ISLAMUDDIN & SONS

THERMAL INSULATION MANUFACTURER

EPS / THERMOPORE INSULATION

TECHNICAL PRODUCT BROCHURE

ISLAMUDDIN & SONS

Expanded Polystyrene (EPS) — Thermopore Insulation

High Quality rigid closed-cell EPS insulation — manufactured in three standard density grades (PS 16 SE, PS 24 SE, PS 32 SE) for sheets, pipe sections, boxes and fully custom packaging. Trusted since 1969.

Plot 39, Sector 28, Korangi Industrial Area, Karachi

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THREE STANDARD GRADES

PS 16 SE

16 KG/M³ · APPARENT DENSITY

Class W · DIN 18164

Standard thermal insulation — walls, lightweight applications, general building use.

PS 24 SE

24 KG/M³ · APPARENT DENSITY

Class WD · DIN 18164

Damp-area insulation — roofs, basements, pipe sections, areas with moisture exposure.

PS 32 SE

32 KG/M³ · APPARENT DENSITY

Class WS + WD · DIN 18164

Load-bearing & damp resistant — floors, decks, industrial flooring, heavy-duty packaging.

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Product Description, Properties & Features

ISLAMUDDIN & SONS · EXPANDED POLYSTYRENE (EPS) THERMOPORE

Description

Islamuddin & Sons Expanded Polystyrene (Thermopore) is a rigid, closed-cell foam insulation manufactured from expanded polystyrene beads fused under controlled heat and pressure. Produced in three standard density grades — **PS 16 SE, PS 24 SE, PS 32 SE** — with fully custom dimensions, thicknesses and shapes available. Construction material class **B1** per DIN 4102.

Application Fields

- Building insulation — walls, roofs, floors, foundations
- Cold storage rooms and refrigerated facilities
- Pipe insulation sections — **½″ to 12″ N.B.**
- Insulated boxes for cold-chain logistics & pharma
- Custom packaging — electronics, fragile goods
- Marine, floatation and buoyancy applications

Salient Features

EPS Thermopore combines very low thermal conductivity with high structural rigidity at low weight:

- Thermal conductivity 0.036–0.040 W/(m·K)
- Construction material class B1 (DIN 4102)
- Closed-cell structure — low water absorption
- Resistant to most acids, alkalis and salt solutions
- Lightweight — apparent density 16 to 32 kg/m³
- Custom dimensions, shapes and densities available

Three Standard Grades

Density and application class are matched to the service environment per DIN 18164, Part 1.

→ **PS 16 SE** — 16 kg/m³ — Class W — general thermal insulation

→ **PS 24 SE** — 24 kg/m³ — Class WD — damp-resistant applications

→ **PS 32 SE** — 32 kg/m³ — Class WS + WD — load-bearing & damp-resistant

Class Definitions (DIN 18164)

→ **W** — Standard thermal insulation

→ **WD** — Damp / moisture-resistant

→ **WS** — Pressure / load-bearing

→ **WS + WD** — Combined load-bearing and damp-resistant

Advantages

→ Excellent dimensional stability with low coefficient of thermal expansion

→ Easy to cut, shape, transport, handle and install

→ Rot-proof and physiologically inert — suitable for food, pharma, marine

→ Long service life and chemical stability

→ Manufactured locally in Karachi since 1969

Standards & Testing

All properties tested in accordance with the relevant DIN standards (DIN 18164, DIN 4102, DIN 52612, DIN 4108, DIN 53420 and others). Standard tolerances and packaging available per client requirement.

Typical Properties — Valid for EPS Thermopore



16–32 kg/m³
APPARENT DENSITY
DIN 53420



0.036–0.040
THERMAL COND. W/(M·K)
DIN 52612



B1
CONSTRUCTION CLASS
DIN 4102



0.06–0.25
COMP. STRESS N/MM²
DIN 5324



0.06–0.57
FLEXURAL STR. N/MM²
DIN 53423



1.0–3.0%
WATER ABSORPTION (28D)
DIN 53434



75–100°C
HEAT DISTORTION TEMP
DIN 53424



1210
SPEC. HEAT J/(KG·K)
DIN 4108



5–7×10⁻⁵
LINEAR EXP. 1/K
—



Custom
DIMENSIONS AVAILABLE
Per spec



Islamuddin & Sons EPS Thermopore range — pipe sections, sheets, boxes, and foil- & kraft-faced pipe insulation

Physical Properties — Full Specification

ISLAMUDDIN & SONS · EXPANDED POLYSTYRENE (EPS) THERMOPORE

Complete physical properties for the three standard EPS grades. All values tested in accordance with the indicated DIN standards.

