/90/120** is defined as a non-loadbearing wall element with fire resistance. Its intended use is to prevent the spread of fire between two fire compartments.

1.2 Description:

Test specimen dimensions are 3000x3000x260mm (width x height x thickness).
The specimen is composed of two concrete panels of different dimensions. The panels consist of three basic layers. On both sides there is class C30/37 concrete. The thickness of the concrete of the loadbearing layer is 120 mm, and the thickness of the concrete of the façade layer is 60 mm, of the manufacturer GP KRK d.d. The panels are reinforced with ribbed reinforcing steel type B500B of Ø8 mm dimension in combination with reinforcement mesh type Q131, of the manufacturer ArcelorMittal Zenica d.o.o. Between concrete layers there is stone wool insulation of 120 kg/m^3 density, of 80 mm thickness, type KI SmartRoof Thermal, manufacturer Knauf Insulation.
The internal (loadbearing) layer of the panel is connected to the external (façade) layer of the panel with connecting anchors type ThermoPin H210 (42 pcs/9 m^2) and type ThermoPin D295 (21 pcs/9 m^2), manufacturer BT Innovation, Germany.
The panels are placed on the loadbearing supporting construction using appropriate connecting steel elements connected to the foreseen supporting structure by bolted connection. After assembly and fixation of panels, stone wool rope, type FC A1, manufacturer Knauf Insulation, is inserted in the joint between panels and in the joint with the supporting construction, and for sealing panel joints, intumescent sealant is used, type Sittol silicon basso modulo, manufacturer Torggler Chimica Spa, Italy.

2. APPLIED STANDARDS

HRN EN 1363-1:2012 Fire resistance tests – Part 1: General requirements (EN 1363-1:2012)

HRN EN 1364-1:2015 Fire resistance tests for non-loadbearing elements – Part 1: Walls (EN 1364-1:2015)

HRN EN 13501-2:2023 Fire classification of construction products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services (EN 13501-2:2023)

LABORATORIJ ZA TOPLINSKA MJERENJA d.o.o. Slavonska Slatina 26 LTM Oroslavje

3. TEST REPORT

Laboratory name	Sponsor	Test report no.	Test method
LTM d.o.o., Stubička Slatina 26, 49243 Oroslavje, CROATIA	MUCIĆ & CO d.o.o., Međugorska 34, 88320 Ljubuški, BOSNIA & HERZEGOVINA	I-4372/19-1 (10/09/2019)	HRN EN 1364-1:2015

4. TEST RESULTS

Test method and report number	Parameters	Test results
HRN EN 1364-1:2015 I-4372/19-1 (10/09/2019)	Temperature curve	standard temperature-time curve
	Direction of placing panels	vertical
	Maximum dimension of panels on the specimen	2500x3000x260 mm (w x h x d)
	Deflection (< 100 mm)	> 121 min.
	E - Integrity: - excessive cracks - ignition of the cotton pad - sustained flaming	 > 121 min. > 121 min. > 121 min.
	I - Insulation: - average temperature increase >140 K - maximum temperature increase >180 K	 > 121 min. > 121 min.
	W - Thermal radiation >15 kW/m^2	-

(-) Not measured, as temperature increase over 300°C was not expected.

5. CLASSIFICATION AND FIELD OF DIRECT APPLICATION

5.1 Classification references: This classification has been carried out in accordance with the standard HRN EN 13501-2:2023, clause 7.5.2.

5.2 Classification: FIRE RESISTANT NON-LOADBEARING WALL MADE OF REINFORCED CONCRETE THERMOPANELS, named **AB - TB26/90/120** has been classified into classes according to the following example of possible combinations of properties and classes, applicable for this element.

R	**E**	**I**	**W**		**t**	**t**	**-**	**M**	**S**	**-**	**C**	**IncSlow**	**sn**	**ef**	**r**

This product can be classified into one of the following classes.
No other classifications are permitted.

E	15	20	30	45	60	90	120
EI	15	20	30	45	60	90	120
EW	15	20	30	45	60	90	120

Fire resistance classification (maximum classes):

E 120* / EI 120* / EW 120*

*** The declared fire resistance classification is only valid when the fire occurs on the inner side of the wall (on the side of the 120 mm thick concrete element)**

LABORATORIJ ZA TOPLINSKA MJERENJA d.o.o. Slavonska Slatina 26 LTM Oroslavje

5.3 Field of direct application:

In the field of direct application for the FIRE RESISTANT NON-LOADBEARING WALL MADE OF REINFORCED CONCRETE THERMOPANELS, named **AB - TB26/90/120**, the following changes in relation to the tested specimen are permitted:

- wall height reduction,
- wall thickness increase,
- components thickness increase,
- reduction of linear dimensions of panels, but not thickness,
- reduction of distance of loadbearing profiles,
- reduction of distance of fixations,
- increase in the number of vertical joints of tested type,
- vertical joints of tested type,
- increase of wall height by up to 1,0 m from the tested (up to 4,0 m of height) for vertically arranged panels,
- unlimited increase of wall width for vertically arranged panels,
- installation into massive supporting constructions with the same or higher fire resistance than the tested specimen is permitted.

5.4 Limitations:

This classification report does not represent approval or product certification.

The classification report validity period depends on the validity period of the test report (i.e. until the product, product standard, field of direct application of the product, standards related to the product or legal regulations change) and is valid up to/in valid 5 years.

The authorized institution can extend the validity of this report after the expiry of this period.

This report is valid until 02/07/2029.

CLASSIFICATION PREPARED BY:

.....

(Marin Žuljević, Master in Occ. Saf.)

Stamp place

DIRECTOR:

.....

(Tomislav Skušić, BSc.)