



# Kavya Roofing Industries

AN ISO 9001 : 2008 Certified Company





**“KAVYA Roofing Industries”** is a specialized Manufacturing Unit of Metal Buildings which incorporates supply of Roofing or Wall cladding sheets, Roofing accessories, Pre-Engineered Steel Buildings and Architect Design, at Visakhapatnam in Andhra Pradesh.

Using Good Quality of Raw material with Modern Machineries using Latest Technology, **KAVYA Roofing Industries** an ISO 9001: 2008 Certified Organization which profiles the widest range of colors and different cover-widths in Pre-Painted Galvanized, Pre-Painted Galvalume and Bare Galvalume sheets and also Supply of Pre-Engineered Steel Buildings under the brand name of '**RAINBOW**'. It has the Team of Dynamically young entrepreneurs' professionally managing the company to cater the increasing needs of customers for durable, affordable and versatile Metal Building System.

**RAINBOW** provides high precision quality work and the most effective solutions which are strong, leak proof, long term durable, having special metallic coating and gives aesthetic look which enhances the appearance, life and value of the building.



### Applications

- ❖ Industrial & Agricultural Sheds
- ❖ Warehouses
- ❖ Railway Stations & Bus Shelters
- ❖ Naval Dockyards & Ports
- ❖ Airport Terminals & Aircraft Hangers
- ❖ Cold Storage & Fruit Canning Industries
- ❖ Sports Stadiums & Dairy Farms
- ❖ Garages & Parking Areas
- ❖ Thermal Power Plants & Engg. Work Shops
- ❖ School & Educations Institutions
- ❖ Auditoriums & Commercial Complexes
- ❖ Hotel & Restaurants
- ❖ Textile Mills & Automobile Showrooms



## Benefits

-  Attractive Colors
-  Resistance to Extremities of Weather
-  Very low Maintenance
-  Thermal Efficiency
-  Excellent Corrosion Resistance
-  Flexible Designs
-  Environment friendly and fire proof
-  Product Approved by Civil-AID
-  Can withstand wind speed of Approx 200 kmph fixed with SDF Screws
-  Excellent Coverage of space
-  Strong Durable and Total Safety
-  Anti - Capillary Groove Ensures Leak - Proof Roof
-  Non-Cracable and gives 550 Mpa Strength to Roof
-  Superior Technology
-  Accurate Thickness, width & length Helps give the perfect fit for any roof
-  Wider valley Ensures Higher water Discharge in case of Heavy Rains
-  Fastest Delivery & Easy to Instal



## SPECTRUM OF COLOURS



Autumn Red



Sky Blue



Off-White



Royale Blue



Torres Blue



Beige



Caulfield Green



Terra Cotta



Mist Green



Light Grey



Teal Green

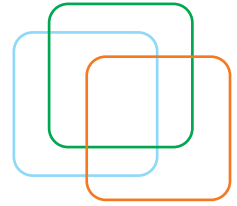


Bare Galvalume

**Note :** Actual Sheet colour may vary from the above range. Please refer to our colour Card or sample, while ordering.

## Layer of Pre-Painted Steel Sheets





## RAINBOW Trapezoidal Profile Roofing Sheets

Below are three types of corrosion protected steel for roof and wall cladding applications.

- ◆ Pre-painted Galvanized Steel (Zinc Coated Steel)
- ◆ Pre-painted Galvalume Steel (Zinc-Aluminium Alloy Coated Steel)
- ◆ Bare Galvalume Steel (Zinc-Aluminium Alloy Coated Steel)

### Technical Specifications

**Galvanized Steel :** Zinc metallized coating can provide corrosion protection in rural and urban areas. Atmospheric conditions will not rust steel protected by a Zinc metallized coating. Therefore, a Zinc metallized coating does not distort the shape of the steel nor it will affect its metallurgical structure. If the product is scratched and the based metal is revealed, zinc will sacrifices itself and protect the exposed area until it is consumed entirely.