Property	Standard	Unit	PS 16 SE	PS 24 SE	PS 32 SE
Type of application	DIN 18164, Part 1	—	**W**	**WD**	**WS + WD**
Minimum apparent density	DIN 53420	kg/m³	16	24	32
Construction material class	DIN 4102	—	B1	B1	B1
Thermal conductivity — measured at +10°C	DIN 52612	W/(m·K)	0.036–0.038	0.036–0.038	0.036–0.038
Thermal conductivity — design value	DIN 4108	W/(m·K)	0.040	0.040	0.035
Compressive stress under 10% compression	DIN 5324	N/mm²	0.06–0.11	0.11–0.16	0.20–0.25
Long-term compressive stress under <2% compression	—	N/mm²	0.015–0.025	0.025–0.050	0.050–0.070
Flexural strength	DIN 53423	N/mm²	0.06–0.30	0.15–0.39	0.33–0.57
Shear strength	DIN 53427	N/mm²	0.08–0.13	0.12–0.17	0.21–0.26
Tensile strength	DIN 53430	N/mm²	0.11–0.29	0.17–0.35	0.30–0.48
Modulus of elasticity (compressive)	DIN 53457	N/mm²	1.60–5.20	3.40–7.00	7.70–11.30
Heat distortion temp — short-term	DIN 53424	°C	100	100	100
Heat distortion temp — long-term at 5,000 N/m²	DIN 18164	°C	80–85	80–85	80–85
Heat distortion temp — long-term at 20,000 N/m²	DIN 18164	°C	75–80	80–85	80–85
Thermal coefficient of linear change	—	1/K	5–7 × 10^{-5}	5–7 × 10^{-5}	5–7 × 10^{-5}
Specific heat capacity	DIN 4108	J/(kg·K)	1210	1210	1210
Water absorption (underwater) — after 7 days	DIN 53434	% vol.	0.5–1.5	0.5–1.5	0.5–1.5
Water absorption (underwater) — after 28 days	DIN 53434	% vol.	1.0–3.0	1.0–3.0	1.0–3.0
Water vapour diffusion current density	DIN 52615	g/(m²·d)	40	35	20
Water vapour diffusion resistance coefficient	DIN 4108	μ	20 / 50	30 / 70	40 / 100

Unit conversions: 16.018 kg/m³ = 1 pcf | 0.1442 W/(m·K) = 1 BTU·in/(ft²·h·°F) | 1 N/mm² = 142 psi (1 MPa) = 100

tons/m² | °C = 5⁄9 × (°F − 32)

Chemical Resistance — Reference Guide

ISLAMUDDIN & SONS · EXPANDED POLYSTYRENE (EPS) THERMOPORE

Resistance of EPS Thermopore to commonly encountered chemicals. Categories below are for reference; in service, exposure time, concentration and temperature all affect performance — please contact us for application-specific guidance.

Result	Active Agent
	Salt Solutions & Soaps
✓	Salt solutions (sea water)
✓	Soaps and wetting-agent solutions
	Bleaches & Oxidizers
✓	Bleaching lyes — hypochlorite, chlorine water, hydrogen-peroxide solutions
	Acids
✓	Dilute acids
✓	35% hydrochloric acid; up to 50% nitric acid
✗	Anhydrous acids — fuming sulphuric acid, glacial acetic acid, 100% formic acid
	Alkalis
✓	Sodium hydroxide, potassium hydroxide, ammonia solution
	Organic Solvents
✗	Acetone, ethyl acetate, benzene, xylene, paint thinner, trichloroethylene
✗	Saturated aliphatic hydrocarbons — surgical spirit, test benzene
△	Alcohols — for example methanol, ethanol
	Fuels & Oils
△	Paraffin oil, Vaseline
✗	Diesel oil
✗	Motor fuel (normal and super gasoline)
✓	Silicone oil

Reading this table:

✓ **Resistant** — insulation is not destroyed even after prolonged exposure

△ **Conditionally resistant** — may shrink or suffer surface attack after prolonged exposure

✗ **Unresistant** — insulation shrinks or dissolves at varying rates

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