



Technical Supplies & Services Co.LLC.



ENVIRONMENT FRIENDLY

CFC / HCFC FREE

PIR

Insulated Composite Panels

Introduction

TSSC manufactures a range of building materials to meet the needs of diverse range of industries. These include high quality corrugated metal sheets and insulated composite panels. TSSC is the largest composite panel manufacturer in the Middle East. The products are manufactured to meet the prescribed specifications of design engineers and building contractors. The components manufactures by TSSC are aesthetically pleasant, weatherproof, provide thermal insulation as well as resistance to fire, fungi and mildew. The panels are manufactured to the exact measurement to fit perfectly and are mounted without mastic (dry joints) assuring short, cost-saving construction time.

The range offered by TSSC can be broadly classified as

- **Profiled Cladding Sheets**
- **Composite Panels**
- **Purlins**
- **Metal Decking**
- **Roofing Systems**

With state of the art manufacturing facilities and latest advanced technology TSSC is specialized in the design, production and distribution of Insulated Panels and Cladding Sheets.

PIR Sandwich Panels

An increasingly strict requirement to thermal insulation of buildings and higher standards in fire safety has led TSSC to search for new solutions for the end user. In order to meet these requirements and to fulfil our customers' expectations we have developed a new offer of sandwich panels, which comprises of Polyisocyanurate as the core.

Polyisocyanurate is a conceptually new material which differs from foam polyurethane in its incombustibility. It offers a high degree of fire resistance, low thermal conductivity and low specific gravity. Due to lower weight, PIR sandwich panels considerably reduce the load on basement, which results in the minimum costs of foundation works and lower steel intensity of the building frames.

TSSC's PIR Sandwich Panels are composite sandwich panels comprising of PIR as the core material. These panels are an ideal solution for projects that require high energy efficiency and fire-resistance for all external and internal partitioning.

These panels have gained increased popularity in the construction of refrigerating terminals, vegetable stores and logistics and retail centres. Our PIR panel system with non-combustible panels and specially designed details and accessories provides a complete solution for fire-resistant facilities or interiors.



Advantages

TSSC's sandwich panels with PIR insulation core

- Panels are non hygroscopic
- Water absorbency degree is < 2.0%;
- Fire safe - No flame spread occurs within the panel core.
- Thermal conductivity is stable during all life time;
- No deformation in winter;
- Structurally efficient -
the strength of the PIR panels is provided due to high adhesion to the outer skins and more rigid foam structure.
- Acoustically compliant
- Lightweight allows quick and rapid building installation and construction.

Applications

Here are some of the applications our product can be customized for:

- Warehouses
- Pre-fabricated buildings
- Fire- Resistant Rooms
- Partition Walls
- Transportation Containers
- Agricultural products storage and processing plants
- High-risk chemical & food processing facilities
- Packing & distribution centres
- Cold stores
- Garages for cars and heavy equipment
- Exhibition and shopping centres
- Sports and fitness complexes



Specifications

Parameters	Values					
Density kg/m ³	40-45					
Thermal conductivity W/m ² K, maximum	0.022 – 0.026					
Fire Classification	Fire Classification as per ASTM E84: Class 1 with less spread and smoke development. As per EN:13165:2008 our PIR foam is DCL (Dubai Central Laboratory) approved . Reaction to Fire: Meets Euro Class E Classification					
Water absorbency of the foam	1% of the volume					
Core Thickness (mm)	35	40	50	60	75	100
Overall Heat Transfer Coefficient U Value (W/m ² K)	0.68	0.60	0.48	0.40	0.32	0.24
Top Skin	Trapezoidal, Microprofiled, Slightly Ribbed					
Bottom Skin	Slightly Ribbed					
Compression Resistance	> 100 Kpa					
Tensile Strength	> 100 Kpa					
Shear Resistance	> 100 Kpa					

Our PIR foam is certified by DCL (Dubai Central Laboratory)

Colouring



RAL 5012
(Light Blue Color)



RAL 1014
(Ivory color)



RAL 1001
(Beige color)

