

# Coldstore Sandwich Panel





## About Us

Assan Panel, a leading organization in the sandwich panel industry, began manufacturing operations in 1990 with its first manufacturing plant in Tuzla, Istanbul.

Its manufacturing capacity was 4 million m<sup>2</sup>/year. Having continued to make investments to increase its production capacity over the years, Assan Panel invested in Iskenderun plant in 2004 with a manufacturing capacity of 3 million m<sup>2</sup>/year, Balıkesir plant in 2009 with a manufacturing capacity of 3 million m<sup>2</sup>/year, and Jordan plant in 2012 with a manufacturing capacity of 4.5 million m<sup>2</sup>/year, respectively.

Having successfully completed the investment for the second production line in Tuzla, Istanbul plant in 2015 with a capacity of 3.5 million m<sup>2</sup>/year, it reached a total production capacity of 18 million m<sup>2</sup>/year. In 2021, Assan Panel invested in Turkic Republics for the first time and Azerbaijan plant began its manufacturing operations with the partnership of STP (Sumgayit Texnologiyalar Park).

Assan Panel, a key pioneer in the industry, contributes to the construction of sustainable and environmentally friendly buildings with its sandwich panel products with PIR and rockwool filling in addition to panels with polyurethane filling for cold room, roof, and exterior wall applications in compliance with fire safety regulations, panels ready for mounting of solar systems, project-specific custom accessories, polycarbonate skylights, fittings consisting of a wide range of screws as well as construction chemicals consisting of sealing and filling products.

Assan Panel provides high-quality, application services with a wide range of high-quality, safe, innovative, fire-resistant products as well as domestic and international business partners.

As a groundbreaking pioneer in the industry, Assan Panel is a leader manufacturer in Turkey with FM Approvals certificate awarded in 2015 by FM Approvals without any height limit in buildings as well as being the holder of many other international certificates. Playing an active role in the global market by exporting to 85 countries around the world under its brands such as AssanPU, Assan Demir, AssanWool, and AssanBoard; Assan Panel is an overall solution partner for industrial buildings.

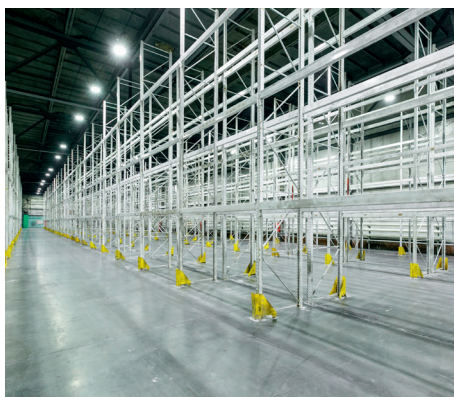




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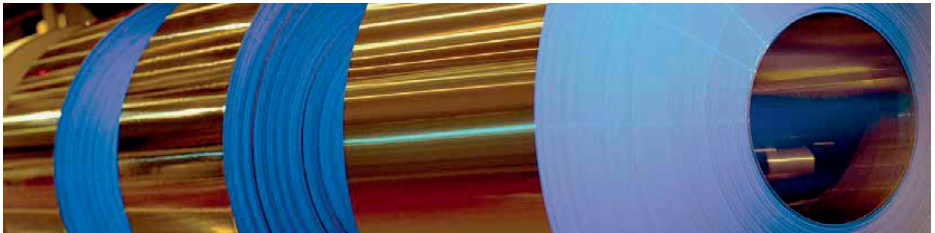


## METAL CHARACTERISTICS



### Preprinted Galvanized Sheet

Assan Panel uses preprinted galvanized sheet manufactured by world-class sheet manufacturers according to the standards of ECCA (European Coil Association). Rolls manufactured by galvanizing with hot-dipped method on the lines have high corrosion resistance. Galvanize sheet is hard, making it resistant to impacts and wear. Visual and physical endurance performances are obtained thanks to finishes including polyester and PVDF.



