MRB
PROJECTS

An ISO 9001-9015
Certified Company

We develop buildings...
to develop nation...

MRB PROJECTS

PRE-ENGINEERED
STEEL BUILDING SOLUTIONS

Committed To Quality & Service

ISO : 9001-2015 Company

Pre-Engineered Building Solutions

MRB PROJECTS

We Understand the actual needs of our customer & provide complete building solution From concept to realization which are cost effective latest in industry and above all leak proof building through skilled experienced team of engineers, software system & xecuters.

PEB Nomenclature at a glance

Main Frame

1. Primary Members

a. Columns
b. Rafters

2. Secondary Members

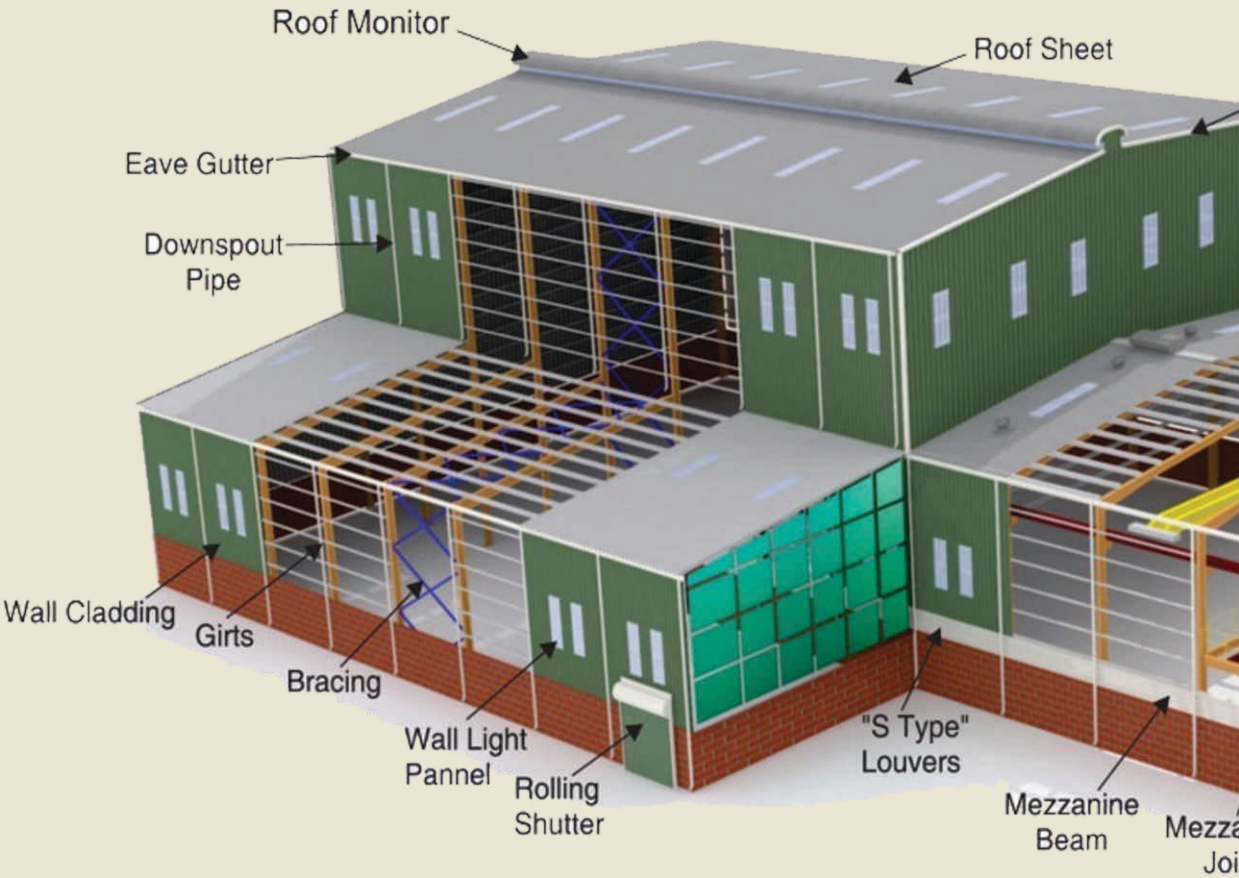
a. Purlins
b. Girt
c. Bracings

3. Sheeting

a. Roof
b. Wall
c. Fascias

4. Accessories

a. Ventilators
b. Sky Lights
c. Solar Panel
d. Miscellaneous



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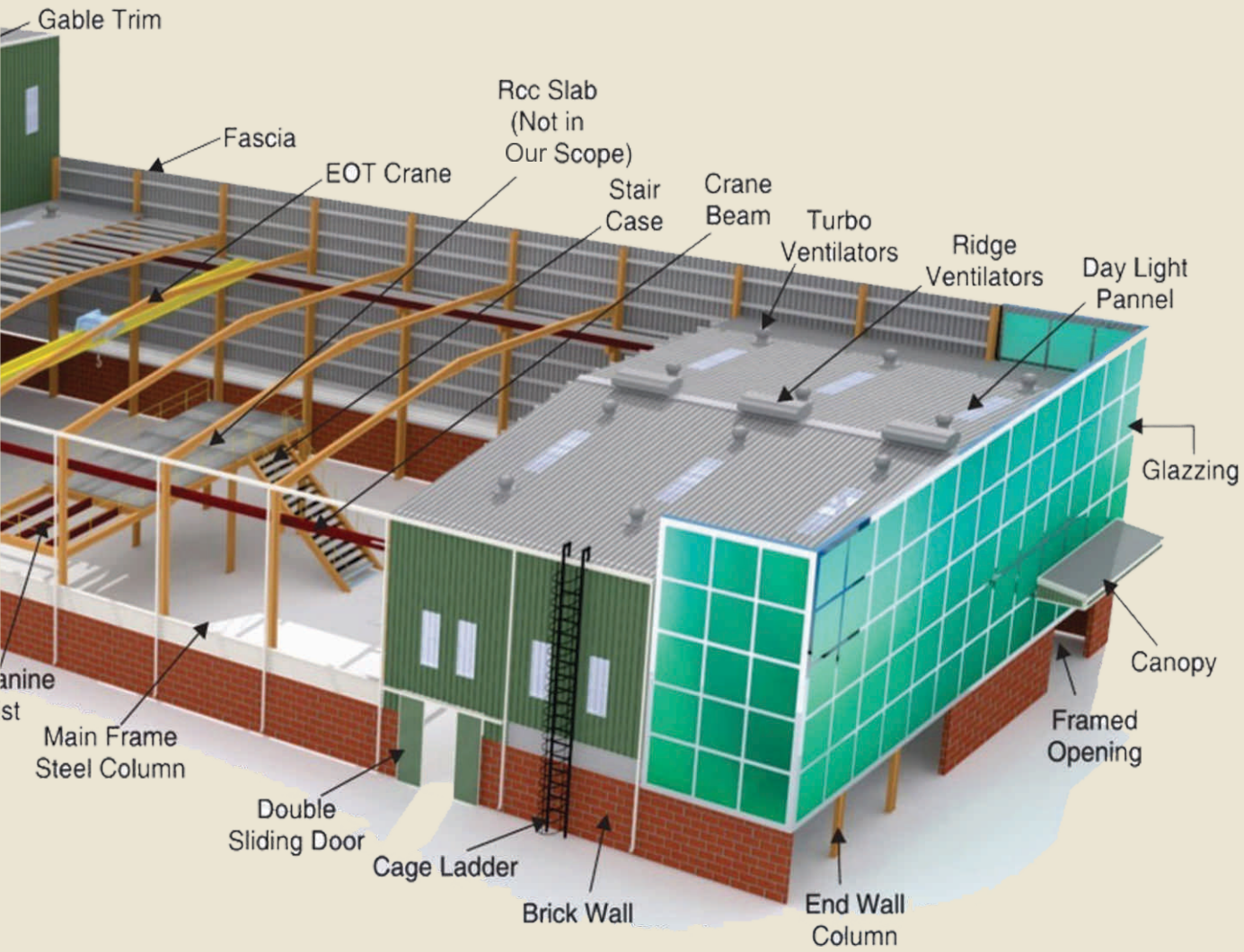

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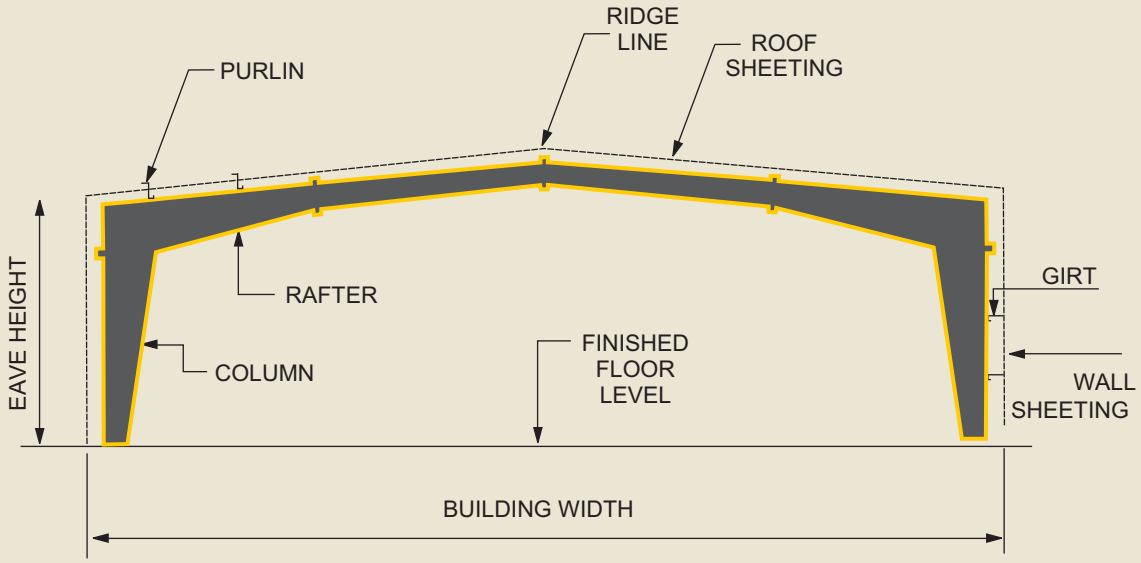

APPLICABLE DESIGN CODE : MBMA / AISE
Wind Load as per IS

DESIGN

Our Designing & Engineering Teams can design your building with high efficiency and accuracy to fulfill your customized need & action plan for your building

All building are designed and erected as per the American Standards & Indian Standards (IS) Codes of Practice.