#### Pre-painted Galvanized Steel

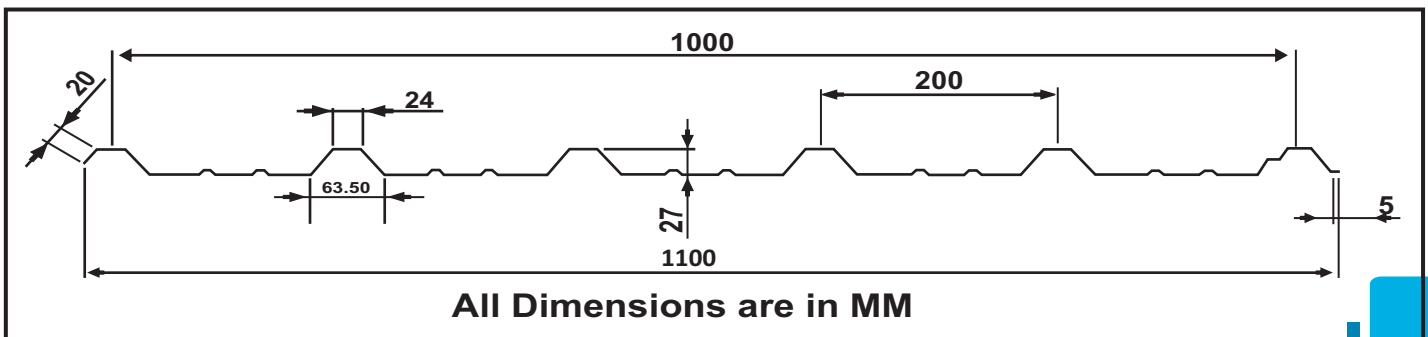
Thickness (TCT)	: 0.30mm - 0.80mm
Metallic Coating	: Z 120 (total on both sides) Higher or lower coating optional.
Base Metal	: High Tensile & Soft Material / CR
Tensile Strength	: 340 - 550 MPa
Paint Coating	: RegularModified / SiliconModified / PolyVinylDifloride Polyester system
Paint Thickness	: 18 - 22 micron on Top & 5 - 8 micron primer on bottom
Thickness Tolerance	: As per ISI
Standard followed	: IS 277, ASTM A653 AS 1397 JISG3312
Combination	: 99.5% Zinc

**Galvalume Steel :** Zinc-Aluminium alloy coating gives corrosion resistance and superior heat reflectivity. Galvalume Steel reflects a high percentage of heat and can withstand in any weather conditions, without surface discoloration. It is also suited for coastal areas. Bare Galvalume coating is inorganic and does not contain volatile compounds that can harm the environment.

#### Pre-painted Galvalume / Bare Galvalume Steel

Thickness (TCT)	: 0.30mm - 0.80mm
Metallic Coating	: Zinc-Aluminium Alloy Coating AZ-150 Higher or lower coating optional.
Base Metal	: High Tensile / CR
Tensile Strength	: 550 MPa
Paint Coating	: RegularModified / SiliconModified / PolyVinylDifloride Polyester system
Paint Thickness	: 18 - 22 micron on Top & 5 - 8 micron primer on bottom
Thickness Tolerance	: As per ISI
Standard followed	: IS 277, ASTM 1397 / A755 / A792, JISG3321/3322
Combination	: 55% Al, 43.4% Zn & 1.5 - 1.6% Si.

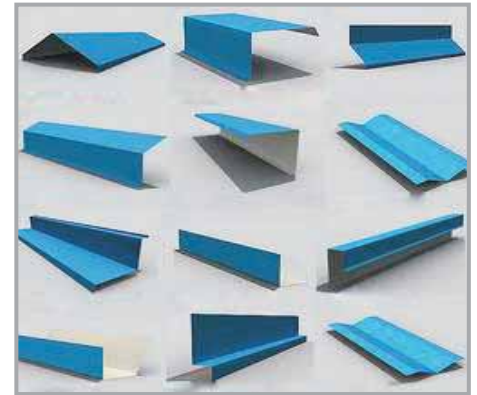
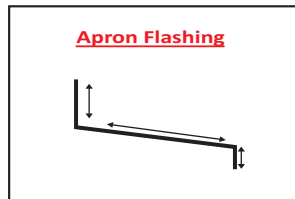
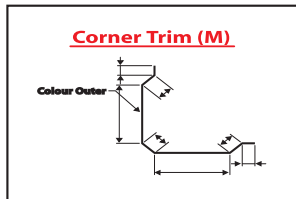
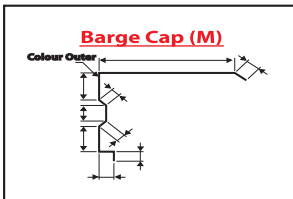
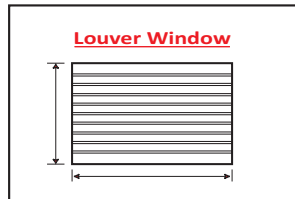
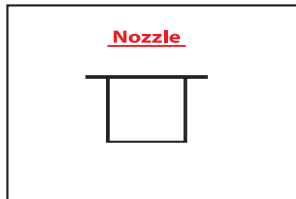
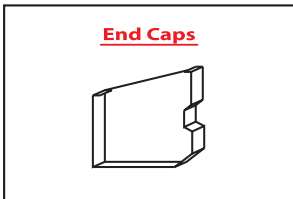
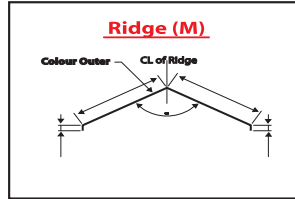
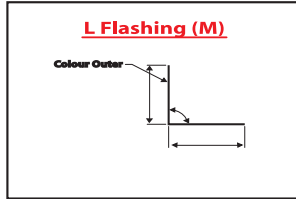
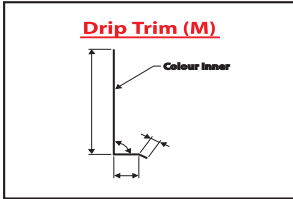
## RAINBOW Trapezoidal Profile Drawing



