



CONSTRUCTING

STATE OF THE ART STEEL FRAMED BUILDINGS
BUILT TO LAST FOR **100+ YEARS**



W W W . V G S S B S . C O M

CERTIFICATES



INTRODUCTION

TO VGS SOLAR & BUILDING SYSTEMS PVT. LTD.

We are our customer's partners in progress. We know they have complex challenges and many responsibilities. As they are conceptualizing and executing projects, Pre-Engineered Steel Buildings (PEB) are just one part of their responsibilities. However, when it comes to the VGS PEBs, we ensure that our customers are worry-free. From ensuring customized engineering designs that optimize efficiencies, to accurate drawings and project planning and using of latest technologies to plan inventories and meet targeted timeline, we are devoted to exceeding our customer's expectations every time. Our experienced and talented team works with our client partners to give them pre-emptive solutions that go beyond Ordinary specifications to ensure efficiencies for our partners. We can handle complex requirements and often deliver innovative engineering solutions that add tremendous value for our customers. we bring our 10 years of experience as pioneers in the category across manufacturing, retail, transportation and logistics to create bespoke solutions for our partners. We have worked with clients on a PAN India basis and have an extensive presence in the North India. With an annual capacity of over 40,000 MT, we are the undisputed leaders and pioneers in the industry and are capable of handling any project. While we deliver steel structures at one level, what we truly believe we deliver at a fundamental level - is total peace of mind for our clients.



VGS offers one of the most comprehensive product portfolios ranging from Pre-Engineered Steel Building, Structural Steel and Storage Solutions. We offer a wide range of steel solutions tailored to our customers' specific needs including Pre-Engineered Steel Buildings, Storage Solutions/Cold Storage Infrastructure, and a broad array of our steel building products that cover applications in major market segments including but not limited to heavy industry infrastructure, high-rise buildings, warehouse, factories, Petrol Pump Canopies, Foot Over Bridges, Food Parks and leisure structures.

Our commitment to excellence provides unmatched product quality, coupled with speed, safe and superior sales services.

COMPANY PROFILE



OUR VISION

At VGS, we believe in going above and beyond our clients' expectations to deliver outstanding service and quality, every time. Customer delight is the cornerstone of each action we take and building the future together.



OUR MISSION

We are India's No.1 choice for PEBs due to our commitment to excellence in quality and engineering design and we want to pre-empt our customers' needs in design, innovation and delivery.

PRE-ENGINEERED BUILDINGS



PEB is a steel structure built over a structural concept of primary members, secondary members, and the cover sheeting connected to each other.

The structural members are custom designed to be lighter in weight and high in strength. It can be fitted with different structural additions like trusses, mezzanine floors, fascia, canopies and crane systems as per user requirements.

There are many advantages of PEB as mentioned below:-

- ✓ Single source responsibility
- ✓ Faster installation
- ✓ Economical
- ✓ Factory- controlled quality (ISO 9001/14001 Certified)
- ✓ Practically maintenance free
- ✓ Clear spans exceeding 90 Metres
- ✓ Flexibility in expansion
- ✓ Energy efficient roof and wall systems
- ✓ Earthquake- resistant





There are various applications of PEB as mentioned below:-

- ✓ Warehouses / Cold Storages
- ✓ Factories / Industrial Buildings
- ✓ Showrooms / Workshops
- ✓ Supermarkets / Shopping Malls
- ✓ Sports Stadiums / Auditorium
- ✓ Function Halls / Community Buildings
- ✓ Petrol Stations / Car Parks
- ✓ Aircraft Hangars
- ✓ Metro Stations
- ✓ Shelters / Sheds
- ✓ Schools / Colleges / Hospitals
- ✓ Office Buildings
- ✓ Shipyards / Ports
- ✓ Foot Over Bridges/ ROB.

BUILDING COMPONENTS

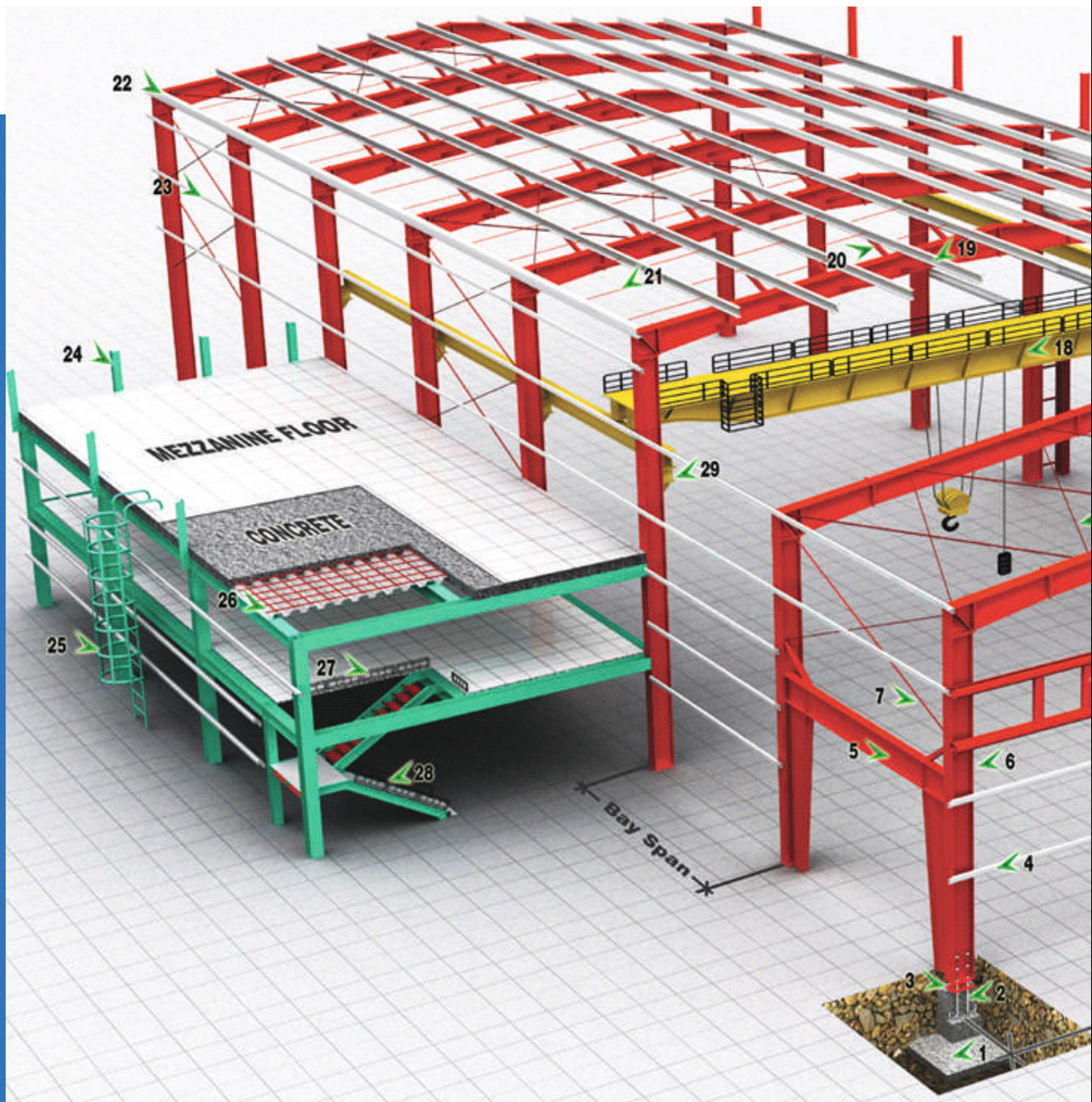


1. VGS Roof Panel
2. VGS Wall Panel
3. Canopy
4. Roll Up Door (Manual/Electrical)
5. Double Slide Door
6. Rake Trim
7. Sky Light (Translucent Panel)
8. Ridge Ventilator (With Bird Mesh)
9. Power Ventilator
10. Eave Gutter
11. Louver With Bird Mesh
12. Masonry Trim
13. Window With Insect Screen
14. Downspout



