SYNTHOS XPS PRIME D 30 L

Declaration of Performance
no. SD/PD30/2022/01
Date of compilation: 2022-03-01

Extruded polystyrene board

1. **Unique identification code of the product-type:**
   Synthos XPS PRIME D 30 L

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 Dwory 7 spółka z ograniczoną odpowiedzialnością spółka jawna
   ul. Chemików 1
   32-600 Oświęcim
   POLAND

4. **System of assessment and verification of constancy of performance:**
   System 3, in case reaction to fire – system 4

5. **Harmonised standards:** EN 13164:2012+A1:2015; EN 14307+A:2013; EN 14934:2007
   Notified Bodies:
   Instytut Techniki Budowlanej (NB 1488)
   Universität Stuttgart für die Materialprüfungsanstalt Universität Stuttgart (NB 0672)
   Forschungsinstitut für Wärmeschutz e. V. München FIW München (NB 0751)
   RISE Research Institutes of Sweden AB (NB 0402)

6. **Declared performances** - Table no.1

Essential characteristics	Performance		Harmonized technical specification
Thermal resistance	Thermal resistance and thermal conductivity	Table no. 2, below	EN 13164:2012+A1:2015
	Thickness		
Reaction to fire	Euroclass characteristic	Euroclass F	EN 13164:2012+A1:2015
Durability of reaction to fire against heat, weathering, ageing/degradation	Durability characteristics	No change	EN 13164:2012+A1:2015

Durability of thermal resistance against heat, weathering, ageing/degradation	Thermal resistance and thermal conductivity	Table no. 2, below	EN 13164:2012+A1:2015
	Durability characteristics	**DS(70,90)**	EN 13164:2012+A1:2015
		DLT(2)5 (≤5%)	EN 13164:2012+A1:2015
	Freeze-thaw resistance after long term water diffusion test	**FTCD1**	EN 13164:2012+A1:2015
	Freeze-thaw resistance after long term water absorption by total immersion	**FTCI1**	EN 13164:2012+A1:2015
Compressive strength	Compressive strength at 10% of deformation	**CS(10/Y)300** (≥300 kPa)	EN 13164:2012+A1:2015
Tensile/flexural strength	Tensile strength perpendicular to faces	**TR200** (≥200 kPa)	EN 13164:2012+A1:2015
Durability of compressive strength against ageing/ degradation	Compressive creep	**CC(2/1,5/50)110**	EN 13164:2012+A1:2015
Water permeability	Long term water absorption by total immersion	**WL(T)0,7** (≤ 0,7%)	EN 13164:2012+A1:2015
	Long term water absorption by diffusion	Table no. 6, below	EN 13164:2012+A1:2015
Water vapour permeability	Water vapour transmission	**MU150**	EN 13164:2012+A1:2015
Release of dangerous substances to the indoor environment	Release of dangerous substances	NPD	EN 13164:2012+A1:2015
Glowing combustion	Continuous glowing combustion	NPD	EN 13164:2012+A1:2015
Reaction to fire Euroclass characteristic	Reaction to fire	Euroclass F	EN 14307:2009+A1:2013
Water permeability	Short term water absorption by partial immersion	**WS(0,5)** (<0,5 kg/m^3)	EN 14307:2009+A1:2013
Thermal resistance	Thermal conductivity	In whole temperature service range - table no. 3	EN 14307:2009+A1:2013
	Dimensions and tolerances		EN 14307:2009+A1:2013
Water vapour permeability	Water vapour transmission properties	**MU150**	EN 14307:2009+A1:2013
Compressive strength	Compressive strength at 10% of deformation	**CS(10/Y)300** ≥300 kPa	EN 14307:2009+A1:2013

