PEBMANUAL

SANA BUILDING SYSTEM

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SBS

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PEB MANUAL

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- FASTER DELIVERY OF MULTI-COATED PROJECTS

INTRODUCTION

Company

Sana Building Systems is uniquely prepared to offer the best in pre-engineered steel buildings (PEB) and hotrolled steel structures (HRSS).SBS advanced capability in both design and fabrication enable us to offer buildings compliant to the latest building codes and fabricated within a strict factory quality-controlled environment using the latest fabrication technology. For more details, please visit https://www.sbslftz.com/

PLANT CAPACITY

From the beginnings, the SBS site and factory complex was designed with all the structures, machinery, material handling systems, maintenance facilities, offices, and crane-serviced storage Yards to produce 2000 metric tons of PEB components per month. This output consists of approximately 1,200 MT of built-up main-frame members, 400 MT of secondary cold formed "C" & "Z" members, and 400 MT of Panels & Panel Accessories per month. In addition,the factory is equipped to produce and additional 2,000 MT /month of Hot Rolled Steel Structures (HRSS). After planned expansion, the HRSS capacity will increase to 3,000 MT/month.

Overall designed capacity at the SBS Lagos Free Zone facility is 5,000 metric tons of steel structures and components per month. 60,000MT per year!!

EXECUTIVE MANAGEMENT

SBS is fortunate to have the most experienced and professional management team in the Pre-Engineered Steel Buildings industry in Africa. This team's humility, honesty, transparency, and flexibility coupled with their attention to details and obsession with quality has assured SBSs quick ascendancy to the enviable rank of the largest and most trusted PEB manufacturer in Africa.

This team has always advocated the following:

- Treat your subordinate's employees the way you want them to treat your best Customers.
- Accomplish each task in a manner that makes it easier for the next person to do his job.
- Consider the interests and welfare of others to be as important to you as your own interests.

GUIDING PHILOSOPHY

At SBS our passion for Pre-Engineered Buildings extends beyond success and profitability. We desire to make everyone aware of the remarkable features and attributes of the PEB System and what makes it such an affordable and flexible building system. PEBs can be used to construct virtually all single story non-residential buildings and even multi-storey buildings (Ground + 5). The intention is to create an environment where every stakeholder of SBS (Shareholders, Employees, Suppliers, and Customers) is empowered to think, innovate ,and contribute to our success. Our vision is to create a great global company that attracts outstanding Employees, Suppliers and Customers. In addition, we respect the environment and support the communities in which we conduct business.

We pledge to exceed the expectations of all with whom come in contact.

ISO certificates

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CERTIFICATE OF REGISTRATION

PEERS QUALITY ASSURANCE LTD

This is to certify that

SANA BUILDING SYSTEMS LFTZ

Of

PLOT # S7-LZ-65, C/O Lagos Free Trade Zone, Ibeju Lekki,
LGA Lekki, Lagos, Nigeria

Operates a **Quality Management System** which has been assessed as conforming to:

ISO 9001:2015

For the Scope of Activities:

Design, Estimation, Fabrication & Erection of Pre Engineered Steel Buildings (PEB) and Hot Rolled Structural Steel (HRSS).

Certificate Number:	**UAE/5/2105260983**
Date of Initial Assessment:	**26/11/2021**
Date of Registration:	**29/11/2021**
Date Re-Issued:	**N/A**
Date of Expiry:	**29/11/2022**

Certificate approved by:

Chris McMillan - Managing Director
Peers Quality Assurance Limited

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Peers Quality Assurance Limited
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Walsall Road
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Sutton Coldfield
B74 4QY England
www.pqal.co.uk

For verification of this certificate, please contact the PQAL UK Office

CERTIFICATE OF REGISTRATION

PEERS QUALITY ASSURANCE LTD

This is to certify that

SANA BUILDING SYSTEMS LFTZ

Of

PLOT # S7-LZ-65, C/O Lagos Free Trade Zone, Ibeju Lekki,
LGA Lekki, Lagos, Nigeria

Operates a **Health & Safety Management System** which has been assessed as conforming to:

ISO 45001:2018

For the Scope of Activities:

Design, Estimation, Fabrication & Erection of Pre Engineered Steel Buildings (PEB) and Hot Rolled Structural Steel (HRSS).