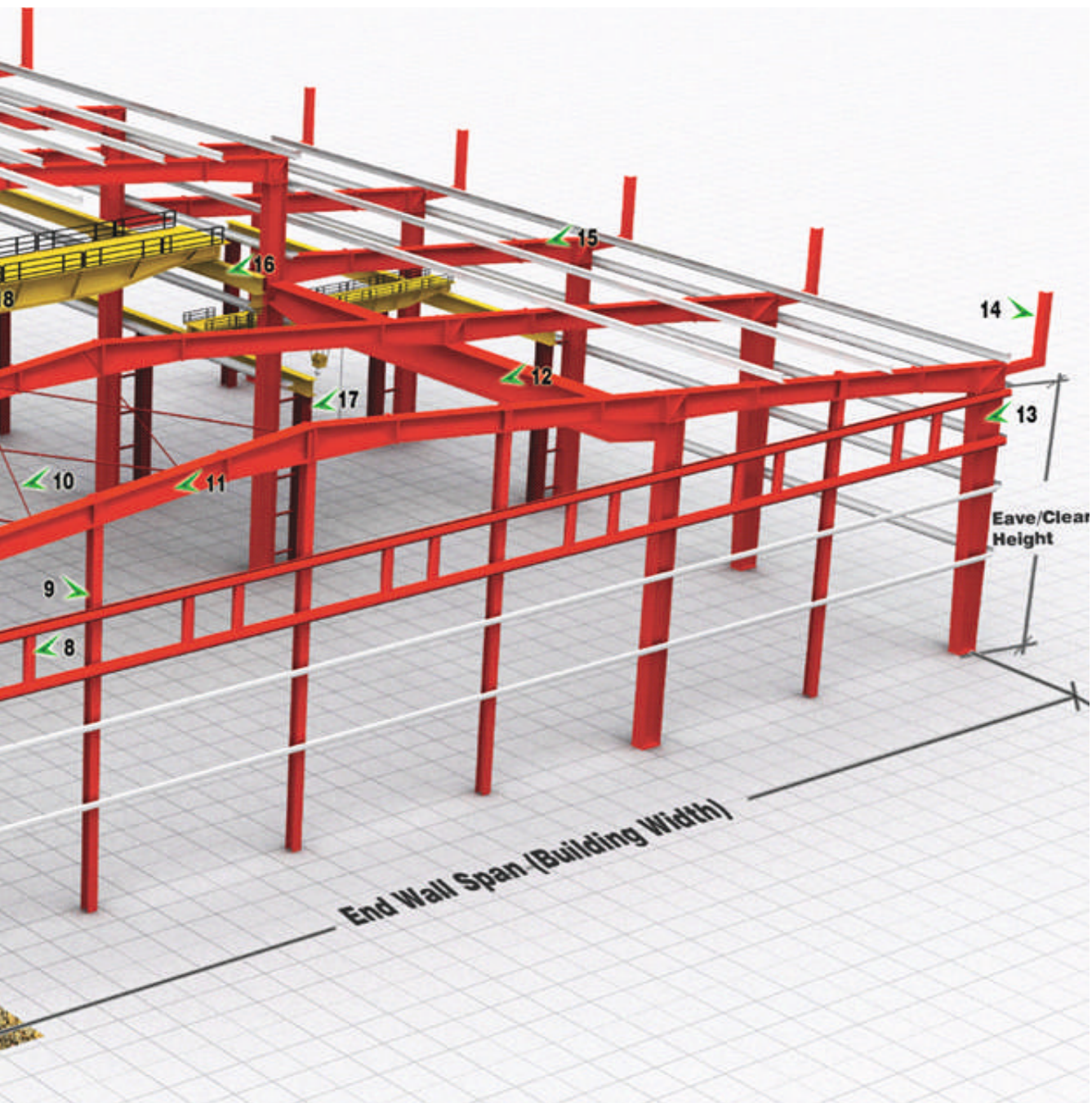
15. Single Walk Door
16. Curved Eave
17. Industrial Louver
18. Corner Trim
19. Eave Trim
20. Flush Fascia
21. Strip Skylight
22. Roof Monitor
23. Double Walk Door
24. Roof Extension
25. Return Downspout
26. Brick Wall
27. Wall Light (Translucent Panel)
28. Curved Cantilever Fascia

Building Components (Contd.)



1. Concrete Footing
2. Anchor Bolts
3. Base Plate
4. End Wall Girt
5. Portal Bracing
6. Main Frame Straight Column
7. Wall Bracing (Angle/Rod)
8. Framed Opening (Window/Louver)
9. End wall Wind Column
10. Roof Bracing (Angle/Rod)
11. Main Frame Rafter
12. Jack Beam

13. Main Frame Tapered Column
14. Cantilevered Fascia Frame



- 15. Lean To Frame
- 16. Crane Beam
- 17. Crane Column
- 18. EOT Crane
- 19. Roof Purlin
- 20. Flange Brace
- 21. Sag Rod
- 22. Eave Strut
- 23. Side wall Girt
- 24. Flush Fascia Frame
- 25. Cage Ladder

- 26. Deck Panel with Steel Mesh
- 27. Hand Rail (Steel)
- 28. Staircase (Checker plate/C channel)
- 29. Crane Bracket

STRUCTURAL SYSTEM

Structural systems are the main load carrying and support members of a pre-engineered building. The shape and size vary based on application and requirements.

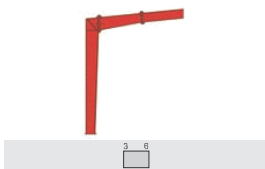
The main frame members are the main load carrying member of a structural system which include columns, end wall posts, rafters and other main support members.

All Structural steel sections and welded plate members shall be designed in accordance with the applicable sections, relating to design requirements and allowable stresses, of the latest edition of the American Institute of Steel Construction.

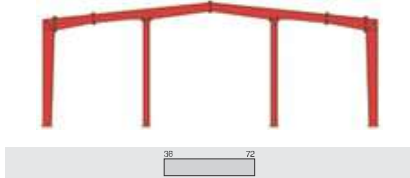
"Specification for the Design, Fabrication and Erection of the Structural Steel for Buildings"
General guidelines on recommended frame types for different widths are given below:

MAIN FRAMES

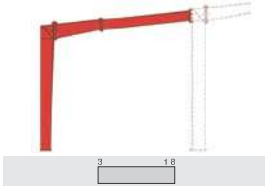
■ L-CANOPY (L-CAN)



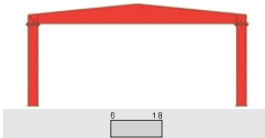
■ BEAM AND COLUMN (BC-2)



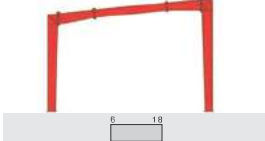
■ LEAN-TO (L-TO)



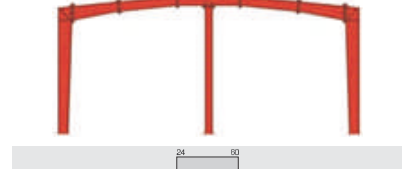
■ SPACE SAVER (SV)



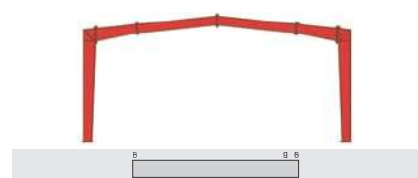
■ SINGLE SLOPE (SS)