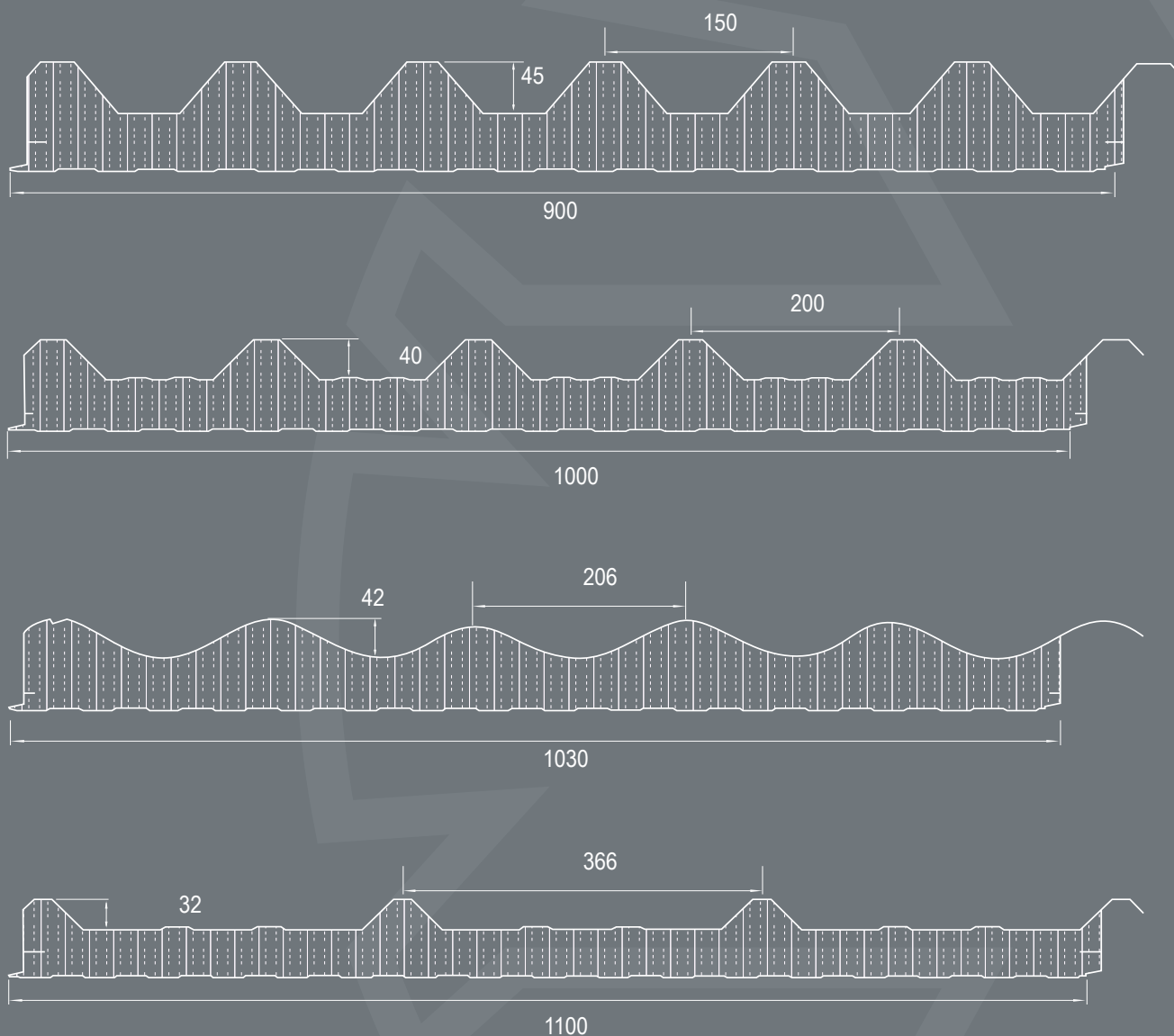


RAL 9003
(White color)



RAL 9002
(Off-white color)

Types of Facing Profiles:



Features of TSSC's PIR Panels:

- Large bend radii on facings ensure that none of the protective coat properties is lost
- Facing profiling ensures uniform facade appearance
- Rigid, self-extinguishing, environmentally and ozone friendly PIR foam core provides excellent thermal insulation parameters.
- Double lock from outer and inner sides increases water-tightness and facilitates assembly.
- Auxiliary groove allows for precise assembly.
- Concealed panel fixings ensure aesthetic facade appearance.
- Properly profiled edges improve thermal insulation and joint tightness.
- Continuous PIR seal ensures proper thermal insulation and joint tightness.



