

Sandwich Panel Technical Specifications

Continuous line PIR, PUF and Rockwool insulated panels,
manufactured in house and delivered across India.

About These **Panels**

ACE manufactures insulated sandwich panels on a continuous production line, which is the difference you feel years after a building goes up. A batch process varies from one run to the next. A continuous line holds the same core density and the same thermal value on every metre of every panel, because it never stops to reset. That consistency is what lets a cold store keep its temperature and a fire barrier keep its rating for the life of the building.

Every panel in this document is made at our Derabassi facility, from panels through to the steel structures they clad, so the whole envelope is engineered and answered for by one company. The figures below are indicative of our standard product. We will confirm the exact specification for your project and provide test certificates for your tender or compliance file on request.

Choosing the Right **Core**

Three cores cover almost every requirement. The choice comes down to how cold the space has to stay, how the material behaves in a fire, and what the budget allows. This table is the short version. The pages that follow give the full specification for each.

Core	Best For	Conductivity	Fire	Temp Range
PIR	Cold storage, deep freeze, clean rooms, fire aware projects	0.022 W/m·K	Low smoke, Eurofins	minus 40 to 120°C
PUF	Cold rooms, chillers, insulated walls and roofs	0.024 W/m·K	Standard	minus 25 to 80°C
Rockwool	Fire barriers, flammable zones, acoustic walls	0.038 W/m·K	Class A1, 2 hour	up to 250°C

A simple rule holds most of the time. *For the coldest and most demanding work choose PIR, for everyday cold and insulated envelopes choose PUF, and where fire is the governing concern choose Rockwool.*

PIR Panels

Polyisocyanurate is the premium foam core. It carries the lowest thermal conductivity of the three, holds its shape across the widest temperature band, and behaves far better in a fire than standard foam, giving off markedly less smoke. It is the specification we recommend for deep freeze rooms, pharmaceutical clean rooms, and any envelope where thermal loss or fire behaviour is the deciding factor.

Property	PIR Wall & Roof Panel
Core Material	Polyisocyanurate (PIR) rigid foam, closed cell
Nominal Core Density	48 plus or minus 2 kg per m ³
Thermal Conductivity	0.022 W/m·K or lower
Typical U value at 100mm	0.27 W/m ² K or lower
Operating Temperature	minus 40°C to plus 120°C
Reaction to Fire	Low smoke and low toxicity, Eurofins certified
Blowing Agent	CFC, HCFC and HFC free
Compressive Strength	0.14 N/mm ² or higher at 10% deformation
Standard Thicknesses	30, 40, 50, 60, 80, 100, 120, 150 mm
Recommended for Cold Storage	80 to 150 mm depending on room temperature
Typical Applications	Cold storage, deep freeze, clean rooms, fire compartments, facades

PUF Panels

Polyurethane foam is the workhorse of the insulated panel world, and for good reason. It gives excellent thermal performance at a sensible price, which makes it the default choice for cold rooms, chillers, and insulated walls and roofs across food, dairy, and general industry. Where a room has to hold above minus twenty degrees, PUF is usually all the project needs.

Property	PUF Wall & Roof Panel
Core Material	Polyurethane (PUF) rigid foam, closed cell
Nominal Core Density	38 to 42 kg per m ³
Thermal Conductivity	0.024 W/m·K
Typical U value at 100mm	0.30 W/m ² K or lower
Operating Temperature	minus 25°C to plus 80°C
Blowing Agent	CFC, HCFC and HFC free
Compressive Strength	0.12 N/mm ² or higher at 10% deformation
Standard Thicknesses	30, 40, 50, 60, 80, 100, 120, 150 mm
Recommended for Cold Rooms	80 to 120 mm for rooms above minus 20°C
Typical Applications	Cold rooms, chillers, insulated walls and roofs, portable structures

Rockwool *Panels*

When fire is the governing concern, the core has to be one that does not burn. Rockwool is a dense mineral wool that carries a Class A1 non combustible rating, the highest there is, and our 80mm and 100mm panels hold a Eurofins certified two hour fire resistance. It also dampens sound better than foam, which makes it the natural choice for fire barrier walls, flammable material zones, and acoustic partitions.

