

SYNTHOS XPS PRIME D 30 (I, L, N)

Extruded polystyrene board

Declaration of Performance

No SD/PD30/2016/01

Date of compilation: 2016-03-01

1. Unique identification code of the product type:

Synthos XPS Prime D 30

2. Intended use:

Thermal insulation for buildings.

Thermal insulation for building equipment and industrial installations.

Thermal insulation and light weight fill products for civil engineering applications.

3. Manufacturer:

SYNTHOS XPS PRIME D 30

Synthos Dwory 7 spółka z ograniczoną odpowiedzialnością spółka jawna

ul. Chemików 1

32-600 Oświęcim

Poland

4. System of AVCP:

System 3

5. Harmonised standards: EN 13164:2012+A1:2015; EN 14307:2009+A1:2013; EN 14934:2007

Notified body: Instytut Techniki Budowlanej (nr 1488)

6. Declared performances – Table No. 1

Essential characteristics	Performance	Harmonized technical specification:
Thermal resistance and thermal conductivity	Table No. 2 below	EN 13164:2012+A1:2015 EN 14934:2007
Maximum service temperature	70°C	EN 14307:2009+A1:2013
Minimum service temperature	-60°C	EN 14307:2009+A1:2013
Durability of thermal resistance against ageing/degradation and high temperature - thermal conductivity in whole service temperature range	Table No. 3 below	EN 14307:2009+A1:2013

Durability of thermal resistance against ageing/degradation	(a)	EN 13164:2012+A1:2015 EN 14307:2009+A1:2013 EN 14934:2007
Durability of thermal resistance against high temperature	No changes with time until maximum service temperature of 70°C	EN 14307:2009+A1:2013
Reaction to fire	Euroclass F	EN 13164:2012+A1:2015 EN 14307:2009+A1:2013 EN 14934:2007
Reaction to fire of the product in standardized assemblies simulating end-use applications	NPD	EN 13164:2012+A1:2015
Durability of reaction to fire against ageing degradation and high temperature	No changes with time until maximum service temperature of 70°C	EN 14307:2009+A1:2013
Durability of reaction to fire against heat, weathering, ageing/ degradation	No changes	EN 13164:2012+A1:2015 EN 14934:2007
Durability of reaction to fire against heat, weathering, ageing/ degradation and high temperature	No changes	EN 14307:2009+A1:2013
Continuous glowing combustion	NPD	EN 13164:2012+A1:2015 EN 14307:2009+A1:2013 EN 14934:2007
Length and width	At nominal length and width - less than 1500 mm: ± 8 mm - more than 1500 mm: ± 10 mm	EN 13164:2012+A1:2015 EN 14307:2009+A1:2013 EN 14934:2007
Thickness within T1 thickness tolerance class	50 mm	EN 13164:2012+A1:2015 EN 14307:2009+A1:2013 EN 14934:2007
Squareness on length and width	5 mm/m	EN 13164:2012+A1:2015 EN 14307:2009+A1:2013 EN 14934:2007
Flatness	At nominal length and width 6 mm/m	EN 13164:2012+A1:2015 EN 14307:2009+A1:2013 EN 14934:2007
Dimensional stability at 70°C and 90% relative humidity	Relative changes in length, width and thickness not exceeding 5%	EN 13164:2012+A1:2015 EN 14934:2007
Dimensional stability at 70°C	NPD	EN 14934:2007