APPLICABLE DESIGN CODES

BIS (Bureau of Indian Standard)

A. Design Dead Load IS-875 (Part-I)-2015
B. Design Imposed Load IS-875 (Part-II)-2015
C. Design Wind Load IS-875 (Part-III)-2105
D. Earthquake resistance IS-1893 (Part-I)-2015
E. Design Hot Rolled built-up IS-800 E2007 (WSD/LDS
F. Tapered built -up 9” edition of AISC
G. Cold form IS-801 (1975)
H. Welding - (AWS D1.1.98), IS-816(1969)

MBMA (Metal Building Manufacture Association)

1. In Accordance with 2002 edition of low rise building solution
2. Wind Speed IS-875 (Part- III) - 1987
3. Earthquake load IS-1893 (1896 (Part-I)-2002
4. Hot Rolled and built -up manual of steel construction, 9” edition of AISC
5. Cold form 1996 Edition of AISI
6. Welding -Structural Steel Welding Code of American Welding Society (AWS.D1.1.98)
7. Design of Tapered Build up section is in accordance with: Manual of steel Construction, 9” Edition of American Institute of Steel Construction (AISC).

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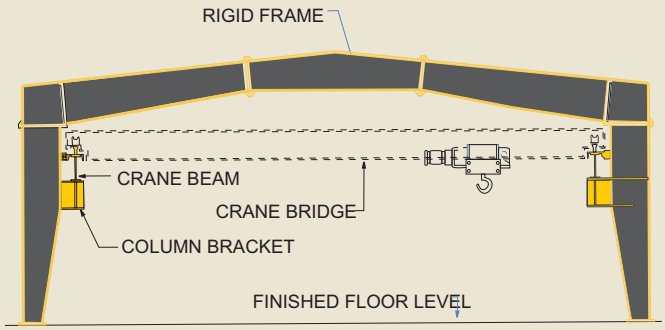
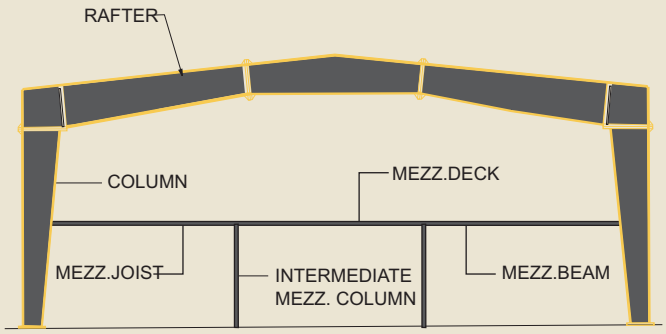


Top Running Crane

Cranes in Building

MRB pre-engineered building can be designed to accept most types of crane systems such as EOT, Monorail, Under - hung crane and other load carrying device like conveyors etc. in both clear span and multi span buildings. When a crane system is to be integrated, MRB's scope is limited to brackets and crane runway beams which support the crane

Complete information on the crane system is required in order design and estimate buildings with cranes.

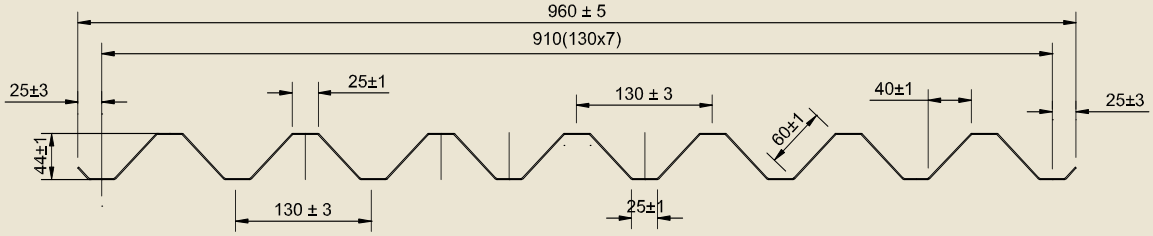


Mezzanine in Building

A mezzanine is an intermediate floor between main floors of a building. Often, a mezzanine is low-ceilinged and projects in the form of a balcony. In industrial applications, mezzanine floor systems are semi-permanent floor systems typically installed within buildings. The most common use of a mezzanine floor is for storage and Shop floor office. Mezzanine floor consist of Mezzanine beam, Joists Deck sheet sheer studs. The economy of the mezzanine floor is affected by the applied load and support column spacing.

The economy of the mezzanine floor is affected by the applied load and support column spacing.

MATERIAL	YIELD STRENGTH	COLOR AVAILABLE	COATING
HR/CR/GP	240mpa	No Color	No coating
CC	240/300/350/550mpa	As per requirment	Upto 450gsm



Deck Profile Sheet Specifications		
Supply Width	:	885/960 ± 5 mm
Covered Width	:	910 ± 5 mm
Length	:	Max up to 13 Mtr
Thickness	:	0.60 mm to 2.0 mm
Through Depth	:	44 + 1mm
Pitch (C/C)	:	130 + 3mm
Top Crest Width	:	25 + 1mm
Crest Slope	:	60 ∓ 1mm

Applications

(I) High Versatility.
(ii) High durability and uniform quality.
(iii) High structural strength to weight ratio.
(iv) Attractive apperance and smooth finish.
(v) Long range economy.
(vi) Deck act as a permanent framework
(vii) Offers an immediate safe working.

WELDING IS APPLIED IN ACCORDANCE WITH:

Structure Steel Welding Code of American Welding Society (AWS D1.1.98) IS-816 (1969): Cod of Practice for use of metal Arc Welding for general construction in steel.e

IS CODE

Loads are applied in accordance with:

a. IS-875 (PART-I)-2015: Code of practice for design dead loads for building and Structure
   IS875 (PART-II)-2015: Code of practice fo design imposed Loads for Building and structures.
   IS875 (Part-III)-2015: Code of practice fo design Wind Loads for Building and structures.
   IS-1893 (Part I) - 2002: Criteria for Earthquake Resistance Design of Structure.
b. Design of prismatic Hot rolled and Built up section is Accordance with: IS-800(2007 & 2015): Code of Practice for general Construction in Steel.
c. Cold Formed members are designed in accordance with: IS-816 (2015): Code of practice for use of cold-formed Light Gauge Structure.

MBMA

Loads are applied in accordance with: I
(a) The 2002 Edition of Low Rise Building System Manual of Metal Building Manufacture Association (MBMA-2016.)

Wind Speed in accordance with: IS-875 (PART-III)-2015: Code of practice for design wind load for
(b) Building and structure.

Earthquake load in accordance with: IS-1893 (PART-I)-2015: Criteria for earthquake resistant
(c) Design of structures. Hot rolled and build up section of designed in accordance with:
Manual ofsteel Construction, 9” Edition of American Institute of steel Construction (AISC).
(d) Cold-Formed members are designed in accordance with: 1996 Edition Cold-Formed Steel Design Manual of American Iron and Steel institute (AISC).
Welding is applied in accordance with : Structural Steel Welding Code of American Welding Society (AWS. D1.98).

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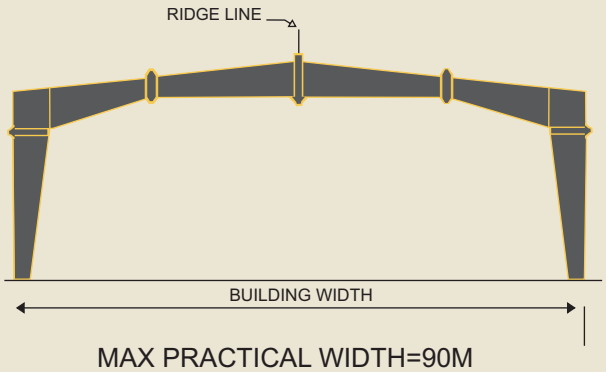
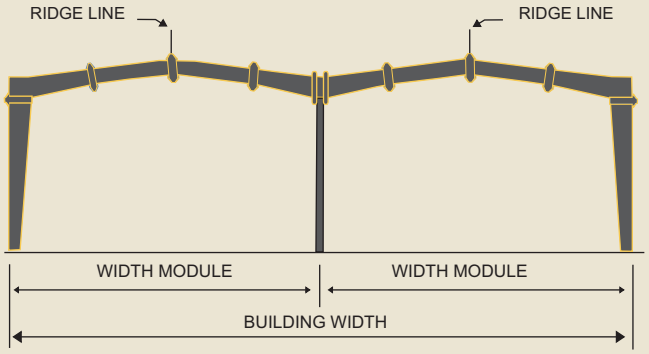
PRIMARY FRAMING SYSTEMS

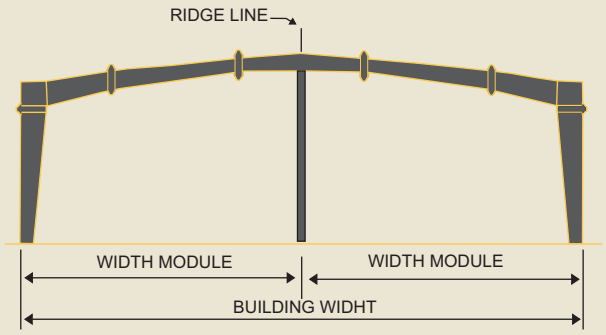
The Most common primary framing system are shown below. All are shown symmetrical about the ridge line. Framing system asymmetrical about the ridge line and Multispan Framing System with unequal with modules are possible but may require more engineering time and probable longer deliveries. Practically any frame geometry is possible. Consult a MRB marketing team for your specific requirements.



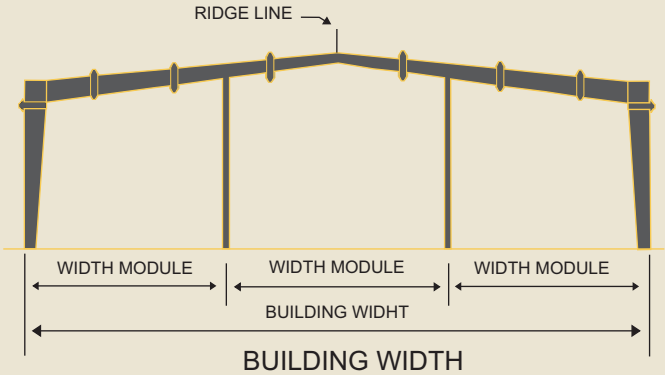
MAX PRACTICAL WIDTH=90M
Clear Span



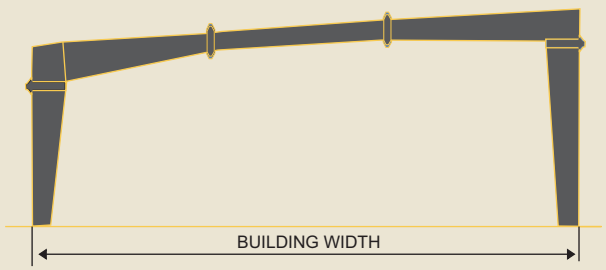
BUILDING WIDTH
MAX, PRACTICAL WIDTH =90M
Multi-Gable (MG-1)



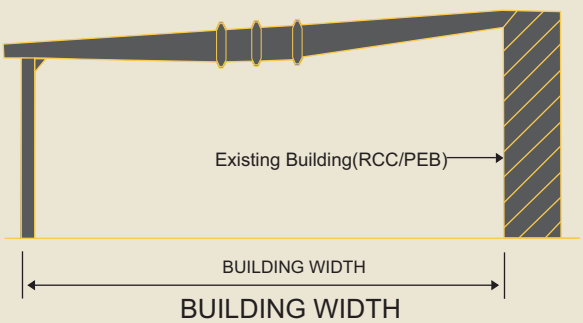
BUILDING WIDTH
MAX, PRACTICAL WIDTH =80M
Multi-Spam “1” (MS-1)



