



ARSHIA STEEL



Kailash Apartment, JN-1/26, A-11, Sector-9, Vashi, Navi Mumbai – 400703.
Tel. 022 2789 0941 | Mob. No. : 98201 03961 | E-mail: arsteel2014@gmail.com

ARSHIA STEEL - CORE BUSINESS

Providing & Installing steel building – PEB, PUF PANELS, Wide range of metal – long & flat steel products, Pre-coated products – Coils, Strips, Roofing Sheet, Building Accessories, Turbo vents, Multi-walls, Polycarbonate sheet, Deck sheet etc...

COMPANY BRIEF

In Nov 2015-ARSHIA STEEL abbreviated as ARSHIA was incorporated by Mr. Liton Biswas with PUF PANEL as the core product.

But, now in a course of one year ARSHIA deals in huge quantity of steel which includes Contract execution of Steel Buildings on LSTK basis, PUF Panel, all sorts of Long and Flat steel products, Metals – ferrous and non-ferrous, pre-coated coils, roofing sheet and accessories, Stainless Steel Tube etc.

ARSHIA is one of the rapidly growing medium sized steel building supplier besides being actively involved in contract handling and supplying a wide range of architectural products primarily PUF Panels.

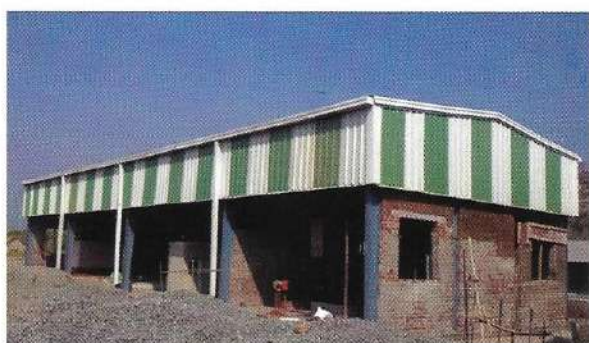
In a short duration of 2 years ARSHIA had executed PEB / Roofing / PUF Panel jobs in a lot of different industries & location. Few of the diversified industries with product & client is tabulated below.

Type of Industry	Product	Client	Location
Residential	PUF Panel	M/s. Satish Tipade	Malegaon
Real Estate, Resort etc.	PUF Panel & Sheet	M/S. E & G Global, Govani Builders ...	Nashik, Mahabaleshwar
Chemical Industries	Sheet	M/s. Jayshil Industries Limited	Mumbai
Extrusion Industries	Al Glazing	M/s. Darshan Extrusion	Silvasa
Mechanized Meat Processing Unit	PEB	M/s. Lulu Group, Swad Agro, Varsha Fresh Meat	Silvasa
Steel Foundry	PEB	Oriental Group	Gandhidham in Gujrat
Foundry resins, catalyst, Coatings etc.	Roofing	M/s. Gargi Hüttenes-Albertus Pvt. Ltd.	Khopoli

Because of multi-company association ARSHIA can supply materials from a number of locations depending on the proximity of destination which saves transportation time & cost at the same time giving ease in monitoring.

ARSHIA tries to play a pivotal role in the industries where steel buildings, PUF Panels, steel products (metals – ferrous & non-ferrous, long and flat, roofing, roofing & building accessories) and other architectural products are required, acting as a trading intermediary and value-adding service provider including taking care of erection activities till commissioning of project.

PRE-ENGINEERED BUILDING



PRE ENGINEERED BUILDINGS: PEB concept has been very successful and well established in North America, Australia and is presently rapidly expanding in INDIA & other Asian countries. PEB construction is 30 to 40% faster than masonry construction. PEB provide good insulation effect and highly suitable for a tropical country like India besides giving a wide range of choice for aesthetic.

INTRODUCTION:

- Pre-Engineered Buildings can be adapted to suit a wide range & variety of structural applications. The greatest economy will be realized when **utilizing standard details. An efficiently designed Pre-Engineered Building can be lighter than the conventional steel buildings by up to 30%.**
- Tailor made building based on client's requirement & actual design calculations using tapered sections.
- The structures are basically produced at the factory with high tensile steel material by collecting complete information of the shed/building (viz; Length, Width, Height etc.).
- The entire design of column, rafters and other accessories is based on International Structural Standards.
- All fabrication is done in factory; building components are brought to site and then fixed/jointed at the site. All connections are bolted.

DESIGN CRITERIA

- DESIGN METHOD:** Allowable stress design method is used as per the AISC specifications. Design on the basis of IS 800 can also be done.
- DEFLECTIONS:** Unless otherwise specified, the deflections will go to MBMA, AISC criteria and standard industry practices.
- Local conditions:** Earthquake(seismic load) & Wind Velocity – as per relevant Indian Standard.
- PRIMARY FRAMING:** Moment resisting frames with pinned or fixed bases.
- SECONDARY FRAMING:** Cold formed Z sections or C sections for purlins or girts designed as continuous beams spanning over rafters and columns with laps.
- LONGITUDANAL STABILITY:** Wind load on building end walls is transferred through roof purlins to braced bays and carried to the foundations through diagonal bracing.
- DESIGN SOFTWARE:** The latest software that is used for design is STAAD PRO.

