Cold Room Panels

OMEGA STEEL CO.
Istanbul · Dilovası plant

Cold room panels are the walls, ceilings and floors of chillers, cold stores, blast freezers and processing rooms: a PIR core 80–200 mm (λ 0.022) between flat, food-grade PPGI skins, joined by cam-lock or tongue-and-groove edges with PU-foam seals so that the room is airtight, vapour-tight and washable. We manufacture them at Dilovası for temperatures from +12 °C down to −40 °C, in 1 000 / 1 150 mm cover and lengths to 12 m, with hinged and sliding cold-room doors, floor panels, corner and coving profiles and the PVC / silicone sealing kit.

PIR λ 0.022 | 80–200 mm | +12 to −40 °C | Cam-lock or T&G | Food-grade flat skins

A cold store is only as good as its panel joints: every gap is a frost bridge and every kilowatt of leakage runs for twenty years. Our cold-room panel is the flat-faced PIR panel with the cam-lock edge, and it ships with the doors and profiles that turn panels into a room.

GRADES, STANDARDS AND TOLERANCES

Grade / standard	Yield (MPa)	Note
PIR core, 40 kg/m³, λ 0.022	—	B-s1,d0; closed cell, no water uptake
Food-grade PPGI 9010, 0.50 mm	≈ 140	EC 1935/2004 indirect food contact
Stainless 304 2B skin, 0.50 mm	≥ 210	meat, fish, chemical rooms — on request
Floor panel: PIR + 0.6 mm skin + plywood + stainless / resin	—	forklift traffic
Cam-lock joints: galvanized steel hooks in PU	—	demountable rooms

CE-marked to EN 14509; rooms designed per the customer's temperature and load with a thermal-load calculation on request.

PANEL THICKNESS BY ROOM TEMPERATURE

Room temperature	Panel thickness	U-value (W/m²K)	Typical room	Notes
+8 to +12 °C	60–80 mm	0.35–0.27	processing, packing, ripening rooms	often part of a plant envelope
+2 to +8 °C	80–100 mm	0.27–0.21	fruit, vegetable, dairy chillers	the most common room
−5 to +2 °C	100–120 mm	0.21–0.18	meat, fish chill, pharmacy	
−18 to −25 °C	150 mm	0.14	frozen storage, ice cream	heated door frames, PRV
−30 to −40 °C	180–200 mm	0.12–0.11	blast freezers, tuna, plasma	heated floor or ventilated void
Any, high energy cost	+ one step	—	EU / Gulf energy pricing	payback 2–4 years

Floor insulation under freezers needs a heating mat or ventilated void to stop frost heave; we supply floor panels and the detail.

JOINTS, DOORS AND ACCESSORIES

Item	Options	Note
Panel joint	cam-lock (hex key) / tongue-and-groove + PU seal	cam-lock for demountable and small rooms; T&G for large stores
Corner	cam-lock corner panel / aluminium or PVC corner profile	
Coving	PVC or aluminium, 50–80 mm radius	hygienic floor–wall and wall–ceiling
Hinged door	800–1 200 × 2 000 mm, 80–150 mm leaf, heated frame for freezers	with inside release
Sliding door	1 200–3 000 × 2 000–3 500 mm, manual or automatic	forklift rooms
Floor panel	PIR + plywood + stainless / anti-slip resin	or insulated slab
Pressure-relief valve	heated	mandatory below 0 °C
Ceiling suspension	hangers and rails for spans > 6 m	
Sealing kit	silicone, PU foam, PVC strips	

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