HENGSEN REFRIGERATION · TECHNICAL CENTER

Choosing PIR panel thickness

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Applies to	PIR / PU insulated panels, chiller and freezer rooms	Issued by	Engineering Department

1. The temperature bands

Thickness	Temperature band	Typical use
80 mm	down to about −5 °C	+2…+8 °C fresh-produce and dairy rooms
100 mm	down to −18 °C	freezer rooms; mixed-use stores that may be re-purposed
120 mm	down to −25 °C	high-ambient sites; the extra 20 mm pays back in one summer
150 mm	−30 °C and below	blast freezers; outdoor rooms in southern European summers

2. The energy trade-off

Each step of 20 mm cuts transmission losses by roughly 15–18 %. On a 20 m³ freezer running 8 700 hours a year, the difference between 100 mm and 120 mm is a few hundred kWh per year — the panel upgrade pays for itself in two to four seasons, and it is the only time you can buy insulation at panel prices instead of renovation prices.

3. Cost per m² and what we recommend

Panel cost rises roughly linearly with thickness, installation cost does not. If the room may be re-purposed from chiller to freezer later, choose 100 mm now — the second-hand value of a re-usable panel box is real money.