ERECTION SYSTEM

A. Preparation for Erection

1. Pre Erection checks
2. Receiving Materials at site
3. Unloading of materials

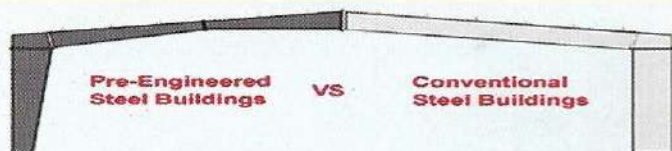
B. Erection of the Framing

1. Preparation of the First Bay
2. Main frames
3. Mezzanine floors
4. Crane Beams

C. Sheeting & Trimming

1. Sheeting preparation
2. Sheeting the roofs /walls
3. Sheeting the walls / roofs
4. Miscellaneous trimmings
5. Fascia

COMPARISON



PEB	CONVENTIONAL
Self weight - 30% lighter	Self weight - More heavy
Primary Member is tapered section	Primary members are Hot rolled "I" section
Secondary members are light weight rolled framed "Z" and "C" section	Secondary members are "I" or "C" section which are heavy in weight.
Delivery - average 6 to 8 weeks	Delivery - average 20 to 26 weeks
Foundation-simple design, easy to construct & light wt.	Foundation- expensive, heavy foundation required.
Erection cost and time- accurately known	Erection cost and time- 20% more than PEB
Overall price -30% lower	Overall price - Higher price per square meter.
Architecture-achieved at low cost	Architecture- achieved at higher cost
Erection process is easy, fast, step by step	Erection process is slow and extensive field labor is required.

PRE ENGINEERED BUILDING vs CONCRETE BUILDINGS

Criteria	PEB	CIVIL
Building Dimension	Suitable for 20-40m. Can sustain much larger span	Suitable for short span 5-8m. Becomes difficult and heavy for larger spans.
Erection Time	Fast erection. Virtually no idle time.	1. Slow erection and time consuming. 2. Poring should take place in limited amount of time. If exceeded the concrete quality may be jeopardized. 3. Contractor will have to wait for the previous cast to harden before being able to cast another batch.
Cost	1. Low manpower count needed. 2. Construction cost at site is low.	1. Large manpower count is needed. 2. Construction cost at site is very high.

APPLICATIONS

- Industrial Buildings
- Warehouses
- Slaughter Houses
- Commercial Complexes
- Showrooms
- Offices
- Schools
- Indoor Stadiums
- Outdoor Stadiums with canopies
- Gas Stations
- Metro Stations, Bus Terminals, Parking Lots
- Primary Health Centers, Angan wadi's
- And many more...

ADVANTAGES

- Aesthetic Appeal
- Faster Completion
- Economical
- Timely completion
- Seismic Resistance
- Ease of Expansion
- Maintenance Free
- Large Clear Spans
- Controlled Quality
- Single point solution

COLD FORMED / ROLLED PRODUCTS - SHEET & PURLINS

ARSHIA STEEL is engaged in supplying COLD ROLL FORMED TRAPEZOIDAL STEEL SHEET both in conventional profile as well as *CRIMPED CURVED PROFILE* sourced from various suppliers depending on location of project & technical criteria such as - the profiled sheet with very high values for "I" & "Z" combined with better load bearing to withstand high wind load and live load. We do lots of careful survey - alteration - refining - fine tuning etc. with respect to Indian realities in terms of Quality, Delivery, Service, Cost & Technical Parameters.

TECHNICAL SUPPORT: ARSHIA STEEL offers the complete roofing solution - in selecting the roof sheet thickness, strength of sheet, substrate type, metallic coating density, paint thickness, paint type, proper fastener selection etc. depending on roof slope, purlin spacing, weather & climate, usage & other custom needs. Technical service includes preparation of sheet layout drawing alongwith BOQ and minimizing wastage & proper closing of cut outs / openings, junctions etc. Technical support also includes selection of gutter configuration based on *peak rain fall per hour* and necessary flashing / accessories - ridge, corners, eaves, aprons, crimped curved, fasteners- type & spacing etc.

AVAILABILITY

Particulars	Colour Coated - Galvanised	Colour Coated - Galvalume
Metallic Substrate	Galvanised steel i.e., Zinc Coated	Galvalume Steel - Alu-Zinc alloy coated.
Base Metal Standards	IS 277, JIS G 3302, ASTM A653, EN 10142.	ASTM A792M, JIS G 3321, EN 10397, AS1397.
Metallic Coating (GSM)	120 - 275	70 - 200
Thickness (TCT)	0.3 - 0.8 mm	0.4 - 0.8 mm
Coating Standards	IS 14246, JIS G 3312, ASTM 755M, EN 10169	IS 14246, JIS G 3312, ASTM 755M, EN 10169.
Yield Strengths (min)	240/340/550 MPa.	240/340/550 MPa.
Paint Finish (Top Coat)	Regular Modified Polyester (RMP), Silicon Modified Polyester (SMP), Super Durable Polyester (SDP), Polyvinylidene Fluoride (PVDF), Abrasion Resistance System (ARS)	Regular Modified Polyester (RMP), Silicon Modified Polyester (SMP), Super Durable Polyester (SDP), Polyvinylidene Fluoride (PVDF), Abrasion Resistance System (ARS)

UNDER BANNER OF ARSHIA IMPEX WE ARE DOING EXPORT ACTIVITIES ...