### STAINLESS STEEL

Stainless steel may be used on sandwich panel surfaces in cases requiring high hygienic performance or protection against the interior factors. These high-quality and maintenance-free surfaces do not require an additional layer for corrosion strength.

### Preprinted Galvanized Sheet Technical Specifications

Sheet Quality	DX51 D+Z	EN 10346
Tensile Strength	270-500Mpa	EN 10346
Rupture % Elongation	Min %22	EN 10346
Zinc-Plating	100-275 g/m <sup>2</sup>	EN 10346
Coating Type	Polyester, PVDF, Plastisol, PVC, Polyurethane	

## PAINT AND COATING TYPES



### Polyester

Ensures durability against external environmental factors and provides high flexibility and temperature balance. It is the most commonly used type of dye for different purposes, both interior and exterior.

### PVDF

Ensures durability against external environmental factors and chemical oils and high corrosion resistance. It is highly resilient against chemical and UV beams. This type of coating features the best color retention and durable gloss. It can be used in prestige building roof and exterior wall coatings.

### Plastisol

This material features the ability of being perfectly formed. It is resistant against moisture and wear and can be opted in applications complied with the food charter. Superior performance in cold, humid environments.

### PVC Film

Applied using lamination method. It is suitable to extensive forming and flexibility. Being hygienic and easy to clean, it can be opted in applications complied with the food charter.

### Paint Specifications

Specifications	Polyester	PVDF	Plastisol	PVC Film
Average Thickness	25 µ	25 µ	100-200 µ	100-200 µ
Temperature Resistance	80 °C	110 °C	60 °C	60 °C
Gloss	10-80	20-40	45-70	5-15
Surface Hardness	1	2	4	3
UV Resistance	3	1+	4	4
Corrosion Resistance	2	1	1	1+

1+ = Excellent, 1 = Very good, 2 = Good, 3 = Satisfactory, 4 = Sufficient, 0 = Non-Compliant





## Thermal Conductivity of Sandwich Panels According to TS EN 14509

Thermal conductivity value (U) is the amount of heat vertically passing through on a 1 m<sup>2</sup> surface in 1 hour when the temperature difference between two parallel surfaces of a material with given thickness d(m). When establishing internal filling material thickness in Sandwich Panels, thermal conductivity value is a determinant factor.

Thermal conductivity values of the materials according to TS 825:

	Assan SmartCore	Polyurethane	XPS	Rockwool	EPS	Glass Wool	Gas Concrete	Plain Concrete
Thermal conductivity coefficient (λ) W/mK)	0.018	0.022	0.030	0.033	0.035	0.035	0.20	1.7

Assan SmartCore Thermal Conductivity Values		
Panel Thickness	U Thermal Conductivity (W/m <sup>2</sup> K)	R Thermal Conductivity (m <sup>2</sup> K/W)
40 mm	0.46	2.17
50 mm	0.38	2.63
60 mm	0.31	3.23
80 mm	0.23	4.35
100 mm	0.19	5.26
120 mm	0.15	6.67
150 mm	0.12	8.33
200 mm	0.09	11.11



# COLDSTORE COLD CHAIN STORAGE SOLUTIONS

CoolCell is an easy to install self supporting coldstore solution which offers superior energy efficiency and increased storage volume compared to conventional cold rooms.

Assan Panel CoolCell is a modular cold store solution with fast track installation method used for minimizing post-harvest losses in the agriculture industry. It can be used for precooling fruits or vegetables after harvest to improve their shelf life or as a cold store facility for dry goods, meat or seafood. The CoolCell can also be used as an emergency shelter or medical treatment facility in natural disaster affected regions.

Operating temperature of the CoolCell is +0 °C for the standard model and can be used to store all kinds of dry goods, fruits, vegetables, meat or seafood.

If required, CoolCell can also be customized to be used as a freezer room with operating temperatures up to -85 °C. Contact Assan Panel Technical Team for freezer room design options.

