Since inception in 1961, TSSC, a primary member of Harwal Group has been setting manufacturing benchmarks in the region with its engineering excellence. The ISO 9001:2008 certified company manufactures a diverse range of products and offers a range of services from its facilities spread across Sharjah, Dubai and Abu Dhabi. TSSC is the largest manufacturer of insulated panels for roofing and cladding in the Middle East. The building materials manufactured by TSSC are fire rated and carry individual product certifications. With over 4 decades of experience, state of the art manufacturing facilities and the largest production capacity in the Middle East, TSSC manufactures products to international quality standards and cater to customer demands by ensuring timely delivery and providing exceptional service.

Range of Products Manufactured by TSSC

Building Materials
- Composite Panels
- Profiled Cladding Sheets
- Seamless Roofing System
- Doors & Windows
- Curtain Walls (Stick System & Unitized Glass)

Cold Stores
- Cold Rooms
- Freezers Rooms
- Refrigerated Vehicle Bodies

Factory Manufactured Houses & Shelters
- Factory Manufactured Houses
- Telecom Shelters
- Portable Cabins
- Containerized Houses

Stainless Steel Products
- Kitchen & Laundry Equipments
- SS Water Coolers
- SS Refrigerators & Freezers

Commercial Refrigeration
- Merchandising Refrigerators (Visi coolers & Freezers)

Industrial Storage Solutions
- Racking System

Metal Products
- Metal Sheds
- Cable Trays
- Trunkings

Services
- Galvanizing
- Coil Coating

TSSC Translucent Roofing Panels

TSSC, the largest manufacturer of insulated composite panels in the Middle East has an extensive range of profiled sheets to meet the cladding and roofing needs of the market. In addition to the GI and Aluminum cladding sheets, TSSC also manufactures translucent roof sheets from synthetic resin and fiber glass using advanced manufacturing techniques. With an average transparency rate of 70% – 75%, TSSC translucent panels transmit abundant natural light into the building.

The panels are manufactured from UV stabilized unsaturated polyester resin reinforced with high quality glass fiber to ensure weather resistance. TSSC’s Translucent Roofing Panels provide cost effective high levels of light transmission, excellent spanning and low thermal expansion. These panels have been designed for the harsh temperatures of the Gulf region and are available with different levels of surface protection depending on the project budget and application.
Fire Retardant Translucent Panels

Advantage of GRP roofing panels is that in the event of a fire, the roofing burns without dropping inflamed particles into the structure that could cause the ignition on the ground. The burnt roof acts as ventilation for the heat, smoke and fumes.

Translucent Twin Skylight Roofing

Energy consumption is an important aspect in today’s environment and the supply of natural daylight is an effective tool in preventing energy consumption. However, heat penetration can diminish benefits derived from natural daylight. TSSC Twin Skylight Translucent panels offer a solution.

The panels are factory assembled GRP translucent panel sheets bonded together using a special media. The design is simple and provides ease of installation, providing long term cost saving and environmental benefits.

Key Features

• Highly Durable
• Panels allow improved transmission of natural light into the interior of the structure.
• GRP sheets are specifically formulated providing fire retardance for use in commercial and institutional buildings at a minimal cost.
• Built-in UV inhibitors provide long term resistance to yellowing and discoloration.
• Oven cured and profiled to ensure maximum binding and strength.
• Resistance to wide range of chemicals.
• Low surface erosion.
• Flexibility allows unique variations to meet design criteria.
• Light weight & Easy to handle.

Continuous Line Manufacturing

TSSC employs a continuous line manufacturing process for the production of the translucent panels. With our state of the art machinery we are able to produce the panels at a line speed of 3 meters / min.
Due to the stable physical performance, Translucent roofing sheets are ideal for:

- Commercial Buildings
- Industrial Buildings
- Residential Projects
- School and Kindergarten
- Warehouses
- Greenhouses
- Covered Walkways
- Skylights
- Public Outdoor Areas
- Shopping Centers

**Applications**

**Product Specifications**

**Weight**

Translucent sheets are sold by weight, not thickness, measured as kilograms per square meter. The strength of the sheet increases with an increase in the weight of the panel. Standard weight (Grade) supplied is 2.4 kg/m². Other grades can also be supplied upon request.

**Specification**

TSSC translucent panels are manufactured to ASTM D 3841-97 (Reapproved 2001), which is the standard specification for Glass-Fiber-Reinforced Polyester Panels. The panels also comply with BS 4514:Part2:1985.

**Colors**

TSSC Translucent panels are available in standard colors of Clear, White Tint, Opalescent, Blue, and Blue Green. Depending on the quantity and to suit specific design applications, panels can be made in any color.

