



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

Akreditovaná zkušební laboratoř, Autorizovaná osoba, Certifikační orgán, Notifikovaná osoba, Inspekční orgán  
Accredited Testing Laboratory, Authorized Body, Certification Body, Notified Body, Inspection Body  
Prosecká 811/76a, 190 00 Praha 9 - Prosek, Czech Republic

Authorized Body 204

Notified Body 1020

Branch 0100 - Praha

# REPORT

on the initial type tests: thermal conductivity, thickness, compressive stress at 10 % deformation, long term water absorption by immersion, release of dangerous substances and reaction to fire

pursuant to Article 5 Clause 1 b) of the Czech Republic Government Decree No. 190/2002 Coll. (system of conformity assessment 3), and in compliance with the Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products (the Construction Products Directive or CPD), as later amended

No. 1020 - CPD – 010029328

Trade name:

Thermal insulation products for buildings - Factory made products of expanded polystyrene (EPS)

Type/variant: HEKİMPOR 16 kg/m<sup>3</sup> WHITE

Manufacturer:

HEKİM YAPI ENDÜSTRİ SAN. VE TİC. A.Ş

Address: MERKEZ: GÜZELYALI MAH, İSTASYON CAD. EGEMEN SOK,  
NO:11/2 PENDİK/İSTANBUL TURKEY

Plant: HEKİM YAPI ENDÜSTRİ SAN. VE TİC. A.Ş

Address: SAKARYA 2, ORGANİZE SAN. BÖL. PK.19 HENDEK/SAKARYA TURKEY

Order: Z 010 12 0003

Number of Report pages including title page: 6

Number of Annexes: 0

This Report is only a part of the complete initial type-testing report.

The person taking responsibility for the content of this report:

  
Ing. Michal Vindyš  
Head Assessor

The person taking responsibility for correctness of this report:

Stamp of Notified body 1020  
Praha, 25 January 2012



  
Ing. Iveta Jiroutová  
Deputy Manager of the Notified Body 1020

Note: This Report may not be reproduced otherwise but complete without a written consent of the notified body deputy manager.  
Technical and Test Institute for Construction Prague, branch 0100-Praha, Prosecká 811/76a, 190 00 Praha 9, Czech Republic  
Phone:+420 286 019 400, fax:+420 286 891 393, e-mail: info@tzus.cz, http://www.tzus.cz  
Bank connection: KB Praha 1 Czech Republic, account No.: 1501-931/0100, ID: 000 15679, VAT: CZ00015679

## 1 Specification of tested subject

Information about the product – description and intended use:

Factory made products of expanded polystyrene which are used for the thermal insulation of buildings. The blowing agent in production of EPS is pentane  $C_5H_{12}$ . The content is 2-7% of pentane as a raw material during the production, after the production the content decreases to 0%. The products are manufactured in the form of sheets. EPS containing no CFCs or HCFCs.

Technical specification: EN 13163:2008

Types:

HEKİMPOR 16 kg/m<sup>3</sup> WHITE

Information about the manufacturer:

HEKİM YAPI ENDÜSTRİ SAN. VE TİC. A.Ş

MERKEZ: GÜZELYALI MAH, İSTASYON CAD. EGEMEN SOK, NO:11/2 PENDİK/İSTANBUL  
TURKEY

Information about the plant:

HEKİM YAPI ENDÜSTRİ SAN. VE TİC. A.Ş

SAKARYA 2,ORGANİZE SAN. BÖL. PK.19 HENDEK/SAKARYA TURKEY

## 2 Sampling

Date of sampling and delivery: 07.10.2011 (fire tests), 04.08.2011,14.10.2011 (mechanical tests)

Place of sampling: ERA LABORATUVARLARI A. Ş.