## Unparalleled Energy Efficiency

CoolCell having unrivalled thermal performance which minimises your energy bills.

## Increased Storage Volume

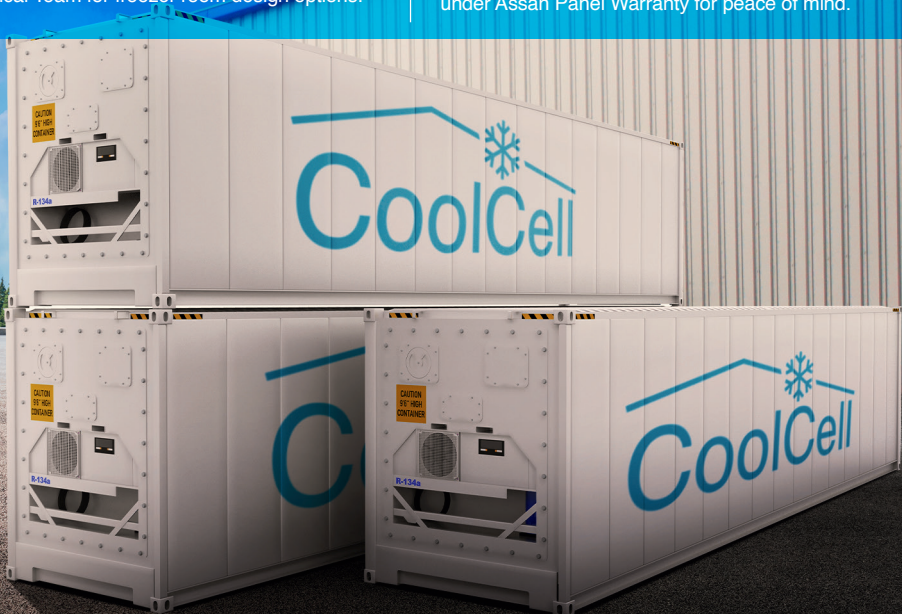
The standard module size provides approx. 170 m<sup>3</sup> storage volume which is approximately 3.5 times more than typical modular cold room storage capacity.

## Self-Supporting System

Our patented accessory design eliminates the need of any steel framework which minimises the construction time, enabling your coldstore to get operational quicker

## Turnkey Solution

Every component required to build the coldbox fits in a single container. Supplied and covered under Assan Panel Warranty for peace of mind.



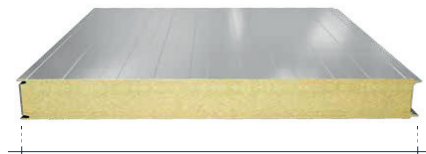
## COLD STORE PANELS

### High-Performance Cold Storage Panel Solutions

Cold Store Controlled Environment insulated panel systems consists of a wide range of panels and systems for use in cold stores, ambient rooms, clean rooms and food processing facilities. Our product range has outstanding performance in the critical building materials performance areas of fire, structural, airtightness, thermal bridging, vapour and water tightness.



1000-1100mm  
Prepainted Galvanized Sheet



1000-1100mm  
Stainless Steel

Place of Production - Istanbul and Iskenderun  
Area of Application – Cold Store  
Useful Width - 1100 mm / 1000 mm  
Minimum Length - 2.40 m  
Maximum Length – Depends on Transport Conditions  
Polyurethane - PIR  
Density (EN 1602) - 40 (2) kg/m<sup>3</sup>

Polyurethane - PIR Thickness - 80-100-120-150-200 mm  
Class of Non-Flammability (EN 13501) - B.s1.d0 (PIR) - B.s2.d0  
Metal Type-Prepainted Galvanized Sheet, Aluminum, Prepainted Aluminum, Stainless Steel  
Standard Top Metal Thickness - 0.50 - 0.60 mm  
Standard Bottom Metal Thickness - 0.50 mm



With original double lamp end to side grain joint, excellent permeability and thermal insulation.