BUILDING WIDTH
MAX, PRACTICAL WIDTH =80M
Multi-Spam “2” (MS-2)



BUILDING WIDTH
MAX, PRACTICAL WIDTH =50M
Single Slope (SS)



BUILDING WIDTH
MAX, PRACTICAL WIDTH =50M
Lean-To (LT)

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STANDARD FRAMING FEATURES

1. Main frames are typically consists of tapered of uniform depth columns and rafters.
2. Rigid Frames for Clear Spam (CS) and Multi Spam (MS) building are most commonly spaced from 6000mm to 10000mm, center line (bay spacing)
3. Outside flanges of Clear Spam (CS) and Multi Spam (MS) riding frame column are inset 250mm from the sidewall steel line to allow for by-pass girts.
4. Outside flanges of space saver (SS) riding frame columns shall be placed flush with the gable wall steel line
5. The top flanges of all rigid frame rafters are 200/250 mm bellow the bottom of the roof sheeting (depending upon the depth of purlin)
6. End frame are “post and beam” (P&B) load bearing frames with end wall girts flush framed into the webs of the end wall posts so that the outer flanges of girts are in the same vertical plan as the outer flanges of the posts. Optional rigid frames may be used at the building ends.
7. End wall posts are typically spaced at 600 mm, depending upon width of the building and end wall openings. Others spacing may also be used when building width is not evenly divisible by 600 mm the interior spacing of the end wall posts of typically kept at 6000mm with two equal end spacing smaller or larger than 6000mm.
8. For Clear Span (CS) and Multi Span (MS) building the sidewall girts are attached (by-passed) to the outer flanges of exterior columns. sidewall girts are lapped at interior frames. For space saver (SS) and lean - to (LT) building, the sidewall girts are flush connected (flush framed) so that the outer flange of the girts is in the same vertical plane as the outer flange of the girts on the exterior columns.
9. The bottom flanges of roof purlins are attached to the outer (top) flanges of the rafters through cleats. Purlins are lapped at interior frames in all structural flaming systems.

C		Z	
Depth (in mm)	Tick (in mm)	Depth (in mm)	Tick (in mm)
150	1.75	150	1.75
170	1.75	170	1.75
250	2.5	250	2.5

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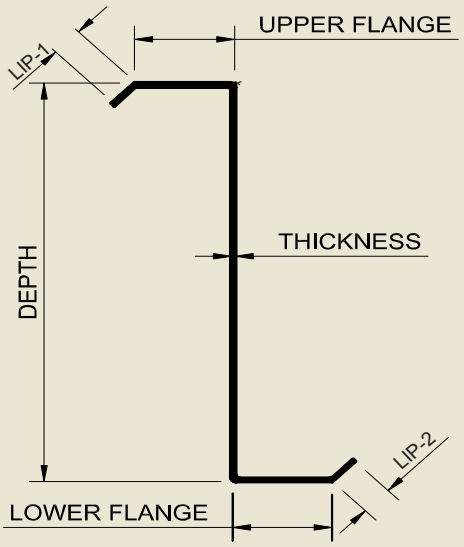
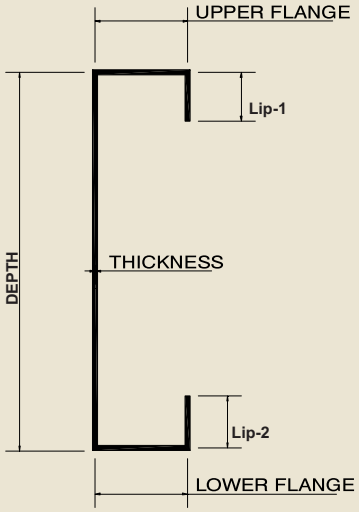
MRB PURLIN





MRB Purlin are structural members designed and produced using the advanced technology, quality and customer oriented services, for use as secondary support for economical roof sheeting and wall cladding systems.

45_0 Lip for better sectional modulus and easy nesting, These are supplied in required length with pre-punched holes for quick bolting. The system gives an excellent strength to weight ratio with flexibility for specific size requirement.

RAW MATERIAL SPECIFICATION

HR Coil as per	:	IS-10748/IS-1079
Galvanised coil as per	:	IS-277
Yield Strength	:	240 MPA/345 MPA
Zinc Coating	:	70 GSM, 120 GSM, 180 GSM 275 GSM, 350 GSM, 450 GSM 1.5mm to 3.00mm
Size	:	150 to 300mm

FEATURES

- ★ Structurally strong
- ★ Uniform and straight.
- ★ Pre punched holes and required length.
- ★ Saving in cost up to 30% due to better design.
- ★ Close tolerances on sectional dimensions due to automatic controlled manufacturing.
- ★ Fast to erect and easy handling.
- ★ Economy due to reduction in dead weight.

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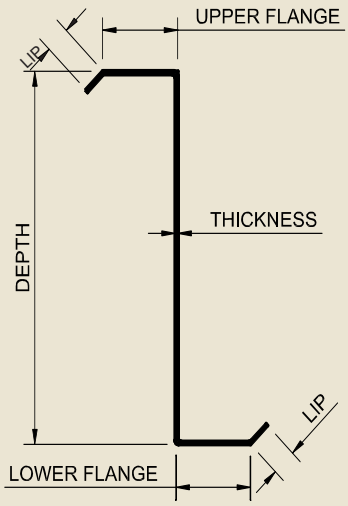


MRB ZED PURLIN (240 MPA)

Physical Properties

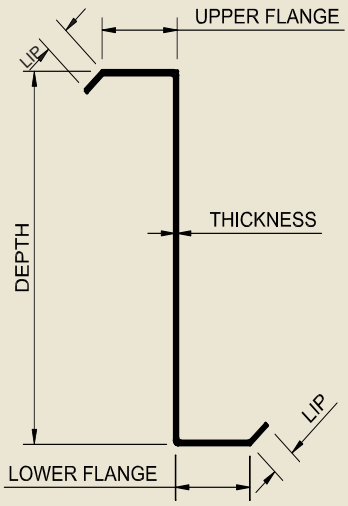
SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	100	55	50	15	1.5	3.44	2.70	1.80	56.10	24.45	11.47	4.82
2	100	55	50	17	1.5	3.50	2.74	1.83	56.80	26.01	11.60	5.13
3	100	55	50	20	1.5	3.59	2.81	1.88	57.69	28.35	11.78	5.59
4	100	55	50	15	1.7	3.88	3.05	2.03	63.00	27.35	12.88	5.41
5	100	55	50	17	1.7	3.95	3.10	2.07	63.79	29.11	13.03	5.75
6	100	55	50	20	1.7	4.05	3.18	2.12	64.80	31.74	13.23	6.27
7	100	55	50	17	2	4.62	3.63	2.42	74.03	33.59	15.13	6.66
8	100	55	50	20	2	4.74	3.72	2.48	75.22	36.65	15.36	7.26
9	100	55	50	17	2.5	5.73	4.49	3.00	90.45	40.66	18.48	8.10
10	100	55	50	20	2.5	5.88	4.61	3.07	91.94	44.42	18.78	8.85
11	100	55	50	20	3	6.99	5.49	3.66	107.86	51.66	22.03	10.34

SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	150	55	50	15	1.5	4.19	3.29	2.19	143.67	24.46	19.50	4.85
2	150	55	50	17	1.5	4.25	3.33	2.22	145.76	26.02	19.78	5.16
3	150	55	50	20	1.5	4.34	3.40	2.27	148.64	28.37	20.16	5.62
4	150	55	50	15	1.7	4.73	3.71	2.48	161.70	27.37	21.95	5.44
5	150	55	50	17	1.7	4.80	3.77	2.51	164.07	29.12	22.27	5.79
6	150	55	50	20	1.7	4.90	3.85	2.56	167.33	31.76	22.70	6.31
7	150	55	50	17	2	5.62	4.41	2.94	191.04	33.61	25.93	6.70
8	150	55	50	20	2	5.74	4.51	3.00	194.87	36.68	26.44	7.30
9	150	55	50	17	2.5	6.98	5.48	3.65	234.71	40.69	31.86	8.15
10	150	55	50	20	2.5	7.13	5.59	3.73	239.50	44.45	32.49	8.90
11	150	55	50	20	3	8.49	6.66	4.44	282.54	51.70	38.34	10.40

SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	200	60	55	15	1.5	5.09	3.99	2.66	298.22	31.06	30.27	5.62
2	200	60	55	17	1.5	5.15	4.04	2.69	302.46	32.94	30.69	5.96
3	200	60	55	20	1.5	5.24	4.11	2.74	308.44	35.77	31.29	6.46
4	200	60	55	15	1.7	5.75	4.51	3.01	336.09	34.78	34.11	6.30
5	200	60	55	17	1.7	5.82	4.57	3.04	340.89	36.90	34.59	6.68
6	200	60	55	20	1.7	5.92	4.65	3.10	347.66	40.08	35.27	7.26
7	200	60	55	17	2	6.82	5.35	3.57	397.70	42.65	40.36	7.75
8	200	60	55	20	2	6.94	5.45	3.63	405.68	46.35	41.15	8.42
9	200	60	55	17	2.5	8.48	6.65	4.44	490.22	51.75	49.75	9.45
10	200	60	55	20	2.5	8.63	6.77	4.51	500.19	56.29	50.75	10.27
11	200	60	55	20	3	10.29	8.08	5.39	592.01	65.63	60.06	12.03

SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	250	60	55	17	2	7.82	6.14	4.09	678.80	42.66	55.00	7.77
2	250	60	55	20	2	7.94	6.23	4.16	692.42	46.36	56.09	8.44
4	250	60	55	20	2.5	9.88	7.75	5.17	855.31	56.31	69.29	10.30
5	250	60	55	20	3	11.79	9.26	6.17	1014.21	65.66	82.17	12.06

SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	300	60	55	17	2	8.82	6.92	4.62	1057.65	42.67	71.31	7.79
1	300	60	55	20	2	8.94	7.02	4.68	1078.40	46.37	72.70	8.46
2	300	60	55	20	2.5	11.13	8.73	5.82	1333.87	56.33	89.93	10.32
3	300	60	55	20	3	13.29	10.43	6.96	1583.78	65.68	106.78	12.09



MRB ZED PURLIN (345 MPA)