■ BEAM AND COLUMN (BC-1)



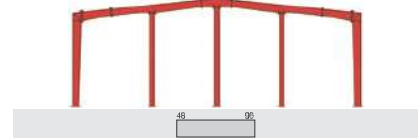
■ RIGID FRAME (RF)



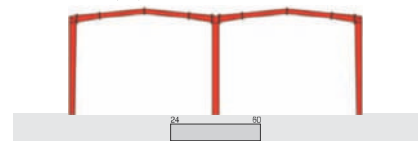
■ BUTTERFLY CANOPY (T-CAN)



■ BEAM AND COLUMN (BC-3)



■ MULTI-SPAN (MS)



Suggested Width Range (Meters) ... For Most Economical Buildings
Standard Eave Height: 3m-8m; Std Bay Spacing: 6m / 7.5m / 9m;
Standard Loadings: Live Load; 0.5/0.6/1.0 Kn/m², Wind Load: 0.75/ 1.0/ 1.25 Kn/m²

CRANE SUPPORT SYSTEMS

Buildings can be designed to support any required crane system. Generally, overhead travelling cranes up to 15 MT are supported on brackets. For higher capacities, an independent support system is provided. Crane support for overhead travelling cranes includes brackets, beams and bracings. In addition, buildings can be designed to carry JIB -Cranes, Mono Rail Cranes, Wall Travelling Cranes, Semi - Gantry Cranes as well.



CANOPIES

Wall canopies over doors and windows at sidewall or end wall are available. Sidewall canopies are supplied without soffit panel and end wall roof extension canopies are supplied with V.R. soffit panel unless noted otherwise. End wall roof extension canopies are not to be supplied with soffit panel if the building remains open all around. Canopy brace angle should be supplied for bay spacing over 7000 mm or as required.



MEZZANINES

Standard Mezzanine Floor Systems consist of galvanized profiled steel deck, joists, beams and intermediate support columns. Main beams can span in lateral directions and joists in longitudinal directions.



FASCIAS

Fascias are used for architectural purposes to conceal the gable of the building. A variety of fascias either straight or inclined can be provided. Fascias are cantilevered from the main frame columns on the sidewall and from the wind columns on the end wall. Flush Fascias or Parapet Fascias can also be provided. VGS provides fascias specially designed to your requirements. These fascias can have vertical, horizontal or curved sheeting to enhance the architectural look of your building.





TRUSSES

The VGS Truss System is one of the company's most popular and highly economical products. It is a rigid structure, ideal for large span roof systems, multiple bay buildings and as mezzanine floor framing. Significant reductions in building heights are possible by running service pipes/ducts through the trusses. Foundation costs also are reduced due to fewer columns being required to support larger spans.

The VGS Truss System structures are individually designed to meet the specific requirements of each building and are fabricated utilizing high quality efficient fixtures. The system allows for easy erection as all connections are field bolted. Except for field splices on very large spans, no site welding is required.

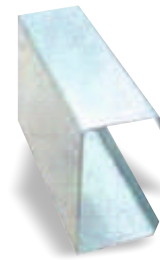
SECONDARY MEMBERS

Secondary structural framing refers to purlins, girts, eave struts, wind bracing, flange bracing, base angles, clips and other miscellaneous structural parts.

Purlins, girts and eave struts are cold form steel members which have a minimum yield strength of 345 MPa (50,000 psi) and will conform to the physical specifications of ASTM A1011 (Grade 50) or ASTM A-653 (Grade 50).

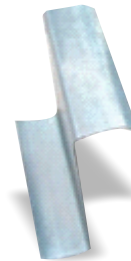
C-Section

C-- Sections are 200 mm deep with a 100 mm flange. The flanges are perpendicular to the web and have a 24 mm stiffening lip.



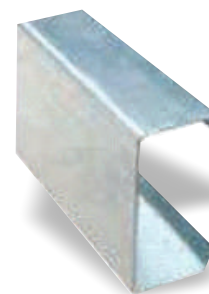
Purlins & Girts

Purlins and girts are roll formed Z sections, 200 mm deep with 64 mm flanges shall have a 16 mm stiffening lip formed at 45° to the flange.



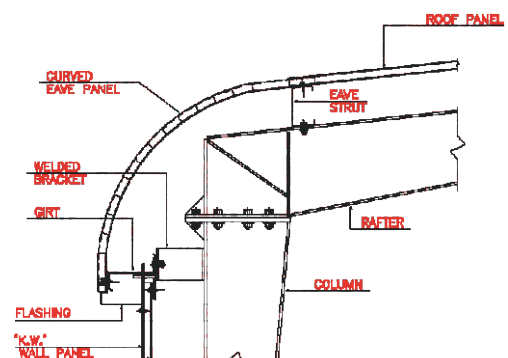
Eave Strut

Eave struts are 200 mm deep with a 104 mm wide top flange, a 118 mm wide bottom flange, both are formed parallel to the roof slope. Each flange has a 24 mm stiffener lip. Structural members are located along the sidewall; at the intersection of the planes of the roof and wall. It is constructed from cold formed C' sections and is rolled to suit the roof slope. This member transmit longitudinal wind force on the end walls from roof brace rods to wall brace rods.



Curved Eaves

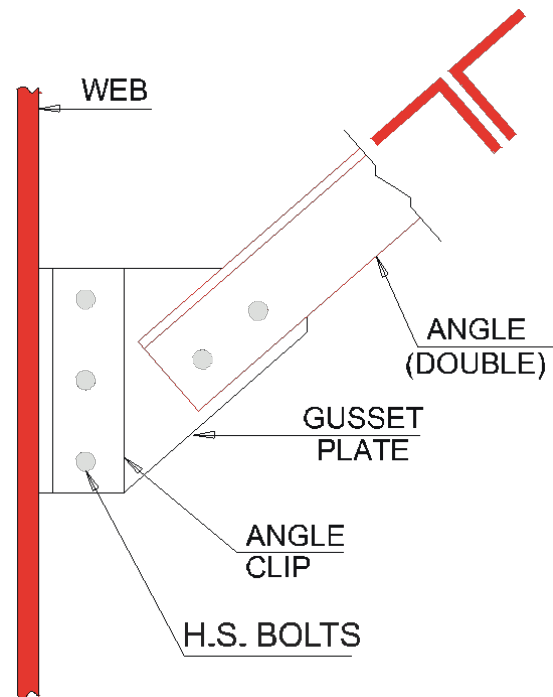
Curve Eaves can transform the look of any building. Curved canopies and walkways provide an inviting entryway into commercial establishments. Curved eaves eliminate seam lines and provide a smooth line for the eye to follow. Our crimping-curving process increases the rigidity of the Curved panels making this choice of panels not only visually appealing but also practically durable.



BRACING SYSTEMS

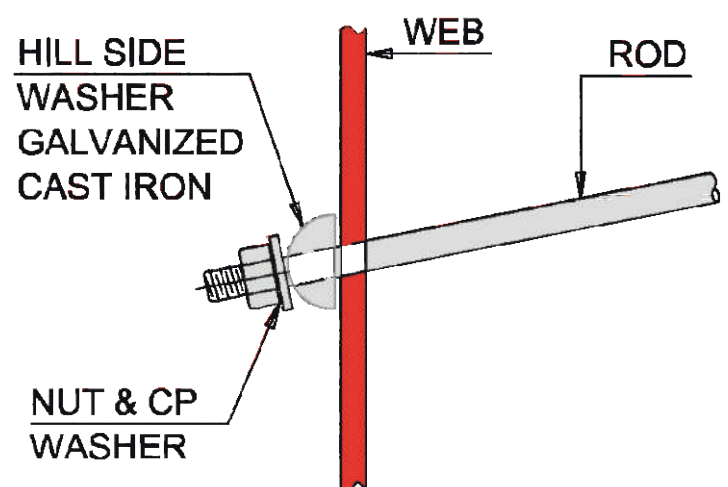
ANGLE BRACING

Angle Bracings are used to withstand the actions of longitudinal forces (tension only). These angles shall have minimum yield of 250 Mpa(36,000 psi) or 345.