Certificate Number:	**UAE/5/8212532056**
Date of Initial Assessment:	**27/11/2021**
Date of Registration:	**29/11/2021**
Date Re-Issued:	**N/A**
Date of Expiry:	**29/11/2022**

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Of

PLOT # S7-LZ-65, C/O Lagos Free Trade Zone, Ibeju Lekki,
LGA Lekki, Lagos, Nigeria

Operates an **Environmental Management System** which has been assessed as conforming to:

ISO 14001:2015

For the Scope of Activities:

Design, Estimation, Fabrication & Erection of Pre Engineered Steel Buildings (PEB) and Hot Rolled Structural Steel (HRSS).

Certificate Number:	**UAE/5/9138741317**
Date of Initial Assessment:	**26/11/2021**
Date of Registration:	**29/11/2021**
Date Re-Issued:	**N/A**
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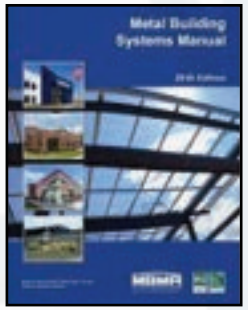
Design Codes

Sana Building Systems is the leading supplier of high quality PEB and HRSS in Africa. We use the latest American codes and specifications for materials, loading, and design of steel buildings.

These are listed below:



Metal Building Systems Manual 2018.

Metal Building Manufacturers Association1300 Summer Ave,Cleveland, Ohio 44115

ANSI/AISC 360-10 Specifications for Structural Steel Buildings,

Manual of Steel Construction 14h Edition 2010.
American Institute of Steel Construction,
130 East Randolph Street, Suite 2000,
Chicago, Illinois 6060

International Building Code IBC-2018

International Code Council,500 New Jersey Avenue, NW,6th Floor, Washington, DC 20001.

AWS D1.1/D1.1M:2020 Structural Welding Code – Steel 24th Edition.

American Welding Society,
8669 NW 36 Street, # 130,
Miami FL 33166

ASCE 7-16 Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

International Code Council,500 New Jersey Avenue, NW,6th Floor, Washington, DC 20001.

AISI S100-16 North American Specifications for the Design of Cold-Formed Steel Structural Members, 2016 Edition.

American Iron and Steel Institute,
25 Massachusetts Avenue NW, Suite 800,
Washington, DC 20001

WHY PRE-ENGINEERED STEEL BUILDINGS (PEB'S)

PEB APPLICATION

Pre-Engineered Steel Buildings (PEB s) became popular in the USA during the second half of the 20th century. By the year 2000 over 80%
of all non-residential single-story buildings in the USA were being constructed using the PEB system. Every conceivable building usage has been constructed using the PEB aproach
In Africa, the manufacture of PEB's newly started and has since become the most popular single story non-residential construction system

THE PEB SYSTEM

From inquiry to occupancy no other building system matches the PEB System when it comes to economy, flexibility, and speed of construction
The PEB system is made of two distinct subsystems:

- THE PEB STEEL STRUCTURE "PEBSS"
- PANELS & PANEL ACCESSORIES "PPA"

ADVANTAGES OF THE PEB SYSTEM

- Lone source Responsibility
- Low Initial Cost
- Engineering Flexibility
- Faster Overall Project Completion
- Minimal maintenance
- Fast Modular Expandability

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COMMON APPLICATIONS OF EB'S IN THIS REGION

INSTITUTIONAL

- Industrial
- Factories
- Workshops
- Warehouses
- Commercial
- Rolling Mills
- Cold Stores
- Slaughterhouses

COMMERCIAL

- Shopping Malls
- Hypermarket
- Showrooms
- Labor Camps
- Fast Food Restaurants
- Supermarkets
- Low Rise (G+S) Buildings

INSTITULIONAL

- Schools
- Exhibition Halls
- Hospitals
- Theaters/Auditoriums
- Sports Halls
- Libraries

SPECIALTY BUILDINGS

Specialty buildings require addiional considerations beyond the straightforward adaptation of the PEB Steel Structure to the application.

Specialty buildings include:

- Aircraft Hangers
- Vehicle Parking Shelters
- Fuel Stations
- Poultry Farms
- Bulk Storage Buildings

The reader should understand and appreciate that the absence of a specific application from what is listed on this page does not necessarily mean that the application cannot be made using the PEB system

WE CARE YOU BETTER

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To Consultants

we say : before you begin to work on any low rise (G+5) building project contact us to provide you withased alternative design /estimate using steel Peb System to reduce building cost and shorten overall project construction time without sacrificing functionality and aesthetics .