Physical Properties

SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	100	55	50	15	1.5	3.44	2.70	1.80	56.10	24.45	11.47	4.82
2	100	55	50	17	1.5	3.50	2.74	1.83	56.80	26.01	11.60	5.13
3	100	55	50	20	1.5	3.59	2.81	1.88	57.69	28.35	11.78	5.59
4	100	55	50	15	1.7	3.88	3.05	2.03	63.00	27.35	12.88	5.41
5	100	55	50	17	1.7	3.95	3.10	2.07	63.79	29.11	13.03	5.75
6	100	55	50	20	1.7	4.05	3.18	2.12	64.80	31.74	13.23	6.27
7	100	55	50	17	2	4.62	3.63	2.42	74.03	33.59	15.13	6.66
8	100	55	50	20	2	4.74	3.72	2.48	75.22	36.65	15.36	7.26
9	100	55	50	17	2.5	5.73	4.49	3.00	90.45	40.66	18.48	8.10
10	100	55	50	20	2.5	5.88	4.61	3.07	91.94	44.42	18.78	8.85
11	100	55	50	20	3	6.99	5.49	3.66	107.86	51.66	22.03	10.34

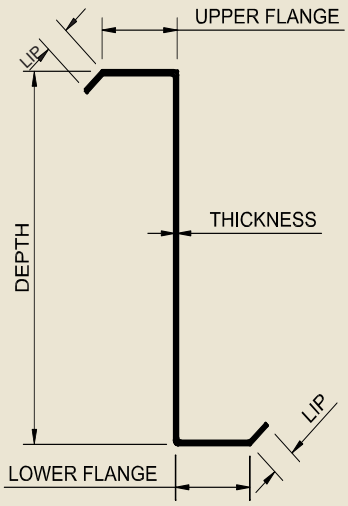
SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	150	55	50	15	1.5	4.19	3.29	2.19	143.67	24.46	19.50	4.85
2	150	55	50	17	1.5	4.25	3.33	2.22	145.76	26.02	19.78	5.16
3	150	55	50	20	1.5	4.34	3.40	2.27	148.64	28.37	20.16	5.62
4	150	55	50	15	1.7	4.73	3.71	2.48	161.70	27.37	21.95	5.44
5	150	55	50	17	1.7	4.80	3.77	2.51	164.07	29.12	22.27	5.79
6	150	55	50	20	1.7	4.90	3.85	2.56	167.33	31.76	22.70	6.31
7	150	55	50	17	2	5.62	4.41	2.94	191.04	33.61	25.93	6.70
8	150	55	50	20	2	5.74	4.51	3.00	194.87	36.68	26.44	7.30
9	150	55	50	17	2.5	6.98	5.48	3.65	234.71	40.69	31.86	8.15
10	150	55	50	20	2.5	7.13	5.59	3.73	239.50	44.45	32.49	8.90
11	150	55	50	20	3	8.49	6.66	4.44	282.54	51.70	38.34	10.40

SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	200	60	55	15	1.5	5.09	3.99	2.66	298.22	31.06	30.27	5.62
2	200	60	55	17	1.5	5.15	4.04	2.69	302.46	32.94	30.69	5.96
3	200	60	55	20	1.5	5.24	4.11	2.74	308.44	35.77	31.29	6.46
4	200	60	55	15	1.7	5.75	4.51	3.01	336.09	34.78	34.11	6.30
5	200	60	55	17	1.7	5.82	4.57	3.04	340.89	36.90	34.59	6.68
6	200	60	55	20	1.7	5.92	4.65	3.10	347.66	40.08	35.27	7.26
7	200	60	55	17	2	6.82	5.35	3.57	397.70	42.65	40.36	7.75
8	200	60	55	20	2	6.94	5.45	3.63	405.68	46.35	41.15	8.42
9	200	60	55	17	2.5	8.48	6.65	4.44	490.22	51.75	49.75	9.45
10	200	60	55	20	2.5	8.63	6.77	4.51	500.19	56.29	50.75	10.27
11	200	60	55	20	3	10.29	8.08	5.39	592.01	65.63	60.06	12.03

SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	250	60	55	17	2	7.82	6.14	4.09	678.80	42.66	55.00	7.77
2	250	60	55	20	2	7.94	6.23	4.16	692.42	46.36	56.09	8.44
4	250	60	55	20	2.5	9.88	7.75	5.17	855.31	56.31	69.29	10.30
5	250	60	55	20	3	11.79	9.26	6.17	1014.21	65.66	82.17	12.06

SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	300	60	55	17	2	8.82	6.92	4.62	1057.65	42.67	71.31	7.79
1	300	60	55	20	2	8.94	7.02	4.68	1078.40	46.37	72.70	8.46
2	300	60	55	20	2.5	11.13	8.73	5.82	1333.87	56.33	89.93	10.32
3	300	60	55	20	3	13.29	10.43	6.96	1583.78	65.68	106.78	12.09

MRB PROJECTS



MRB ZED PURLIN

Sectional Properties

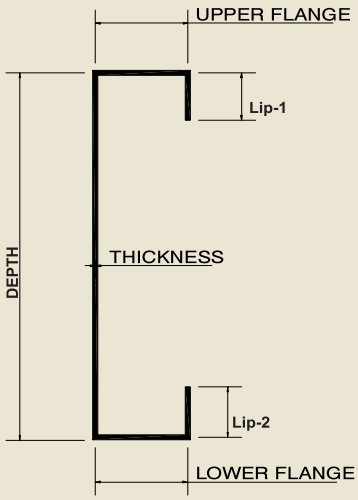
SN	D	B1	B2	L	t	Area	Weight	H/t	Allowable	Allowable Bending Moment	
					mm	cm^2	kg/m		Shear Force KN	M1	M2
1	100	55	50	15	1.5	3.44	2.70	64.67	39.49	2.34	2.24
2	100	55	50	17	1.5	3.50	2.74	64.67	40.18	2.37	2.27
3	100	55	50	20	1.5	3.59	2.81	64.67	41.22	2.40	2.31
4	100	55	50	15	1.7	3.88	3.05	56.82	50.76	2.63	2.52
5	100	55	50	17	1.7	3.95	3.10	56.82	51.65	2.66	2.55
6	100	55	50	20	1.7	4.05	3.18	56.82	52.98	2.70	2.59
7	100	55	50	17	2	4.62	3.63	48.00	62.83	3.09	2.96
8	100	55	50	20	2	4.74	3.72	48.00	64.46	3.13	3.01
9	100	55	50	17	2.5	5.73	4.49	38.00	77.86	3.77	3.61
10	100	55	50	20	2.5	5.88	4.61	38.00	79.90	3.83	3.67
11	100	55	50	20	3	6.99	5.49	31.33	95.06	4.49	4.31

SN	D	B1	B2	L	t	Area	Weight	H/t	Allowable	Allowable Bending Moment	
					mm	cm^2	kg/m		Shear Force KN	M1	M2
1	150	55	50	15	1.5	4.19	3.29	98.00	25.49	3.98	3.84
2	150	55	50	17	1.5	4.25	3.33	98.00	25.86	4.04	3.90
3	150	55	50	20	1.5	4.34	3.40	98.00	26.41	4.11	3.97
4	150	55	50	15	1.7	4.73	3.71	86.24	37.20	4.48	4.32
5	150	55	50	17	1.7	4.80	3.77	86.24	37.74	4.54	4.39
6	150	55	50	20	1.7	4.90	3.85	86.24	38.54	4.63	4.47
7	150	55	50	17	2	5.62	4.41	73.00	57.24	5.29	5.11
8	150	55	50	20	2	5.74	4.51	73.00	58.46	5.39	5.21
9	150	55	50	17	2.5	6.98	5.48	58.00	89.41	6.50	6.27
10	150	55	50	20	2.5	7.13	5.59	58.00	91.33	6.63	6.40
11	150	55	50	20	3	8.49	6.66	48.00	115.46	7.82	7.55

SN	D	B1	B2	L	t	Area	Weight	H/t	Allowable	Allowable Bending Moment	
					mm	cm^2	kg/m		Shear Force KN	M1	M2
1	200	60	55	15	1.5	5.09	3.99	131.33	17.25	6.17	6.00
2	200	60	55	17	1.5	5.15	4.04	131.33	17.45	6.26	6.08
3	200	60	55	20	1.5	5.24	4.11	131.33	17.76	6.38	6.20
4	200	60	55	15	1.7	5.75	4.51	115.65	25.15	6.96	6.76
5	200	60	55	17	1.7	5.82	4.57	115.65	25.45	7.06	6.85
6	200	60	55	20	1.7	5.92	4.65	115.65	25.89	7.19	6.99
7	200	60	55	17	2	6.82	5.35	98.00	41.54	8.23	8.00
8	200	60	55	20	2	6.94	5.45	98.00	42.27	8.40	8.16
9	200	60	55	17	2.5	8.48	6.65	78.00	81.49	10.15	9.86
10	200	60	55	20	2.5	8.63	6.77	78.00	82.93	10.35	10.06
11	200	60	55	20	3	10.29	8.08	64.67	118.30	12.25	11.91

SN	D	B1	B2	L	t	Area	Weight	H/t	Allowable	Allowable Bending Moment	
					mm	cm^2	kg/m		Shear Force KN	M1	M2
1	250	60	55	17	2	7.82	6.14	123	30.24	11.22	10.94
2	250	60	55	20	2	7.94	6.23	123	30.70	11.44	11.16
4	250	60	55	20	2.5	9.88	7.75	98	60.15	14.14	13.79
5	250	60	55	20	3	11.79	9.26	81	104.26	16.76	16.35

SN	D	B1	B2	L	t	Area	Weight	H/t	Allowable	Allowable Bending Moment	
					mm	cm^2	kg/m		Shear Force KN	M1	M2
1	300	60	55	17	2	8.82	6.92	148	23.56	14.55	14.22
1	300	60	55	20	2	8.94	7.02	148	23.88	14.83	14.51
2	300	60	55	20	2.5	11.13	8.73	118	46.74	18.34	17.94
3	300	60	55	20	3	13.29	10.43	98	80.95	21.78	21.30



MRB LIP CHANNEL (240MPA)

Sectional Properties

SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	100	55	50	15	1.5	3.44	2.70	1.80	56.10	13.72	11.47	3.76
2	100	55	50	17	1.5	3.50	2.74	1.83	56.80	14.37	11.60	4.00
3	100	55	50	20	1.5	3.59	2.81	1.88	57.69	15.32	11.78	4.36
4	100	55	50	15	1.7	3.88	3.05	2.03	63.00	15.36	12.88	4.21
5	100	55	50	17	1.7	3.95	3.10	2.07	63.79	16.10	13.03	4.48
6	100	55	50	20	1.7	4.05	3.18	2.12	64.80	17.17	13.23	4.89
7	100	55	50	17	2	4.62	3.63	2.42	74.03	18.62	15.13	5.18
8	100	55	50	20	2	4.74	3.72	2.48	75.22	19.85	15.36	5.65
9	100	55	50	17	2.5	5.73	4.49	3.00	90.45	22.60	18.48	6.29
10	100	55	50	20	2.5	5.88	4.61	3.07	91.94	24.12	18.78	6.87
11	100	55	50	20	3	6.99	5.49	3.66	107.86	28.13	22.03	8.02

