



Sathyam Steel Roof Structures Limited



ISO 9001:2015



EXCELLENCE IN
QUALITY & SERVICE



PRE ENGINEERED BUILDINGS(PEB) ▶ STEEL ROOFING & CLADDING ▶ STEEL KLIP-LOCK SHEETS
DECKING SHEETS ▶ PURLINS ▶ ACCESSORIES

www.sathyamsteelroof.com

About

Started our journey in the year 2004, we, "Sathyam Steel Roof Structures Ltd." An ISO 9001:2015, is a well known customer oriented and recognized as the leading organization engaged in a wide range of Pre Engineered Buildings, Structural Members like Z & C Purlins, Structural Decking Sheets, Roofing Material like Trapezoidal Sheets & Klip-Lock Sheets, Louvers, Crimped Sheets, various custom & standard design flashings etc. We developed each and every product with great care & responsibility to add additional values to our esteemed customers. We have carefully chosen the best internationally recognized machineries to produce the highest standard of quality like zero tolerances with stable production.

Vision

We aspire to be the India's largest Pre Engineered Building business organization that delivers best-in-class products and specialty solution using safe, sustainable and innovative processes.

Mission

Value Creation for all the stakeholders, customers, suppliers and our people. Becoming the supplier by choice, delivering premium products. Believes success by pure quality and superior services.

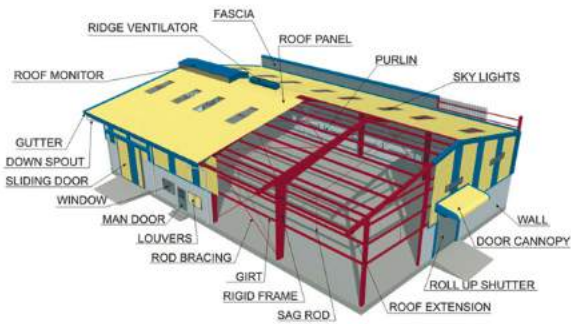


ISO 9001:2015

Our quality assurance department ensure the highest quality to our esteemed customers. The company is professionally managed and follow the best industry practices for total customer satisfaction. Our well experienced & dedicated manpower working tirelessly to achieve the best in the industry. Our strength start with entire customer satisfaction on quality materials, meeting strict quality norms, on time delivery and after sales services etc.



Pre-Engineered Buildings



Our Pre-Engineered buildings are custom designed to meet your exact requirements.

Basic Building Parameters

Length

Building length is the distance between the outside flanges of endwall columns in opposite endwalls. It is a combination of several bay lengths.

Width

No matter what primary system is used, the building width is defined as the distance from outside of eave strut of one sidewall to outside of eave strut of the opposite sidewall.

Height

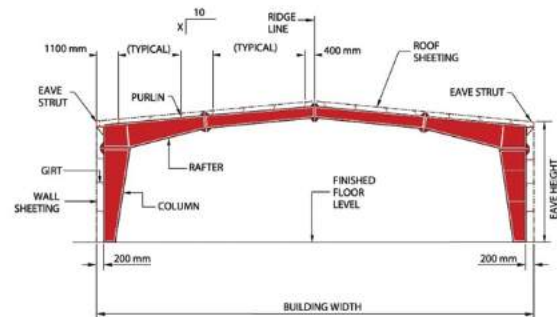
Building height is the eave height, which is usually the distance from the bottom of the main frame column base plate to the top outer point of the eave strut. When the columns are recessed or elevated from the finished floor, eave height is the distance from the finished floor level to the top of the eave strut.

Roof Slope: (X/10)

This is the angle of the roof with respect to the horizontal. The most common roof slopes are 0.5/10 and 1/10. Any practical roof slope is possible in PEB.

Bay Spacing (Interior Bay Length)

This is the distance between the center lines of two adjacent interior main frame columns. The most common bay lengths are 6m to 7.5m. Any bay length is possible up to 15 meters.

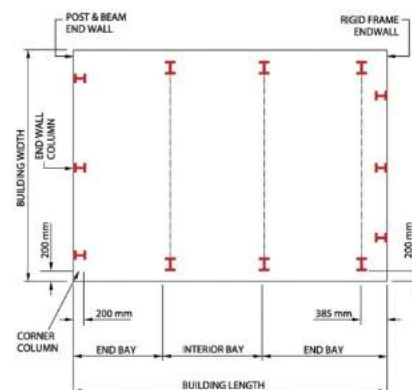


End Bay Length

This is the distance from the outside of the outer flange of end wall columns to the center line of the first interior frame column.