ROD BRACING

Rod bracing shall have a minimum yield strength of 250MPa (36,000 psi) and will conform to the physical specifications of ASTMA-36 or equivalent.



CLADDING & ROOFING SYSTEMS

PANEL PROFILES

VGS standard steel panel are available in 26 or 24 gauge thickness and have a minimum yield strength of 550 MPa. Steel panels are hot dipped and galvanized with zinc or zinc-aluminium coating. Galvanized materials conform to G90 for 275 grams per square metre according to ASTM A653. Zinc - Aluminium coated materials conform to AZ150 according to ASTM A792.

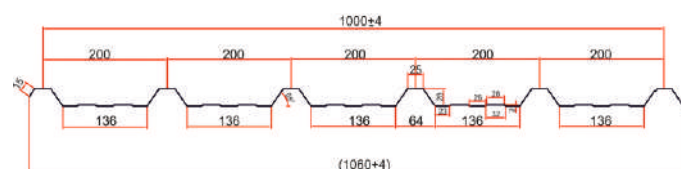
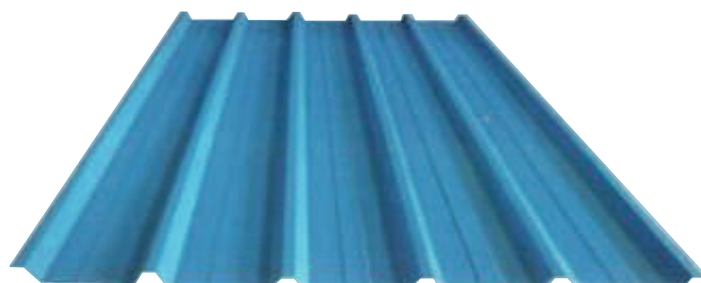
VGS panels are prepared with a multilayered coating system to ensure long life and optimum coating adherence. The base material is pretreated, before applying a corrosion resistant primer and top coat. The combined thickness of the painted film is 25 microns on the front side and 12 microns on the reverse side.

The VGS Cladding & Roofing systems consists of ribbed steel panels and thus provides room for a built-up roof system. The profiled steel panel is fixed to the secondary framework by self-drilling screws. The overlaps of this panel are fastened with stitching screws. The secondary framing is normally Z purlins fixed with 1.5m purin spacing to the primary framing. The thermal insulation varies depending on the type of the built-up roof.

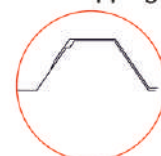
ADVANTAGES

- Simple and economical parapets
- Can be used for complex roof shapes
- Economical rain water drainage
- High degree of thermal insulation
(depending on the specification of the built-up roof system)
- Reduced peak height
- Fully integrated accessories: skylights, smoke vents,
- A cost-effective and practical solution
- An increase of safety and water tightness
thanks to the strength of its fixation
- Attractive and economical
- Easy to install
- Cost-effective energy efficiency
- Long-term performance

VR 200/28



Overlapping



VGS MULTI-SEAM

India's Finest Standing Seam Roofing System (American Technology)

VGS Roof System is a steel membrane like structure covering entire building with panels joined together with a double lock standing seam and a uniquely designed clip formed into the seam at the building site in a unique manner that requires no through fasteners or holes. The panels are joined and sealed together by a portable electric seamer. The Multi-Seam roofing system is industry's finest standing seam metal roofing system with years of weathertight.

This roof system is attached to the building with a unique clip arrangement that requires no through panel fasteners yet is securely attached to prevent wind blow off while allowing the roof sheet to move up to 60 mm with thermal expansion and contraction without sacrificing structural integrity.



Single Length Sheet Up To 100 Mts

The VGS sheets are custom rolled to any transportable length maximum upto 13 meters. However, our specialized service of On-Site Roll Forming enables single length sheet up to 100mts long, without end laps - therefore on most jobs you can have single sheet from ridge to eaves resulting into zero laps, which are otherwise potential areas of leakage. VGS recommends avoiding end laps for total maintenance free roof. However if unavoidable two pieces clamped connection is recommended to Seal end laps.

Weather Tight

Roof panels are permanently seamed together with a full 3600 double lock seam to keep moisture out and designed as water and dust barrier. The raised seam assists drainage.

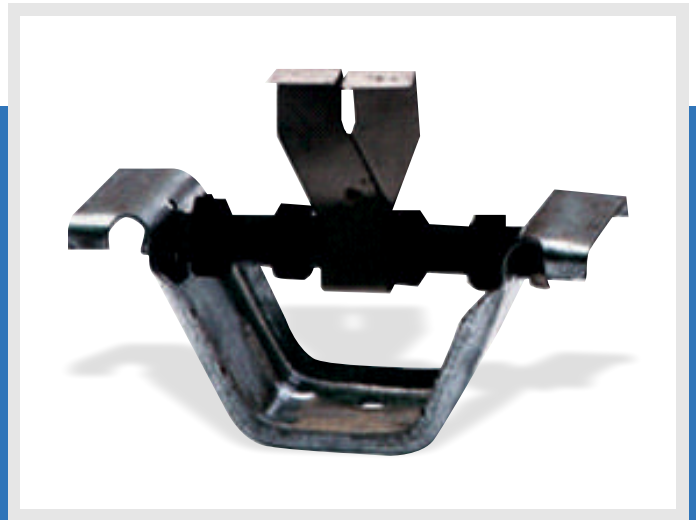
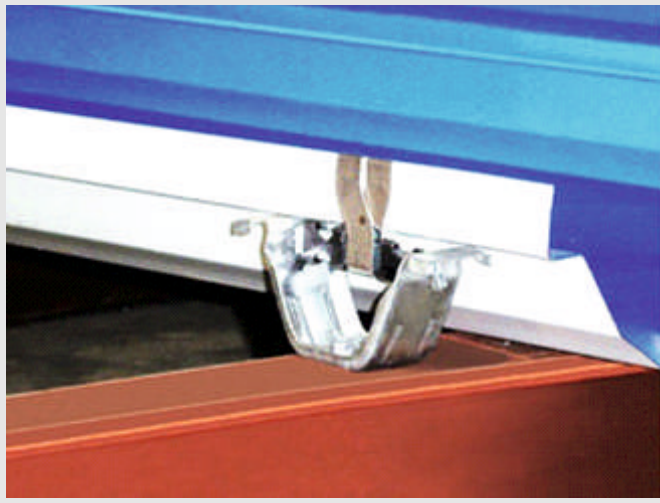


Roof Seamer

The seaming process uses a heavy duty, Electric, portable roll forming machine called the Roof Seamer.



CLIP DESIGN



Roof clips securely attach the roof panels to the supporting structurals by stainless steel tabs which are roll formed into the panel seam.

Stainless steel tabs are 50% stronger than other galvanized standing seam tabs. The clip design allows for 32 mm of movement in either direction to accommodate expansion and contraction forces. This permits buildings up to 500 feet wide without the need for special expansion joints.