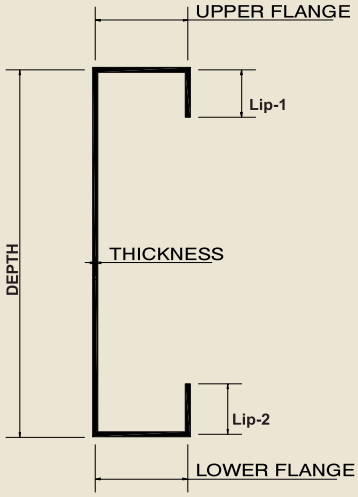
SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	150	55	50	15	1.5	4.19	3.29	2.19	143.67	15.65	19.50	3.94
2	150	55	50	17	1.5	4.25	3.33	2.22	145.76	16.44	19.78	4.20
3	150	55	50	20	1.5	4.34	3.40	2.27	148.64	17.59	20.16	4.58
4	150	55	50	15	1.7	4.73	3.71	2.48	161.70	17.53	21.95	4.42
5	150	55	50	17	1.7	4.80	3.77	2.51	164.07	18.42	22.27	4.70
6	150	55	50	20	1.7	4.90	3.85	2.56	167.33	19.71	22.70	5.13
7	150	55	50	17	2	5.62	4.41	2.94	191.04	21.30	25.93	5.44
8	150	55	50	20	2	5.74	4.51	3.00	194.87	22.80	26.44	5.94
9	150	55	50	17	2.5	6.98	5.48	3.65	234.71	25.86	31.86	6.61
10	150	55	50	20	2.5	7.13	5.59	3.73	239.50	27.71	32.49	7.22
11	150	55	50	20	3	8.49	6.66	4.44	282.54	32.33	38.34	8.43

SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	200	60	55	15	1.5	5.09	3.99	2.66	298.22	21.18	30.27	4.68
2	200	60	55	17	1.5	5.15	4.04	2.69	302.46	22.23	30.69	4.96
3	200	60	55	20	1.5	5.24	4.11	2.74	308.44	23.76	31.29	5.39
4	200	60	55	15	1.7	5.75	4.51	3.01	336.09	23.74	34.11	5.25
5	200	60	55	17	1.7	5.82	4.57	3.04	340.89	24.93	34.59	5.57
6	200	60	55	20	1.7	5.92	4.65	3.10	347.66	26.65	35.27	6.05
7	200	60	55	17	2	6.82	5.35	3.57	397.70	28.86	40.36	6.45
8	200	60	55	20	2	6.94	5.45	3.63	405.68	30.87	41.15	7.01
9	200	60	55	17	2.5	8.48	6.65	4.44	490.22	35.11	49.75	7.85
10	200	60	55	20	2.5	8.63	6.77	4.51	500.19	37.59	50.75	8.55
11	200	60	55	20	3	10.29	8.08	5.39	592.01	43.94	60.06	10.00

SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	250	60	55	17	2	7.82	6.14	4.09	678.80	30.63	55.00	6.58
2	250	60	55	20	2	7.94	6.23	4.16	692.42	32.83	56.09	7.15
4	250	60	55	20	2.5	9.88	7.75	5.17	855.31	39.98	69.29	8.72
5	250	60	55	20	3	11.79	9.26	6.17	1014.21	46.73	82.17	10.20

SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	300	60	55	17	2	8.82	6.92	4.62	1057.65	32.01	71.31	6.67
1	300	60	55	20	2	8.94	7.02	4.68	1078.40	34.36	72.70	7.25
2	300	60	55	20	2.5	11.13	8.73	5.82	1333.87	41.83	89.93	8.84
3	300	60	55	20	3	13.29	10.43	6.96	1583.78	48.89	106.78	10.35

MRB PROJECTS



MRB LIP CHANNEL (345MPA)

Sectional Properties

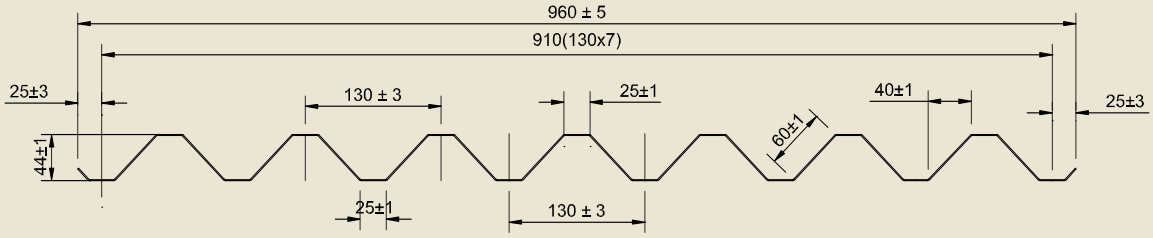
SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	100	55	50	15	1.5	3.44	2.70	1.80	56.10	13.72	11.47	3.76
2	100	55	50	17	1.5	3.50	2.74	1.83	56.80	14.37	11.60	4.00
3	100	55	50	20	1.5	3.59	2.81	1.88	57.69	15.32	11.78	4.36
4	100	55	50	15	1.7	3.88	3.05	2.03	63.00	15.36	12.88	4.21
5	100	55	50	17	1.7	3.95	3.10	2.07	63.79	16.10	13.03	4.48
6	100	55	50	20	1.7	4.05	3.18	2.12	64.80	17.17	13.23	4.89
7	100	55	50	17	2	4.62	3.63	2.42	74.03	18.62	15.13	5.18
8	100	55	50	20	2	4.74	3.72	2.48	75.22	19.85	15.36	5.65
9	100	55	50	17	2.5	5.73	4.49	3.00	90.45	22.60	18.48	6.29
10	100	55	50	20	2.5	5.88	4.61	3.07	91.94	24.12	18.78	6.87
11	100	55	50	20	3	6.99	5.49	3.66	107.86	28.13	22.03	8.02

SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	150	55	50	15	1.5	4.19	3.29	2.19	143.67	15.65	19.50	3.94
2	150	55	50	17	1.5	4.25	3.33	2.22	145.76	16.44	19.78	4.20
3	150	55	50	20	1.5	4.34	3.40	2.27	148.64	17.59	20.16	4.58
4	150	55	50	15	1.7	4.73	3.71	2.48	161.70	17.53	21.95	4.42
5	150	55	50	17	1.7	4.80	3.77	2.51	164.07	18.42	22.27	4.70
6	150	55	50	20	1.7	4.90	3.85	2.56	167.33	19.71	22.70	5.13
7	150	55	50	17	2	5.62	4.41	2.94	191.04	21.30	25.93	5.44
8	150	55	50	20	2	5.74	4.51	3.00	194.87	22.80	26.44	5.94
9	150	55	50	17	2.5	6.98	5.48	3.65	234.71	25.86	31.86	6.61
10	150	55	50	20	2.5	7.13	5.59	3.73	239.50	27.71	32.49	7.22
11	150	55	50	20	3	8.49	6.66	4.44	282.54	32.33	38.34	8.43

SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	200	60	55	15	1.5	5.09	3.99	2.66	298.22	21.18	30.27	4.68
2	200	60	55	17	1.5	5.15	4.04	2.69	302.46	22.23	30.69	4.96
3	200	60	55	20	1.5	5.24	4.11	2.74	308.44	23.76	31.29	5.39
4	200	60	55	15	1.7	5.75	4.51	3.01	336.09	23.74	34.11	5.25
5	200	60	55	17	1.7	5.82	4.57	3.04	340.89	24.93	34.59	5.57
6	200	60	55	20	1.7	5.92	4.65	3.10	347.66	26.65	35.27	6.05
7	200	60	55	17	2	6.82	5.35	3.57	397.70	28.86	40.36	6.45
8	200	60	55	20	2	6.94	5.45	3.63	405.68	30.87	41.15	7.01
9	200	60	55	17	2.5	8.48	6.65	4.44	490.22	35.11	49.75	7.85
10	200	60	55	20	2.5	8.63	6.77	4.51	500.19	37.59	50.75	8.55
11	200	60	55	20	3	10.29	8.08	5.39	592.01	43.94	60.06	10.00

SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	250	60	55	17	2	7.82	6.14	4.09	678.80	30.63	55.00	6.58
2	250	60	55	20	2	7.94	6.23	4.16	692.42	32.83	56.09	7.15
4	250	60	55	20	2.5	9.88	7.75	5.17	855.31	39.98	69.29	8.72
5	250	60	55	20	3	11.79	9.26	6.17	1014.21	46.73	82.17	10.20

SN	D	B1	B2	L	t	Area	Weight	Weight	Ixx	Iyy	Zxx	Zyy
					mm	cm^2	kg/m	kg/m^2	cm^4	cm^4	cm^3	cm^3
1	300	60	55	17	2	8.82	6.92	4.62	1057.65	32.01	71.31	6.67
1	300	60	55	20	2	8.94	7.02	4.68	1078.40	34.36	72.70	7.25
2	300	60	55	20	2.5	11.13	8.73	5.82	1333.87	41.83	89.93	8.84
3	300	60	55	20	3	13.29	10.43	6.96	1583.78	48.89	106.78	10.35



MRB METAL DECK PROFILE 44/130MM

Physical Properties

SN	t(mm)	Area	Weight	Weight	Ixx	Zxx
		cm^2	kg/m	kg/m^2	cm^4	cm^3
1	0.60	7.32	5.75	5.99	16.55	7.52
2	0.63	7.69	6.03	6.28	17.4	7.90
3	0.80	9.76	7.66	7.98	22.1	10.03
4	1.00	12.20	9.58	9.98	27.6	12.54
5	1.25	15.25	11.97	12.47	34.5	15.67
6	1.60	19.52	15.32	15.96	44.1	20.06
7	2.00	24.40	19.15	19.95	55.2	25.08

ALLOWABLE LOAD (Kg/m^2): Yield Stress of Material =2400 Kg/cm^2

SN	t(mm)	Span (m)										
		1	1.2	1.4	1.5	1.6	1.75	2	2.5	3	3.5	4
1	0.60	1241	862	633	552	485	405	310	199	138	101	78
2	0.63	1303	905	665	579	509	426	326	209	145	106	81
3	0.80	1655	1149	844	736	646	540	414	265	184	135	103
4	1.00	2069	1437	1055	919	808	676	517	331	230	169	129
5	1.25	2586	1796	1319	1149	1010	844	646	414	287	211	162
6	1.60	3310	2299	1689	1471	1293	1081	828	530	368	270	207
7	2.00	4138	2873	2111	1839	1616	1351	1034	662	460	338	259

ALLOWABLE LOAD (Kg/m^2): Yield Stress of Material =3400 Kg/cm^2

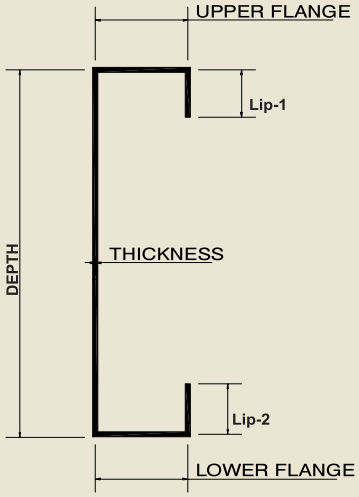
SN	t(mm)	Span (m)										
		1	1.2	1.4	1.5	1.6	1.75	2	2.5	3	3.5	4
1	0.60	1758	1221	897	782	687	574	440	281	195	144	110
2	0.63	1846	1282	942	821	721	603	462	295	205	151	115
3	0.80	2345	1628	1196	1042	916	766	586	375	261	191	147
4	1.00	2931	2035	1495	1303	1145	957	733	469	326	239	183
5	1.25	3663	2544	1869	1628	1431	1196	916	586	407	299	229
6	1.60	4689	3256	2392	2084	1832	1531	1172	750	521	383	293
7	2.00	5861	4070	2991	2605	2290	1914	1465	938	651	478	366

