Technical Supplies & Services Co. LLC.

GLASS & ALUMINUM SYSTEMS
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
- Freezer Rooms
- Refrigerated Vehicle Bodies

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

**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

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**Glass & Aluminum Division**

TSSC’s glass and aluminum division has years of experience as a glazing and aluminum fabricator/subcontractor in construction projects such as high rise buildings and towers, residential and commercial buildings, villas, facilities and etc. The division is fully capable of handling facade envelopes and glazing works, curtain wall projects, windows and doors, composite panel claddings and interior metal and glass works. We have developed strategic partnerships with renowned suppliers and manufacturers of glass technologies. This allows us to provide our clients with the most appropriate solutions for glass, aluminum, doors and windows projects.

The management team comprises of highly experienced professionals from across the world coupled with highly skilled Project Managers who are responsible for managing all components of the projects. We also maintain a core group of very experienced technicians who have the relevant skills to support all projects that we supply to. Teamwork, perseverance, open-communication and commitment towards our principles are the attributes that have led our teams to continuously develop new products that make a difference.

The Quality Management System followed by the division has ensured that the products and services offered surpass the expectations of its customers. Our state of the art QC laboratories ensure that products supplied meet the various international standards to which they are produced. The production line implements a continuous quality system at each stage of production. Moreover, our stringent vendor qualification system selects the best international manufacturers and suppliers for the production and procurement needs. In addition to this, the division provides its customers with a complete technical support.

We are able to supply and install all glass and aluminum products required to provide our customers with a turnkey solution. This includes:

- Aluminum Doors & Windows
- uPVC Doors & Windows
- Conventional Curtain Wall Systems
- Two Way Structural Glazing
- Four Way Structural Glazing
- Unitized Curtain Wall System
- Sky Lights
- Frameless Glazing Works
- Aluminum Composite Panel Cladding
- Stainless Steel Cladding & Aluminum Railings

www.tsscuae.com
TSSC provides high performance curtain wall solutions for middle and high rise buildings. The curtain walls are sealed, internally and externally with frame gaskets and factory injection molded vulcanized corner joints to provide high performance solutions for new and refurbished buildings. They are able to handle all loads (including dead load, wind load, seismic load, thermal load, blast load etc.) as well as keep air and water from penetrating the building envelope. The curtain walls are designed to accommodate double glazing options and can withstand calculated design wind pressure for various locations.

The curtain wall stick system by TSSC has several advantages:

**Simplicity and Flexibility**
Whether there is one single material or a combination of two or more the entire curtain wall can be constructed using the same framing and glazing or cladding system.

**Convenience and Speed**
Using the same system for all different materials makes the construction of the curtain wall simple, fast and cost effective. It also solves the problems of drainage and water proofing that are created when different systems for different materials are used.

**Low Cost**
The curtain wall stick system offered by TSSC can accommodate any material on the same profile series simplifying the fabrication and installation, therefore lowering the cost.

**Safety and Reliability**
The curtain wall stick system provides a perimetric support for all glazing or cladding material with uniform distribution of wind loads and stresses caused from other factors.

**Thermal Insulation**
Thermal insulation can be achieved with the use of a uPVC profile instead of aluminum profiles for the sash frame of the glass.
ALUSTET Stick Curtain Wall system

TSSC provides an innovative and unique curtain wall stick system for building facades and represents ALUSTET in the Middle East market. ALUSTET is the highly sought next generation curtain wall system based on a radically new concept, protected by several patents worldwide. The major characteristics of the curtain wall stick system are:

1. For the construction of a façade with different cladding and glazing materials, the framing of the curtain wall is the same and one aluminum profile is used for mounting the glazing and cladding panels on the framing.

2. The vertical mullions and horizontal transoms are the same for any type of façade regardless the façade complexity and material diversity.

3. Mullions and transoms are connected with “T” shape connection cleats creating rigid cross joints thereby upgrading the structural behavior of the façade.

4. The cross section of the mounting profiles provides a secure perimetric fixing of the panels on the curtain wall framing.

5. Thermal insulation can be achieved by replacing the aluminum sash frame of the vision glass with a PVC channel profile.

Unitized Glass Curtain Wall System

The unitized glass system offering from TSSC is an innovative concept that revolutionizes the construction and structural behavior of building envelopes when installed onto middle and high rise buildings. The units are assembled & glazed in the factory and all components are included within the units. The panels are then packed on metal or timber pallets, transported to site by trailers and hoisted to required floor level by tower crane. Site installation teams shall install individual panels to designated areas (using a monorail or mobile floor crane).