DESIGN FREEDOM HIGH STRENGTH

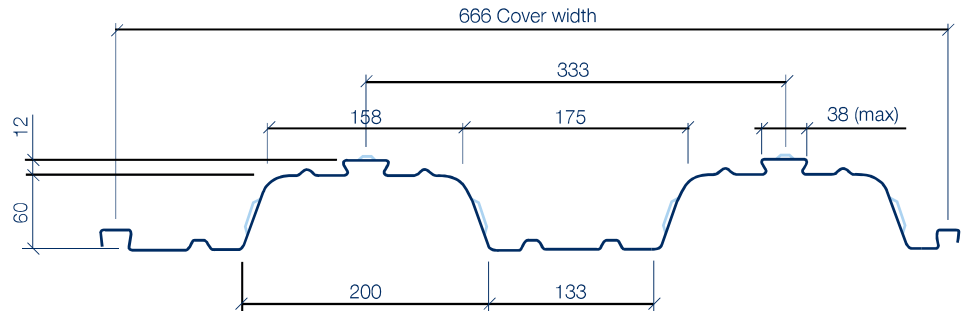
VGS has 51mm high ribs providing strength and beauty. The recommended minimum roof pitch for the profile is 2° (1 in 30). If the purlin and the roof plane are perfectly aligned Multi-Seam can be used for roof slope as low as 1°. Steep Slope, Low Slope, and Flat Roof profiles can all be designed with standing seam metal roof.

ROOF PROFILES	YIELD STRENGTH OF STEEL	THICKNESS TO CONSIDER (TCT)	WEIGHT		I_{xx} (cm ⁴) /m	Z_{xx} (cm ³) /m		MOMENT CAPACITY AT TOP COMPRESSION FLANGE	MOMENT CAPACITY AT BOTTOM COMPRESSION FLANGE
			COVER WIDTH	RUNNING LENGTH		TOP	BOTTOM		
MULTI-SEAM™ 1. COVER WIDTH: 485MM 2. THICKNESS: 0.45 - 0.6MM 3. ROOF SLOPE: 2° 4. STEEL STRENGTH: 240 & 350 MPA 5. METALLIC COATING: GALVALUME/GALVANISED 6. COLOR COATING: BARE GALVALUME POLYESTER/SMP/PVDF	240	0.50	4.64	2.25	40.035	6.241	22.101	1.292	0.940
		0.55	5.13	2.49	44.125	6.880	24.383	1.483	1.067
		0.60	5.63	2.73	48.213	7.519	26.655	1.670	1.195
	340	0.45	4.15	2.01	35.924	5.600	19.811	1.457	1.046
		0.47	4.34	2.11	37.573	5.858	20.730	1.563	1.138
		0.50	4.64	2.25	40.035	6.241	22.101	1.724	1.263
		0.55	5.13	2.49	44.125	6.880	24.383	1.986	1.456
		0.60	5.63	2.73	48.213	7.519	26.655	2.254	1.635

VGS SOLAR & BUILDING SYSTEMS PVT. LTD.

DATA SHEET
DS-60

Engineering innovative Construction Technology
Masters in Steel Decking Systems



- ✓ Un-propped spans in excess of 3.5m.
- ✓ Reduces concrete volume.
- ✓ Engineered embossment design for optimum composite action between decking and concrete.
- ✓ Fire Rating upto 4.0 hrs.
- ✓ Soffit 'Wedge Nut' fixings available with load capacity of upto 1Kn.

SECTION PROPERTIES

Nominal Thickness mm	Design Thickness (Bare Steel) mm	Grade N/mm ²	Depth of Profile mm	Weight of Profile kg/m ² kN/m ²		Height of Neutral Axis mm	Area of Steel mm ² /m	Moment of Inertia cm ⁴ /m
0.9	0.86	S350	60 / 72*	10.25	0.100	33.6	1216	93.5
1.0	0.96	S350	60 / 72*	11.34	0.111	33.6	1355	102.1
1.2	1.16	S350	60 / 72*	13.61	0.133	33.7	1633	119.8

Note: Figures against depth of profile indicate the nominal depth, with overall depth (including height of re-entrant) marked *.

CONCRETE VOLUME & WEIGHT

Slab Depth mm	Volume of Concrete m ³ /m ²	Weight of Concrete (Normal Weight)		Weight of Concrete (Lightweight)	
		Wet (kN/m ²)	Dry (kN/m ²)	Wet (kN/m ²)	Dry (kN/m ²)
120	0.086	2.02	1.98	1.60	1.52
130	0.096	2.26	2.21	1.79	1.70
140	0.106	2.50	2.44	1.98	1.87
150	0.116	2.73	2.67	2.16	2.05
175	0.141	3.32	3.25	2.63	2.49
200	0.166	3.91	3.83	3.09	2.93
225	0.191	4.50	4.40	3.56	3.37
250	0.216	5.09	4.98	4.03	3.81

Deflection

This table is based on concrete poured to a constant thickness and does not take account for deflection of the decking or supporting beams. (as a guide, to account for the deflection of the decking a concrete volume of span/250 should be added to the figures indicated in the table)

Concrete Weight

These tables indicate concrete weight only and do not include the weight of decking or reinforcement.

Concrete weights are based on the concrete densities specified in BS5950 Part 4 clause 3.3.3


as follows:

Normal Weight Concrete - 2400kg/m³ (wet) and 2350 kg/m³ (dry).

Lightweight Concrete - 1900kg/m³ (wet) and 1800 kg/m³ (dry).

LOAD SPAN TABLES (Normal Weight Concrete)-Steel Grade S350

Maximum spans (m) using Normal Weight Concrete (wet density 2400 kg/m³) for S350 grade steel.

				Maximum Permissible Span (m)											
Span Type	Fire Rating (hours)	Slab Depth (mm)	Mesh	0.9mm Gauge				1.0mm Gauge				1.2mm Gauge			
				Total Unfactored Applied Load (kN/m²)											
				3.5	5.0	7.5	10.0	3.5	5.0	7.5	10.0	3.5	5.0	7.5	10.0
 Single Span	1.0	130	A142	3.15	3.15	3.15	2.74	3.40	3.40	3.28	2.81	3.71	3.71	3.43	2.93
		150	A193	2.99	2.99	2.99	2.99	3.24	3.24	3.24	3.24	3.53	3.53	3.53	3.53
		200	A393	2.71	2.71	2.71	2.71	2.90	2.90	2.90	2.90	3.20	3.20	3.20	3.20
	1.5	140	A193	3.06	3.06	3.06	2.76	3.28	3.28	3.28	2.79	3.62	3.62	3.35	2.87
		150	A193	2.99	2.99	2.99	2.88	3.24	3.24	3.24	2.91	3.53	3.53	3.53	2.99
		200	A393	2.71	2.71	2.71	2.71	2.90	2.90	2.90	2.90	3.20	3.20	3.20	3.20
	2.0	150	A193	2.99	2.99	2.91	2.55	3.24	3.24	2.92	2.56	3.53	3.53	2.95	2.60
		175	A252	2.89	2.89	2.89	2.89	3.06	3.06	3.06	3.06	3.35	3.35	3.35	3.25
		200	A393	2.71	2.71	2.71	2.71	2.90	2.90	2.90	2.90	3.20	3.20	3.20	3.20
 Double Span	1.0	130	A142	3.59	3.53	3.00	2.66	3.83	3.61	3.07	2.73	4.34	3.77	3.21	2.85
		150	A193	3.38	3.38	3.38	3.09	3.70	3.70	3.57	3.15	4.12	4.12	3.71	3.28
		200	A393	2.97	2.97	2.97	2.97	3.18	3.18	3.18	3.18	3.76	3.76	3.76	3.76
	1.5	140	A193	3.48	3.48	2.99	2.66	3.80	3.56	3.03	2.70	4.22	3.66	3.12	2.77
		150	A193	3.38	3.38	3.10	2.75	3.70	3.69	3.14	2.79	4.12	3.78	3.23	2.87
		200	A393	2.97	2.97	2.97	2.97	3.18	3.18	3.18	3.18	3.76	3.76	3.76	3.76
	2.0	150	A193	3.38	3.23	2.77	2.47	3.69	3.25	2.79	2.49	3.73	3.29	2.83	2.53
		175	A252	3.16	3.16	3.16	2.94	3.44	3.44	3.33	2.96	3.91	3.91	3.37	2.99
		200	A393	2.97	2.97	2.97	2.97	3.18	3.18	3.18	3.12	3.76	3.76	3.55	3.16
 Double Span (Propped)	1.0	130	A393	4.78	4.37	3.80	3.24	4.84	4.43	3.85	3.34	4.96	4.54	3.95	3.53
		150	A393	5.04	4.56	4.00	3.60	5.12	4.63	4.06	3.66	5.26	4.76	4.17	3.76
		200	2 x A393	4.42	4.42	4.42	4.42	4.88	4.88	4.88	4.56	5.70	5.70	5.31	4.79
	1.5	140	A393	4.54	4.09	3.57	3.21	4.59	4.13	3.61	3.25	4.67	4.21	3.68	3.31
		150	A393	4.65	4.20	3.68	3.32	4.70	4.25	3.72	3.35	4.79	4.33	3.79	3.42
		200	2 x A393	4.42	4.42	4.42	4.21	4.88	4.88	4.65	4.24	5.70	5.29	4.72	4.30
	2.0	150	A393	4.31	3.89	3.41	3.07	4.33	3.92	3.43	3.09	4.38	3.96	3.47	3.13
		175	2 x A252	4.78	4.49	3.97	3.59	4.95	4.52	3.99	3.62	5.00	4.56	4.03	3.65
		200	2 x A393	4.42	4.42	4.15	3.78	4.88	4.68	4.17	3.80	5.14	4.72	4.20	3.83