Fire Safety Testing and Certification

The main purpose of the fire safety design of a building is to minimize the consequences of a fire. As fire increases in size and objects around the fire origin begin to burn, the surface linings of the walls and ceilings close to the fire also ignite. Therefore, it is very important that the walls and ceilings are fire safe and do not spread fire, spit out burning droplets or emit excessive smoke. **TSSC's PIR Sandwich Panels** preserve their integrity and heat insulation properties for a certain time period preventing injury to people by allowing them to safely evacuate the building and also limiting the material and economic damage which is likely to follow.

Fire testing methods referred to as "reaction to fire" tests are conducted on surface linings to evaluate the contribution of products and materials to the early stages of a fire in terms of:

- Ignitability
- Flame spread
- Heat release
- Smoke production
- Occurrence of flaming droplets/particles

Building elements classified as "fire resistant" with respect to integrity and insulation are used as a means to prevent fire being spread between fire compartments.

TSSC 's panels have been tested according to standards EN 13501-1 and ASTM E84. For more information, please contact our technical department.

Certificates

CERTIFICATE

ISO 9001 : 2008
Quality Management System

VINÇOTTE INTERNATIONAL MIDDLE EAST
Dubai – United Arab Emirates

This is to certify that **TECHNICAL SUPPLIES & SERVICES CO. LTD. (CORPORATE)**


Located at **Plot No. 1317 and 1505, Industrial Area #10, P. O. Box 1818, Sharjah, United Arab Emirates**
Plot No. 75/689, Industrial Area # 13, P. O. Box 1818, Sharjah, United Arab Emirates
Plot # 598/296, 297, 298, 299, Dubai Investment Park, P. O. Box 77031, Dubai, United Arab Emirates

has established and is operating a quality system according to the requirements of ISO 9001 : 2008 "Quality Management System" for


See Annexure for Scope of Sites

Certificate number: Q10-106 (n)
First issued: 27 March 2010
Date of issue: 27 March 2010
This certificate expires on: 28 March 2013


This Quality System Certificate is granted subject to the Vinçotte International Middle East General Regulations and is based on the result of the audits performed by it. The Certificate / Registration is subject to the organization maintaining its Quality System to the required standard, monitored periodically by the Vinçotte International Middle East.



Signed for this certification body:



Wael Kamal
Chairman Certification Committee



Annexure to Certificate Q10-106

1. **TECHNICAL SUPPLIES & SERVICES CO. LTD. (Industrial Area # 10)**
 - (a) Design of Insulated Panels and Refrigeration Equipment for Cold Stores, Refrigerated Transport and Telecom Shelters
 - (b) Manufacture and / or Supply, Commissioning and Servicing of Insulated Panels, Profile Metal Sheets, Z-Purlins, Freezers and Refrigeration Equipment

2. **TECHNICAL SUPPLIES & SERVICES CO. LTD. (Industrial Area # 13)**
 - (a) Provision of Hot-Dip Galvanizing Services
 - (b) Design, Manufacture, Supply and Service of Display Chiller and Freezer Units

3. **TECHNICAL SUPPLIES & SERVICES CO. LTD. (Roof and Wall Cladding Division)**
Manufacture and / or Supply, Commissioning and Servicing of Insulated Panels, Profile Metals, Z & C Purlins

4. **TECHNICAL SUPPLIES & SERVICES CO. LTD. (Glass and Aluminium Division)**
Design, Manufacturing, Supply, Installation and Servicing of Aluminium, UPVC and Façade Systems




CERTIFICATE OF PRODUCT CONFORMITY

Dubai Central Laboratory Department (DCLD) of Dubai Municipality, hereby attests that the product(s):

FACTORY-MADE RIGID POLYURETHANE FOAM
(Details as per the attached Scope of Certification)

manufactured by:

TECHNICAL SUPPLIES & SERVICES CO. LTD.
P.O. Box 77031 Dubai Investment Park, Dubai UAE

have been assessed in accordance with DCLD Document Ref. No. RD-DP21-2001 (IC) "General Rules for DM third party product certification system through factory assessment" and the relevant Specific Rules, and were found in conformity with the standard specification:

BS EN 13165:2008

Accordingly, DCLD hereby authorizes the above manufacturer to affix the DCL Product Conformity Mark to the above-mentioned product(s).



ENGR. HAWA ABDULLA RASTAKI
Director, Dubai Central Laboratory Department
Dubai Municipality



Certificate No: CL10020120
Valid Until: 02 January 2013



Current Issue Date: 03 January 2012
Original Issue Date: 03 January 2010

The attached Scope of Certification bearing the same Certificate No. forms an integral part of this certificate.
This certificate is subject to the Terms and Conditions of the Product Certification System.

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