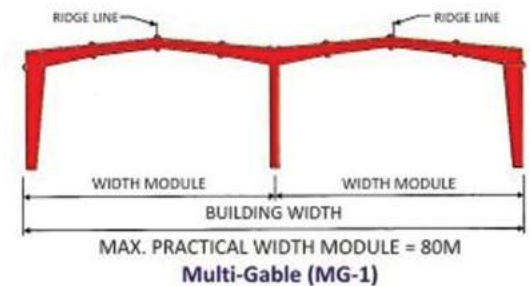
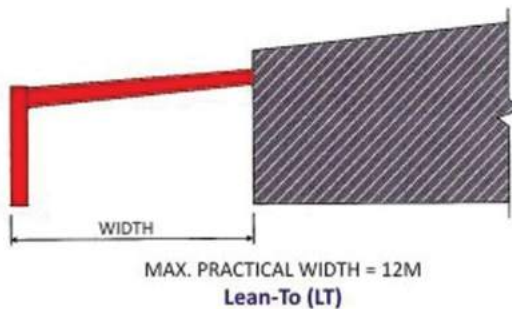
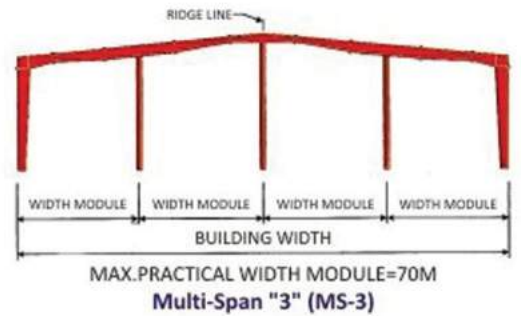
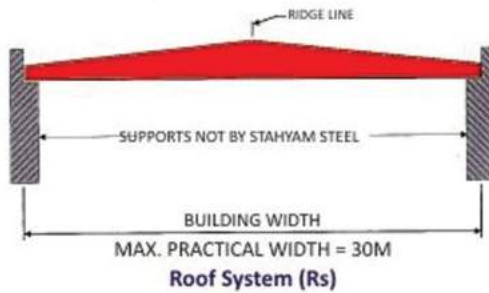
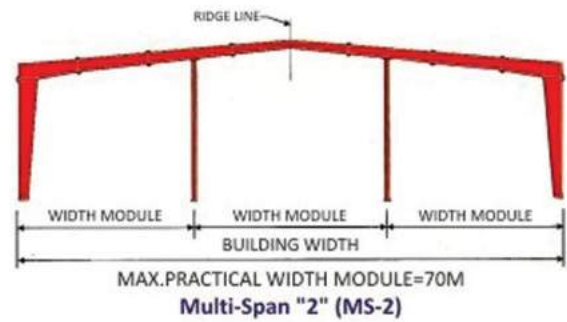
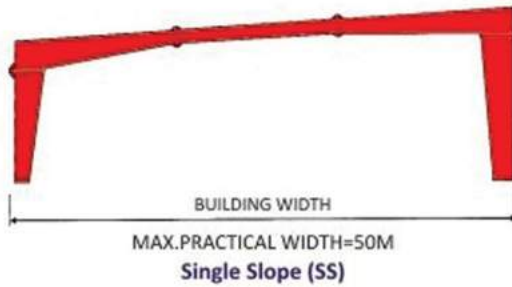
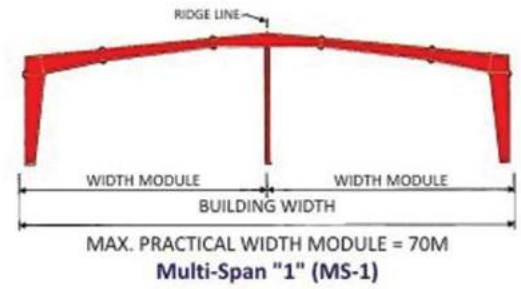
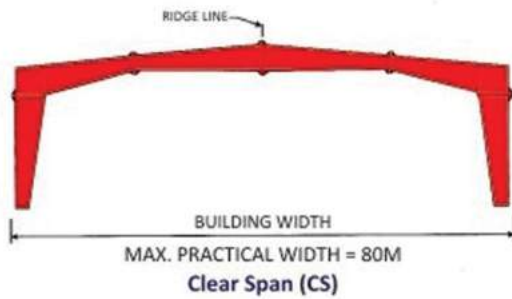
Sidewall & Endwall Conditions

This is about the wall cladding arrangements. Either it can be partially Brick wall and above steel cladding, or fully sheeted or fully brick wall.



Pre-Engineered Buildings

Basic Framing Systems



Pre-Engineered Buildings

Design of Structures

Our design department is fully supported by well qualified & experienced engineers duly backed up by two design consultants who are well known for their design skills inland & overseas. Detailed engineering design with data sheet of calculation will be submitted considering wind, dead, live load as per IS-875, & relevant coefficients for terrain category for the height of structure to determine the safe life of the building.