Design Table Limits – Criteria

Typically, spans are governed by the maximum 'un-propped' condition at Construction Stage, except where values are for propped spans and/or are indicated as follows:

Spans shown in **red** indicate where spans are limited by the fire condition, greater spans may be achievable by either increasing mesh size or addition of bottom reinforcement

Spans shown in **blue** indicate where spans are limited by the composite/normal stage conditions, greater spans may be achievable where shear studs are provided.

FIRE INSULATION THICKNESS

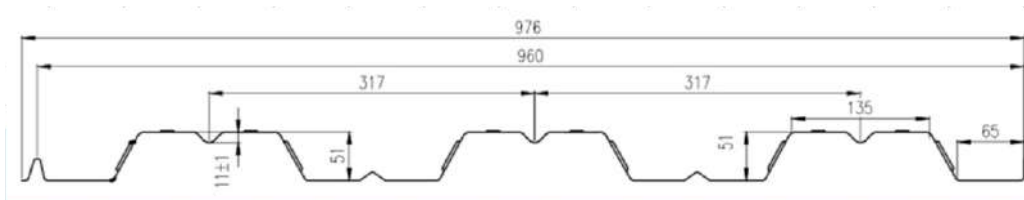


Minimum Insulation Thickness (x) of Concrete (mm)					
Fire Rating	1 hr	1.5 hr	2 hr	3 hr	4 hr
NWC	70	80	90	115	130
LWC	60	70	80	100	115

The image and table above details the minimum insulation thickness required to suit fire design criteria – in accordance with BS5950 Part 8.

VGS SOLAR & BUILDING SYSTEMS PVT. LTD.

Engineering Innovative Construction Technology
Masters In Steel Decking Smart Solutions



PARAMETER	DIMENSION
✓ Trough Depth	51mm
✓ Pitch	317mm
✓ Supplied Width	976 mm
✓ Covered Width	960 mm
✓ Length	Customized /asper requirement
✓ Thickness	0.8 to 1.2mm
	*Subjected to Standard Tolerances

V-SMART METAL DECK

- ✓ Structural adequacy is established by choosing the section to provide requisite sectional modulus to satisfy moment and deflection criterion.
- ✓ A moment coefficient of 1/8 is used for single span & dual spans and 1/10 for 3 or more spans deflection co-efficient are 0.013 for single span & 0.0078 for multi spans. The deflection co-efficient are 0.013 for single span and 0.0078 for multi spans.
- ✓ The maximum deflection of the deck sheets is restricted to L/240 under uniformly distributed loads.

SECTION PROPERTIES

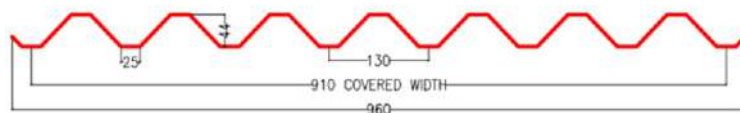
Thickness (mm)	Weight (kg/m)	Moment of Inertia cm ⁴	Section Modulus cm ³
0.8	7.964	48.94	17.92
1.0	9.955	65.72	22.30
1.2	11.946	87.16	27.90

ALLOWABLE LOADS

Thickness (mm)	Total Uniformly Distributed Load In Kg/sq. meter (for unit width of sheets) Maximum Permissible span in meters.							
	1.00M	1.20M	1.50M	1.70M	2.00M	2.20M	2.50M	2.70M
0.8	1130	942	753	665	528	397	-	-
1.0	1719	1432	1146	1011	718	539	368	-
1.2	2412	2010	1608	1374	927	696	474	377

VGS SOLAR & BUILDING SYSTEMS PVT. LTD.

Engineering Innovative Construction Technology
Masters In Cost Effective Decking Systems



PARAMETER	DIMENSION
✓ Trough Depth	44 mm
✓ Pitch	130 mm
✓ Supplied Width	960 mm
✓ Covered Width	910 mm
✓ Length	Customized /asper requirement
✓ Thickness	0.6 to 2mm *Subjected to Standard Tolerances

V-ECO METAL DECK

- ✓ Structural adequacy is established by choosing the section to provide requisite sectional modulus to satisfy moment and deflection criterion.
- ✓ A moment coefficient of 1/8 is used for single span & dual spans and 1/10 for 3 or more spans deflection co-efficient are 0.013 for single span & 0.0078 for multi spans. The deflection co-efficient are 0.013 for single span and 0.0078 for multi spans.
- ✓ The maximum deflection of the deck sheets is restricted to $L/250$ under uniformly distributed loads.

SECTION PROPERTIES

Thickness (mm)	Weight (kg/m)	Moment of Inertia cm ⁴	Section Modulus cm ³
0.6	5.8	19.36	8.41
0.7	6.73	21.8	9.6
0.8	7.69	24.79	10.92
0.9	8.64	27.75	12.23
1	9.59	30.67	13.53
1.1	10.53	33.56	14.81
1.2	11.48	36.43	16.09
1.25	11.96	37.85	17.56

ALLOWABLE LOADS

Thickness (mm)	Total Uniformly Distributed Load In Kg/sq. meter (for unit width of sheets) Maximum Permissible span in meters.									
						2.20M				
0.63	1510	1887	671	839	378	472	240	302	167	210
0.8	1912	2390	850	1062	397	477	306	382	212	265
1.00	2380	2975	1057	1321	595	744	380	476	264	331
1.25	2959	3699	2054	1643	739	924	473	592	328	411
1.60	3761	4702	1671	2020	939	1175	601	752	417	522
2.00	4665	5833	2074	2592	1156	1457	746	933	518	647

ACCESSORIES

Ridge Ventialtors

These are available with bird screen and with a standard length of 3000mm and can be supplied as single or continuous modules.

Throat widths are available in 300mm with mechanical damper and 600mm without damper.

300mm Diameter



600mm Diameter



SKYLIGHTS AND WALL LIGHTS

Made of translucent Polycarbonate to match VGS roof and wall panels, with an estimated light transmitting capacity of 60%.