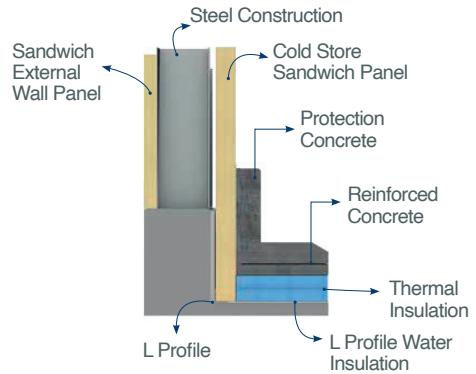
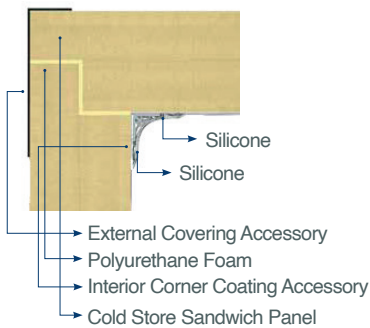
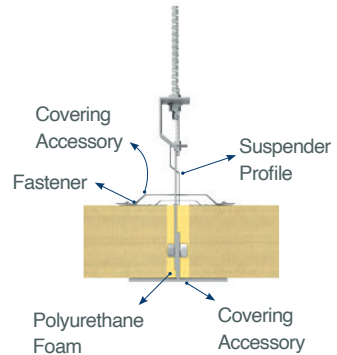
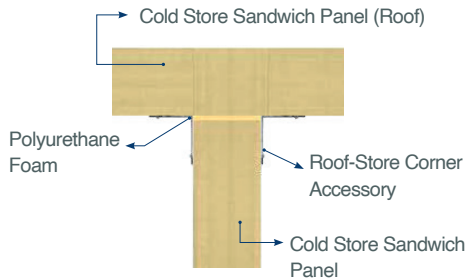
- With original double lamp end to side grain joint detail, excellent durability.
- Usable as exterior wall coating.
- Quick and easy assembly.
- Maximum thermal insulation with high density PUR\*/PIR\* foam. ( $\lambda$ : 0,022 w/mK)
- Extra effective fire resistance certified with TS/EN/13501 B.s2.d0 fire class.
- Aesthetic and different choices of colors.
- Original complementary material selection up to 6 meters and accessories

### Installation Lengths

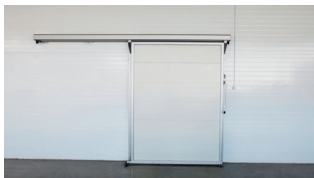
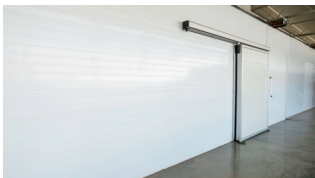
External Sheet Thickness (mm)	Internal Sheet Thickness (mm)	PUR / PIR mm	Maximum Internal Height (m)	Ceiling Span (m)
0.5	0.5	80	6.5	4
0.5	0.5	100	8	5
0.5	0.5	120	10	6
0.5	0.5	150	12	7
0.5	0.5	200	13	8



## APPLICATION DETAILS



## ASSAN PANEL ISOTHERMAL DOORS



## ACCESSORIES AND PROFILES

The accessories provide a hygienic environment in the assembly of floor, wall, and ceiling panels to each other and in the created conditioned area.

Hygienic, stainless steel, PVC, PVDF or polyester coated galvanized profiles depending on the needs of the application:

- Angular inner - outer profiles
- Corner connectors
- Flat or Z shaped profiles
- U shaped profile for positioning the panel
- Ceiling brackets and apparatuses
- Aluminum angle brackets







## ATMOSPHERE-CONTROLLED COLD STORES

Atmosphere-controlled stores are resistant to different gas concentrations, adjusted temperature and humidity rates, enabling atmospheric conditioning and pressure arising as a result of these factors. Gas-proof full insulation must be implemented in these stores.





## REFERENCES





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