



TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.
Technical and Testing Institute for Construction Prague

Akreditovaná zkušební laboratoř, Autorizovaná osoba, Notifikovaná osoba, Oznamovaný subjekt, Subjekt pro technické posuzování, Certifikační orgán, Inspekční orgán / Accredited Testing Laboratory, Authorised Body, Notified Body, Technical Assessment Body, Certification Body, Inspection Body.



Centrální laboratoř – zkušebna Ostrava
Central laboratory – Testing department Ostrava

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zkušební laboratoř č. 1018.3
akreditovaná podle ČSN EN ISO/IEC 17025:2018 Českým institutem pro akreditaci, o.p.s.
Testing Laboratory No. 1018.3
accredited pursuant to ČSN EN ISO/IEC 17025:2018 by Czech Accreditation Institute

PROTOKOL TEST REPORT

č. / No. 070-061531

o klasifikaci reakce na oheň podle EN 13501-1
on the classification of the reaction to fire according to EN 13501-1

Objednavatel: **Elit Plast Ltd.co**
Ordering Party:
Adresa: **23 Vostochnaya, 41-a, Kherson, Ukraine**
Address:
IČO: **314885021034**
Company ID:
Výrobce: **Elit Plast Ltd.co**
Manufacturer:
Zkušební vzorek: **Desky z extrudovaného polystyrenu (XPS) Penoboard™**
Test sample: **Boards from extruded polystyrene (XPS) Penoboard™**
Zakázka č.: **Z070220158**
Order No.:
Počet stran protokolu včetně strany titulní: **3** Počet stran příloh: **8**
Number of pages of the test report incl. title page: **3** Pages of annexes: **8**

Vypracoval:
Prepared by:

Ing. Tomáš Klepáč
zkušební technik - specialista
test technician - specialist

Schválil:
Approved by:



Ing. Bohdana Zámečníková
vedoucí zkušebny
head of the Testing Department

Výtisk č. /
Print No.: **4**
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11.07.2022, Ostrava

Prohlášení: 1) Výsledky zkoušek v tomto protokolu uvedené se vztahují pouze ke zkoušenému předmětu a nenahrazují jiné dokumenty.
2) Bez písemného souhlasu zkušební laboratoře se nesmí protokol reprodukovat jinak, než celý.
3) Vyhodnocení výsledků podle normy bylo provedeno mimo rámec činnosti akreditované zkušební laboratoře.
Declaration: 1) The test results in this Report relate only to the tested article and they do not substitute any other documents.
2) The Test Report must be copied as a whole only otherwise a written consent of the testing laboratory is needed.
3) Evaluation of the test results in accordance with a standard was performed beyond competence of the testing laboratory.

1 Údaje o vzorku / Sample data

Číslo vzorku: VZ070220355
Evidence Number:

Vzorek: Desky z extrudovaného polystyrenu (XPS) Penoboard™
Sample: Boards from extruded polystyrene (XPS) Penoboard™

Objednávka / smlouva: Z070220158
Order / contract:

Datum odběru / dodání: 23.05.2022
Date of sampling / sample delivery:

Místo odběru: sklad výrobce.
Sampling place: warehouse of the manufacturer.

Metoda odběru: náhodný odběr ze skladu výrobce.
Sampling method: random selection from the product warehouse.

Způsob přípravy vzorku: dodané desky izolantu byly rozřezány mechanickými nástroji na požadované rozměry.
Method of the sample preparation: supplied slabs the insulation product were cut by mechanical tools to prescribed dimensions.

Údaje o podmínkách při odběru, příp. plán a postup odběru, jméno pracovníka provádějícího odběr jsou uvedeny v zápisu o odběru vzorků, který je uložen ve zkušebně. Výsledky zkoušek se vztahují ke vzorku, jak byl přijat.
Data on sampling conditions, plan and procedure of sampling and name of the person who performed sampling are stated in the Sampling Minutes that are stored in the Testing Department. The test results relate to the sample as received.