Product	Sheet Width	Effective Width	Crest Depth	Crest Distance
Trapezoidal Profile	1100mm	1000mm	27mm	200mm c/c with 2 ribs at the center for stiffening

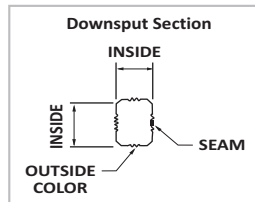
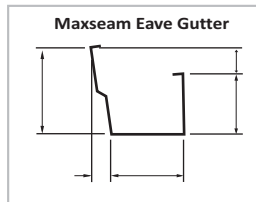
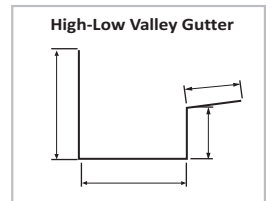
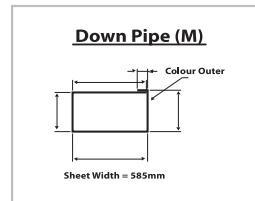
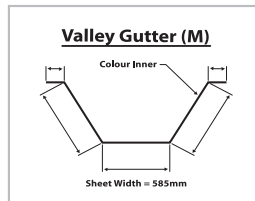
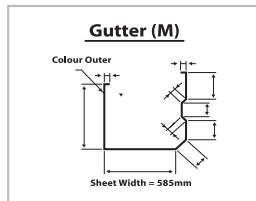
## Accessories

**RAINBOW** has wide range of accessories like Gutter, Flashing, Ridges, Louvers, Downpipe, etc which are manufactured out of the same material used for Roof and cladding to ensure equal quality and durability. All accessories are available in small, medium, heavy and customized sizes as per customer needs.



## Benefits of Gutter and down pipes – Drainage solutions

- ❖ Strong, light weight and corrosion resistant
- ❖ Leakproof water drainage solution.
- ❖ Various panels and lengths available subject to different pitches and local rainfall



## RAINBOW ROOF RIDGE VENTILATOR

Rainbow Roof Ridge ventilators are a new concept in the ventilation field. These systems are designed and can be fixed on any of sheet roof profile to effectively remove heat, humidity, smoke, fumes, and dust from interiors, providing optimum fresh air in the working environment such as factories as it exchanges the air between inside and outside, allowing for coolness and fresh air with running and maintenance costs virtually nonexistent, they are of maximum benefit to industries needing continuous extraction of plant and sun heat.

## Turbo Roof Ventilator



Turbo Roof Ventilators are designed in a manner to fetch the normal as well as extreme weather conditions pertaining at any industrial or commercial shed so as to remove heat & dust to the extent possible, also to maximum fresh air enters the shed, these are wind driven, they have the following specifications.

### Specifications :

- \* Designed as per industrial & commercial specifications.
- \* Very high durability.
- \* Can withstand any extreme weather conditions.

- \* Turbine Roof Ventilators are made up of Nylon / SS / Aluminum material.
- \* Vanes are designed so as to prevent rain water from entering the shed.
- \* Very light in weight.
- \* Requires no maintenance & zero operating cost.
- \* Environmental friendly & Removes any kind of dust, heat replacing with fresh air.
- \* Makes working conditions cool for working.
- \* Can be used in existing as well as new shed.



