

SYNTHOS XPS PRIME G1

SYNTHOS XPS PRIME G2

Extruded polystyrene

Technical Data Sheet

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Approved by: Daniel Siwec, Product Manager

Previous issues of this document are not valid

XPS PRIME G

CHARACTERISTICS

Synthos XPS PRIME G1 and Synthos XPS PRIME G2 are thermoinsulating materials, which have been given a shape of a board in the process of extrusion and direct blowing. The products are manufactured from polystyrene resin, the raw material safe for your human health and approved for use in contact with food.

They are foams of specific small and closed cell structure containing air in their internal structure. Products do not contain flame HBCD.

INTENDED APPLICATIONS OF BUILDING PRODUCT

Thermal insulation for buildings (ThIB):

- perimeter insulation of walls below ground level
- insulation of floors and floorings
- insulation of strip footings and slab foundations
- insulation of inverted flat-roofs
- insulation of transportation routes and parking lots
- insulation of railways and tramways
- insulation of terraces, loggias and balconies
- insulation of elements of agricultural, utility and livestock buildings
- insulation of places where cold bridges may appear
- formwork
- other thermoinsulation application in construction with the accordance to the local regulations and standards

ADVANTAGES OF SYNTHOS XPS PRIME G1 AND G2 PRODUCTS

- Excellent thermal conductivity coefficient
- Closed-cell structure
- Very low water absorption
- High compressive strength
- Easy assembling of the boards
- Suitable for complete recycling
- Due to presence of air inside the cells, thermoinsulating properties do not deteriorate in time, moreover they improve while ambient temperature decrease (due to thermal conductivity coefficient value decrease)

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TECHNICAL PARAMETERS

1. THERMOINSULATING PROPERTIES

Parameter	Unit	Test method	Value			
			XPS PRIME G1 25		XPS PRIME G2 25	
Thermal conductivity coefficient (λ_D) acc. to EN-13164 (10 °C)	W/(m·K) m ² ·K/W	EN 13164	λ_D	R_D	λ_D	R_D
Thermal resistance (R_D) acc. to EN-13164 (10 °C)			0,032	0,60	0,033	0,60
$d_N = 20\text{mm}$			0,032	0,90	0,033	0,90
$d_N = 30\text{mm}$						

2. MECHANICAL PROPERTIES

Parameter	Code	Unit	Test method	Value		
				G1 25 - I, L	G1 25 - IR	G2 25 - I, L,
Compressive stress or compressive strength at 10% deformation	CS(10\Y)	kPa	EN 826	≥ 250		
Tensile strength perpendicular to faces	TR	kPa	EN 1607	-	≥ 600	-

3. HYDROPHOBIC PROPERTIES

Parameter	Code	Unit	Test method	Value		
				G1 25 - I, L	G1 25 - IR	G2 25 - I, L,
Long-term water absorption by total immersion	WL(T)	%	EN 12087 + A1	≤ 0,7	≤ 1,5	≤ 0,7
Long-term water absorption by diffusion	WD(V)	%	EN 12088	≤ 3	-	-
Freeze-thaw resistance after long-term water diffusion test	FTCD	%	EN 12091	≤ 1	-	-
Water vapour diffusion resistance	MU	-	EN 12086	150	50	150 (acc. to EN-ISO 10456)

4. OTHER PARAMETERS

Parameter	Code	Unit	Test method	Value or feature		
				G1 25 - I, L	G1 25 - IR	G2 25 - I, L,
Finishing of the surface	-	-	-	smooth	embossed	smooth
Finishing of the edges	-	-	-	I – Square L – Half-lapped		
Thickness	-	mm	EN 823	20, 30		

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Thickness tolerance ¹⁾	T	-	-	T1	T3	T1
Length	-	mm	EN 822	1250 (+/-8)		
Width	-	mm		600 (+/-8)		
Squareness on length and width	-	mm/m	EN 824	≤ 5		
Flatness on length and width	-	mm/m	EN 825	≤ 6		
Dimensional stability under specified conditions – 90% relative humidity and 70 °C ²⁾	DS(70,90)	%	EN 1604 + AC	≤ 5		
Deformation under specified compressive load and temperature conditions, at load 40 kPa and temperature 70 °C	DLT(2)	%	EN 1605	≤ 5	≤ 5	-
Reaction to fire – class	-	Euroklasa	EN 13501-1+A1	E		
Durability of reaction to fire	-	-	-	Does not deteriorate in time		

1) Thickness tolerance: T1 -2/+2 mm; T3: -0,5/+0,5 mm

2) Dimensional stability parameter is declared for following conditions: temperature up to 70 °C and ambient relative humidity level up to (90±5)%. The manufacturer does not declare keeping dimensional stability by Synthos XPS PRIME G1 and G2 in conditions of temperature higher than 70 °C, and at the same time ambient relative humidity level higher than 90%.