Rate of release of corrosive substances	Trace quantities of water soluble chloride ions	NPD	EN 14307:2009+A1:2013
	Trace quantities of water soluble fluoride ions	NPD	EN 14307:2009+A1:2013
	Trace quantities of water soluble silicate ions	NPD	EN 14307:2009+A1:2013
	Trace quantities of water soluble sodium ions	NPD	EN 14307:2009+A1:2013
	pH value	NPD	EN 14307:2009+A1:2013
Release of dangerous substances to the indoor environment	Release of dangerous substances	NPD	EN 14307:2009+A1:2013
Glowing combustion	Continuous glowing combustion	NPD	EN 14307:2009+A1:2013
Durability of reaction to fire against ageing/degradation and high temperature	Durability characteristics	No change	EN 14307:2009+A1:2013
	Maximum service temperature	**ST(+)70** (70°C)	EN 14307:2009+A1:2013
Durability of thermal resistance against ageing/degradation and high temperature	Thermal conductivity	In whole temperature service range - table no. 3	EN 14307:2009+A1:2013
	Dimensions and tolerances		EN 14307:2009+A1:2013
	Durability characteristics	(a)	EN 14307:2009+A1:2013
	Maximum service temperature	**ST(+)70** (70°C)	EN 14307:2009+A1:2013
Reaction to fire	Reaction to fire	Euroclass F	EN 14934:2007
Glowing combustion	Continuous glowing combustion	NPD	EN 14934:2007
Resistance against dynamic loads	Resistance against cyclic compressive loading	Table no. 5, below	EN 14934:2007
Water permeability	Long term water absorption by total immersion	**WL(T)0,7** (≤ 0,7%)	EN 14934:2007
	Long term water absorption by diffusion	NPD	EN 14934:2007
Release of dangerous substances to the indoor environment	Release of dangerous substances	NPD	EN 14934:2007
Thermal resistance	Thermal resistance and thermal conductivity	Table no. 2,below	EN 14934:2007
	Thickness		EN 14934:2007
Water vapour permeability	Water vapour transmission	NPD	EN 14934:2007

Compressive strength	Compressive strength at 2% of deformation	**CS(2/Y)100** (≥100 kPa)	EN 14934:2007
	Compressive strength at 5% of deformation	**CS(5/Y)200** (≥200 kPa)	EN 14934:2007
	Compressive strength at 10% of deformation	**CS(10/Y)300** (≥300 kPa)	EN 14934:2007
Tensile/flexural strength	Flexural strength	Table no. 4, below	EN 14934:2007
Durability of reaction to fire against heat, weathering, ageing/ degradation	-	No change	EN 14934:2007
Durability of thermal resistance against heat, weathering, ageing/degradation	Thermal resistance and thermal conductivity	Table no.2, below	EN 14934:2007
	Dimensional stability at 23°C and 90% relative humidity	NPD	EN 14934:2007
	Dimensional stability at (70 °C)	NPD	EN 14934:2007
	Dimensional stability at 70°C and 90% relative humidity	**DS(TH)**	EN 14934:2007
	Deformation under specific conditions of compressive load of 40 kPa and at temperature of 70°C	**DLT(2)5** (≤5%)	EN 14934:2007
	Freeze-thaw resistance	**FTC1**	EN 14934:2007
Durability of compressive strength against ageing/ degradation	Compressive creep	**CC(2/1,5/50)110**	EN 14934:2007
	Freeze-thaw resistance	**FTC1**	EN 14934:2007
Durability of resistance against dynamic loads	Resistance to cyclic compressive load	Table no.5, below	EN 14934:2007
Durability of resistance against chemical and biological agents	-	NPD	EN 14934:2007

(a) According to B appendix to EN 14307+A:2013, the declared values of thermal resistance factor (as in table 2) comprise changes of thermal conductivity of Synthos XPS PRIME D in time.

Table no. 2. Heat values for particular thickness

Thickness In the class of tolerance T1 [mm]	Coefficient of thermal conductivity λ_D [W/mK]	Thermal resistance R_D [m^2K/W]
50	≤ 0,029	≥ 1,65
100	≤ 0,031	≥ 3,20

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

Thickness In the class of tolerance T1 [mm]	Coefficient of thermal conductivity λ_D [W/mK] at -60°C	Coefficient of thermal conductivity λ_D [W/mK] at +10 °C	Coefficient of thermal conductivity λ_D [W/mK] at +70 °C
50	0,023	0,029	0,036
100	0,026	0,031	0,038

Table no. 4 Flexural strength for particular thickness

Thickness [mm]	Flexural strength – declared level	Flexural strength – value of pressure [kPa]
50	**BS400**	≥ 400
100	NPD	

Table no. 5. Resistance against cyclic compressive loading

Thickness [mm]	Resistance against cyclic compressive loading using square - wave load: 5% deformation after 2 x 10^6 cycles	Resistance against cyclic compressive loading using sinusoid - wave load: 5% deformation after 2 x 10^6 cycles
50	**CLRT(5/2×10^6)180**	**CLR(5/2×10^6)180**
100	**CLRT(5/2×10^6)140**	**CLR(5/2×10^6)140**

Table no. 6. Long term water absorption by diffusion for particular thickness

Thickness [mm]	Long term water absorption by diffusion – declared level
50	**WD(V)3**
100	**WD(V)1**

The performance of the product identified above is in conformity with the set of declared performances. 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

Artur Pawłowski

Oświęcim, 2022-03-01