**Working Principal:** It utilizes wind energy to include air flow by centrifugal action. The centrifugal force generated by the rotating vanes creates low pressure zone, which draws fresh air from outside even after the stoppage of wind.

## RAINBOW SANDWICH PANELS

Rainbow Sandwich panels for wall cladding and roofing for multifarious applications. Rigid polyurethane foam is sandwiched by metals of flexible facing and becoming very popular in meeting the requirement of construction industry by providing a cost effective system for building and energy conservation. Panels are made for modern continuous plant and possess superior properties as against others they can be made with different types of facing materials, with various thickness ranging from 25mm to 200mm as per customer requirement, proprietary and exclusive joint systems to deliver you the best combination of aesthetics, durability and thermal insulation.

### Advantages of Sandwich Panels:

- \* Excellent thermal insulation which result in better working environment, productivity and cost.
- \* High load bearing capacity at low weight helps to do erection without lifting equipment, and also easier & quick installation.
- \* Facing made of top quality metallic color coated sheets and guarantees for long life, Varieties of finishes available to match aesthetic needs.

### Applications :

PUF Insulated panels for various applications such as industrial application for Commercial Buildings, Prefabricated shelters, Cold storages, Pack House, Food Processing, Freezer Rooms, Industrial Building, Partition Cabins, Clean Rooms, Accommodation Shelters for zero temperature areas, Information kiosks, Health centers & Renovation.



## RAINBOW TRUSS LESS ROOF



### Rainbow Truss less Roofing (Self Supported Roofing):

Modern Curved/Arch Truss less Roof is a marvel of architecture and design proven to withstand various loads due to its unique profile and installation techniques. It is made of Galvalume material – the latest in metal roofing, without the need for any structural members. It's the fastest roofing system available today and the fabrication of roofing panels and erection is carried out at site.

**Rainbow Truss less Roof** is Crimp curved, increasing the materials rigidity and hence the life of the roof. And the depth and cross corrugation with higher thickness and quality material ensures superior strength.

## Rainbow PolyCarbonate Multiwall / sheets

**Rainbow** Polycarbonate sheets are made up of polymers. The polymer is given rainbow profile shape by different molding processes. Polycarbonate roof sheets are manufactured by the process of extrusion. Polycarbonate roof sheets are commonly called transparent steel due to high impact resistance and glass like clarity.

### Salient Feature of polycarbonate sheets:

- ★ Have very high impact strength.
- ★ Light transmission of upto 95%.
- ★ Easy installation.
- ★ Light in weight.
- ★ Available in standard length of 3.00 mts.
- ★ High temperature tolerance (from -40°C to +130°C).
- ★ Excellent thermal and electrical insulation properties.

### Salient Feature of Multi-wall sheets:

- ◆ Varying widths. Maximum width is 7 feet (2.1m).
- ◆ Thicknesses: Can range from approximately 0.157 to 1.77 inches (4 to 45mm).
- ◆ Length: Dependent on the equipment.
- ◆ Option to coextruded an ultra-violet (UV) protection layer on the top surface of the sheet.
- ◆ Transparent, translucent, and opaque colors possible.
- ◆ High degree of thermal insulation.
- ◆ Light-weight material.
- ◆ Increased weathering resistance when coextruded with a UV concentrate from BMS.
- ◆ Continuous production and high output possible.

### Applications

- Residential flat & curved glazing
- Roof glazing
- Building façades and claddings
- Greenhouse roofing
- Skylights
- Walkways



## Rainbow FRP Sheets

Rainbow profile FRP corrugated sheets are available in different thickness, and length. Their transparency property helps in successfully meeting the challenges of any kind of weather.

### Specification:

- ◆ Thickness: 0.8mm, 1.2mm, 1.5mm, 2mm, 2.5 mm, 3 mm, 4mm
- ◆ Colors: Clear, sky blue, light green
- ◆ Length : Standard length of 3.00 Mts
- ◆ Density : g/cm 22.00 to 2.00
- ◆ Light transmission : 75-90%
- ◆ Applicable temperature: 40°C to 120°C

### Application areas:

- **Industrial :** Ware housing sheds, site cabins, security cabins
- **Domestic :** Parking sheds, room extensions, roofing
- **Transportation:** Bus station, ticket counters, parcel offices, shelters.