SAFE ASSEMBLING AND STORAGE CONDITIONS

Storage

Synthos XPS PRIME G1 and G2 boards should be stored in ventilated buildings, the best when covered with a roof in order to keep the boards from degradation of their surface and internal structure.

The degradation can happen by the intensive sun. In case of long-term outside storage, the boards should be protected against the sun with a light-colour material.

Synthos XPS PRIME G1 and G2 boards the same way as all polystyrene-made products in case of exposure to heat sources above 75 °C distort or degrade what is resulting with deformation or even melting.

Synthos XPS PRIME G1 and G2 boards the same way as all polystyrene-made products are flammable, in the case of exposure to open fire they can rapidly burn.

That is way for each step of handling with Synthos XPS PRIME G1 and G2, boards should not be exposed to open fire or any different heat source.

Synthos XPS PRIME G1 and G2 cannot be stored in buildings where flammable and volatile materials are stored.

Assembling

Synthos XPS PRIME G1 and G2 boards cannot be used in direct contact with substances which act destructively on polystyrene (e.g. organic solvents like acetone, benzol, nitro-solvents...) or different specimen containing such organic compounds. For that reason it is recommended to use for assembling solvent-free adhesives. Before use one should check if the adhesive is dedicated for polystyrene foam.

Assembling at low temperatures requires providing adequate spacing between the boards in order to maintain proper dilatation.

Synthos does not declare keeping dimensional stability by Synthos XPS PRIME G1 and G2 in conditions of temperature higher than 70 °C, and at the same time ambient humidity level higher than 90%.

As a result of exposure on the plate to solar radiation, its surface degradation, structural degradation, dimensional change and loss of flatness and rectangularity can occur. Consequently, if the boards are exposed to these rays, they should be protected against light in opaque material

RESPONSIBILITIES AND GUARANTEES

Responsibilities

Information in this document are only informative thus producer does not hold any responsibilities or obligations. SYNTHOS S.A. is only distributor of Synthos XPS PRIME G1 and G2 materials and does not hold any responsibility for their assembling. It is the customer who is responsible for the decision if the materials meet his needs and/or place of the assembling at the customer site and wastes disposal remain in accordance with applicable law.

Guarantees

According to the harmonized European Standards EN-13164 following durabilities are referred:

1. Durability of heat resistance and thermal conductivity in the conditions of exposure to high temperature, weather conditions, aging or degradation
 - Declared values indicated for Synthos XPS PRIME G1 and G2 are based on so called aging procedure, simulating its behaviour in infinity, and confirming stability of heat resistance and thermal conductivity in time.
 - The product is resistant to freeze-thaw cycles as indicated by the declared parameters: freeze-thaw resistance, after the water absorption at diffusion test.
 - The product is resistant against deformations, what is indicated by dimensional stability and deformation under specific conditions of load and temperature

2. Durability of reaction to fire if exposed to high temperature, weather conditions, aging, degradation.

The parameters of reaction to fire of Synthos XPS PRIME G1 and G2 products remain constant with time.

3. Durability of compressive strength in the conditions of aging or degradation

It is characterized by freeze-thaw resistance (as above).

The condition of keeping of the essential characteristics by the product is to follow the guidelines:

1. Synthos XPS PRIME G1 and G2 should be stored according to the guidelines in this document, see SAFE ASSEMBLING AND STORAGE CONDITIONS
2. Synthos XPS PRIME G1 and G2 should be used in accordance with the applicable product technical documentation issued by SYNTHOS S.A., in force at the time of its production. Through the technical documentation it is understood this document and the declarations of performance.
3. The construction project is in line with current building regulations in country of construction in force at the date of sale of Synthos XPS PRIME G1 and G2.
4. Work with Synthos XPS PRIME G1 and G2 are carried out in accordance and accurately according to the construction project.
5. The building is used as intended.
6. The building is kept in good order.

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PACKING OF SYNTHOS XPS PRIME G1 AND G2

Basic packaging unit – package in PE film packaging. Basic form of a loading unit with given number of packages on it, set on polystyrene-foam beams, wrapped with a PE film.

Table data given for goods with nominal dimensions 1250x600 mm:

XPS board thickness [mm]	No. of boards in a package [pcs.]	Insulation surface in a package [m ²]	Number of packages in loading unit [pcs.]	Insulation in loading unit [m ²]	Volume in a package [m ³]	Volume in loading unit [m ³]	Height of a loading unit with beams [m]
20	20	15,0	12	180	0,3000	3,60	2,48
30	14	10,5	12	126	0,3150	3,78	2,60

Dimensions of board in transportation [mm]		
Finishing of the edges	Length	Width
I, IR	1250	600
L	1265	615

MANUFACTURER

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8000 Novo Mesto,
Slovenia

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This document is of an informative character. The information given herein is based on the present state of our knowledge and experience. Product should be transported, stored and used in accordance with valid regulations and good occupational hygiene practice. Making use of the information as well as product application is beyond the producer control and determination of the safe conditions of use is the sole responsibility of a customer.

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