Design & Engineering Software Support

Staad Pro, MBS, Autocadd

Structural Components of PEB



Typical Rafter



Typical Column

High grade steel plate conforming to ASTM A 572 M Grade 345 and IS 2062. Factory painted with the minimum of 35 Microns (DFT) of corrosion protection primer.

Design Loads Considered by Us (Standard)

Unless otherwise specified, Sathyam's Pre-Engineered Buildings are designed for the following minimum loads

Roof live load: 0.57 Kn/m² (As per MBMA)

Design Wind speed: Upto 50m/sec (180 kmph)
(As per IS 875-1987)

International Quality Standards

LOW RISE BUILDING SYSTEMS MANUAL

Metal Building Manufacturers Association (MBMA)

ALLOWABLE STRESS DESIGN

American Institute of Steel Construction (AISC)

STRUCTURAL WELDING CODE

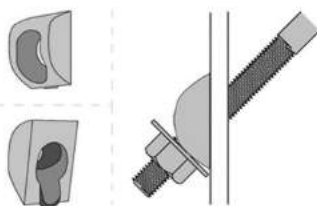
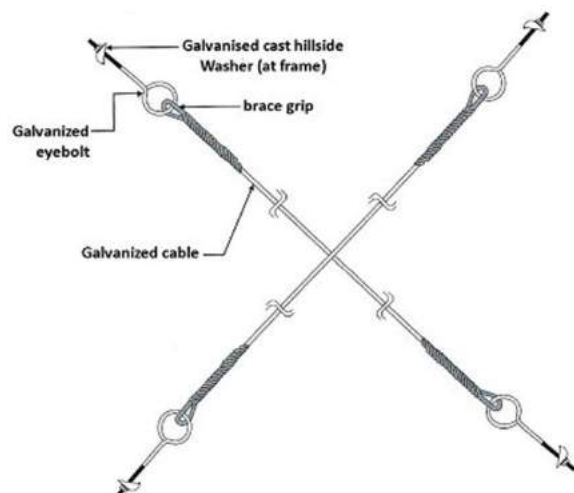
American Welding Society (AWS)

COLD FORMED STEEL DESIGN MANUAL

American Iron & Steel Institute (AISI)

Bracings

The system shown here is cable bracing. Other type of Bracings like Rod Bracing, Angle Bracing and Pipe Bracings are allowed based on the building's design requirements. Cable is manufactured in accordance with ASTM A475 extra high strength galvanized strands.



Hill side washers for Bracing rods

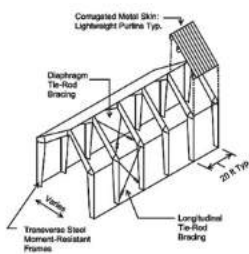


Anchor Bolts

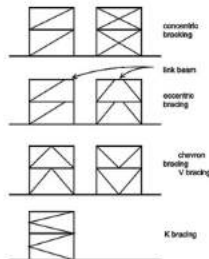
PEB+

PEB+ buildings are Pre-Engineered buildings with design and engineering optimized to extreme loading conditions. PEB+ are low cost residential buildings which comprises the benefits of PEB along with the optimization to high seismic zone level areas (Seismic Zone - V).

- ▶ Details of geological and geotechnical environment are taken into account for the PEB+ engineering
- ▶ The main challenge is to meet the double demand-the building needs to possess large inelastic deformation capacity and to have strength in all its members to sustain the forces and moments imposed on them

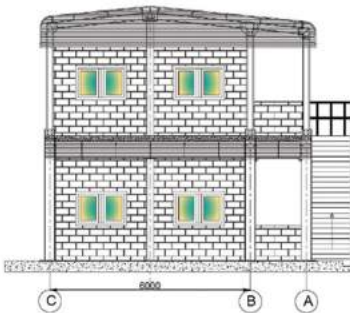


Typical low rise residential building



Bracing types used for high seismic zones

Multi - Storey PEB+



Major Factors that influence Site Effects

Seismological factors

- ▶ Intensity and frequency characteristics of bed rocks in seismological environment
- ▶ Duration of bed rock motions