### Advantages

- Water proof
- Resistant to all types of weather
- High tensile strength
- Resistant to acid / alkali fumes
- Free from problems of cracking, wrapping and buckling



## RAINBOW PRE-ENGINEERED BUILDINGS

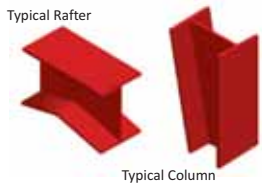
### Pre-Engineered Building Concept

Pre-Engineered Buildings (PEB) were introduced into the steel building industry to facilitate fast design, delivery and erection of simple low rise structures like canopies, warehouses etc.

### Benefits:

- ❖ PEB can be constructed in much less than the normal time from other structures.
- ❖ PEB is a structural concept whereby all the components of a building are designed, detailed and fabricated to suit the specific requirement of design and serviceability.
- ❖ There would be absolutely no cutting or welding at site.
- ❖ The erector would only use spanners to connect the various elements together.

**PEB buildings are made of 3 major components. They are**

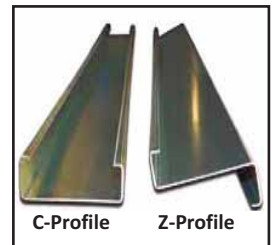


### 1. Primary Framing:

Primary Framing consists of columns and rafters with tapered web and variable flanges. These are manufactured by welding together cut plates to form the desired frame I-sections. The tapered sections are welded at factory/bolted at site to form the desired frame profile. These frames in PEB are normally moment resisting frames with fixed or pinned bases as mandated by the design.

### 2. Secondary framing members:

Secondary framing members are purlins and grits made of cold formed sheets. Normally, secondary framing members are in Z or C shapes. Purlins which are used to support roof sheeting and the grits at longitudinal walls are normally designed as continuous members. However, the grits at transverse or short walls are normally designed as simply supported beams. The spacing of secondary framing members are primarily dictated by the capacity of the cladding to span in the between the purlins/grit.

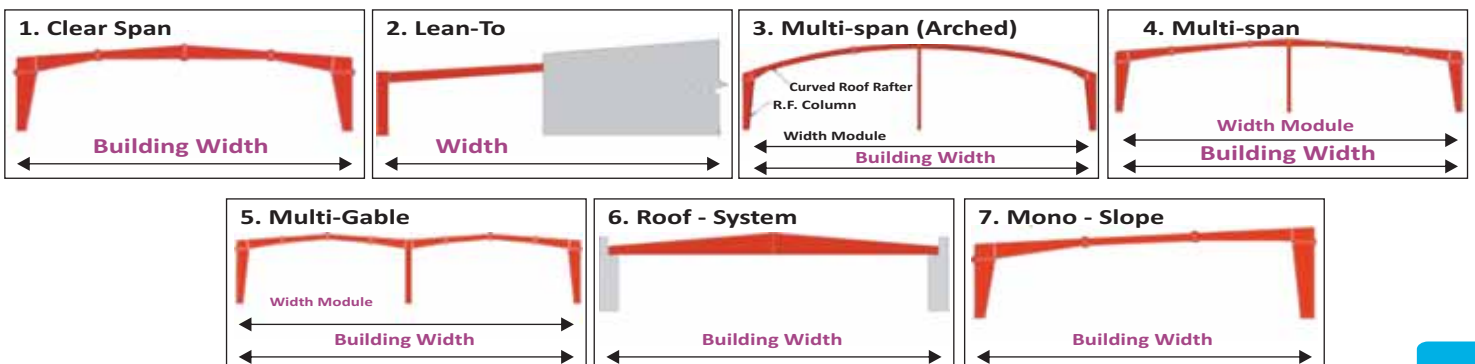


### 3. Cladding:

Cladding comes in a variety of profiles which are customized to suit structural and aesthetic requirements.

