CLIMAPLUS ULTRAPOR GRAPHITE EPS

Graphite polystyrene thermal insulation plates

ULTRAPOR GRAPHITE EPS is a high-quality innovative expanded polystyrene foam insulation material, enhanced with graphite, which offers improved thermal insulation performance. It is comprised of many small pockets of air within a polymer matrix containing graphite. The graphite reflects radiant heat energy like a mirror, increasing the material's resistance to the flow of heat, or R-value which leads even up to 20% better thermal insulation properties than white EPS.



Advantages:

- Superior thermal efficiency: Graphite technology provides insulation properties 20% higher than white EPS, even at lower densities.
- Technical versatility: Available in a wide range of sizes and densities, adapted to any project.
- Easy installation: Reduced weight and excellent handling ensure fast installation and optimal adhesion on various substrates.
- Handling safety: Non-irritating and non-toxic material for the skin, providing a safe working environment.
- Sustainability and durability: Eco-friendly product with a long service life, maintaining its performance over time.

CE

EPD

INTERNATIONAL EPD SYSTEM

TECHNICAL CHARACTERISTICS

Packaging:

5-20 item packages depending on the thickness

Application:

Suitable for thermal insulation in external masonries

Shades:

Available in grey.

Storage:

Keep in a dry, humidity-free place away from the sun. Avoid application under solar radiation. Place a mesh or a net on scaffolds in order to create a shady place.

APPLICATION

ULTRAPOR GRAPHITE EPS is perfectly compatible with the high-performance adhesives of the THRAKON portfolio, such as THC 405 or THC 410, forming together a homogeneous and extremely resistant thermal insulation system. The product can be applied to a wide variety of surfaces, including brickwork, AAC blocks, concrete surfaces or old plasters, being the central element in ETICS (plastered facades) systems of dry plasters. Its use together with the recommended adhesives guarantees superior structural adhesion and long-term thermal stability for the entire building envelope.

APPLICATION

For optimal substrate preparation, it is recommended to prime non-absorbent surfaces (such as power-troweled concrete or old tiles) with the GLX 298 adhesion primer, while highly absorbent surfaces (such as AAC blocks – BCA or mineral plasters) should be treated with the deep-penetrating primer GLX 292. This step is essential for regulating porosity and ensuring superior mechanical bonding between the substrate and the subsequent layers of adhesive or finish. For mechanical fixing, use anchors/dowels specifically designed for thermal insulation systems, applied in a quantity of 6–8 pieces per m², increasing their density as the building height increases in order to counteract wind forces. If gaps larger than 2 mm appear between the polystyrene boards, they must be filled with low-expansion polyurethane foam to eliminate thermal bridges. Filling these gaps with adhesive is strictly prohibited.

Technical characteristics		Units	Standard	Symbol	Value			
					EPS 80	EPS 100	EPS 150	EPS 200
Fire resistance		(Kg/m^3)	EN 13163	EN 13501-1 Euroclass	E			
Thermal conductivity		(W/mK)		EN 12667 λ	0.031	0.030	0.030	0.030
Dimension tolerance	Length	(mm)		EN 822 L2	±2			
	Width	(mm)		EN 822 W2	±2			
	Thickness	(mm)		EN 823 T2	±2			
	Squareness on length and width	(mm/m)		EN 824 S2	±2			
	Flatness	(mm)		EN 825 P5	±5			
Water absorption by partial immersion		(kg/m^2)		EN 12088 WL(P)	0.2			
Resistance to vapor diffusion		(1)		EN 12086 μ	20 to 40	30 to 70	30 to 70	30 to 70
Vapor permeability		(mg/(Pa h m))		EN 12086 δ	0.015 to 0.030	0.009 to 0.02	0.009 to 0.020	0.009 to 0.020
Shear strength		(N/mm^2)	ETAG 004	EN 12090 f_{tk}	≥0.02			
Shear factor		(N/mm^2)		G_m	≥1			
Dimensional stability	Condition: 23°C, 50% R.H.	(%)	EN 13163	EN 1603 DS (N)2	Length, $\Delta\varepsilon_l$, and width, $\Delta\varepsilon_b$, %: ± 2			
	Condition: 48 h, 70°C, 90% R.H.	(%)		EN 1604 DS (70, 90)1	Length, $\Delta\varepsilon_l$, and width, $\Delta\varepsilon_b$, %: 1 Thickness $\Delta\varepsilon_d$: 1%			
Compressive stress at 10% deformation		(kPa)		EN 826 CS(10)	≥80	≥100	≥150	≥150
Resistance to aging / degradation	Fire resistance Thermal conductivity				No change			
Bending strength		(kPa)		EN 12089 BS	≥125	≥150	≥200	≥200
Tensile strength		(kPa)		EN 1607 TR	≥150	≥150	≥200	≥250