2 Zkušební metody / Test methods

V rámci rozsahu akreditace / within the scope of the accreditation:

ČSN EN 13164+A1 Tepelněizolační výrobky pro budovy – Průmyslově vyráběné výrobky z extrudovaného polystyrenu (XPS) – Specifikace
Thermal insulation products for buildings – Factory made extruded polystyrene foam (XPS) products – Specification

EN 13501-1 *) Fire classification of construction products and building elements - Part 1: Classification using test data from reaction to fire tests

*) Klasifikace stavebních výrobků a konstrukce staveb - Klasifikace podle výsledků zkoušek reakce na oheň byla provedena ve spolupráci s PAVUS, a.s., Praha, pobočka Veselí nad Lužnicí. Při stanovení byl použit postup výše uvedené laboratoře. Tato laboratoř je akreditována ČIA a je registrována pod číslem 1026.2

*) Classification of construction products and building construction - Classification according to the results of reaction to fire tests was performed in cooperation with PAVUS, a.s., Prague, Veselí nad Lužnicí branch. The above laboratory procedure was used for the determination. This laboratory is accredited by ČIA and is registered under number 1026.2

Odchylky od normového postupu nebo použití nenormových metod: nebyly uplatněny.
Deviations from a standard procedure or the use of non-standardized methods: were not applied.



3 Výsledky zkoušek / Test results

Zkoušky byly provedeny dne: 17.06.2022

The tests were performed on:

Místo provedení zkoušek: Laboratoře zkušebny PAVÚS Veselí nad Lužnicí

Place of testing: Laboratory of the Testing Department PAVÚS Veselí nad Lužnicí

Zkoušky vykonal: Ing. Pavla Hejná

The tests were performed by:

Údaje o podmínkách při provádění zkoušky a o použitém zkušebním zařízení jsou uvedeny v záznamech o zkoušce. Použité přístroje a měřidla jsou ověřovány a kalibrovány podle platného plánu zkušebny PAVÚS Veselí nad Lužnicí.

Data on the person who performed the test, test conditions and equipment used are listed in the test minutes. Apparatuses and measuring instruments used for testing have been verified pursuant to the valid plan of the Testing Department PAVÚS Veselí nad Lužnicí.

3.1 Klasifikace podle EN 13501-1 / Classification according to EN 13501-1

Výsledky stanovení jsou uvedeny v následující tabulce/ *For test results see in the following table table.*

Tabulka – Reakce na oheň - klasifikace / Table - Reaction to fire – Classification

Reakce na oheň – klasifikace / Reaction to fire - Classification	
Desky z extrudovaného polystyrenu (XPS) Penoboard™ / Boards from extruded polystyrene (XPS) Penoboard™	
Reakce na oheň - klasifikace (platí pro tloušťku 20 mm a výše) / Reaction to fire - Classification (applies to a thickness 20 mm and more)	E

4 Příloha / Attachment

- 4.1 Protokol č. Pr-22-1.091-En o zkouškách reakce na oheň pro výrobek pro výrobek – Desky z extrudovaného polystyrenu (XPS).
Protocol No. Pr-22-1.091-En on reaction to fire tests for a product for a product - Boards from extruded polystyrene (XPS).
- 4.2 Protokol č. PK1-01-22-049-E-0 o klasifikaci reakce na oheň podle EN 13501-1 pro výrobek - Desky z extrudovaného polystyrenu (XPS).
Protocol No. PK1-01-22-049-E-0 on the classification of the reaction to fire according to EN 13501-1 for a product - Boards from extruded polystyrene (XPS).

KONEC PROTOKOLU / END OF THE TEST REPORT



Příloha 4.1 / Attachment 4.1



Order No.: Z210220167

PAVUS, a.s.

AUTHORIZED BODY 216
NOTIFIED BODY 1391
ACCREDITED TESTING LABORATORY
EGOLF MEMBER



FIRE TESTING LABORATORY VESELÍ NAD LUŽNICÍ

Testing Laboratory No. 1026 accredited by ČIA
Notified Testing Laboratory
Workplace Veselí nad Lužnicí

**REACTION TO FIRE
TESTS REPORT**

No. Pr-22-1.091-En

Issued on 2022-06-24

For product

Boards from extruded polystyrene (XPS)

Objednatel: **Technický a zkušební ústav stavební Praha, s.p.**
Pobočka Ostrava
U Studia 14
700 30 Ostrava - Zábřeh
Česká republika

Pro firmu: **Elit Plast Ltd.co**
23 Vostochnaya
41-a, Kherson
Ukraine

Test method:

EN ISO 11925-2
» Reaction to fire tests - Ignitability of building products
subjected to direct impingement of flame
- Part 2: Single-flame source test «

Report contains: 5 pages
(4 text pages + 1 annex)