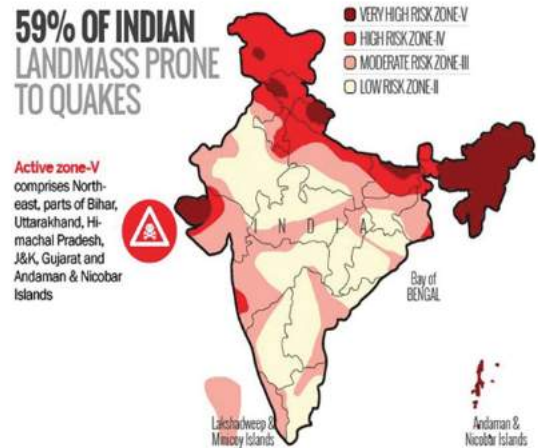
Geological factors

- ▶ Soil deposit thickness
- ▶ Type of under lying rock

Advantages

- ▶ Most economical for low rise residential buildings
- ▶ Excellent stability & structural integrity
- ▶ Withstands higher wind & snow load
- ▶ Faster construction
- ▶ Good aesthetic value with the use of various accessories
- ▶ Suitable for extreme load conditions

59% OF INDIAN LANDMASS PRONE TO QUAKES



Each structure of a PEB+ building is backed by Extreme design and analysis

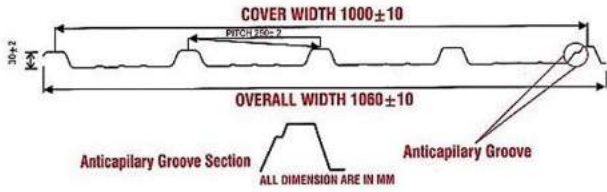
Buildings are designed considering highest safety factors ie.,

- ▶ Highest wind speed of 158 km/hr
- ▶ Seismic Zone-V
- ▶ Live load of 750 kg/sq.m.

This Hybrid method of steel construction opens up the option of light & heavy weight multi stories building. PEB+ is ideal solution for low cost yet super strong school & college buildings, residential buildings, office buildings, complexes etc.

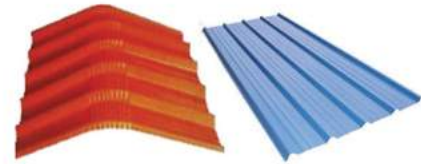


Steel Roofing & Cladding Sheets



Available Finishes & Thickness

Galvanized Steel (240Mpa)	0.35-0.65 mm TCT
Pre painted Galvanized Steel (240Mpa)	0.35-0.65 mm TCT
Al-Zn alloy coated Steel (550 Mpa)	0.35-0.65 mm TCT
Colour Coated Al-Zn Alloy Coated Steel (550 Mpa)	0.35-0.65 mm TCT



		Span wise load carrying capacity (kg/m ²) [For roofing and cladding] Deflection limits - L/150											
		240 Mpa				350 Mpa				550 Mpa			
Yield Strength	Thickness	0.45	0.50	0.55	0.60	0.45	0.50	0.55	0.60	0.45	0.50	0.55	0.60
	Single	1.00	281	335	385	435	342	416	497	569	453	548	652
1.25		180	214	246	278	219	266	318	364	279	321	365	411
1.50		125	149	171	193	152	185	221	253	161	186	211	238
1.75		92	109	126	142	111	129	147	166	102	117	133	150
Double	1.00	305	343	380	417	419	472	526	578	577	683	790	898
	1.25	197	221	245	269	271	305	339	373	374	442	511	580
	1.50	137	154	171	187	189	213	236	260	261	309	357	405
	1.75	101	114	126	138	107	120	134	147	193	228	263	298
Multi	1.00	355	399	442	485	485	548	611	672	668	791	916	1041
	1.25	229	258	285	313	315	355	394	434	434	514	594	674
	1.50	160	180	199	218	220	248	275	303	304	360	415	471
	1.75	118	132	147	161	163	183	203	223	225	265	307	348

Product Advantages



Superior Corrosion Resistance



Durable & Strong



EPA Energy Star Compliant



Thermal Reflectivity

Available Colors



Light Blue



Off White



Royal Blue



Red



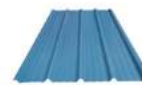
Caulified Green



Terracota Red



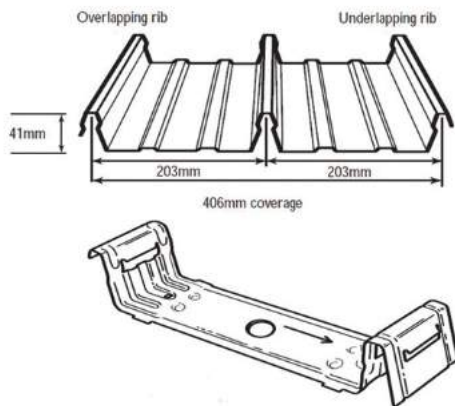
Environmental Green



Taurus Blue

Note: Other colours are also available on request

Klip Lock Sheets



Available Finishes & Thickness

Galvanized Steel (240Mpa)	0.45-0.6 mm TCT
Pre painted Galvanized Steel (240Mpa)	0.45-0.6 mm TCT
Al-Zn alloy coated Steel (550 Mpa)	0.45-0.6 mm TCT
Colour Coated Al-Zn Alloy Coated Steel (550 Mpa)	0.45-0.6 mm TCT