TURBO VENTS

Turbo ventilators are round metal vents with fins in them and are powered by the wind to rotate for creation of effective ventilation to suck out the stale hot air from inside of the building. These are flexible to install anywhere on the roof without any structural supports.



LOUVERS

Adjustable louvers are with overlapping blades allowing free air flow. Size is 1 m x 1 m. incorporating insect screen, hand crank and blade adjustment lever.

ALUMINUM WINDOWS

Designed for installation with VGS wall panel, double slide, self flashing with pre-glazed clear glass and removable half insect screen. Standard size is 1 m x 1 m. Multiple windows can be formed by joining the jamb fins together.



DOORS

SLIDING DOORS (SINGLE OR DOUBLE LEAF) 3 m, 4 m and 5 m wide and 3 m to 5.5 m high. Other sizes are available on special order.



PRIMARY & SECONDARY BOLTS

High strength bolts used for main connections are manufactured as per ASTM A-325M. Material finish is Electro-Galvanized, yellow passivated. Mild steel bolts used for secondary connections are as per ASTM A-307, provided in plain finish.



SHEETING FASTENERS

Self-drilling screws are No. 14 Type A, with 19mm EPDM sealing washers with hardened drill points. Screws are available in carbon steel or stainless steel (bi-metal). Material specification for the steel wire is as per ASTM A-510 minimum grade 1018



SEALANTS

Silicon sealant and rope sealants are used to provide a weather seal and has excellent gap-filling properties. These offer excellent adhesion, long life, airtight and water tight sealing solutions to all our accessories



INDUSTRIES



- ✓ Steel Plants
- ✓ Metal Smelters
- ✓ Cement Plants
- ✓ Chemical Plants
- ✓ Fertilizers and Petrochem
- ✓ Oil & Gas Structures etc.

INFRASTRUCTURE



- ✓ Power Plants
- ✓ Airport Terminal Buildings
- ✓ Railway Bridges
- ✓ Transmission Towers
- ✓ Telecom Towers
- ✓ Bridge Girders

COMMERCIAL BUILDINGS



- ✓ High rise Buildings
- ✓ Commercial & Residential
- ✓ Shopping Malls
- ✓ Multiplexes, etc.

Engineering

The engineering department uses the latest versions of internationally renowned industry standard 2D and 3D software for designing and detailing. VGS upholds its position at the cutting edge of the industry due to its commitment to quality and customer satisfaction. Skilled structural engineers using the very latest in computerized engineering design and detailing systems permit the selection of the most economical, accurate and efficient framing and cladding systems.

Design Software

The Design / Engineering Department are fully computerized, utilizing the latest software packages to enable them to produce the most economical structures in the shortest time possible. The software packages most frequently used are: STAAD PRO, AUTO CAD, ETABS, and TEKLA STRUCTURES.

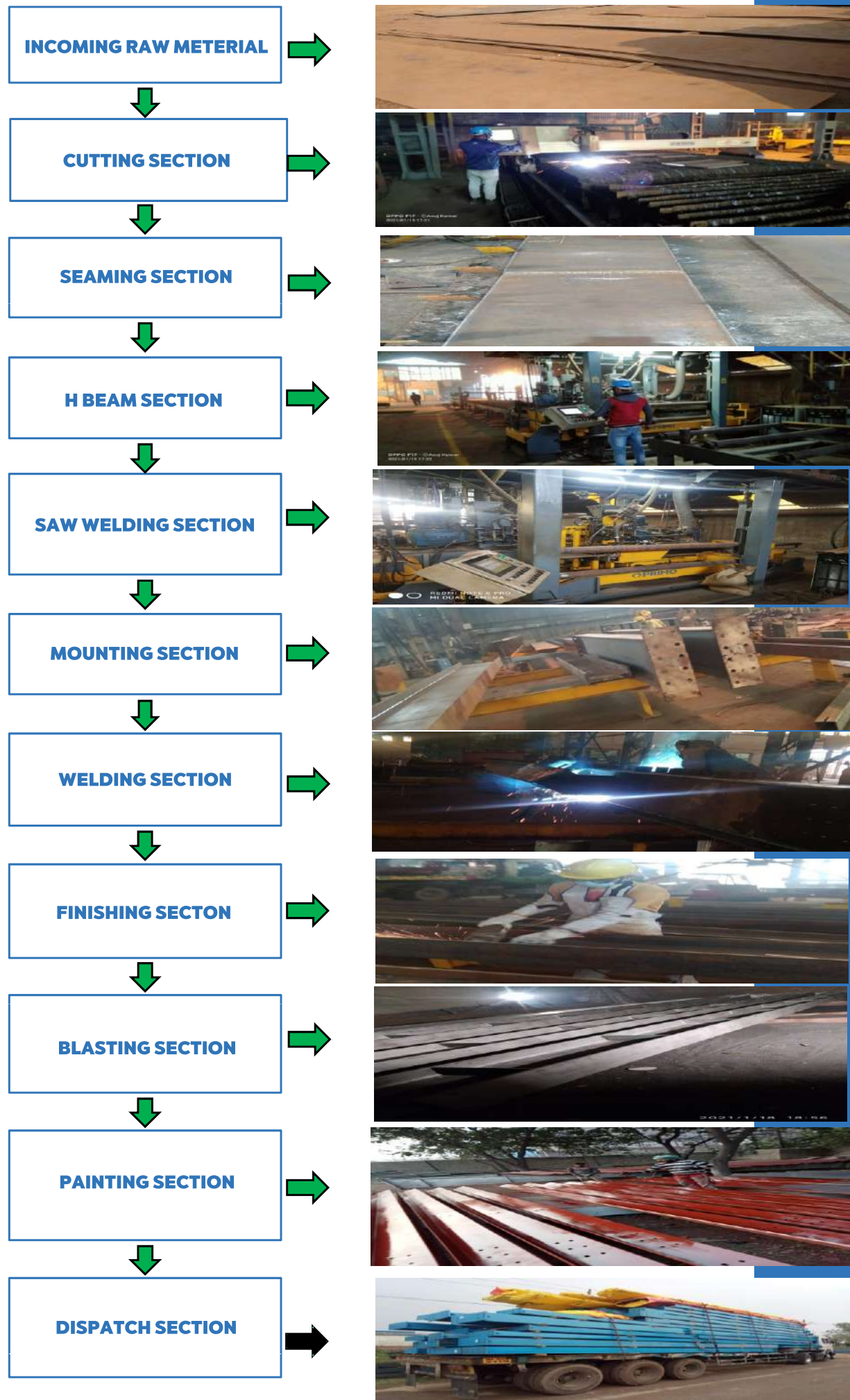
Welding

All welding operations are carried out in accordance with VGS approved welding procedures by independently qualified welders. VGS welders are trained to performed the welding processes SAW, SMAW, & FCAW and are AWS D1.1/ASME SEC-IX qualified for various positions including 6GR for T,K, and Y connections, During the welding operation all welders are continually monitored to ensure that the welding parameters, as detailed in the relevant procedure, are adhered to and that the level of workmanship is maintained. All items, after completion of welding are visually inspected against the requirements of AWS D 1.1 for compliance. Any visual discontinuity is marked and repaired immediately. Only when the item has been fully passed and accepted it will be released to blasting and painting All welding inspections are entered onto the Piece Monitoring System.