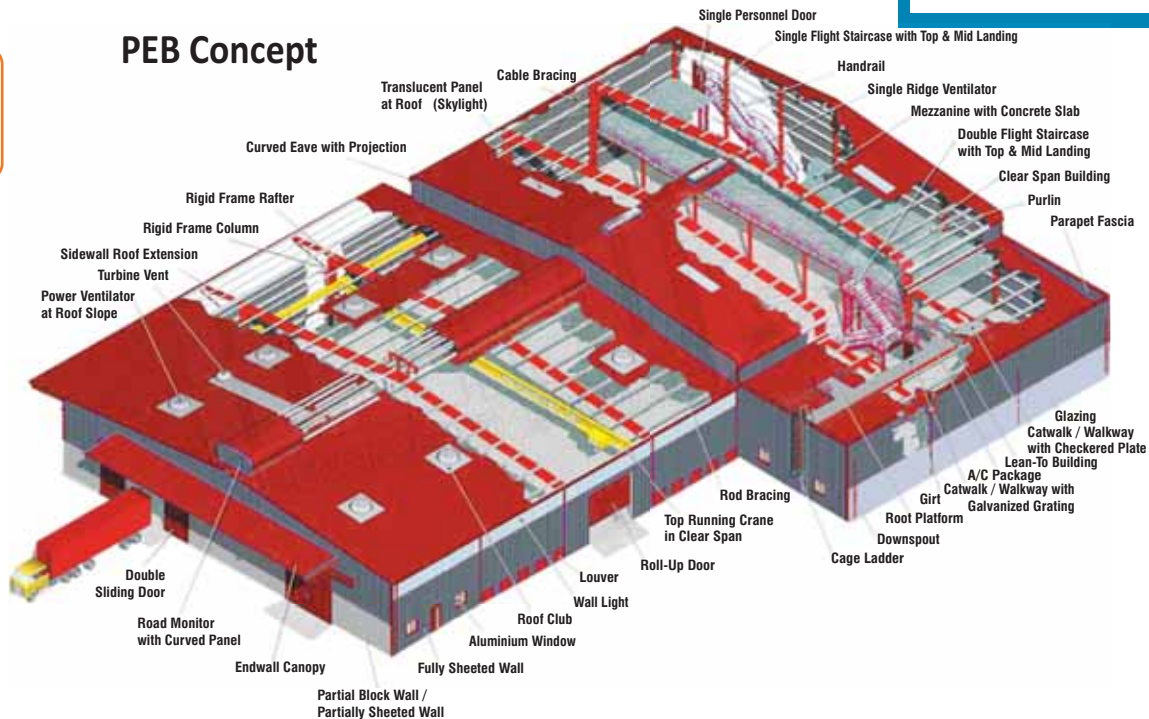
### Structural Profiles in PEB :

Below Figure shows some of the typical frames used in PEB. The various profiles for the primary members are chosen based on the requirement in terms of the building usage, loads, economy etc. The chosen profiles are spaced at distance varying from 6 to 10m in order to form the length of the building. Quite often in buildings a combination of all the profiles indicated are used. This gives lots of flexibility for the building configuration.





## PEB Concept

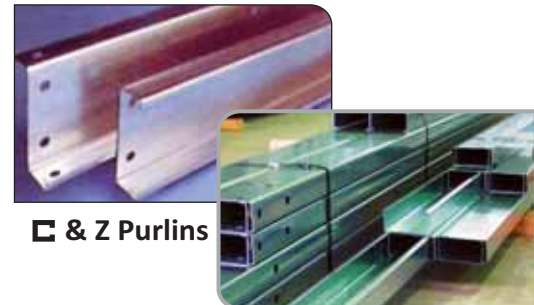


## RAINBOW PURLINS AND GIRTS

**C & Z Purlins** Rainbow Purlins and Girts are roll-formed from Hi-Tensile Galvanised / Hot Rolled steel. They are primarily used to provide lightweight, economical, efficient roofing and cladding support systems for framed structures. Purlins and Girts are available in a range of different sizes and configurations.

**C-sections** have equal flanges and may be used in single spans and unlapped continuous spans in multi-bay buildings. Their freestanding stable shape allows easy handling and storage and is easily adapted for use in small and medium sized buildings as structural framework.

**Z-sections** feature one broad and one narrow flange allowing the two sections to fit together snugly, making them suitable for lapping. Z sections of the same depth and different thickness' can be lapped in any combination. Purlins and Girts that are lapped form a structurally continuous line along the length of the building, a factor that contributes significantly to the reduction in building costs. We are also able to customise sections outside the standard range to suit your individual requirements



## RAINBOW METAL DECKING SHEETS

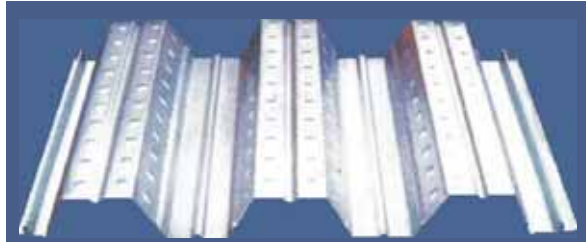
**Metal Deck Profile Sheets** for steel buildings are manufactured from Cold Roll Formed Steel. Composite Deck Slab is steel cum concrete slab having ribbed steel profile at the bottom & concrete on top, together forming a part of the floor/ roof structure called the composite deck slab. The composite floor profile offers the ultimate in the light weight steel decking which reduce the concrete usage to provide a cost effective and alternative floor solution that is easy to install.

