Graphite EPS

Graphite EPS Thermal Insulation Board

Description

EPS Thermal Insulation Board is a thermal insulation material with a closed-cell structure, produced by expanding expanded polystyrene (EPS) granules with steam and fusing them together within a mold.

The product provides high thermal insulation performance thanks to its low thermal conductivity coefficient. Due to its lightweight structure, it does not impose additional load on structural systems and offers ease of application.

EPS boards can be manufactured in white and grey (graphite) colors.

Advantages

- Provides high thermal insulation performance.
- High flexural and impact resistance.
- Thickness and thermal insulation properties remain stable over time.
- Cost-effective.
- High water vapor permeability.
- Lightweight and easy to install.
- Closed-cell structure allows easy plaster application without adhesion problems.
- Resistant to moisture and dampness.
- Long service life.

Areas of Use

- External Thermal Insulation Composite Systems (ETICS).
- Rendered exterior façade systems.
- Under decorative façade cladding systems.
- Interior thermal insulation applications.
- Insulation of shear walls and columns.
- Roof and floor insulation applications.
- Cold storage facilities.
- Prefabricated building systems.

Surface Preparation

The application surface must be sound, clean, dry, free from dust, oil, and loose particles. Concrete, cement-based substrates, and plasters must be dry and have completed their curing period. If the substrate is highly absorbent or the application is carried out in hot weather conditions, the surface should be slightly moistened before application.

Application

EPS boards are fixed to the application surface using adhesive mortar and mechanical anchors.

- Mix Hammerfast TP-100 Y with approximately 6–6.5 L of water using a low-speed mixer until a homogeneous, lump-free mixture is obtained. Allow the prepared mortar to rest for 5 minutes, then remix for 1–2 minutes. Before application, let the mortar rest for 3–5 minutes.

- Apply the adhesive mortar in continuous strips along the edges of the insulation board and spot applications in the center using a trowel. Ensure that at least 40% of the board surface is covered with adhesive. If the substrate is very smooth, apply the adhesive on the back of the board using a 10 × 10 mm notched trowel. Care should be taken to avoid adhesive overflow into the joints.

- Press the boards firmly against the surface until the desired alignment is achieved. Boards should be installed from bottom to top, tightly jointed and staggered. At corners, boards coming from opposite directions should overlap each other. If gaps occur between boards, they should be filled with thermal insulation strips or EPS material.

- Once the insulation adhesive has sufficiently cured (minimum 24 hours), the boards should be mechanically fixed to the substrate using suitable anchors. Anchors should not protrude from the surface, and at least 6 anchors per m² should be used. Corner profiles should be applied at weak points such as corners and window edges.

- After mechanical fixing, the system should be coated with Hammerfast TP-100 S Thermal Insulation Base Coat Mortar.

AYK Yapı Kimyasalları San. ve Tic. Ltd. Şti.
Orhaniye Mah. 2076. Sok. No: 4 K.Kazan/Ankara
Tel: +90 313 815 48 15 / Fax: +90 313 815 48 16
E-mail : info@ayk.com.tr / Web: www.ayk.com.tr

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Consumption

The consumption of EPS thermal insulation boards depends on the application surface area. Considering the standard board size of 50 × 100 cm (0,5 m²):

Approximately 2 EPS boards are required per 1 m² of surface area. It is recommended to calculate an additional 2–5% material allowance to compensate for possible waste due to cutting during application. Consumption may vary depending on the surface flatness, detail areas, and application method.

Precautions

- During and after application, the surface should be protected from air drafts and contact with water.
- Keep away from open flames and high heat sources.
- During installation, boards should be placed in a staggered (interlocking) pattern. Care should be taken to avoid gaps between the boards.
- EPS boards should not be used exposed in outdoor conditions without protection; they must be covered with a suitable render or cladding system.
- Prior to application, EPS boards should be protected from rain, moisture, and direct sunlight.
- Do not apply on frozen substrates, surfaces where ice is melting, or where there is a risk of frost within 24 hours.
- In hot weather conditions, avoid exposing the material to direct sunlight and prepare the mixture using cold water.
- Application should not be carried out on surfaces exposed to strong wind or direct sunlight. If application under such conditions is unavoidable, the environment and surface should be properly prepared beforehand.
- Do not apply in rainy weather, and the applied surface should be protected from rain for at least 24 hours.
- Application should be carried out at temperatures between +5°C and +30°C.
- During application, the relevant ETICS system application guidelines must be followed.

Technical Properties

Property	Standard	Value
Length Tolerance Class	TS EN 822	L2 (±2 mm)
Width Tolerance Class	TS EN 822	W2 (±2 mm)
Thickness Tolerance Class	TS EN 823	T1 (±1 mm)
Surface Flatness	TS EN 825	P5 (±5 mm)
Dimensional Stability	TS EN 1603	DS(N)2 (±0.2%)
Squareness	TS EN 824	S2 (±2 mm/m)
Long-Term Water Absorption	TS EN 12087	WL(T)5 (≤ 5%)
Thermal Conductivity (λ)	TS EN 12667	≤ 0.032 W/mK
Water Vapor Permeability (μ)	TS EN 12086	20 – 40
Tensile Strength Perpendicular to Faces	TS EN 1607	TR100 (≥ 100 kPa)
Compressive Strength at 10% Deformation	TS EN 826	CS(10)60 (≥ 60 kPa)
Reaction to Fire Class	TS EN 13501-1	E
HS Code	3921.11.00.00.00	

Note: Values are determined at 23 ± 2 °C temperature and 50 ± 5% relative humidity.

Storage and Shelf Life

- Store in a cool, dry, and well-ventilated area, separately from flammable materials such as solvents, thinners, etc.
- Do not expose to direct sunlight for extended periods.
- Protect from mechanical damage.
- Keep away from open flames and heat sources.
- Storage on pallets is recommended.

Under the above-mentioned storage conditions, the shelf life of the product is unlimited.

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Packaging Information

Hickness (mm)	Number of Boards per Package (pcs)	Package Area (m^2)	Package Volume (m^3)
20	25	12.5	0.25
30	16	8	0.24
40	12	6	0.24
50	10	5	0.25
60	8	4	0.24
70	7	3.5	0.245
80	6	3	0.24
100	5	2.5	0.25

Cleaning of Tools

All tools used should be cleaned with warm water immediately after application.

Safety Precautions

- Keep out of reach of children.
- Do not eat or swallow.
- Keep away from food products.
- Do not inhale directly and avoid contact with the body.
- May cause allergic reactions.
- In case of contact with eyes, rinse thoroughly with plenty of water and seek medical advice.
- It is recommended to use protective gloves, safety goggles, and protective clothing during application.
- Wash hands thoroughly with plenty of water after application.
- For detailed safety information, refer to the Material Safety Data Sheet (MSDS).

Quality Certificates

- ISO 9001
- ISO 14001
- TSE
- CE

9001:2015 14001:2015

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