ALLOWABLE LOAD (Kg/m^2): Yield Stress of Material =5500 Kg/cm^2

SN	t(mm)	Span (m)										
		1	1.2	1.4	1.5	1.6	1.75	2	2.5	3	3.5	4
1	0.60	2845	1975	1451	1264	1111	929	711	455	316	232	178
2	0.63	2987	2074	1524	1327	1167	975	747	478	332	244	187
3	0.80	3793	2634	1935	1686	1482	1238	948	607	421	310	237
4	1.00	4741	3292	2419	2107	1852	1548	1185	759	527	387	296
5	1.25	5926	4115	3024	2634	2315	1935	1482	948	658	484	370
6	1.60	7585	5268	3870	3371	2963	2477	1896	1214	843	619	474
7	2.00	9482	6585	4838	4214	3704	3096	2370	1517	1054	774	593

Young's Modulus =200 Gpa
Deflection Limit =Span/150 (IS800-2007)
The sheets should span over minimum four supports
The load shall be multiplied by .8 if the sheets are spanning over 2 or 3 supports

MRB PROJECTS



MRB LIP CHANNEL

Sectional Properties

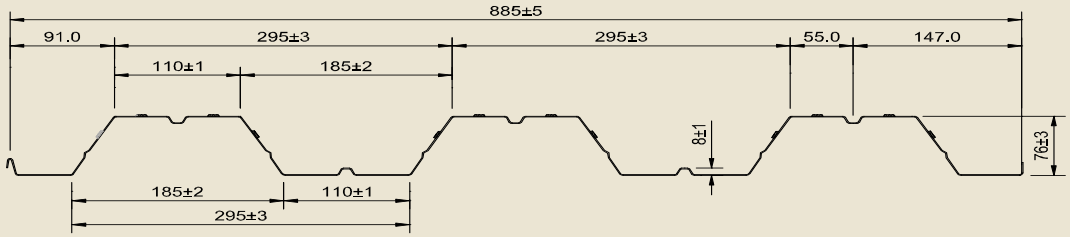
SN	D	B1	B2	L	t	Area	Weight	H/t	Allowable	Allowable Bending Moment	
					mm	cm^2	kg/m		Shear Force KN	M1	M2
1	100	55	50	15	1.5	3.44	2.70	64.67	39.49	2.34	2.24
2	100	55	50	17	1.5	3.50	2.74	64.67	40.18	2.37	2.27
3	100	55	50	20	1.5	3.59	2.81	64.67	41.22	2.40	2.31
4	100	55	50	15	1.7	3.88	3.05	56.82	50.76	2.63	2.52
5	100	55	50	17	1.7	3.95	3.10	56.82	51.65	2.66	2.55
6	100	55	50	20	1.7	4.05	3.18	56.82	52.98	2.70	2.59
7	100	55	50	17	2	4.62	3.63	48.00	62.83	3.09	2.96
8	100	55	50	20	2	4.74	3.72	48.00	64.46	3.13	3.01
9	100	55	50	17	2.5	5.73	4.49	38.00	77.86	3.77	3.61
10	100	55	50	20	2.5	5.88	4.61	38.00	79.90	3.83	3.67
11	100	55	50	20	3	6.99	5.49	31.33	95.06	4.49	4.31

SN	D	B1	B2	L	t	Area	Weight	H/t	Allowable	Allowable Bending Moment	
					mm	cm^2	kg/m		Shear Force KN	M1	M2
1	150	55	50	15	1.5	4.19	3.29	98.00	25.49	3.98	3.84
2	150	55	50	17	1.5	4.25	3.33	98.00	25.86	4.04	3.90
3	150	55	50	20	1.5	4.34	3.40	98.00	26.41	4.11	3.97
4	150	55	50	15	1.7	4.73	3.71	86.24	37.20	4.48	4.32
5	150	55	50	17	1.7	4.80	3.77	86.24	37.74	4.54	4.39
6	150	55	50	20	1.7	4.90	3.85	86.24	38.54	4.63	4.47
7	150	55	50	17	2	5.62	4.41	73.00	57.24	5.29	5.11
8	150	55	50	20	2	5.74	4.51	73.00	58.46	5.39	5.21
9	150	55	50	17	2.5	6.98	5.48	58.00	89.41	6.50	6.27
10	150	55	50	20	2.5	7.13	5.59	58.00	91.33	6.63	6.40
11	150	55	50	20	3	8.49	6.66	48.00	131.50	7.82	7.55

SN	D	B1	B2	L	t	Area	Weight	H/t	Allowable	Allowable Bending Moment	
					mm	cm^2	kg/m		Shear Force KN	M1	M2
1	200	60	55	15	1.5	5.09	3.99	131.33	17.25	6.17	6.00
2	200	60	55	17	1.5	5.15	4.04	131.33	17.45	6.26	6.08
3	200	60	55	20	1.5	5.24	4.11	131.33	17.76	6.38	6.20
4	200	60	55	15	1.7	5.75	4.51	115.65	25.15	6.96	6.76
5	200	60	55	17	1.7	5.82	4.57	115.65	25.45	7.06	6.85
6	200	60	55	20	1.7	5.92	4.65	115.65	25.89	7.19	6.99
7	200	60	55	17	2	6.82	5.35	98.00	41.54	8.23	8.00
8	200	60	55	20	2	6.94	5.45	98.00	42.27	8.40	8.16
9	200	60	55	17	2.5	8.48	6.65	78.00	80.78	10.15	9.86
10	200	60	55	20	2.5	8.63	6.77	78.00	82.21	10.35	10.06
11	200	60	55	20	3	10.29	8.08	64.67	118.30	12.25	11.91

SN	D	B1	B2	L	t	Area	Weight	H/t	Allowable	Allowable Bending Moment	
					mm	cm^2	kg/m		Shear Force KN	M1	M2
1	250	60	55	17	2	7.82	6.14	123	30.24	11.22	10.94
2	250	60	55	20	2	7.94	6.23	123	30.70	11.44	11.16
4	250	60	55	20	2.5	9.88	7.75	98	60.15	14.14	13.79
5	250	60	55	20	3	11.79	9.26	81	107.77	16.76	16.35

SN	D	B1	B2	L	t	Area	Weight	H/t	Allowable	Allowable Bending Moment	
					mm	cm^2	kg/m		Shear Force KN	M1	M2
1	300	60	55	17	2	8.82	6.92	148	23.56	14.55	14.22
1	300	60	55	20	2	8.94	7.02	148	23.88	14.83	14.51
2	300	60	55	20	2.5	11.13	8.73	118	46.74	18.34	17.94
3	300	60	55	20	3	13.29	10.43	98	80.95	21.78	21.30



MRB METAL DECK PROFILE 76/295MM

Physical Properties

SN	t(mm)	Area	Weight	Weight	Ixx	Zxx
		cm^2	kg/m	kg/m^2	cm^4	cm^3
1	0.60	7.32	5.75	6.49	70.35	18.51
2	0.63	7.69	6.03	6.82	73.9	19.44
3	0.80	9.76	7.66	8.66	93.8	24.68
4	1.00	12.20	9.58	10.82	117.3	30.86
5	1.25	15.25	11.97	13.53	146.6	38.57
6	1.60	19.52	15.32	17.31	187.6	49.37
7	2.00	24.40	19.15	21.64	234.5	61.71

ALLOWABLE LOAD (Kg/m^2): Yield Stress of Material =2400 Kg/cm^2

SN	t(mm)	Span (m)										
		1	1.2	1.4	1.5	1.6	1.75	2	2.5	3	3.5	4
1	0.60	3314	2301	1691	1473	1294	1082	828	530	368	270	207
2	0.63	3479	2416	1775	1546	1359	1136	870	557	387	284	217
3	0.80	4418	3068	2254	1964	1726	1443	1105	707	491	361	276
4	1.00	5523	3835	2818	2454	2157	1803	1381	884	614	451	345
5	1.25	6903	4794	3522	3068	2697	2254	1726	1105	767	564	431
6	1.60	8836	6136	4508	3927	3452	2885	2209	1414	982	721	552
7	2.00	11045	7670	5635	4909	4315	3607	2761	1767	1227	902	690

ALLOWABLE LOAD (Kg/m^2): Yield Stress of Material =3400 Kg/cm^2

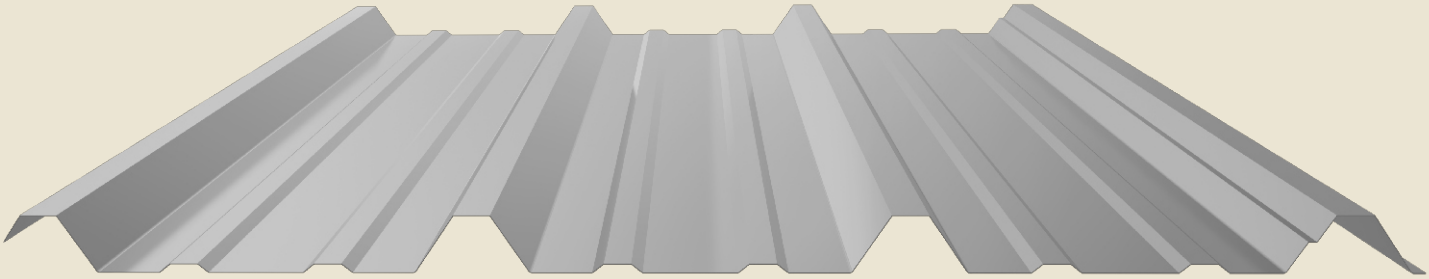
SN	t(mm)	Span (m)										
		1	1.2	1.4	1.5	1.6	1.75	2	2.5	3	3.5	4
1	0.60	4694	3260	2395	2086	1834	1533	1174	751	522	383	293
2	0.63	4544	3423	2515	2191	1925	1609	1232	789	548	402	308
3	0.80	5770	4346	3193	2782	2445	2044	1565	1001	695	511	391
4	1.00	7212	5433	3992	3477	3056	2555	1956	1252	869	639	489
5	1.25	9016	6791	4990	4346	3820	3193	2445	1565	1087	798	611
6	1.60	11540	8693	6387	5563	4890	4087	3129	2003	1391	1022	782
7	2.00	14425	10866	7983	6954	6112	5109	3912	2504	1739	1277	978