No. of copies: 2
Copy No.: 1

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Phone: +420 285 019 537

Branch Veselí nad Lužnicí
Čtvrť J. Hybeše 879, 391 81 Veselí nad Lužnicí, Czech Republic, mail to: veseli@pavus.cz
Phone: +420 381 477 418



Report No: Pr-22-1.091-En

Page 2 (out of 5)

1 INTRODUCTION

Reaction to fire tests of the product Boards from extruded polystyrene (XPS) were performed based on the order of the company Technický a zkušební ústav stavební Praha, s.p. - pobočka Ostrava in Fire Testing Laboratory PAVUS, a.s. Veselí nad Lužnicí.

The tests have been prepared, performed and evaluated on the following background papers:

- [1] EN ISO 11925-2:2020 Reaction to fire tests – Ignitability of building products subjected to direct impingement of flame – Part 2: Single-flame source test
- [2] EN 13238:2010 Reaction to fire tests for building products – Conditioning procedures and general rules for selection of substrates
- [3] Cover form delivered by the sponsor
- [4] ILAC-G17:01/2021 Guidelines for Measurement Uncertainty in Testing
- [5] JCGM 100:2008 GUM 1995 with minor corrections, Evaluation of measurement data – Guide to the expression of uncertainty in measurement (Available from www.BIPM.org.)

For the purposes of this report the definitions stated in [1] and [2] are valid together with following abbreviations:

ČIA Český institut pro akreditaci, o.p.s. (Czech Accreditation Institute)
ATL accredited testing laboratory
FTL fire technical laboratory

2 TEST SUBJECT

Acc. to [3]:	Product name:	Boards from extruded polystyrene (XPS)
	Product identification:	Boards from extruded polystyrene
	Producer:	manufacturing plant Elit Plast Ltd.co, St. Mykulynetska 46, Ternopol, Ukraine
	Product thickness:	20±60 mm
	Density:	(24.0+28.0) kg/m ³
	Product use:	as thermal insulation of floors, walls, foundations, for production of sandwich panels and for thermal insulation of installations and industrial equipment
	Sampling procedure:	by sponsor without ATL participation
	Date of specimen delivery:	2022-05-23
	Measured thickness:	20 mm, 60 mm
	Measured density:	27.57 kg/m ³
	Conditioning:	according [2]

The subjects of the test were 12 test specimens Boards from extruded polystyrene (XPS) with dimension of 250 x 90 mm x 20 mm and 12 test specimens Boards from extruded polystyrene (XPS) with dimension of 250 x 90 mm x 60 mm without substrate acc. [2].

3 TEST PERFORMANCE

3.1 General

Tests were performed according to [1] clause 7.3.3.1 - Surface exposure
clause 7.3.3.2 - Edge exposure

Deviations from the test method: no

Used testing and gauging equipment is listed in Annex A.

The tests were performed in the room V218 of FTL on the 17th June 2022 The ambient air temperature was 24 °C at 38 % of relative air humidity.



3.2 Test methods

Surface exposure

The surface of individual vertically oriented samples in order 1 to 6 is exposed to the flame in the vertical axis of the test specimen, 40 mm above its bottom edge. A small burner moves at 45° angle horizontally to the test specimen until the flame reaches a pre-determined contact point. From the first contact moment of the specimen with the flame, the small burner is allowed to operate for 30 seconds and it is removed.

Edge exposure:

Individual vertically oriented samples in order 1 to 6 are exposed to the flame in the centre of test specimen. The small burner is moved in parallel towards the specimen at the angle of 45°, till the flame will reach the pre-set contact point. From the first contact moment of the specimen with the flame the small burner is left to act for the period of 30 seconds and it is removed.

The following items are evaluated: the flame spread above 150 mm from the contact point of the test flame; the time, in which it is occurred; the ignition of the filter paper located under the specimen. The possible flame spread, within 60 seconds after applying the small burner flame, is monitored.

4 TEST RESULTS

Expression of the results according to [1] cl. 8:

4.1 Surface exposure according to [1] cl. 7.3.3.1, thickness of 20 mm

Test number	Specimen ignition (yes - no)	Height of flame tip (mm)	Time (s) for the flame to reach a distance of 150 mm above the small burner impingement	Filter paper ignition (yes - no)
1	yes	120	-	no
2	yes	120	-	no
3	yes	140	-	no
4	yes	120	-	no
5	yes	120	-	no
6	yes	140	-	no

After the contact of the small flame burning of specimens in the high approximately of 120+140 mm were occurred. The filter paper did not burn.