Fastening Method

- ▶ The two fasteners are inserted only through the 2 punched holes. Four dimples are also provided in the clip but these are for auxillary fasteners only
- ▶ The clip has a short return leg and a long return leg. The clip must be positioned with the short leg engaging over the male rib of the under lapping

Maximum Support Spacing (mm)

Type of Span	BMT (mm)		
	0.42	0.48	0.6
Roofs			
Single Span	1500	1800	2300
End Span	1700	2400	2700
Internal Span	2100	3000	3600
Unstiffened eaves overhang	200	300	300
Stiffened eaves overhang	600	900	900
Walls			
Single Span	1800	2400	2700
End Span	1800	2400	3000
Internal Span	1800	2400	3000
Overhang	300	400	600

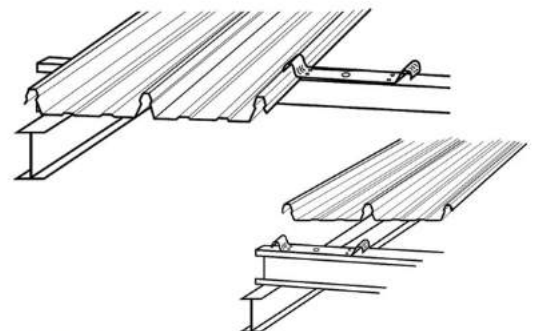
*For roofs: the data are based on foot-traffic loading

*For walls: the data are based on pressures (see wind pressure table)

*Table data are based on supports of 1mm BMT

Sathyam Steel 118 Clip

The Steel Clip has been designed for Sathyam Steel-Klip sheets. It requires only two fasteners per clip and provides an easy, positive engagement in the ribs of the deck.

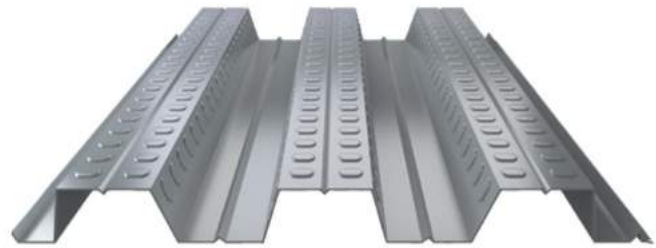
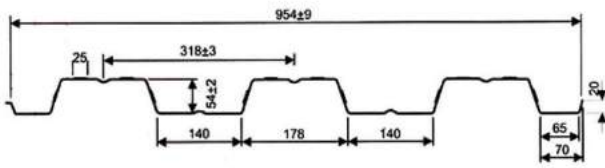


Available Colors



Note: Other colours are also available on request

Decking Sheets



Available Thickness

0.6 to 2.0 mm @ upto 340 Mpa

Available in

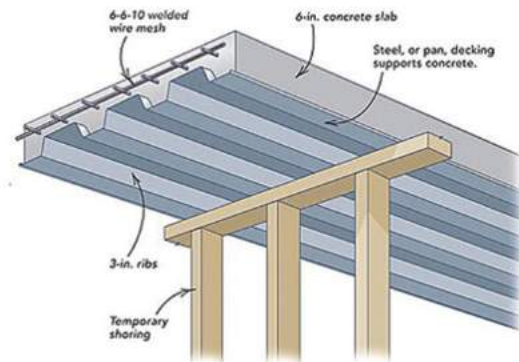
Normal CR

Galvanized Steel

Pre Painted Galvanized Steel

Bearing & Fixing

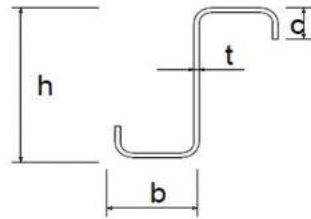
The minimum bearing for metal decking is 50mm and on steel work. For concrete or masonry work shall be 75mm. At ends, support fixing at 300mm center is recommended. At intermediate supports, fixing shall be placed at the spacing of 600mm centers. Fixing to steel work may be done by using shot fired nails, Self drilling or self tapping screws. Slot may be cut in the decking to allow for the concrete encasement of support beams.



Welding of Brackets, clips etc. and for suspending fixtures may be done if required by customer.