To Owners Developers and Direct Clients

we say : Contact SBSfor the supply and erection of PEBs and HRSSs,especially at the planning stage, can reduce your project cost and shorten its construction schedule

To General Contractors

we say : if you are not familiar with PEB but want to bid on large industrial or warehousing projects, SBSwill save you time and money. We will assume full responsibility for the supply and optional erection of the PEBs and free you to focus on other aspects of the project.

Government Approval Authorities

we say : SBS cares about the communities in which it conducts business. We comply with the latest codes that are applicable to our industry. We invite your technical staff to attend Our technical orientation seminars and visit our Head Office & Factory.

To Specialized PEB Contractors

we say : SBS understands the fast-track nature of your work and appreciates the role you play in expanding the PEB business in this region. We know that you want full compliance to your inquiry. competitive prices and on time delivery. We pledge to give you that and more.

To Potential Employees

we say: we recognize that the greatest single competitive advantage in our industry is people, And we make our peole know it. No other PEB manufacturer in this eion is dedicated to helping employees reach their maximumpotential as we do .

We expect you to cary our company values along during your journey in our company.

Tel +234 807 400 0000 Contact Sales@sbslftz.com

OUR CAMPUS

SBS Campus in Lagos, Nigeria. is easily accessed Ibeju Lekki.

By link: https://goo.gl/maps/wWv3cnCLwCMZVEPs5

SBS's campus occupies a 60,000 M^2 site. in the Lagos Free Zone. Our built-for-purpose facilities are the best in the PEB industry. We believe that no other single PEB facility anywhere in the world, is a match to ours when it comes to functionality, efficiency, and simplicity.

We are proud of our complex, and we invite you to visit it.

We promise you a memorable and productive experience

THE TRANSACTION CYCLE

THE QUOTATION PROCESS

Almost all jobs begin with RFQ's (Requests for Quotation). Customers Consultants submit RFQ's to our sales Department .

By mail To Sales@sbslftz.com

Or By calling our sales line +234 807 400 0000

FASTEST RESPONSE TO RFQ'S

All RFQ's are eventually processed in our Estimating Department by senior design/estimating engineers. They are committed to produce economical solutions to your exact requirements.

SBS is the only PEB manufacturer in this region having a dedicated Estimating department with design/estimation engineers and drafts-men giving customers the advantage of the fastest response to RFQ's

PROPOSAL OFFERS I DRAWINGS

SBS's proposal offer is comprehensive and transparent . All our proposal offers are detailed and accompanied with proposal drawings to help customers see exactly what is

PRE-SHIPMENT JOB MANAGEMENT

A Customer Service Engineer dedicated tomanaging area jobs in coordination with all Head Office Departments. He is responsible to manage the progress and status of a project from its date of entry in our Order Register until the last components of the PEB are erected.

FAST JOB PROCESSING CYCLE

Each SBS Job is managed by an experienced Customer Service Engineer accessing Head Office resources (Engineering, Production Planning, Production, Quality Control, Shipping and Finance) to quickly respond to Customer queries.

JOB PROCESSING ACTIVITIES INCLUDE:

- Order Confirmation
- Preparation & submittal of Approval Drawings
- Review of returned Approval Drawings
- Preparation of Shop Drawings, Erection
- Drawings and Bills of Material.
- Job release for Production (after confirmation of fulfillment of contractual payment terms)
- Actual Fabrication of a job
- Release for Shipment
- Quality Control throughout the Process

PREPARATION OF APPROVAL DRAWINGS

SBS needs approximately 2 weeks after contract signing to prepare approval drawings for a typical building and 4 weeks (or more) for complex or multi-building projects

RETURN OF APPROVAL DRAWINGS

Engineering cannot proceed with final design and related production engineering until Approval Drawings are returned to us,signed by the customer. Quite often, the longest single stage in the overall job processing cycle is the return to SBS of the released Approval Drawings Delays in this stage of he processing cycle can result in significant scheduleng problems later. A job can progress towards production and shipment only after this package is returned to us. Each drawing in our approval drawings package is for a specific building and bears an approval stamp.

For each drawing the Customer must check only one of the 3 boxes in the stamp, sign & date the drawing and return all approval drawings for a specific building to our Sales Office. If re submittal is required, the process is repeated until final approval is given.

PREPARATION OF SHOP DRAWINGS & ERECTION DRAWINGS

SBS can begin these activities (for a specific building) only after the return of all the approved drawings of that building (signed & dated) from the Customer.

