

PU Sandwich Panel Specification

1. GENERAL INFORMATION – THE CONSTRUCTION OF SANDWICH PANELS :

Al Qatami insulation Company provides wide range of Galvanized steel faced sandwich panels with polyurethane core.

The range of products includes wall and roof sandwich panels for industrial halls, Warehouses, sports halls, production facilities, commercial pavilions and facilities, offices, social and public utility buildings.

Sandwich panels consist of two Galvanized steel claddings and a structural-insulating core. The core is made of "141 b "polyurethane foam with the highest thermal insulation value among all known insulation materials.

It is responsible for transmitting shear stress, maintaining fixed distance between the claddings and ensuring high thermal insulation values.

It enables application of considerable spans of supports both in the ceiling and on the walls at the same time.

2. PRODUCTION TECHNOLOGY :

PU panels are filled in one piece under pressure with Polyurethane foam; the insulation foam has got a very high insulation value with density 42 kg/m³.

3. STEEL COILS SPECIFICATION :

- Base metal = JIS G 3302 SG CC Z12/ (ASTM A755) White Gray
- Paint Top = 25 micron regular modified polyester (white gray) + 5 Mic. universal primer in Ral. 9002
- Back Coat = 5-7 Mic. epoxy primer in Mill Std grey color
- Coil ID = 508 mm
- Insulation = Foamed in place.
- Both Side Steel gauge = 27
- Size = 0.4 mm X 1219 mm X Coil
- With PE protecting film.

4. PU SPECIFICATION :

- Polyurethane shall be filled between the sheets having the following properties:

- Description:

- Overall density of insulation foam 42 kg/m³
- Core density 38-42kg/m³
- K- Value 0.018 W/m.K
- Compressive strength of insulation 0.21 N/mm²
- Closed cell contain 97%
- Water vapor transmission 1.4%
- Water absorbent 1.9 Vol. %
- Fire Strength DIN to the insulation : DIN 4102, B2 (Fire Resistance)

5. Sandwich panels available sizes :

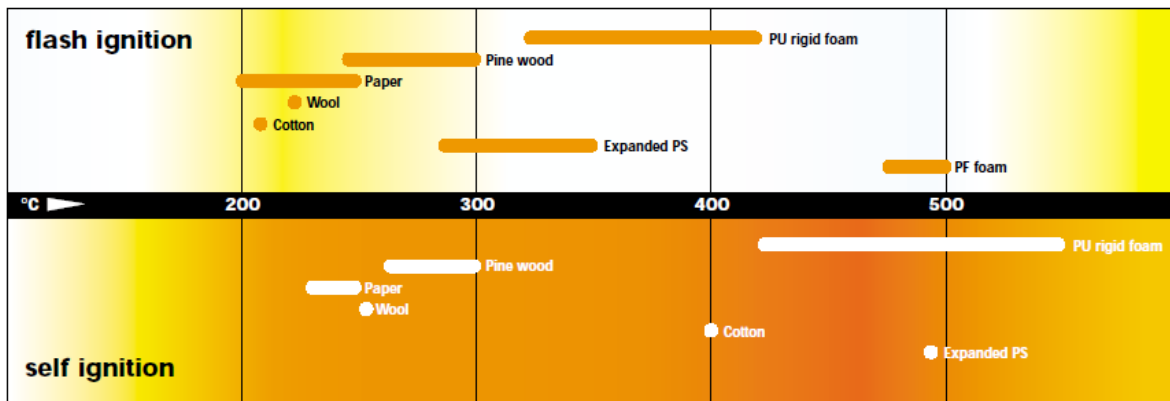
Type	Width	Thickness	Length	Density/m ³
Wall Type	1.000 m	5 cm	1 to 12 m	40 kg/m ³
Wall Type	1.000 m	7.5cm	1 to 12 m	40 kg/m ³
Wall Type	1.000 m	7.5cm	1 to 12 m	40 kg/m ³
Roof Type	1.000 m	5cm	1 to 12 m	40 kg/m ³
Roof Type	1.000 m	7.5cm	1 to 12 m	40 kg/m ³
Roof Type	1.000m	10cm	1 to 12 m	40 kg/m ³

6. Thermal stability :

In addition to the stability characteristics of insulation materials under increased temperatures, the maximum and minimum temperature limits are also important for certain fields of application. The duration of a specific temperature influence is especially important here. The temperature limit for the application of the material can become apparent through various

effects, for example changes in dimensions, loss of form and stability, through to thermal decomposition.

Insulation materials made of rigid polyurethane foam (PU) have a high level of thermal resistance and good dimensional stability properties. Depending on the density and facings, rigid polyurethane foam (PU) insulation materials for building applications can be used long-term over a temperature range of -30°C to $+90^{\circ}\text{C}$. Rigid polyurethane foam (PU) insulation materials can withstand temperatures of up to 250°C for short periods with no adverse effects.



When exposed to heat or ignition sources, polyurethane rigid foams start to decompose at temperatures of $T \geq 250^{\circ}\text{C}$. There is no melting in general and burning droplets are not formed during the whole fire. There is no smoldering behavior as seen e.g. for cork or for some high density mineral insulation materials. Ignitable decomposition products in practice are generated at temperatures of 300°C - 320°C . Ignition properties of materials are e.g. determined by the Setchkin apparatus (ASTM-D 1929). The Table shows self-ignition and flash ignition temperatures according to this method. For determining flash ignition temperatures a pilot flame is used.