4.2 Edge exposure according to [1] cl. 7.3.3.2, thickness of 20 mm

Test number	Specimen ignition (yes - no)	Height of flame tip (mm)	Time (s) for the flame to reach a distance of 150 mm above the small burner impingement	Filter paper ignition (yes - no)
1	yes	140	-	no
2	yes	140	-	no
3	yes	140	-	no
4	yes	140	-	no
5	yes	140	-	no
6	yes	140	-	no

After the contact of the small flame burning of specimens in the high approximately of 140 mm were occurred. The filter paper did not burn.

4.3 Surface exposure according to [1] cl. 7.3.3.1, thickness of 60 mm

Test number	Specimen ignition (yes - no)	Height of flame tip (mm)	Time (s) for the flame to reach a distance of 150 mm above the small burner impingement	Filter paper ignition (yes - no)
1	yes	120	-	no
2	yes	120	-	no
3	yes	120	-	no
4	yes	120	-	no
5	yes	140	-	no
6	yes	100	-	no

After the contact of the small flame burning of specimens in the high approximately of 120+140 mm were occurred. The filter paper did not burn.

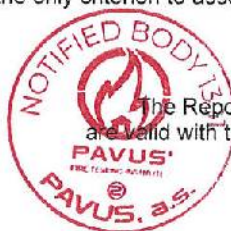
4.4 Edge exposure according to [1] cl. 7.3.3.2, thickness of 60 mm

Test number	Specimen ignition (yes - no)	Height of flame tip (mm)	Time (s) for the flame to reach a distance of 150 mm above the small burner impingement	Filter paper ignition (yes - no)
1	yes	120	-	no
2	yes	140	-	no
3	yes	120	-	no
4	yes	140	-	no
5	yes	140	-	no
6	yes	140	-	no

After the contact of the small flame burning of specimens in the high approximately of 120+140 mm were occurred. The filter paper did not burn.

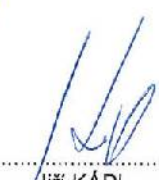
4.5 Application of Test Results

The test results apply to the behaviour of the product's test bodies to be tested under specific test conditions and they are not meant the only criterion to assess the possibility of fire hazard of the product when used.



The Report and Annex sheets
are valid with the embossed stamp only

Elaborated by: 
Pavla HEJNÁ
ATL Engineer

Approved by: 
Jiří KAPL
ATL Manager



ANNEX A: TESTING AND MEASURING EQUIPMENT, MEASUREMENT UNCERTAINTY

Testing equipment:	Registration number:
Test chamber	0061
Test hood with ventilation system	0061
Test piece fastening device	0061
Small gas burner with a fine valve	0061
45° angle gauge	0061
Pattern of specimen dimension	0061
Flame meter	0061
Burner spacers	0061
Desiccator	0070
Conditioning air chamber PO 2	0125

Measuring equipment:	Metrological registration number:
Stop-watch	3 05 13
Thermo-hygro-baro-graf D 4130	3 13 08
Calliper 150 mm	3 01 52
Tape measure SUPRA 5 m	3 01 67
Digital balance KERN EW 6000	3 04 09
Thermoanemometer FV	3 08 23
Datalogger ALMEMO 2590-9	3 10 32

Metrological relationships of the device are specified in the metrological registration card of the device, which is expressly identified by the metrological registration number of the device.

Measured quantity	Extended measurement uncertainty
Time	1 s
Ambient air temperature	< 2 °C
Ambient air relative humidity	3 %
Linear measures	0.1 mm
Air flow rate	0.1 m/s

The reported expanded uncertainties of measurement are stated as the standard uncertainties of measurement multiplied by the coverage factor $k = 2$, which for a normal distribution corresponds to a coverage probability of approximately 95 %, see [4] and [5].

Příloha 4.2 / Attachment 4.2



PAVUS, a.s.