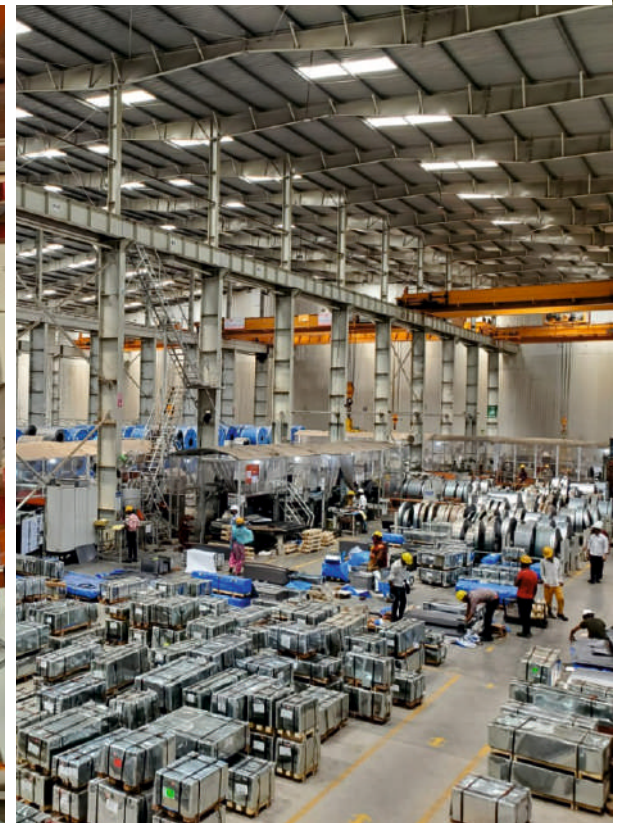
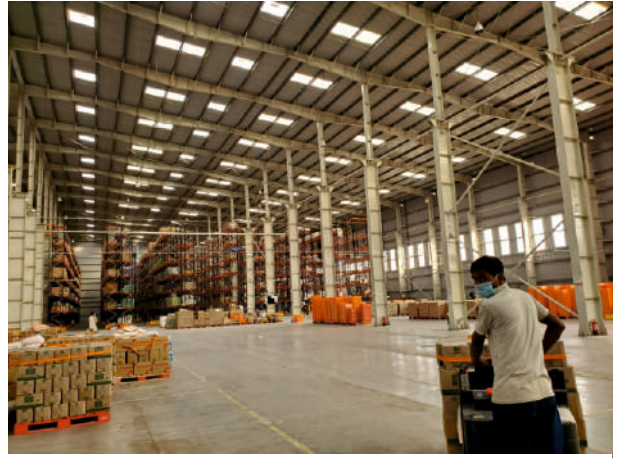
Non Destructive Testing

Welding Inspection & Non-Destructive Testing monitoring of welding variables like voltage, amperage and welding consumables is carried out as per approved welding procedure specifications. In addition, visual inspection is carried out on 100% of each section to ensure highest quality in manufacturing. VGS is capable of performing UT, MPI & PT as per AWS D1.1/D1.1M requirements. Further, VGS has the capability to carry out ultrasonic and radiography, tests and the results of all NDT examinations are entered on the Piece Monitoring System.

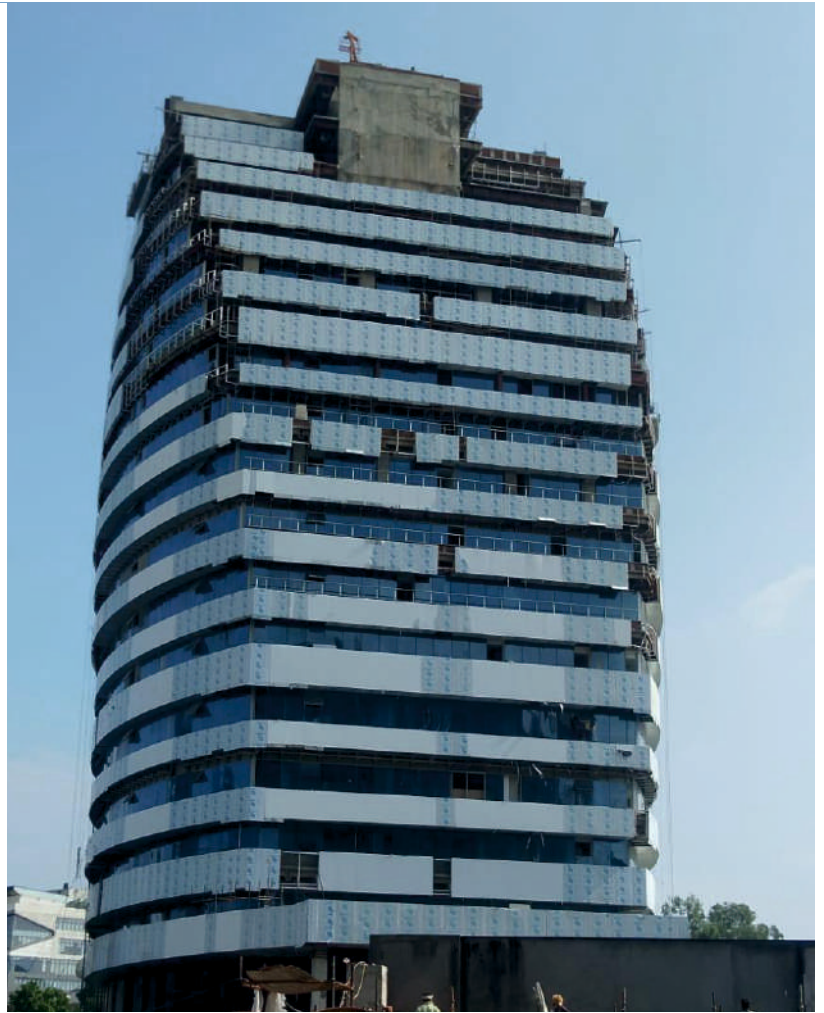
IN PROCESS FLOW DIAGRAM



ALLIED HI-TECH INDUSTRIES FARIDA3AD



B-IEE CORPORATE TOWER NOIDA



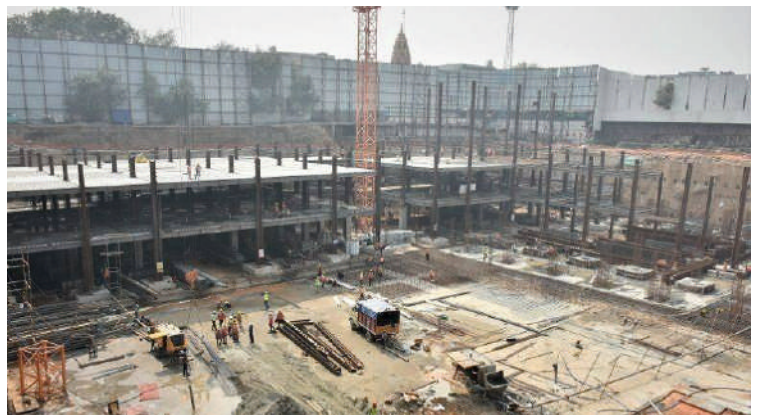
IMPACT IT SOLUTIONS, GREATER NOIDA



IOCL DEPOT, ALLAHABAD



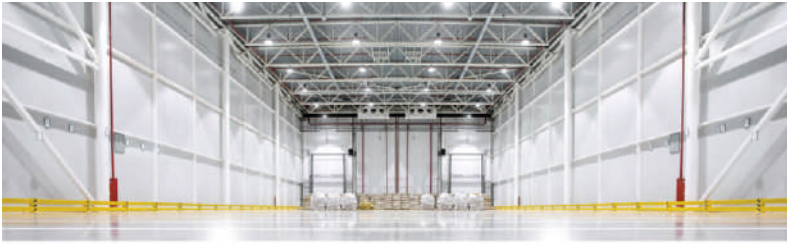
OMAXE MLCP, OLD DELHI



RELIANCE PETROL PUMP, WEST BENGAL



COLD STORE, HARYANA



WAREHOUSING CENTER, NEPAL





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