Paint Finish (Back Coat)	Epoxy Coating in light grey (mill Std) or RAL 7035, PU Compatible etc.	Epoxy Coating in light grey (mill Std) or RAL 7035, PU Compatible etc.
Paint Coating Thickness (DFT)	Primer 5-7 microns both sides Top Coat 13-25 microns or as per requirement Back Coat 5-8 microns or as per requirement	Primer 5-7 microns both sides Top Coat 13-25 microns or as per requirement Back Coat 5-8 microns or as per requirement
Natural Finish	-----	Bare Galvalume

Note: Guard Film is not part of standard supply and may be considered if required.

PRODUCT – 1: Trapezoidal profiled sheet – profile is designed to make optimum use of the metal properties from which they are engineered.

TECHNICAL DATA:

Cover Width : 975 to 1020 mm, **Pitch :** 195 to 255 mm,
Profile Depth: 28 to 35 mm
Anti-Capillary Groove – Yes,
Return Leg: Yes, Stiffener - Yes

Note : Load Table, I & Z value – May be made available if required.

PRODUCT – 2: Crimped Curve – profile is designed to make optimum use of the metal properties from which they are engineered, roofing slope and aesthetic at eaves.

PRODUCT – 3 : Accessories - We can supply following Roofing / Building Accessories

Ridge - Apron Flashing- Base flashing- Cap Flashing-Corner Flashing - Eaves Flashing - Valley Flashing – Eave Gutter – Downspout etc.

Advantages of trapezoidal profiled sheet

- Very high I (moment of inertia) & Z (section modulus) value and excellent load bearing capacity (this may save purlin quantity).
- Even suited for coastal zones prone to cyclones, sheet of 975mm to 1000mm width can be used for tall buildings (even in the range of 85mm high)
- An ideal choice for those who choose to design with larger purlin spacing.
- The sheet geometry is such designed to provide optimum advantage in terms of cover and strength.

PUF PANEL – CFC FREE



An insulated panel (more commonly known as PUF panel) is a composite building material. It consists of an insulating layer of rigid core sandwiched between two layers of sheet - outer & inner. The sheet can be of PPGL / PPGL of different combination for outer and inner sheet thicknesses. The core may be either expanded polystyrene foam (EPS), extruded polystyrene foam (XPS), polyisocyanurate foam, POLYURETHANE FOAM (PUF) or fibrous insulation material. The PUF is being the most common choice for every one.

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BASIC CHARACTERISTICS

Thermal Resistance

- Sandwich panels have λ values from 0,024 W/mK for polyurethane to 0,05 W/mK for mineral wool. Therefore, they can achieve different U-values depending on core and thickness of the panel.
- The installation of a system with sandwich panels minimizes thermal bridges through the joints.

Acoustic Insulation

- The assessed sound reduction measurement lies at approx. 25 dB for PUR / PUF elements and at approx. 30 dB for MW elements.

Mechanical Properties

- The space between the supports can be up to 11 m (walls), depending on the type of panel used. Normal applications have spaces between the supports that are approx. 3 m - 5 m
- The thickness of panels is from 30 mm up to more than 200 mm
- The density of sandwich panels range from 40 kg/m² up to 100 kg/m² (depending on the foam and metal thickness,) which decreases time and effort for transportation, manipulation and installation.

Fire Behaviour

- Sandwich panels have different fire behavior, resistance and reaction, depending on the foam, metal thickness, coating, etc. The user will be able to choose between different sandwich panels types depending on the requirements.

Impermeability

- The assembling system of sandwich panels allow to have air and water tight buildings.

ADVANTAGES

- Design:** Building envelope made from PUF Panel sandwiched with metal sheet (plain / profiled) provides customers and architects with products, which meet all of the highest demands regarding construction characteristics and design.
- Quality:** High degree of pre-fabrication implies better quality control, faster and easier supply, erection and commissioning.
- Resource efficiency:** Due to their high strength, PUF Panel can bear high loads with less material.
- Sustainability:** Refurbishment flexibility, low whole-life cycle cost, 100% recycling, etc.
- Energy efficiency:** Profiles and sandwich panels are the best solution for the construction of nearly zero energy buildings i.e., with zero net energy consumption.

Sandwich panels (PUF Panel) due to their physical, mechanical and design properties are available for a variety of applications: roof and Roof cladding, external walls and wall cladding, walls (including partitions) and ceiling within the building envelope. They are used in industry and in residential sector, and the two sectors can be used in both new construction and rehabilitation. Some of the applications where we can find sandwich panels are:

- Industrial buildings
- Public buildings
- Offices and administration buildings
- Cold storage
- Clean rooms
- Agricultural buildings
- Power plants
- Residential houses