Dimensional stability at 23°C and 90% relative humidity	NPD	EN 14307:2009+A1:2013 EN 14934:2007
Deformation under specific conditions of compressive load of 40 kPa and at temperature of 70°C	≤5%	EN 13164:2012+A1:2015 EN 14307:2009+A1:2013 EN 14934:2007
Compressive strength at 10% deformation	≥300 kPa	EN 13164:2012+A1:2015 EN 14307:2009+A1:2013 EN 14934:2007
Compressive strength at 5% deformation	≥200 kPa	EN 14934:2007
Compressive strength at 2% deformation	≥100 kPa	EN 14934:2007
Durability of compressive strength against ageing/ degradation - compressive creep	Value not exceeding 1,5 % for compressive creep and 2 % for total thickness reduction after extrapolation at 50 years under a declared stress of 110 kPa	EN 13164:2012+A1:2015 EN 14934:2007
Tensile strength perpendicular to faces	≥200 kPa	EN 13164:2012+A1:2015 EN 14307:2009+A1:2013
Shear strength	≥170 kPa	EN 13164:2012+A1:2015 EN 14307:2009+A1:2013 EN 14934: 2007
Bending strenght	≥400	EN 13164:2012+A1:2015 EN 14307:2009+A1:2013 EN 14934:2007
Durability of resistance against dynamic loads - resistance to cyclic compressive load	Table No. 4 below	EN 14934:2007
Behaviour under cyclic loading	Table No. 5 below	EN 13164:2012+A1:2015
Short term water absorption by partial immersion	<0,1 kg/m ²	EN 14307:2009+A1:2013
Water permeability - long term water absorption by total immersion	≤ 0,7%	EN 13164:2012+A1:2015 EN 14934:2007
Long term water absorption by diffusion	≤ 3	EN 13164:2012+A1:2015
Durability of thermal resistance against heat, weathering, ageing/degradation - freeze- thaw resistance after long term water diffusion test	≤1%	EN 13164:2012+A1:2015
Freeze - thaw resistance (durability of thermal resistance against heat, weathering, ageing/degradation and durability of compressive strength against ageing/ degradation)	≤1%	EN 14934:2007

Durability of thermal resistance against heat, weathering, ageing/degradation - freeze – thaw resistance after long term water absorption by total immersion	$\leq 1\%$	EN 13164:2012+A1:2015
Water vapour diffusion resistance factor	≥ 100	EN 13164:2012+A1:2015 EN 14307:2009+A1:2013 EN 14934:2007
Rate of release of corrosive substances – water – soluble chlorides	< 27 ppm	EN 14307:2009+A1:2013
Rate of release of corrosive substances – water – soluble fluorides	< 5 ppm	EN 14307:2009+A1:2013
Rate of release of corrosive substances – water – soluble silicates	< 27 ppm	EN 14307:2009+A1:2013
Rate of release of corrosive substances – water – soluble sodium ions	< 5 ppm	EN 14307:2009+A1:2013
Rate of release of corrosive substances – pH	$7,0 \pm 0,5$	EN 14307:2009+A1:2013
Release of dangerous substances	NPD	EN 13164:2012+A1:2015 EN 14307:2009+A1:2013 EN 14934: 2007
Durability of resistance against chemical and biological agents	NPD	EN 14934: 2007

- (a) According to
- C appendix to EN 13164:2012+A1:2015,
 - C appendix to EN 14934:2007,
 - B appendix to EN 14307:2009+A1:2013,
- the declared values of thermal resistance factor (as in table 2) comprise changes of thermal conductivity of Synthos XPS Prime S in time.

Table No. 2. Heat values for particular thickness

Thickness [mm]	Coefficient of heat conductivity λ_D [W/mK]	Thermal resistance R_D [m ² K/W]
50	$\leq 0,029$	$\geq 1,65$

Table No. 3. Heat values for particular thickness in whole temperature service range

Thickness [mm]	Coefficient of heat conductivity λ_D [W/mK] at -60°C	Coefficient of heat conductivity λ_D [W/mK] at $+10^\circ\text{C}$	Coefficient of heat conductivity λ_D [W/mK] at $+70^\circ\text{C}$
50	0,023	0,029	0,035

Table No. 5. Resistance against cyclic compressive loading

Thickness [mm]	Resistance against cyclic compressive loading using square - wave load: 5% deformation after 2×10^6 cycles	Resistance against cyclic compressive loading using sinusoid - wave load: 5% deformation after 2×10^6 cycles
50	CLRT($5/2 \times 10^6$)200	CLR($5/2 \times 10^6$)180

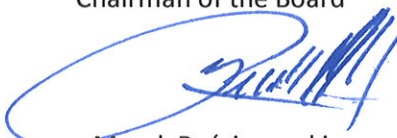
Table No. 6. Behaviour under cyclic loading of 150 kPa

Thickness [mm]	Resistance against cyclic compressive loading using square - wave load
50	CL($2,5/2 \times 10^6$)150

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

Chairman of the Board



Marek Rościszewski

Oświęcim, March 1, 2016