		Span wise load carrying capacity (Kg/m ²) for deck shuttering							
		Deflection Limits to be - (L/180)							
Yield Strength		240 Mpa				350 Mpa			
Thickness		0.6	0.8	1	1.2	0.6	0.8	1	1.2
Span	Spacing(m)								
Single	1	919	1462	2073	2704	1131	1860	2638	3496
	1.4	439	746	1057	1379	577	949	1346	1784
	1.8	284	451	640	835	349	574	814	1079
	2	229	366	518	676	283	465	655	832
Double	1	841	1359	1893	2432	1032	1717	2459	3211
	1.4	447	718	1008	1303	550	910	1297	1705
	1.8	276	441	621	806	339	559	796	1049
	2	224	359	506	657	276	455	647	854
Multi	1	960	1558	2161	2766	1177	1964	2820	3669
	1.4	516	830	1162	1499	634	1050	1500	1967
	1.8	319	511	720	932	393	649	924	1217
	2	260	417	587	761	320	529	752	992

Z-Purlins



Typical 'Z' Purlin

High grade steel conforming to ASTM A 607 Grade 50 or equivalent, available in various thickness. Factory painted with a minimum thickness of 35 microns (DFT) of corrosion protection primer, or Pre-Galvanised Finish.

Product Advantages

- ▶ More than 30% of steel by weight is saved
- ▶ Light weight & strong
- ▶ Greater spanning capacity
- ▶ Longer life due to zinc coating
- ▶ Lower maintenance cost

Available in

CR, HR, Galvanized Iron, Galvalume

Available Thickness

1 mm to 3 mm

Available Yield Strength

Upto 350 Mpa

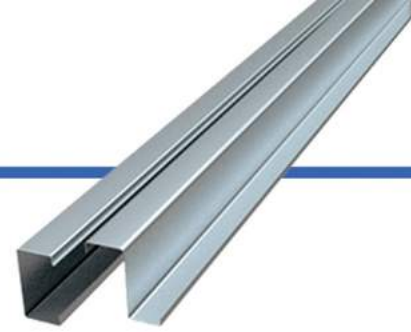
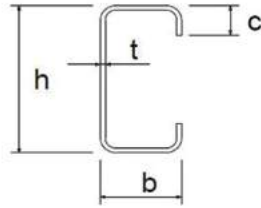
Description	h mm	b mm	c mm	t mm	Weight Kg/m	Area mm ³	Ixx mm ⁶	Zx mm ³	rx mm	Iyy mm ⁶	Zy mm ³	ry mm
100x50x20x2.0	100	50	20	2.00	3.53	0.45	0.71	14.10	39.60	0.31	6.26	26.10
100x50x20x2.5	100	50	20	2.50	4.35	0.55	0.85	17.10	39.30	0.37	7.50	25.70
125x50x20x2.0	125	50	20	2.00	3.93	0.50	1.19	19.10	48.80	0.31	6.26	24.80
125x50x20x2.5	125	50	20	2.50	4.84	0.62	1.45	23.20	48.50	0.37	7.50	24.40
125x65x20x2.0	125	65	20	2.00	4.40	0.56	1.42	22.70	50.30	0.61	9.49	32.90
125x65x20x2.5	125	65	20	2.50	5.42	0.69	1.73	27.70	50.00	0.73	11.50	32.50
125x75x20x2.0	125	75	20	2.00	4.71	0.60	1.57	25.10	51.10	0.89	12.00	38.40
125x75x20x2.5	125	75	20	2.50	5.82	0.74	1.92	30.70	50.80	1.07	14.50	38.00
150x50x20x2.0	150	50	20	2.00	4.32	0.55	1.83	24.50	57.70	0.31	6.26	23.60
150x50x20x2.5	150	50	20	2.50	5.33	0.68	2.23	29.80	57.40	0.37	7.50	23.20
150x65x20x2.0	150	65	20	2.00	4.79	0.61	2.16	28.80	59.50	0.61	9.49	31.60
150x65x20x2.5	150	65	20	2.50	5.92	0.75	2.64	35.20	59.20	0.73	11.50	31.10
150x75x20x2.0	150	75	20	2.00	5.10	0.65	2.38	31.80	60.50	0.89	12.00	36.90
150x75x20x2.5	150	75	20	2.50	6.31	0.80	2.91	38.80	60.20	1.07	14.50	36.50
175x75x20x2.5	175	75	20	2.50	6.80	0.87	4.16	47.60	69.30	1.07	14.50	35.20
175x75x20x3.0	175	75	20	3.00	8.07	1.03	4.89	55.90	69.00	1.24	16.90	34.70
175x50x15x1.5	175	50	15	1.50	3.46	0.44	1.96	22.40	66.70	0.21	4.17	21.60
175x50x15x1.8	175	50	15	1.80	4.12	0.53	2.32	26.50	66.50	0.24	4.87	21.30
200x75x20x2.5	200	75	20	2.50	7.29	0.93	5.68	56.80	78.20	1.07	14.50	34.00
200x75x20x3.0	200	75	20	3.00	8.66	1.10	6.69	66.90	77.90	1.24	16.90	33.50
200x75x20x2.0	200	75	20	2.00	5.89	0.75	4.63	46.30	78.60	0.89	12.00	34.40
300x63x20x2.5	300	63	20	2.50	8.78	1.12	13.50	90.20	110.00	0.67	10.90	24.50
300x80x16x2.5	300	80	16	2.50	9.29	1.18	15.10	100.00	113.00	1.15	14.70	31.20
300x80x16x3.0	300	80	16	3.00	11.10	1.41	17.80	119.00	112.00	1.34	17.00	30.80