Property	Rockwool Wall & Roof Panel
Core Material	High density mineral wool (Rockwool)
Nominal Core Density	100 to 120 kg per m ³
Thermal Conductivity	0.038 W/m·K
Typical U value at 100mm	0.48 W/m ² K or lower
Reaction to Fire	Class A1 non combustible, Eurofins certified 2 hour resistance on 80mm and 100mm
Operating Temperature	Tolerant to high heat, up to 250°C
Acoustic Performance	Superior sound reduction compared with foam cores
Standard Thicknesses	50, 60, 80, 100, 120, 150 mm
Recommended for Fire Barriers	80 to 120 mm depending on rating required
Typical Applications	Fire barrier walls and roofs, flammable stores, acoustic partitions

Facing and Finish *Options*

Every core can be finished with the facing your project calls for, from a hard wearing coated steel skin for industrial walls to a hygienic stainless steel face for pharmaceutical clean rooms.

Facing Material	Thickness	Notes
Colour coated GI / Galvalume	0.30 to 0.80 mm	SMP, RMP and PVDF coatings, wide colour range
Aluminium	0.40 to 0.71 mm	Lightweight, non magnetic, corrosion resistant
Stainless steel SS304 / SS316	0.50 to 1.20 mm	GMP and pharmaceutical grade, fully hygienic

Panel Joint *Systems*

Wall panels join with a double tongue and groove profile and concealed fixing, which hides the fasteners and closes the thermal path at every joint. For demountable cold rooms we offer a cam lock joint that pulls panels tight and lets the room be dismantled and moved later.

Roof panels use a five rib trapezoidal profile with a side overlap and concealed fixing, engineered to shed water and span between purlins without a mid support in most bays.

Dimensions and *Tolerances*

Thickness Options	30, 40, 50, 60, 80, 100, 120, 150 mm (200 mm on request)
Cover Width	1000 mm standard, 1150 mm optional
Panel Length	1000 mm to 12000 mm, made to order
Length Tolerance	plus or minus 5 mm
Thickness Tolerance	plus or minus 2 mm
Dimensional Stability	plus or minus 2% tested hot and cold over 24 hours

Fire *Performance*

Fire behaviour is where the core choice matters most, and where an independent certificate matters more than any claim we could make ourselves. Our Rockwool panels carry a Class A1 non combustible rating and a Eurofins certified two hour fire resistance on 80mm and 100mm panels. Our PIR panels are Eurofins certified and give off far less smoke than a standard foam panel, which is often the difference between people getting out and not. We will supply the relevant fire certificate for your specification on request.

Standards and *Certifications*

- ISO 9001:2015 certified quality management across the full manufacturing process
- NABL accredited laboratory testing behind the thermal values in this document
- Eurofins fire certification on PIR and Rockwool panels
- Manufactured to conform with the relevant Bureau of Indian Standards requirements
- Approved to supply the Indian Armed Forces and government departments
- Three stage quality control with batch marking and full traceability on every panel

Handling, Storage and *Installation*

Panels arrive protected and should be kept that way until they are fixed. Store them flat on level bearers, clear of standing water, and leave the protective film in place until installation. Lift panels rather than dragging them, and support long panels along their length when moving them. On site, our own erection crews install to the fixing pattern the design calls for, which is the last link in keeping the performance you specified all the way to handover.

How to Specify *and Order*

Tell us the room temperature you need to hold, the fire rating the project demands, and the wall and roof areas, and our team will come back with a recommended core, thickness, and facing, along with a price and a delivery timeline. For anything in this document, or for certificates and drawings, reach us here.

Get in *Touch*

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