PRODUCT DESCRIPTION	DIMENSIONS	THICKNESS	PACKAGE			THERMAL CONDUCTIVITY	THERMAL RESISTANCE
	mm	mm	Sheets/package	m^2/package	m^3/package	λ_d (W/mK)	R_D (m^2K/W)
EPS 80	1000*500	30	20	10.00	0.30	0.031	1.0
		40	15	7.50	0.30		1.3
		50	12	6.00	0.30		1.6
		60	10	5.00	0.30		1.9
		70	9	4.50	0.32		2.3
		80	8	4.00	0.32		2.6
		90	7	3.50	0.32		2.9
		100	6	3.00	0.30		3.2
		120	5	2.50	0.30		3.9
EPS 100	1000*500	30	20	10.00	0.30	0.030	1.0
		40	15	7.50	0.30		1.3
		50	12	6.00	0.30		1.6
		60	10	5.00	0.30		1.9
		70	9	4.50	0.32		2.3
		80	8	4.00	0.32		2.6
		90	7	3.50	0.32		2.9
		100	6	3.00	0.30		3.2
		120	5	2.50	0.30		4.0
EPS 150	1000*500	30	20	10.00	0.30	0.030	1.0
		40	15	7.50	0.30		1.3
		50	12	6.00	0.30		1.6
		60	10	5.00	0.30		1.9
		70	9	4.50	0.32		2.3
		80	8	4.00	0.32		2.6
		90	7	3.50	0.32		2.9
		100	6	3.00	0.30		3.2
		120	5	2.50	0.30		4.0
EPS 200	1000*500	30	20	10.00	0.30	0.030	1.0
		40	15	7.50	0.30		1.3
		50	12	6.00	0.30		1.6
		60	10	5.00	0.30		1.9
		70	9	4.50	0.32		2.3
		80	8	4.00	0.32		2.6
		90	7	3.50	0.32		2.9
		100	6	3.00	0.30		3.2
		120	5	2.50	0.30		4.0

*Note: The measurements were taken in laboratory environment under normal temperature and relative humidity conditions (+23ºC, 50%). It is possible for them to vary depending on the conditions prevailing at the worksite (temperature, humidity, absorbability of the substrate).

The technical information and instructions contained in the present brochure and referring to the application and end use of Thrakon products are based on the up to now know-how and experience of the Company with regards to the products and are provided in good faith as long as such products are stored, used and applied as per Thrakon recommendations. Due to the inability, on our part, to directly inspect the conditions prevailing at the worksite as well as the application procedures of the product, the Company does not provide any guarantee with regards to the adequacy of its products for specific purpose while the Company shall not bear any legal responsibility based on the information stated in the present brochure or any other written, oral, or otherwise provided recommendations and instructions. The users of the products are advised to perform a limited surface testing of the products adequacy for the eventual application and use intentions. Thrakon reserves the right to modify the features of its products without prior notification. All orders shall be approved only following acceptance of the above and under the eventual Commercial Policy terms of the Company. The issuance of the present brochure voids any prior version.

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