Sampling method: EN 13163

Transport mode: by the Manufacturer

## 3 Testing methods, standards and procedures

The tests were carried out according to harmonized standard EN 13163:2008

EN 13163 Thermal insulation products for Buildings – Factory made products of expanded polystyrene (EPS) - Specification

Test methods:

EN 823 Thermal insulating products for building applications - Determination of thickness

EN 826 Thermal insulating products for building applications - Determination of compression behaviour

EN 1602 Thermal insulating products for building applications - Determination of apparent density

EN 12087 Thermal insulating products for building applications - Determination of long-term water absorption by immersion

EN 12667 Thermal performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat flow meter methods - Products of high and medium thermal resistance

- EN ISO 11925-2 Reaction to fire tests - Ignitability of building products subjected to direct impingement of flame - Part 2: Single-flame source test
- EN 13501-1+A1 Fire classification of construction products and building elements - Part 1: Classification using test data from reaction to fire tests

#### 4 Test results

Starting and ending dates of tests: 09.08.2011 – 04.11.2011

The test specimens were conditioned before testing at the temperature (23±2) °C and relative humidity (50±5) % and then were tested.

Result of the test of Reaction to fire was taken from the Classification report No ERA-11-076, issued 31.10.2011 by ERA LABORATUVARLARI A.Ş., Fire Test Laboratory, Accredited Body No. AB-0330-T, Notified Body 2184, Tümsan 1 Sanayi Sitesi 8. Blok No:25 İkitelli /Küçükçekmece, 34308 İSTANBUL Turkey

Test reports Nr. FTST112556 from 31.10.2011 on Fire and technical Characteristics according to TS EN ISO 11925-2, Annex A, ERA LABORATUVARLARI A. Ş., Tümsan 1 Sanayi Sitesi 8. Blok, No:25 İkitelli /Küçükçekmece, 34308 İSTANBUL, Turkey

Results of the tests (determination of thickness, long term water absorption by immersion, thermal conductivity and compressive stress at 10 % deformation) were taken from the Test protocols issued by accredited testing laboratory CEVKAK

Test Report AB-0247-T 133-293 11-11 from 24.11.2011, Determination of thickness according to EN 823, Expanded polystyrene foam (EPS) HEKİMPOR 16 kg/m<sup>3</sup> WHITE, CEVKAK

Test Reports AB-0247-T 133-295 11-11 from 24.11.2011, Determination of long term water absorption by immersion according to EN 12087, Expanded polystyrene foam (EPS) HEKİMPOR 16 kg/m<sup>3</sup> WHITE, CEVKAK

Test Report AB-0247-T 133-294 11-11 from 24.11.2011, Determination of compressive stress at 10 % deformation according to EN 826, Expanded polystyrene foam (EPS) HEKİMPOR 16 kg/m<sup>3</sup> WHITE, CEVKAK

Test Report AB-0247-T 133-210 09-11 from 12.09.2011, Determination of thermal conductivity according to EN 12677, Expanded polystyrene foam (EPS) HEKİMPOR 16 kg/m<sup>3</sup> WHITE, CEVKAK

Declaration of producer "Release of Dangerous Substances" cl. 4.3.15. of EN 13163, 05.12.2011

EC Declaration of Conformity, CE mark, labels, Expandable polystyrene (EPS) production and manufacturing process

Certificate of accreditation laboratory No. AB-0247-T issued by Türkak (Turkish accreditation agency) according to TS EN ISO/IEC 17025 for CEVKAK, Tümsan Sanayi Sitesi 2. Kısım B Blok No:5 İkitelli İstanbul, Turkey

Certificate of accreditation laboratory No. AB-0330-T issued by TÜRKAK (Turkish accreditation agency) according to TS EN ISO/IEC 17025 for ERA LABORATUVARLARI A. Ş., Tümsan 1 Sanayi Sitesi 8. Blok, No:25 İkitelli /Küçükçekmece, 34308 İSTANBUL, Turkey

##### 4.1 Determination of thermal conductivity

Specification of test: EN 13163 (Article 4.2.1)

Sample specification: 720 x 600 x 50 mm

Determination according to test method: EN 12667/EN 12939

Test and measuring equipment: Heat Flow Meter

Date receipt of samples 04.08.2011

Test was carried out by: Nazan Arslan/CEVKAK

Date of test: 09.08.2011-17.08.2011

The test was carried out at the room temperature (23±2) °C and relative humidity (50±5) %.