The unitized glass system has several advantages:

- All vision fixed panels can be converted at any time easily to projected windows.
- The installation of the curtain wall panels may be conducted at any location of the building without the need of any sequential procedure.
- Each glass unit or cladding panel can be removed without removing adjacent glass units or cladding panels.
- The installation of the curtain wall panels can take place from the interior of each floor.
Other Stick Curtainwall Systems supplied by TSSC

- GULF EXTRUSION SYSTEMS, UAE
- ALUSTET, GREECE
- REYNAERS ALUMINUM SYSTEMS, BELGIUM
- TECHNICAL SYSTEM, FRANCE
- REHAU, GERMANY
- EASY SAFETY ALUMINUM SYSTEM
As a leading provider of door systems TSSC supplies doors to both commercial and residential construction markets to best suit the access requirements of most entrances. Our doors are available in a wide array of finishes and designs and offer sound insulation, heat preservation and dustproof protection.

Manual, automatic and security door systems can be provided in both, sliding and revolving systems, based on customer requirements. Our elegant doors and sliding systems are recommended for theatres, banks, restaurants, offices, hospitals, furniture centers, shopping malls and exhibition.

For various purposes we provide the following types of doors:
- Hinged Doors
- Service Doors
- Manual Horizontal sliding doors
- Automatic horizontal sliding doors

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**Hinged Doors**

TSSC hinged doors are both versatile and functional and built to enhance the design of your project. Whether it's a grand entryway, gallery, or the kitchen door, TSSC has the options and design flexibility to make every opening special.

- Fully weather sealed around the complete frame perimeter
- Keyed lock for added security
- A range of glazing choices
- Plain glass or various glazing bar designs
- Inward and Outward swing door
- A range of standard and custom colors
- A variety of door style configurations
- Improved energy saving with thermally broken profiles

**Swivel Door**

Our aluminum swivel doors offer beautiful appearance, security and high performance.

- 360 degrees swiveling and can be stopped at any degree.
- Tempered, laminated or double glazed glass is available.
- Suitable for creating partitions in meeting rooms

**Revolving Doors**

TSSC offers revolving doors with project-specific diameters, which are the focal point of any modern façade. These doors are designed for everyday use so is an ideal alternative for buildings with a high volume of visitors.

- Robust construction
- Specific diameter can be produced
- Choice of drive system: fully automatic, power assisted or manual
- High degree of insulation
Manual Horizontal sliding doors

Manual horizontal sliding doors from Glass Alum are easily parted in any order to allow personnel pass-through. A vast range of sliding doors are available with several opening options.

- Easy Installation
- Quiet Operation

Automatic horizontal sliding doors

Automatic horizontal sliding doors from TSSC gives a wide variety of possibilities along with high performance. These automatic sliding doors feature a high-speed parting action.

Features include all Manual Door features plus:
- Rapid Open/Close
- Easy Set-Up - all adjustments are made with external controls
- Infrared motorized system detects personnel pass-through from a distance
- Digital Text Display - provides easy to read interface
- Soft Start and Soft Stop - avoids destructive acceleration and deceleration sequences
- Doors Stay Shut - uses motor torque to ensure an airtight seal in the closed position
Our window systems combine the latest advancements in technology with unrivalled design. Elegant and attractive, yet practical, durable and energy efficient, TSSC window systems offer quality and style that is simply superior. With extensive experience in producing the highest quality aluminum and uPVC systems and glazed residential windows TSSC enjoys an enviable reputation for quality and design. Our aluminum windows are found in projects ranging from homes to low and high rise building applications. Our exceptional products ensure that you receive only the best windows and doors for your home or workplace.

**Horizontal Sliding Windows**

- Meeting rail and interlock are aluminum extruded for added structural strength and rigidity.
- Provides a contemporary look.
- Strength and stability due to the aluminum.
- Choice of different colors for the frames.
- Easy-opening window over kitchen counters and sinks, also suitable for bedroom egress requirements.
- The high integral sash track and rollers provide smooth and easy sliding action over the life of the window.
- Windows can be single or double glazed.
- Custom features such as extruded heavy duty fly screening systems can be installed.

**Hinged Windows**

- Increased insulation.
- Provide considerable ventilation.
- Efficient weather and waterproofing when closed.
- Provides a large area open to air flow.
- Hinged Windows are simple and cost-efficient.
- Provides excellent ventilation.
- Frame installs easily in a variety of wall conditions.
- Available in standard or custom sizes.