The floor is constituted by a profile sheet on to which a layer of concrete is poured. The sheet is bonded to concrete by means of mouldings on the sheet which stop the concrete

from slipping horizontally and detaching vertically. When the concrete is poured and until it has reached an appropriate level of hardening, the weights of the concrete, personnel working and equipment used in borne by the sheet alone. Once the concrete has hardened the sheet and concrete form a unified bond with all the characteristics of traditional reinforced concrete, where the sheet, after having performed the function of framework, acts as a metal reinforcement. Appropriate cross ends must be provided to absorb the negative moments.

**Application Areas:** Multi-storey Buildings (Industrial/Residential), Shopping malls, Mezzanine Floors, Bridges, Walkways, Platforms etc.

**Advantages :** Decreases in slab thickness, provide lighter slab, reduced foundation loads resulting in less material consumption & thus lowering the cost.



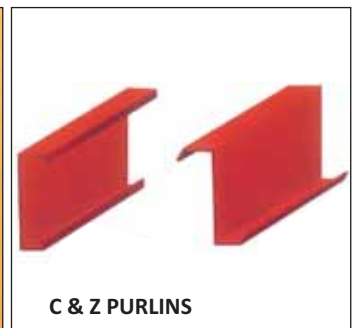
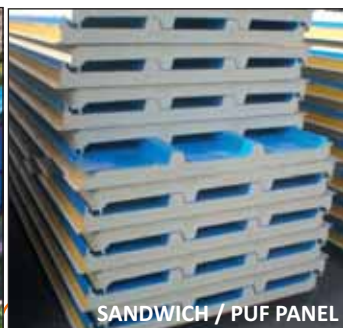
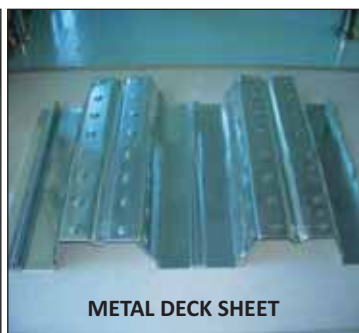
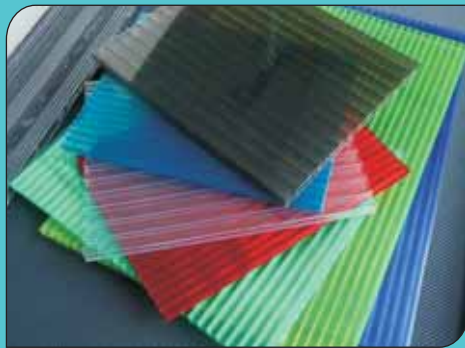
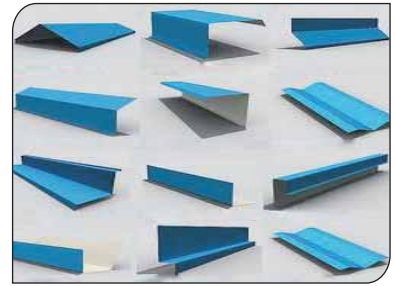
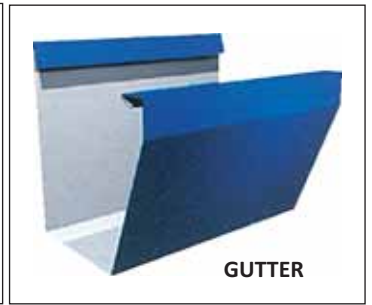
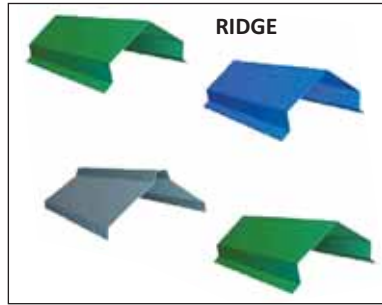
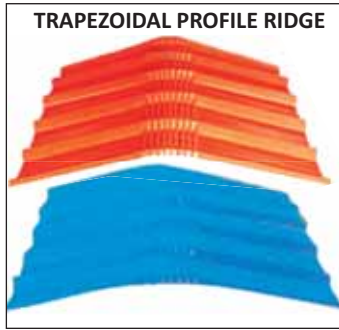
**Rainbow Self Drilling Fasteners** The fasteners (screws/rivets) used to fix roofing, cladding sheets and the accessories, should be durable as much as the product itself. Screws used for attaching panels and trims to girt and purlins are conforming to Australian standard AS3566:2002.