AUTHORIZED BODY AB 216
NOTIFIED BODY 1391
ACCREDITED CERTIFICATION BODY FOR PRODUCT CERTIFICATION No. 3041

Address:
Prosecká 412/74, 190 00 Prague 9 –
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Phone: 286 019 587, E-mail: mail@pavus.cz
http://www.pavus.cz

Branch:
Fire testing laboratory Veselí nad Lužnicí
Čtvrť J. Hybeše 879, 391 81 Veselí nad Lužnicí
Phone: 381 477 418, E-mail: vesel@pavus.cz

REACTION TO FIRE CLASSIFICATION REPORT

**Subject of
classification:**

*Construction products excluding floorings and linear pipe thermal
insulation products in accordance with
EN 13501-1:2018, clause 11*

Report No.:

PK1-01-22-049-E-0

Product name:

Boards from extruded polystyrene (XPS)

Sponsor:

Technický a zkušební ústav stavební Praha, s.p.
Pobočka Ostrava
U Studia 14
700 30 Ostrava - Záběh
Czech Republic

For company:

Elit Plast Ltd.co
23 Vostochnaya
41-a, Kherson
Ukraine

Prepared by:

PAVUS, a.s.
Accredited certification body for product certification No. 3041
- accreditation issued by Czech Accreditation Institute, p. s. c.,
- Certificate of Accreditation No. 314/2021
Prosecká 412/74
190 00 PRAGUE 9
Czech Republic

Order No. Z210220167

Date of Issue:

2022-06-27

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1 INTRODUCTION

- 1.1 This Classification Report specifies classification method for *Boards from extruded polystyrene (XPS)* in conformity with the procedures set forth in EN 13501-1:2018.
- 1.2 This Classification Report has 3 pages and it can be used or reproduced as a whole only.

2 DETAILS OF CLASSIFIED PRODUCT

2.1 General

The product *Boards from extruded polystyrene (XPS)* is manufactured by the company Elit Plast Ltd.co, 23 Vostochnaya, 41-a, Kherson, Ukraine in the manufacturing plant Elit Plast Ltd.co, St. Mykulynetska 46, Ternopol, Ukraine. The product is used as thermal insulation of floors, walls, foundations, for production of sandwich panels and for thermal insulation of installations and industrial equipment.

2.2 Product description

Thickness: 20+60 mm
Density: (24.0+28.0) kg/m³
Composition: XPS

3 REPORTS AND RESULTS IN SUPPORT OF THIS CLASSIFICATION

3.1 Reports

Name of the Laboratory Address Accreditation number:	Name of sponsor of the Test Report	Report number Date of issue	Test method
PAVUS, a.s. Veselí nad Lužnicí AZL č. 1026	Technický a zkušební ústav stavební Praha, s.p. Pobočka Ostrava U Studia 14 700 30 Ostrava - Zábřeh Česká republika	Pr-22-1.091 2022-06-24	EN ISO 11925-2:2020

3.2 Results

Test method	Parameter	Number of tests	Results	
			Continuous parameter-mean	Compliance with parameters
EN ISO 11925-2 Surface exposure Thickness of 20 mm	$F_s \leq 150$ mm up to 20 s Filter paper non-ignition	6	- -	yes (E) yes (d0)
EN ISO 11925-2 Surface exposure Thickness of 20 mm	$F_s \leq 150$ mm up to 20 s Filter paper non-ignition	6	- -	yes (E) yes (d0)
EN ISO 11925-2 Surface exposure Thickness of 60 mm	$F_s \leq 150$ mm up to 20 s Filter paper non-ignition	6	- -	yes (E) yes (d0)
EN ISO 11925-2 Edge exposure Thickness of 60 mm	$F_s \leq 150$ mm up to 20 s Filter paper non-ignition	6	- -	yes (E) yes (d0)

4 CLASSIFICATION AND FIELD OF APPLICATION

4.1 Reference of classification

This classification has been carried out in accordance with clause 11, EN 13501-1:2018.

4.2 Classification

The product – *Boards from extruded polystyrene (XPS)* – in relation to its reaction to fire behaviour is classified:

Reaction to fire classification: E

4.3 Field of application

This classification is valid for the following product parameters:

Thickness: 20 mm and more
Density: (24.0÷28.0) kg/m³
Composition: cannot be changed

The classification is valid for the following end use applications:

The product *Boards from extruded polystyrene (XPS)* is intended for using in accordance with clause 2.2 of this report.

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 on the classification validity.

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

Elaborated by:



Pavla HEJNÁ
Fire testing laboratory

Approved by:



Jan TRIPES

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391 81 Veselí nad Lužnicí
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(5)