Expanded polystyrene foam HEKIMPOR 16 kg/m<sup>3</sup> WHITE

Nominal density	Measured values	
	Thermal conductivity coefficient $\lambda_{\text{mean}}$ [W.m <sup>-1</sup> .K <sup>-1</sup> ]	Thermal resistance value [m <sup>2</sup> .K/W]
16 kg/m <sup>3</sup>	0,035242	1,470372
	0,035544	1,455313
	0,035004	1,485670
	0,035476	1,458509

#### 4.2 Determination of thickness

Test specimen: full size according to EN 13163:2008 (Article 4.2.3)

Determination according to test method: EN 823

Date receipt of samples 03.10.2011

Test was carried out by: Nazan Arslan/CEVKAK

Date of test: 11.10.2011

The test was carried out at the room temperature (23±2) °C and relative humidity (50±5) %.

Expanded polystyrene foam (EPS) HEKIMPOR 16 kg/m<sup>3</sup> WHITE

Nominal density	Sample No.	Thickness [mm]	
		Nominal thickness	Measured mean value
16 kg/m <sup>3</sup>	1279	10	11
	1280	20	19
	1281	30	30
	1282	40	40
	1283	50	50
	1284	60	60
	1285	70	71
	1286	80	80
	1287	90	90
	1288	100	100

#### 4.3 Determination of compressive stress at 10 % deformation

Test specimen: 50 × 50 × 50 mm according to EN 13163:2008 (Article 4.3.4)

Determination according to test method: EN 826

Date receipt of samples 03.10.2011

Test was carried out by: Nazan Arslan/CEVKAK

Date of test: 01.11.2011

The test was carried out at the room temperature (23±2) °C and relative humidity (50±5) %.

Expanded polystyrene foam (EPS) HEKIMPOR 16 kg/m<sup>3</sup> WHITE

Nominal density	Compressive stress at 10 % deformation
	Measured mean value
16 kg/m <sup>3</sup>	76,63 kPa
	75,73 kPa
	76,13 kPa
	78,60 kPa

#### 4.4 Determination of long term water absorption by immersion

Test specimen: 200 × 200 mm according to EN 13163:2008 (Article 4.3.9.1)

Determination according to test method: EN 12087, method 1A, 2A

Date receipt of samples 03.10.2011

Test was carried out by: Nazan Arslan/CEVKAK

Date of test: 07.10.2011 - 04.11.2011

The test was carried out at the room temperature (23±2) °C and relative humidity (50±5) %.

Expanded polystyrene foam (EPS) HEKİMPOR 16 kg/m<sup>3</sup> WHITE

Nominal density	Water absorption	
	Partial immersion [W <sub>lp</sub> , kg. m <sup>-2</sup> ]	Full immersion (in volume) [W <sub>lt</sub> , %]
16 kg/m <sup>3</sup>	0,39	2,74
	0,29	2,75
	0,31	2,82
mean value	0,3	2,8

#### 4.5 Classification of reaction to fire

The EPS products are classified in accordance with the clause 11.3 of EN 13501-1+A1

Specification of test: EN 13163:2008 Table 4 (Article 4.2.8)

The samples of EPS were tested according to EN ISO 11925-2, Annex A

Conditioning according to EN 13238, Article 4.3.c

Sample description: 14.09.2011, 16.09.2011, 19.09.2011, 20.09.2011

Date receipt of samples 07.10.2011

Date of test: 25.10.2011

Test was carried out by: Ali BAYRAKTAR/ ERA Fire Test Laboratory

Result of test (Single-flame source test) and classification reaction to fire:

Test method	Parameter	Result	Compliance of parameter
EN ISO 11925-2, Annex A	F <sub>s</sub> ≤ 150 mm	yes	yes (E)
	ignition of filter paper	no	no (E)

Fire Behaviour	Smoke production	Flaming droplets
E	s not classified	d not classified

Reaction to fire classification: E

The classification according to reaction to fire is valid for the following product parameters:

For the white coloured products:

Density:  $16 \text{ kg/m}^3 \pm 15\%$

Thickness  $\geq 10 \text{ mm}$

#### **4.6 Release of dangerous substances**

According to the statement issued by the manufacturer does not contain hazardous chemicals.

#### **5 Annexes**

No annexes