Note: Other sizes are also available on request

C-Purlins



Typical 'C' Purlin



Product Advantages

- ▶ More than 30% of steel by weight is saved
- ▶ Light weight & strong
- ▶ Greater spanning capacity
- ▶ Longer life due to zinc coating
- ▶ Lower maintenance cost

High grade steel conforming to ASTM A 607 Grade 50 or equivalent, available in various thickness. Factory painted with a minimum thickness of 35 microns (DFT) of corrosion protection primer, or Pre-Galvanized Finish.

Available in

CR, HR, Galvanized Iron, Galvalume

Available Thickness

1 mm to 3 mm

Available Yield Strength

Upto 350 Mpa

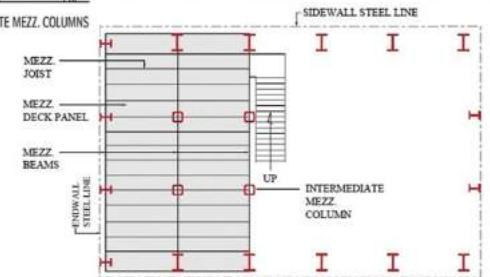
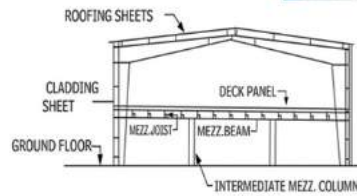
Description	h mm	b mm	c mm	t mm	Weight Kg/m	Area mm ³	I _{xx} mm ⁶	Z _x mm ³	r _x mm	I _{yy} mm ⁶	Z _y mm ³	r _y mm
100x50x20x2.0	100	50	20	2.00	3.53	0.45	0.71	14.10	39.60	0.17	5.32	19.30
100x50x20x2.5	100	50	20	2.50	4.35	0.55	0.85	17.10	39.30	0.20	6.35	19.00
100x75x20x2.0	100	75	20	2.00	4.32	0.55	0.95	18.90	41.40	0.44	9.65	28.20
100x75x20x2.5	100	75	20	2.50	5.33	0.68	1.15	23.00	41.20	0.53	11.60	27.90
125x50x20x2.0	125	50	20	2.00	3.93	0.50	1.19	19.10	48.80	0.18	5.46	19.00
125x50x20x2.5	125	50	20	2.50	4.84	0.62	1.45	23.20	48.50	0.22	6.52	18.70
125x75x20x2.0	125	75	20	2.00	4.71	0.60	1.57	25.10	51.10	0.48	9.95	28.20
125x75x20x2.5	125	75	20	2.50	5.82	0.74	1.92	30.70	50.80	0.58	12.00	27.90
150x50x20x2.0	150	50	20	2.00	4.32	0.55	1.83	24.50	57.70	0.19	5.56	18.70
150x50x20x2.5	150	50	20	2.50	5.33	0.68	2.23	29.80	57.40	0.23	6.65	18.40
150x75x20x2.0	150	75	20	2.00	5.10	0.65	2.38	31.80	60.50	0.51	10.20	27.90
150x75x20x2.5	150	75	20	2.50	6.31	0.80	2.91	38.80	60.20	0.61	12.30	27.60
175x50x20x2.0	175	50	20	2.00	4.71	0.60	2.65	30.30	66.40	0.20	5.64	18.30
175x50x20x2.5	175	50	20	2.50	5.82	0.74	3.23	36.90	66.00	0.24	6.75	18.10
175x75x20x2.5	175	75	20	2.50	6.80	0.87	4.16	47.60	69.30	0.65	12.50	27.30
175x75x20x3.0	175	75	20	3.00	8.07	1.03	4.89	55.90	69.00	0.75	14.50	27.00
200x75x20x2.5	200	75	20	2.50	7.29	0.93	5.68	56.80	78.20	0.68	12.70	27.00
200x75x20x3.0	200	75	20	3.00	8.66	1.10	6.69	66.90	77.90	0.79	14.80	26.70
225x50x20x2.5	225	50	20	2.50	6.80	0.87	5.94	52.80	82.80	0.26	6.89	17.30
225x50x20x3.0	225	50	20	3.00	8.07	1.03	6.98	62.00	82.40	0.30	7.91	17.00
225x75x20x2.5	225	75	20	2.50	7.78	0.99	7.49	66.60	86.90	0.70	12.90	26.60
225x75x20x3.0	225	75	20	3.00	9.25	1.18	8.83	78.40	86.60	0.81	14.90	26.30
250x75x20x2.5	250	75	20	2.50	8.27	1.05	9.61	76.90	95.50	0.72	13.00	26.20
250x75x20x3.0	250	75	20	3.00	9.84	1.25	11.30	90.70	95.10	0.84	15.10	25.90
300x70x20x3.0	300	70	20	3.00	10.80	1.37	16.90	113.00	111.00	0.74	13.70	23.30

