



Green Panel EPS-P 100, 150, 200 STYROHART®

SPECIAL-PURPOSE THERMAL INSULATION PANELS WITH REDUCED WATER ABSORPTIVITY

Produced under Marbet Management System in accordance with PN-EN ISO 9001:2009. Producer guarantees the highest quality of the product as confirmed by the statement of conformity with Polish Standard No. PN-EN 13163:2009 - products for thermal insulation in building industry, and CE mark.

General characteristics

Green Panels EPS-P 100, 150, 200 STYROHART® are thermal-insulation panels for insulating construction elements, also in damp environment. They are made of expanded polystyrene (EPS) in aggregation technology (individual foaming in moulds rather than cutting from EPS blocks). This technology allows for obtaining complex surface textures to improve mortar adhesion and carry away humidity and water from the area between the insulated wall and EPS panel.

Green Panels STYROHART® are produced in 1220 x 620 mm size (including a 20mm overlap) with thickness ranging from 30 to 200 mm (every 10 mm). The actual thickness of the 20cm panel is 198 mm. One panel covers 0.72 m² (120 x 60 cm). Thanks to their specially shaped edges, the panels overlap both vertically and horizontally. This results in a continuous insulating surface over the entire area, preventing cold bridges.

Features

- IMPROVED HEAT-INSULATING PROPERTIES - individual injection technology results in perfect foaming of every panel and stability of its heat-insulating properties.
- REDUCED WATER ABSORPTIVITY - during the individual injection process the whole panel surface is covered with "hydrophobic skin", which makes it a perfectly sealed structure.
- SPECIALLY SHAPED OVERLAPPING EDGES - they prevent cold bridges and provide tight heat insulation over the entire insulated surface, even when the panels are not laid with high precision.
- REPEATABLE AND STABLE DIMENSIONS - the injection technology allows for producing panels with identical dimensions. No matter how long the panels are stored, they do not warp.
- GREEN COLOUR - green colour across the entire cross section means that 100% pure materials are used for producing every panel, which guarantees stability of all its properties.
- INCREASED DIMENSIONS - to ensure more time-effective laying.

Use

Green Panels STYROHART® can be used as thermal insulation for foundations and underground sections of buildings (without draining systems), floors, walls and ceilings including rooms with higher humidity, slabs on ground, industrial floors, cold rooms, flat roofs and inverted roofs including "green" roofs.

The panels are available in three types: EPS-P 100, 150 and 200, which should be chosen by the architect depending on the intended use and expected loads.

Heat conductivity coefficient for EPS panels should be specified in accordance with PN-EN ISO 10456:2009, taking into consideration the expected dampness depending on their use (no contact or long-term contact with water plus possible allowance for careless laying and rain water flowing between thermal and damp insulations in inverted roofs).

Chemical resistance

STYROHART® panels do not react chemically with any solid materials used at construction site. They are resistant to aging. They do not biodegrade in damp environment, retaining their physical properties, shape and dimensions. STYROHART® panels are environment-friendly and do not contain any hazardous substances. They are **not** resistant to organic solvents, including acetone, benzol, nitro, petrol, etc..

Basic technical parameters		Green Panels EPS-P ... STYROHART®		
		100	150	200
1.	Apparent density (kg/m ³)	≥ 20	≥ 27	≥ 30
2.	Compressive stress with 10% true strain (kPa)	≥ 100 CS 10 (100)*	≥ 150 CS 10 (150)*	≥ 200 CS 10 (200)*
3.	Binding strength (kPa)	≥ 170 BS 170*	≥ 200 BS 200*	≥ 250 BS 250*
4.	Tensile strength perpendicular to panel surface (kPa)	≥ 200 TR200*	n/a	n/a
5.	Compressive strain at specific compression and temperature	20kPa/80°C/48h DLT(1)5*	40kPa/70°C/168h DLT(2)5*	40kPa/70°C/168h DLT(2)5*
6.	Heat conductivity coefficient at 10°C (declared value) λ _D (W/mK)	≤ 0.036*	≤ 0.034*	≤ 0.034*
7.	Long-term water absorptivity (%) - 28 days at total submersion,		≤ 1 WL(T)1*	
8.	Water absorptivity at long-term diffusion (%) for thickness (mm)	120 - 200	100 - 200	**)
9.	Dimension stability (%) under normal laboratory conditions		± 0,2 DS.(N)2*	
10.	Dimension stability (%) after 48 hours at 70°C and 90% humidity,		1 DS (70,90) 1*	
11.	Dimensions (mm) - width (W2)* - length (L2)* - thickness (T2)* - flatness (P4)* - rectangularity (S2)*		600 ± 2 mm 1200 ± 2 mm (every 10 mm in the 30-190 mm range plus 198 mm) ± 1mm ± 5 mm ± 2 mm / 1000 mm	
12.	Fire resistance		Class E	

*) - Declared levels in accordance with PN-EN 13163:2009 , **) - Under examination; currently the parameter is not declared

Laying, working and storing	J One of the many advantages of EPS is that it is very easy to work with and poses no health hazards. The STYROHART® panels can be easily cut with a fine-toothed hand saw. Using a knife, virtually any shape can be obtained. The STYROHART® panels can be fixed to vertical and sloping foundation walls using water-based bituminous emulsions, which can also be applied earlier as waterproofing (e.g. Deitermann's Superflex-10 or Ceresit's CP-43). EPS panels will protect waterproofing against mechanical damage. For insulating foundation walls and cellars without draining systems, once the STYROHART® panels have been laid, the trench can be backfilled directly with earth. Long exposure to UV degrades the surface of the panels so they should be protected properly during storing and laying.
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Thermal resistance and packaging	Declared thermal resistance of STYROHART panels [m ² KW]																		
	EPS-P 100	0.80	1.10	1.35	1.65	1.90	2.20	2.50	2.75	3.05	3.30	3.60	3.85	4.15	4.40	4.70	5.00	5.25	5.50
EPS-P 150	0.85	1.15	1.45	1.75	2.05	2.35	2.60	2.90	3.20	3.50	3.80	4.10	4.40	4.70	5.00	5.25	5.55	5.80	
EPS-P 200	0.85	1.15	1.45	1.75	2.05	2.35	2.60	2.90	3.20	3.50	3.80	4.10	4.40	4.70	5.00	5.25	5.55	5.80	
Thickness (mm)	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	198	
	Packaging, covering surface, volume																		
Amount of panels per package [pcs]	16	12	10	8	7	6	5	5	5	4	4	4	3	3	3	3	3	3	3
Covering surface per package [m ²]	11.52	8.64	7.20	5.76	5.04	4.32	3.60	3.60	3.60	2.88	2.88	2.88	2.16	2.16	2.16	2.16	2.16	2.16	2.16
Package volume [m ³]	0.346	0.346	0.360	0.346	0.353	0.346	0.324	0.360	0.396	0.346	0.374	0.403	0.324	0.346	0.367	0.389	0.410	0.432	

Basic documents	Polish Standards Certificate No. PN-EN 13163:2009 Hygienic Certificate No. HK/B/1267/06/2006
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This technical card replaces all earlier product specifications.