**Awning / Top Hung Windows**

- Functional design.
- Continuous hinge for added strength and smooth operation.
- Can be left partly open to allow continuous ventilation.
TSSC provides different types of glazing used in architectural applications. Common types of glazing we offer are:

Single Glazing - Relative to all other glazing options, single-glazed with clear glass allows the highest transfer of energy (i.e. heat loss or heat gain depending on local climate conditions) while permitting the highest daylight transmission.

Single-glazed with tinted glass can be provided to reduce solar heat gain. But, it also reduces visible light as compared to single-glazed with clear glass or even other standard tinted glass products such as green and blue tints which offer significantly higher visible light transmission clear glass (Source: Efficient Windows).

Double Glazing - Double glazing, compared to single glazing, cuts heat loss in half due to the insulating air space between the glass layers. The inner and outer layers of glass are both clear and separated by an air gap. In addition to reducing the heat flow, a double-glazed unit with clear glass will allow the transmission of high visible light and high solar heat gain. TSSC also provides high-performance Low-E coating double glazing for reduced solar heat.

A double-glazed unit with high-performance tinted glass reduces solar heat gain and also has a visible transmittance closer to clear glass. Though, the tint has no effect on the U-factor but reduces solar gain, which is a benefit in the summer.

Laminated - This type of glazing consists of two or more lites of glass and one or more bonding interlayer. The glass does not shatter and is the logical choice for a safety glazing, due to its break “safe” characteristics. Laminated glazing resists condensation twice as long as clear glass and provides high energy efficiency results. The use of laminated glass in hurricane-prone areas can also reduce the effects of windstorms on buildings by preserving the integrity of the building envelope and by preventing glass particle fallout.

Tempered Laminated - Used when strength, thermal resistance and safety are important considerations. This type of glazing is a type of safety glass that has increased strength and will usually shatter in small pieces when broken.

Double Laminated - Ordinary glass breaks easily. Tempered glass, while stronger, shatters under a greater impact. But laminated glass is different. If laminated glass is broken, the vinyl interlayer remains in the frame, with glass fragments adhering to the interlayer. This provides a strong barrier against forced entry and cannot be cut from one side only, which renders glasscutters useless. Double laminated glazing also provides excellent acoustic properties. (Source: cardinal corp)
For decades, the Quality Management System followed by TSSC has ensured that the products and services offered by the company always surpass the expectations of its customers. Continuous improvement is an ongoing characteristic of our ISO 9001:2008 system to improve every operational process. As a leading manufacturer, TSSC has always stayed focused on finding new ways to design, produce, sell and deliver quality products at economic prices.

TSSC has QA/QC departments to continuously monitor their operational processes and product quality. TSSC’s state of the art QC laboratories ensure that products supplied meet the various international standards to which they are designed and produced. The production line implements a continuous quality system that conforms the quality at each stage of production. Most of TSSC products are approved by third party certifying agencies. We are ISO 9001 : 2008 certified by VINÇOTTE INTERNATIONAL MIDDLE EAST. TSSC composite panels have very high fire ratings and TSSC is under the process of obtaining FM approval for all the panels they manufacture. Besides these, most of TSSC products are DCL approved.

TSSC offers up to 25 years guarantee (according to the specifications) against manufacturing defects for all polyurethane insulated panels.

Moreover, TSSC’s stringent vendor qualification system selects the best international manufacturers and suppliers for the production and procurement needs. Some of the major suppliers for TSSC include:

- HUNTSMAN USA
- BAYER GERMANY
- KASON USA
- DAN-DOORS DENMARK
- PASTORE & LOMBARDI ITALY
- CORUS UK
- OTEFAI ITALY
- ARCELOR EUROPE
- HINDALCO INDIA
- UNI COIL KSA
- BLUESCOPE AUSTRALIA
- JSW STEEL INDIA
- UTTAM GALVA INDIA
- BASF GERMANY
- NATIONAL STEEL INDIA
- ESSAR STEEL INDIA
- POSCO SOUTH KOREA
- YUSCO TAIWAN

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Manufacturing Process & Our Facilities

Crimping Machine for Pre-Assembled Doors & Windows

Freezing Machine for Pre-Assembled Doors & Windows

Curtain Wall panels pre assembly

CNC Manichine for Composite Cladding Panels

CNC Manichine for Composite Cladding Panels

Profile Cutting Machine