- ❖ High corrosion resistant coating.
- ❖ Provides 4-6 times more durable than conventional galvanised fasteners.
- ❖ Unique shank protection system minimizes damage to the protective coating on the screw.
- ❖ Grip sheeting towards the seal to maximize water-proof ability.
- ❖ Strong self tapping drill point and durable washer.
- ❖ To maximize water tightness, always place roof screws with EPDM washers with shank guard through the crests.
- ❖ For wall cladding, you may use either crest or valley fixing.



## Some of our Esteem Clients

WALT AIR RAILWAY DIVISION  
 VIZAG STEEL PLANT  
 BHPV LTD  
 VISAKHA FOODS (P) LTD.  
 VIZAG PROFILES GROUP  
 AIRPORT AUTHORITY OF INDIA  
 NAVAL DOCK YARD  
 HINDUSTAN SHIP YARD LTD  
 AIRPORT AUTHORITY OF INDIA  
 VISAKHAPATNAM PORT TRUST  
 MILITARY ENGINEER SERVICES (MES)  
 GAIL (I) PVT LTD  
 ANDHRA UNIVERSITY  
 VIJAYA VISAKHA MILK DAIRY PRODUCTS  
 HERITAGE MILK FOODS  
 HINDUSTAN PETROLEUM CORPORATION LIMITED  
 CONTAINER CORPORATION OF INDIA LTD  
 HBL POWER SYSTEMS LIMITED  
 DR REDDY LABS  
 THE KRISHNA INDUSTRIAL EXHIBITION  
 SIONIC PHARMA LTD  
 SAI ANUSHA MINERAL EQUIPMENTS  
 KANTIPUDI AUTOMOBILES  
 SRAVANI PAPERCONES & TUBES, KRISHNA DIST.  
 K.L UNIVERSITY  
 SUJANA THERMAL POWER PLANT  
 GANGA EPS, RAYAGADA  
 HIMADHARI CHEMICALS & INDUSTRIES, KORBA  
 AGARWAL STEEL TRADERS  
 ASHOK JINDAL PLYWOOD LTD  
 JK PAPER LTD JK PAPER MILLS  
 HINDUSTAN CONSTRUCTION & CO  
 HINDUSTAN AERONAUTICS LIMITED  
 MITTAL MINERALS & REFINERY  
 NEW LAXMI STEEL & POWER PVT.LTD  
 DAS DAIRY FORMS  
 GRAMA SWARAJYA SAMITHI  
 ADI DURGA STEELS (P) LTD.  
 NATURAL FOOD STORAGE  
 NEWS CONSTRUCTION  
 ARC INDIA PETROLEUM (P) LTD.  
 LALAGUDA RAILWAY STATION  
 PORT DIVISION  
 JNTU ENGG COLLEGE  
 TABACCO EXPORTERS  
 MANNA JUBILEE CHURCH  
 PMR DAIRY FORMS  
 CPF INDIA PVT LTD  
 TENALI & BAPTALA RAILWAY STATION  
 SRI PVNR SB RICE MILL  
 NEW SON BIO SCIENCE  
 SRI MANJU GRANITE  
 SRI SIVA BALAJI SLABS INDUSTRIES  
 K P R FERTILIZERS  
 SRI VIJAYALAKSHMI TALIKIES  
 NAVYA JUTE MILLS (P) LTD.  
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 HYDERABAD, T.G.  
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 KAKINADA, A.P.  
 KAKINADA, A.P.  
 RAJAHMUNDRY, A.P.  
 RAJAHMUNDRY, A.P.  
 TANGUTURU, A.P.  
 ERRAVARAM  
 GUNTUR, A.P  
 NELLORE, A.P  
 ONGOLE, A.P  
 KHAMMAM, T.G.  
 KHAMMAM, T.G.  
 KHAMMAM, T.G.  
 PRAKASHAM, A.P.  
 BOBBILI, A.P  
 SRIKAKULAM, A.P.





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