Note: Other sizes are also available on request
www.sathyamsteelroof.com

Accessories

Mezzanine Floor

Intermediate mezzanine floor is possible in Pre-Engineered Building systems. Mezzanine floors can be provided in full or partial area in Pre-Engineered buildings to suit loading requirements for office, storage and other utilities. Sathyam's standard Mezzanine framing system consists of a steel deck supported by joists framed onto main mezzanine beams. The main beams may also be supported by intermediate columns if provided by design loads. Applied floor loads, such as dead, live and collateral loads along with mezzanine column spacing are also considered while designing a mezzanine floor.



Sathyam Louvers



Crimp Sheets



Material Specifications

Technical Specifications of Galvalume (GL)

Material: Bare Galvalume – ASTM A792M

Coating mass: upto AZ 150 Tensile strength: upto 550 Mpa

Technical Specifications of Pre Painted Galvalume (GL)

Material: Galvalume Type of coating: RMP/SMP/PVDF etc

Technical Specifications of Galvanized Steel(GI)

Zinc coating: Pure Lead Free Zinc upto 275 GSM,

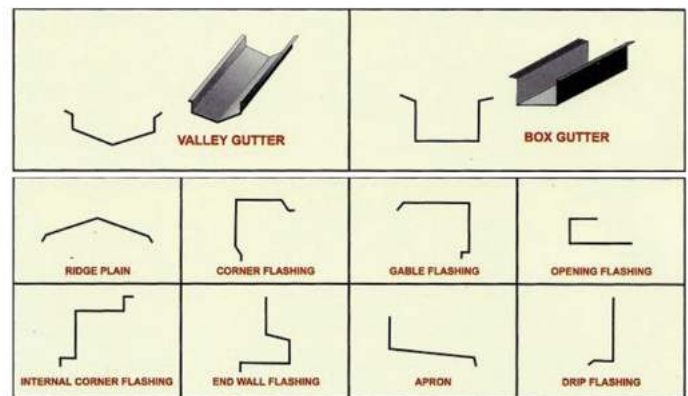
Conforming to IS 277 Cold Rolled Steel Coils

Tensile strength: 240 Mpa

Technical Specifications of Pre Painted Galvanized Steel(PPGI)

Material: Galvanized Iron Type of coating: RMP/SMP/PVDF etc

Flashing & Gutter



- Crimp Sheets
- Sathyam Louvers
- Custom made Sathyam Downspout
- Canopy
- Roofing and Cladding Sheets

World Class Machines Used by Sathyam



Heavy Duty Hydraulic Shear



Dual/Triple Head CNC Gas Cutting Machine



H Beam Assembly Machine



Automatic Dual Head Submerged Arc Welder Line



Flange Correction Mill



CNC Drilling Machine



Shot Blasting



Robotic Welding Machine



Z Purlin Roll Forming Line



C/Z Purlin Roll Forming Line



Roof & Wall Sheet Panel Mill



KLIP-Lock Sheet Mill

Some of our Projects



Tamil Nadu News Print Ltd.
W - 45m L - 105m H - 6.5m



Greato Moulds
W - 60m L - 88m H - 9m



Mahindra R & D Building
Building W - 12m L - 100m H - 6m



Chettinad Indoor Stadium
W - 15m L - 40m



S.N.J. Breweries
W - Span 90m L - 110m



Indian Railway Gantry Building
W - Clear Span 20m L - 60m H - 16m



Suja Shoei
W - Clear span 25m L - 60 m H - 7.2m



Samsung
W - Multi span 88.3m L - 62m H - 10.2 m

Some of our Clients





📍 CORPORATE OFFICE



Sathyam Steel Roof Structures Limited

Plot No.22, Vazhga Valamudan House
Thirumalai Nagar Annex,
Perungudi,
Chennai - 600096
Tamil Nadu, India

📍 MANUFACTURING UNIT



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