**Typical Transmission Levels**

<table>
<thead>
<tr>
<th>Weight</th>
<th>Clear</th>
<th>Blue Green</th>
<th>Opalescent</th>
<th>White Tint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>82%</td>
<td>51%</td>
<td>69%</td>
<td>44%</td>
</tr>
<tr>
<td>Heat</td>
<td>75%</td>
<td>69%</td>
<td>66%</td>
<td>43%</td>
</tr>
</tbody>
</table>

**TSS 35 / 205**

<table>
<thead>
<tr>
<th>Width</th>
<th>Length</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1025 mm</td>
<td>6 m</td>
<td>Clear, White Tint, Opalescent, Blue &amp; Blue Green</td>
</tr>
</tbody>
</table>

Depending on the order, lengths more than 6m can also be supplied.
### TSS 45/250

<table>
<thead>
<tr>
<th>Width (mm)</th>
<th>Length (m)</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>6</td>
<td>Clear, White Tint, Opalescent, Blue &amp; Blue Green</td>
</tr>
</tbody>
</table>

Depending on the order, lengths more than 6m can also be supplied.

### TSS 45/150

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<th>Width (mm)</th>
<th>Length (m)</th>
<th>Color</th>
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</thead>
<tbody>
<tr>
<td>900</td>
<td>6</td>
<td>Clear, White Tint, Opalescent, Blue &amp; Blue Green</td>
</tr>
</tbody>
</table>

Depending on the order, lengths more than 6m can also be supplied.

### TSS 40/200

<table>
<thead>
<tr>
<th>Width (mm)</th>
<th>Length (m)</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>6</td>
<td>Clear, White Tint, Opalescent, Blue &amp; Blue Green</td>
</tr>
</tbody>
</table>

Depending on the order, lengths more than 6m can also be supplied.

### TSS 32/366

<table>
<thead>
<tr>
<th>Width (mm)</th>
<th>Length (m)</th>
<th>Color</th>
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</thead>
<tbody>
<tr>
<td>1100</td>
<td>6</td>
<td>Clear, White Tint, Opalescent, Blue &amp; Blue Green</td>
</tr>
</tbody>
</table>

Depending on the order, lengths more than 6m can also be supplied.
Physical Properties

<table>
<thead>
<tr>
<th>Properties</th>
<th>Value</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength</td>
<td>114Mpa</td>
<td>ASTM D 638-99</td>
</tr>
<tr>
<td>Impact Strength</td>
<td>8 Joules</td>
<td>ASTM D 638-99</td>
</tr>
<tr>
<td>Elongation at Break</td>
<td>4.4 %</td>
<td></td>
</tr>
<tr>
<td>Flexural Strength</td>
<td>290 Mpa</td>
<td>ASTM D 790-99</td>
</tr>
<tr>
<td>Elastic Modulus (Tensile)</td>
<td>4522 Mpa</td>
<td>ASTM D 638-99</td>
</tr>
<tr>
<td>Compressive Strength</td>
<td>135 Mpa</td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.45</td>
<td></td>
</tr>
<tr>
<td>Elastic Modulus (Flexural)</td>
<td>8900 Mpa</td>
<td>ASTM D 790-99</td>
</tr>
<tr>
<td>Thermal Expansion</td>
<td>-2.7 x 10-5 mm/mm/°C</td>
<td>ASTM D 6341-98</td>
</tr>
<tr>
<td>Thermal Conductivity</td>
<td>0.25 W/mK</td>
<td></td>
</tr>
<tr>
<td>Yellowness Index (YI)</td>
<td>2.14 ASTM E 313-00</td>
<td></td>
</tr>
<tr>
<td>Water Absorption</td>
<td>1% in 24hrs / 23°C</td>
<td>ASTM D 570-98</td>
</tr>
<tr>
<td>Recommended Operations Temperature Range</td>
<td>-20° to +75°C</td>
<td></td>
</tr>
</tbody>
</table>

Handling & Storage

1. Store sheets in a dry and fire safe area. Do not store heavy materials on sheets as they may fracture.
2. Use a Lifting beam for stacked panels over 6 meters long. Avoid hook cranes.
3. While physically handling the panels care must be taken not to twist them.
4. Do not walk on the panels at any time. The panels are not designed to support undistributed weight of workers.
5. Roofing ladders or crawling boards or equivalent means of protection must be used during work on roofs.

Maintenance of Translucent Panels
Sheets should be regularly cleaned with warm water and detergents to maintain light transmissions.