ALLOWABLE LOAD (Kg/m^2): Yield Stress of Material =5500 Kg/cm^2

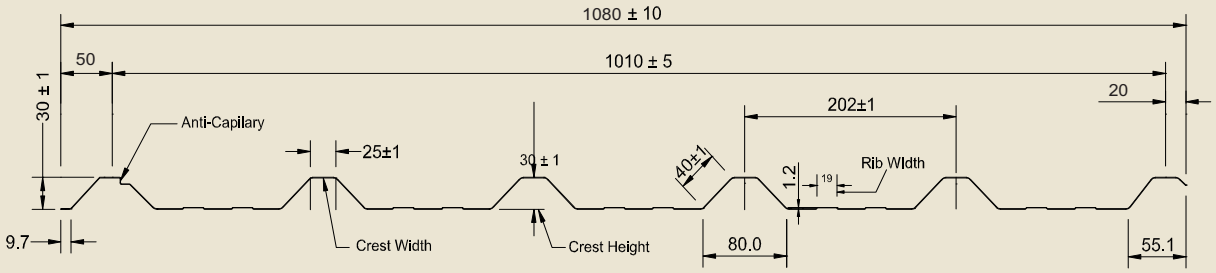
SN	t(mm)	Span (m)										
		1	1.2	1.4	1.5	1.6	1.75	2	2.5	3	3.5	4
1	0.60	7594	5273	3874	3375	2966	2480	1898	1215	844	620	475
2	0.63	7973	5537	4068	3544	3115	2603	1993	1276	886	651	498
3	0.80	10125	7031	5166	4500	3955	3306	2531	1620	1125	827	633
4	1.00	12656	8789	6457	5625	4944	4133	3164	2025	1406	1033	791
5	1.25	15820	10986	8071	7031	6180	5166	3955	2531	1758	1291	989
6	1.60	20249	14062	10331	9000	7910	6612	5062	3240	2250	1653	1266
7	2.00	25312	17578	12914	11250	9887	8265	6328	4050	2812	2066	1582

Young's Modulus =200 Gpa
Deflection Limit =Span/150 (IS800-2007)
The sheets should span over minimum four supports
The load shall be multiplied by .8 if the sheets are spanning over 2 or 3 supports.

MRB PROJECTS

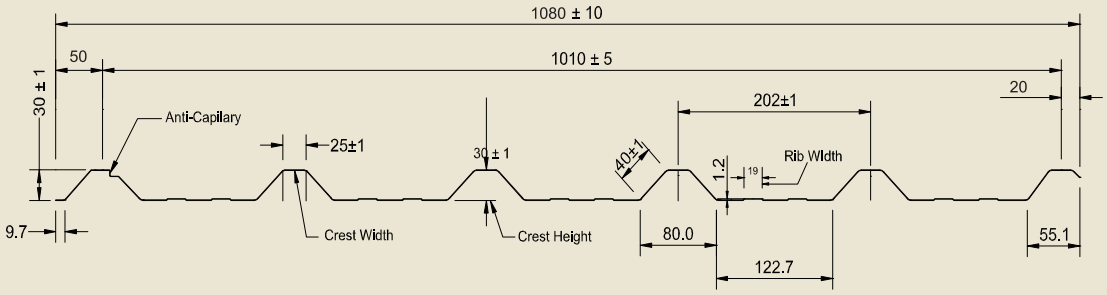


MRB HI-RIB PROFILE 30/202



1. Economical Roof profile with excellent design flexibility
2. 202mm pitch for easy water shredding.
3. Available in thickness 0.47, 0.50, 0.55, 0.60
   Cover width 1020mm & available upto 13m in length.
4. Special side lap corrugation gives extra support at panel overlap.
5. Recommended roof-pitch 3 (1 in 20)

PROFILE SHEET SPECIFICATION	
Coil Input Width	1220 mm
Supply Width	1080 ± 10mm
Cover Width	1010 ± 5mm
Pitch	202 ± 1mm
Crest Height	30 ± 1mm
Crest Width	25 ± 1mm
Rib Height	1-2mm as per thickness of coil
Length	as required (Max upto 10 mtrs)
Thickness Range	0.47 mm to 0.6 mm
Color	As per requirement
Yield Strength	350MPA & 550MPA
Top Coat Paint System	RMP/SMP/PVDF/SDP
Coating	AZ-70 to AZ-150Gsm



MRB HI-RIB PROFILE 30/202

Physical Properties

SN	t(mm)	Area	Weight	Weight	Ixx	Zxx
		cm^2	kg/m	kg/m^2	cm^4	cm^3
1	0.4	4.88	3.83	3.58	5.82	2.66
2	0.45	5.49	4.31	4.03	6.55	3.00
3	0.50	6.10	4.79	4.48	7.28	3.33
4	0.55	6.71	5.27	4.92	8.00	3.66
5	0.60	7.32	5.75	5.37	8.73	4.00
6	0.63	7.686	6.03	5.64	9.17	4.20
7	0.65	7.93	6.23	5.82	9.46	4.33
8	0.70	8.54	6.70	6.27	10.19	4.66
9	0.80	9.76	7.66	7.16	11.64	5.33

ALLOWABLE LOAD (Kg/m^2): Yield Stress of Material =2400 Kg/cm^2

SN	t(mm)	Span (m)										
		1	1.2	1.4	1.5	1.6	1.75	2	2.5	3	3.5	4
1	0.4	394	274	201	175	154	129	99	63	44	32	25
2	0.45	444	308	226	197	173	145	111	71	49	36	28
3	0.50	493	342	251	219	193	161	123	79	55	40	31
4	0.55	542	377	277	241	212	177	136	87	60	44	34
5	0.60	591	411	302	263	231	193	148	95	66	48	37
6	0.63	621	431	317	276	243	203	155	99	69	51	39
7	0.65	641	445	327	285	250	209	160	103	71	52	40
8	0.70	690	479	352	307	270	225	173	110	77	56	43
9	0.80	789	548	402	351	308	258	197	126	88	64	49

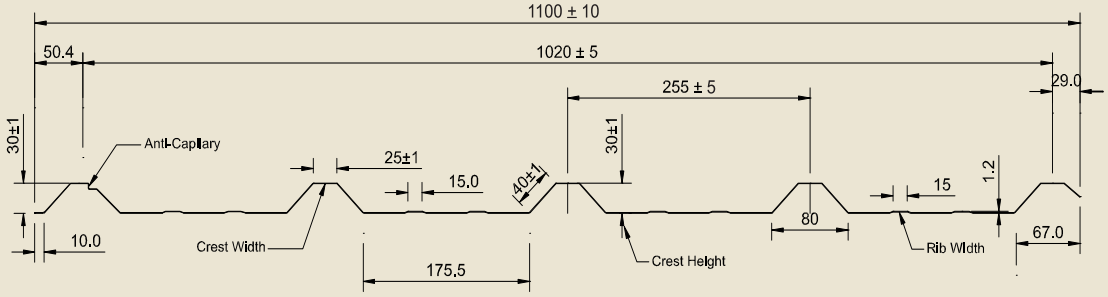
ALLOWABLE LOAD (Kg/m^2): Yield Stress of Material =3400 Kg/cm^2

SN	t(mm)	Span (m)										
		1	1.2	1.4	1.5	1.6	1.75	2	2.5	3	3.5	4
1	0.40	559	388	285	248	218	182	140	89	62	46	35
2	0.45	628	436	321	279	245	205	157	101	70	51	39
3	0.50	698	485	356	310	273	228	175	112	78	57	44
4	0.55	768	533	392	341	300	251	192	123	85	63	48
5	0.60	838	582	428	372	327	274	209	134	93	68	52
6	0.63	880	611	449	391	344	287	220	141	98	72	55
7	0.65	908	630	463	403	355	296	227	145	101	74	57
8	0.70	978	679	499	434	382	319	244	156	109	80	61
9	0.80	1117	776	570	497	436	365	279	179	124	91	70

ALLOWABLE LOAD (Kg/m^2): Yield Stress of Material =5500 Kg/cm^2

SN	t(mm)	Span (m)										
		1	1.2	1.4	1.5	1.6	1.75	2	2.5	3	3.5	4
1	0.4	904	628	461	402	353	295	226	145	100	74	56
2	0.45	1017	706	519	452	397	332	254	163	113	83	64
3	0.50	1130	784	576	502	441	369	282	181	126	92	71
4	0.55	1243	863	634	552	485	406	311	199	138	101	78
5	0.60	1355	941	692	602	529	443	339	217	151	111	85
6	0.63	1423	988	726	633	556	465	356	228	158	116	89
7	0.65	1468	1020	749	653	574	479	367	235	163	120	92
8	0.70	1581	1098	807	703	618	516	395	253	176	129	99
9	0.80	1807	1255	922	803	706	590	452	289	201	148	113

Young's Modulus =200 Gpa
Deflection Limit =Span/150 (IS800-2007)
The sheets should span over minimum four supports
The load shall be multiplied by .8 if the sheets are spanning over 2 or 3 supports.



MRB HI-RIB PROFILE 30/255

Physical Properties

SN	t(mm)	Area	Weight	Weight	Ixx	Zxx
		cm^2	kg/m	kg/m^2	cm^4	cm^3
1	0.4	4.88	3.83	3.58	5.21	2.25
2	0.45	5.49	4.31	4.03	5.86	2.53
3	0.50	6.10	4.79	4.48	6.51	2.81
4	0.55	6.71	5.27	4.92	7.16	3.09
5	0.60	7.32	5.75	5.22	7.81	3.38
6	0.63	7.686	6.03	5.49	8.20	3.54
7	0.65	7.93	6.23	5.66	8.46	3.66
8	0.70	8.54	6.70	6.09	9.11	3.94
9	0.80	9.76	7.66	6.97	10.41	4.50

ALLOWABLE LOAD (Kg/m^2): Yield Stress of Material =2400 Kg/cm^2

SN	t(mm)	Span (m)										
		1	1.2	1.4	1.5	1.6	1.75	2	2.5	3	3.5	4
1	0.4	324	225	165	144	127	106	81	52	36	26	20
2	0.45	365	253	186	162	142	119	91	58	41	30	23
3	0.50	405	281	207	180	158	132	101	65	45	33	25
4	0.55	446	309	227	198	174	145	111	71	50	36	28
5	0.60	486	338	248	216	190	159	122	78	54	40	30
6	0.63	510	354	260	227	199	167	128	82	57	42	32
7	0.65	527	366	269	234	206	172	132	84	59	43	33
8	0.70	567	394	289	252	221	185	142	91	63	46	35
9	0.80	648	450	331	288	253	212	162	104	72	53	41

ALLOWABLE LOAD (Kg/m^2): Yield Stress of Material =3400 Kg/cm^2

SN	t(mm)	Span (m)										
		1	1.2	1.4	1.5	1.6	1.75	2	2.5	3	3.5	4
1	0.4	459	319	234	204	179	150	115	73	51	37	29
2	0.45	516	359	263	230	202	169	129	83	57	42	32
3	0.50	574	398	293	255	224	187	143	92	64	47	36
4	0.55	631	438	322	281	247	206	158	101	70	52	39
5	0.60	689	478	351	306	269	225	172	110	77	56	43
6	0.63	723	502	369	321	282	236	181	116	80	59	45
7	0.65	746	518	381	332	291	244	186	119	83	61	47
8	0.70	803	558	410	357	314	262	201	129	89	66	50
9	0.80	918	638	468	408	359	300	230	147	102	75	57

ALLOWABLE LOAD (Kg/m^2): Yield Stress of Material =5500 Kg/cm^2

SN	t(mm)	Span (m)										
		1	1.2	1.4	1.5	1.6	1.75	2	2.5	3	3.5	4
1	0.4	743	516	379	330	290	242	186	119	83	61	46
2	0.45	835	580	426	371	326	273	209	134	93	68	52
3	0.50	928	645	474	413	363	303	232	149	103	76	58
4	0.55	1021	709	521	454	399	333	255	163	113	83	64
5	0.60	1114	773	568	495	435	364	278	178	124	91	70
6	0.63	1169	812	597	520	457	382	292	187	130	95	73
7	0.65	1207	838	616	536	471	394	302	193	134	98	75
8	0.70	1299	902	663	578	508	424	325	208	144	106	81
9	0.80	1485	1031	758	660	580	485	371	238	165	121	93

Young's Modulus =200 Gpa
Deflection Limit =Span/150 (IS800-2007)
The sheets should span over minimum four supports
The load shall be multiplied by .8 if the sheets are spanning over 2 or 3 supports.

