EPS Sandwich Panels

OMEGA STEEL CO.
Istanbul · Dilovası plant

EPS sandwich panels use a glued expanded-polystyrene core — the cheapest insulating core, λ 0.036 W/mK, 15–20 kg/m³ — between steel skins, and are made on a discontinuous (press-laminated) line rather than by foaming. They are the budget panel for internal partitions, camp and site buildings, light roofs and walls in mild climates, and cold-room partitions where price beats performance. We make them at Dilovası in 50–200 mm with PPGI skins, lengths to 12 m.

λ 0.036 W/mK | 15–20 kg/m³ | 50–200 mm | Lowest price | Partitions · camps

When the building is temporary, the climate is mild or the panel is a partition nobody insures, EPS is the sensible core: half the price of rockwool, a fifth less than PUR, and light enough that two people carry a 6 m panel.

GRADES, STANDARDS AND TOLERANCES

Grade / standard	Yield (MPa)	Note
EPS core, 15–20 kg/m³, flame-retardant (EPS-FR)	λ 0.036–0.038 W/mK	B-s2,d0 / B-s3,d0 (E untreated); EN 13163
Compressive strength	≥ 0.07–0.10 N/mm²	at 10 % deformation
Service temperature	−50 to +75 °C	softens above 80 °C
Adhesive	two-component PU	press-laminated
Skins DX51D + Z100–Z140 + PPGI or galvanized	≈ 140	EN 10346 / EN 10169

CE-marked to EN 14509; use flame-retardant EPS only; avoid dark outer colours in hot climates.

EPS PANEL THICKNESS AND U-VALUE

Thickness	U-value (W/m²K)	Weight (kg/m²)	Girt / purlin spacing (0.5 kN/m²)	PIR equivalent	Typical use
50 mm	0.68	8.2	2.6 m	30 mm	partitions, camps
60 mm	0.57	8.4	2.9 m	40 mm	walls, light roofs
80 mm	0.44	8.8	3.4 m	50 mm	houses, offices
100 mm	0.35	9.2	3.8 m	60 mm	chiller partitions
120 mm	0.30	9.6	4.1 m	80 mm	cold rooms 0–5 °C
150 mm	0.24	10.2	4.5 m	100 mm	cold stores
200 mm	0.18	11.2	5.0 m	120 mm	freezer partitions

Spans single-span L/100; EPS panels are 10–20 % less stiff than PUR at equal thickness.

WHERE EPS PANELS FIT

Application	EPS suitable?	Note
Internal partitions and offices in halls	yes — ideal	cheapest, light
Camp units, site offices, prefab housing	yes	the market standard
Walls of unheated / mildly heated buildings	yes	temperate and dry-inland climates
Roofs in hot climates (Gulf, Africa)	with care	light colours only (9002 / 9010); core softens at 80 °C
Cold-room partitions and simple chillers	yes	100–150 mm; PIR for freezers
Buildings with fire class or insurer requirement	no	PIR or rockwool
Food-plant interiors	possible	sealed joints, 9010 skins
Fire compartment walls	no	rockwool

SKINS, COATINGS AND COLOURS

Skin	Thickness	Zinc / paint	Where
PPGI PE 25 µm	0.40 / 0.50 / 0.60 mm	Z100–Z140, RAL 9002 / 9010 / 3009 / 7016 …	outer and inner face standard
PPGI SMP / PVDF	0.50 / 0.60 mm	Z140–Z275	coastal, Gulf, colour warranty
Galvanized	0.40 / 0.50 mm	Z140–Z275, unpainted	inner face on a budget
Food-grade PE	0.50 mm	Z140, RAL 9010	food, cold-store interiors
Aluzinc / aluminium	0.50 / 0.60 mm	—	to order

Outer skin profiled (micro-rib, lined or 5-rib roof); inner skin micro-ribbed or flat.

STANDARDS

EN 14509 — self-supporting double-skin metal-faced insulating panels · EN 13501-1 fire classification; EN 13165 (PIR/PUR), EN 13162 (mineral wool), EN 13163 (EPS) cores · EN 10169 / EN 10346 skin steel · EN 10204 3.1