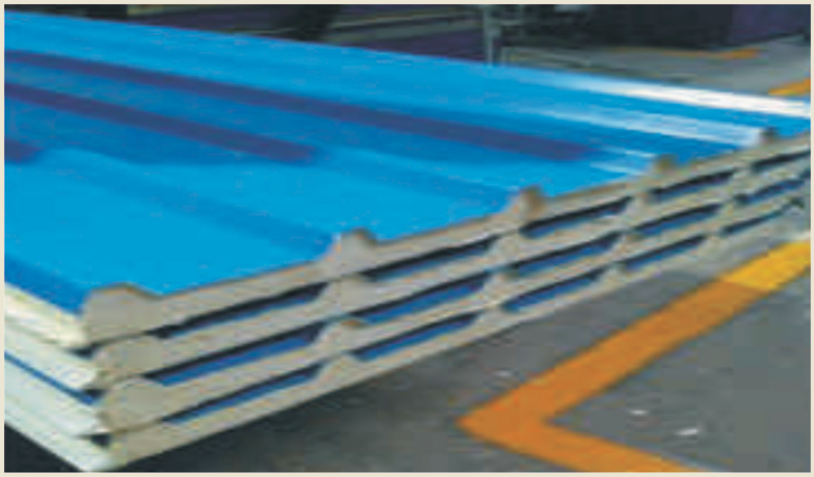
MRB PROJECTS

MRB PUF PANELS

Density:- 40+ 2Kg/M ^{3}
Tensile Strength:- 3.7Kg/Cm ^{2}
Bending Strength:- 4.0Kg /Cm ^{2}
Compressive Strength at 10% Deformation:- 2.1Kg/Cm ^{2}
Adhesion Strength (Between Foam & Steel):- 2.9Kg/Cm ^{2}

Features :-

1. High Load bearing capacity at low weight.
2. Excellent and durable thermal insulation
3. Absolute water and vapour barrier
4. Excellent air tightness and free of thermal bridges which results in considerable energy savings.
5. Easy repair and replacement in case of damage.
6. Long Life and very low maintenance cost.
7. Good sound insulation.
8. Reasonable fire reaction and resistance.



SPECIFICATION

Top Sheet	MRB Standard Color Coated Sheet
Bottom Sheet	MRB Pain/Ribbed Color Coated Sheet
Insulation	Fire Retardant/Rock Wool/Glaas Wool
Widht	1080MM
Length	As per requirement
Thickness	30MM To 200MM
weight	Depend upon thickness

LOAD TABLE

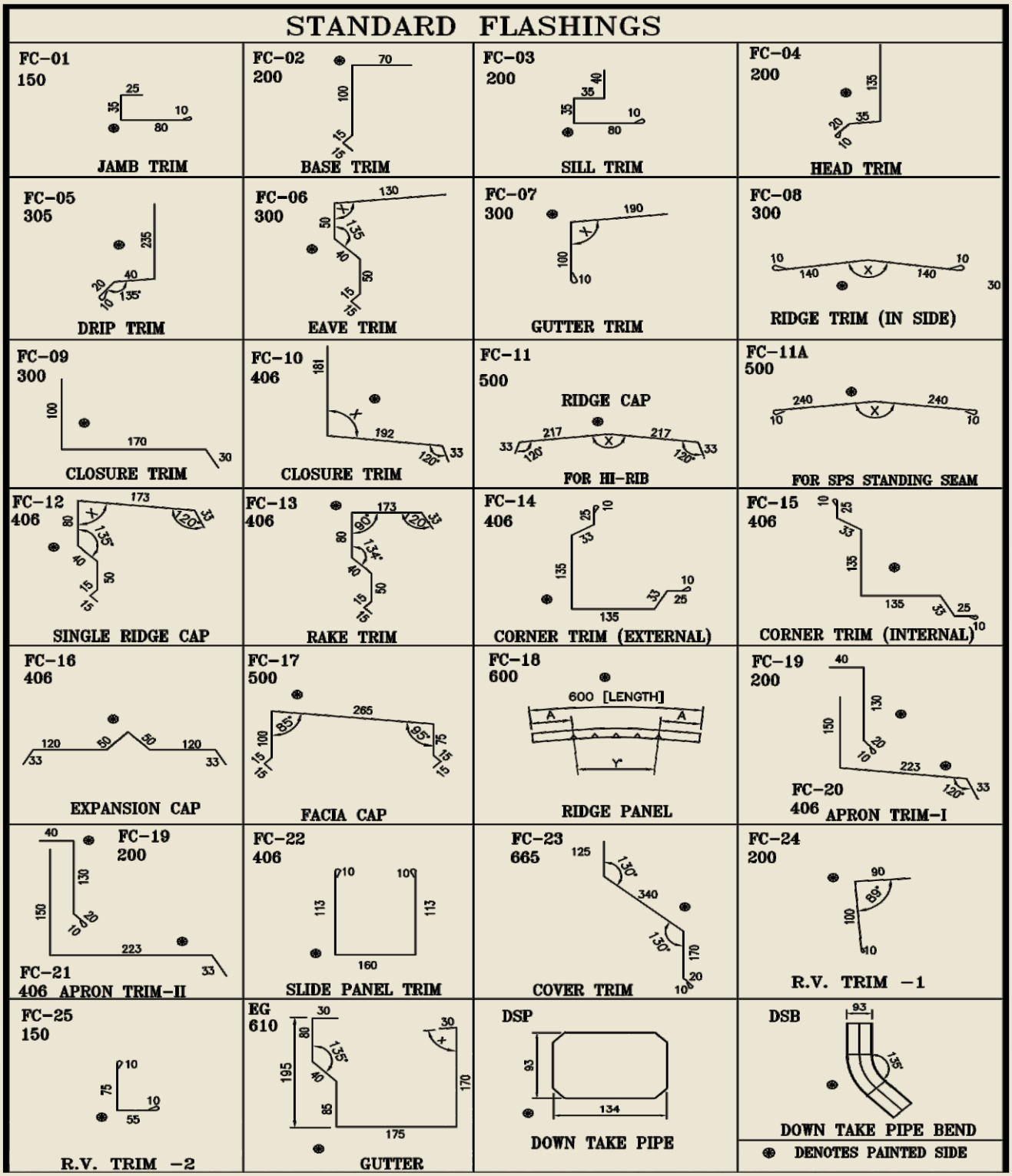
Span Condition	Core thickness	Load Type	Load in KN/m^2							
			Span (Meter)							
			1	1.2	1.4	1.6	1.8	2	2.2	2.4
Single Span	45,60,80,100	Pressure	13.31	9.19	6.71	5	3.48	2.5	1.85	1.4
		Suction	10.71	7.5	5.57	3.93	2.79	2.07	1.59	1.25
Double Span	45,60,80,100	Pressure	8.68	5.98	4.35	3.29	2.57	2.05	1.67	1.39
		Suction	9.95	6.98	5.18	4.02	3.22	2.65	2.23	1.91

MRB PROJECTS

MRB FLASHINGS & TRIMS

MRB Wall and roof flashing and trims are produced from the same material (Base metal, Thickness and color) as the wall roof panels of the building. They include formed Gutter, down take pipe, corner & gable end flashing, bottom flashing barge flashing &ridges etc. As per site conditions are supplied.

STANDARD FLASHINGS



Allied products

LOUVERS:-

Easily installed into end walls for increased Ventilation Technically designed to be made Customized lengths and ready for installation. The louvers allow fresh air inside and prevent the entry of dust and rain water.

FEATURES:-

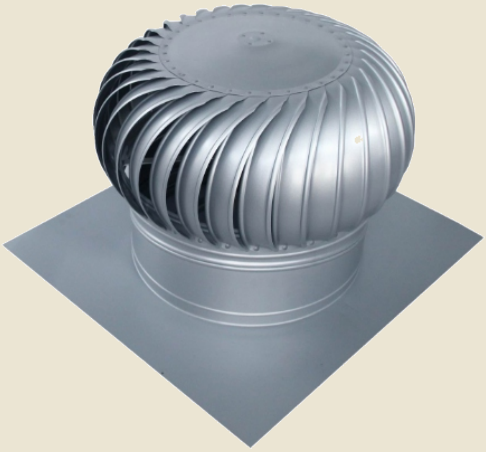
1. The Louvers are made using Zincalume & Color Coated Galvanized Steel
2. Light weight, Easy to install
3. Long Life
4. Maintenance Free
5. No Operational Cost
6. Reduce Power Cost
7. Reduce Maintenance Cost

TURBO / ROOF VENTILATORS:-

Circulation of Fresh air, essential energize work efficiency create dust free atmosphere and equalize ambient temperature.

FEATURE:-

1. Rust Free
2. Eco Friendly
3. Maintenance Free
4. Easy to install
5. Noise less operations
6. Uniform & Continuous flow of fresh air.
7. Weather proof & storm proof.
8. No need of electricity - Wind driven
9. Fresh air 24x365days.



MRB POLYCARBONATE

1. Rigid Polycarbonate Transparent roof glazing sheets Available in required lengths matching MRB Roofing and Cladding, made out of finest lexan polycarbonate sheets from GE-Plastics Excellent Light transmission between 60%-95% depending on thickness.

OUR ASSURANCE

Cost Effective production and Quality Assurance
Research and developments- Tailor made solution for regional and local requirements.
Environment Health & safety-progressive attitude towards health and safety issues.

OUR ASSURANCE

This is a specialized service which provided our customers end to end services
Encompassing entire life cycle of integrated building through dedicated
Experienced team of Project managers, Engineers & Executers.

Deliver Projects... Fullfill Dreams...

MRB PROJECTS

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Factory Ad.: Plot No. 20, Piyala Road, Sikri (Haryana) IND-121004

I'm green