SBS will release final column reactions and Anchor Bolt Setting Plan (and shipment of anchor bolts) within a week of returned Approval Drawings

SBS needs 2-3 weeks to complete the preparation of shop drawings and erection drawings for an average building.

ACTUAL PRODUCTION OF JOB

SBS needs approximately 2-3 weeks to produce an average building and stage it ready for shipment.

POST SHIPMENT OB MANAGEMENT

SBS's management of a job does not stop after dispatch of materials. It extends to the time when all the components of the PEBs in the job are erected.

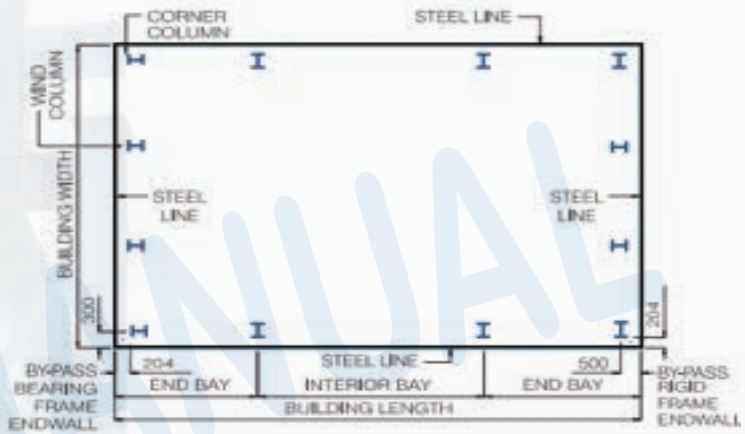
SUPPLY CONTRACTS (ERECTION SPECIALIST)

SBS has a territory-based erection specialist who provides site support to all our supply-only jobs in NIgeria. His services are provided when requested by the Customer and can include guidance during the setting of anchor bolts, during of the unloading of the first shipment of materials, providing erection guidance to erectors and following up on behalf of the Customeron matters related to material shortages and quality non-conforming materials. He ensures the speedy erection of the job in a safe and proper manner.

PEB STEEL STRUCTURE "PEBSS"

BASIC BUILDING PARAMETERS

The PEB Steel Structure "PEBSS" of a building comprises of interior rigid frames, end wall bearing or rigid frames, end wall wind columns, secondary structural members (roof purlins & wall girts), wind bracing components and the structural framing of optional subsystems such as roof monitors, mezzanines (inclusive of mezzanine deck and deck fasteners), roof extensions, canopies, fasciae, parapets, interior partitions, roof & wall framed openings, anchor bolts, connection bolts and sag rods.



Building Width.

No matter what primary framing 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.

Building Length.

This is the distance between the outside of wall girts in opposite End walls. Building length is the sum of all bay lengths.

For maximum economy, maintain in equal interior bay lengths and make the end bays shorter than the interior bays. An example would be a 100 m long building that has 11interior bay lengths of 8 m and two end bay lengths of 6 m.

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 possile.

Interior Bay Length.

Interior bay length is the distance between the center lines of columns of two adjacent interior rigid frames. The most common interior bay lengths in the PEB industry are 6, 7.5, 8, 9 and 10m.The most economical range of interior bay lengths is 7.5-8.5m

End Bay Length.

This is the distance from the outside of end wall girts to the center line of the columns of the first interior rigid frame. For maximum economy limit the end bay length to 6m or less and use by-pass end wall girts.

Building Height.

Building height is defined by the eave height which is the distance from finish floor level to the top outer point of the eave strut. Eave heights up to 35 m are possible.

Steel Line

is the plane of the outside of the flanges of secondary "Z" & "Camembert (or the inside of panels).

Typical Purlin Spacing

is 1500 mm but may be higher or lower as required by design.Ridge Purlin Spacing is 600 mm to accommodate optional 600 mm ridge gravity ventilators. It is higher when a roof monitor is specified.

Eave Purlin Spacing

is generally the balance distance of all roof purlins' spacing's unless it exceeds 1500 mm, in which case it is divided into two spaces.

BUILDING TYPES (PRIMARY FRAMING SYSTEMS)

The most common primary framing systems are shown below. All are shown symmetrical about the ridge line.Framing systems unsymmetrical about the ridge line and Multi Span/Multi Gable Framing with unequal width modules are possible. All frames are shown with by-pass sidewall girts (an economical PEB Standard). Flush sidewall girts are a more expensive and less practical option. Practically any frame Geometry is possible

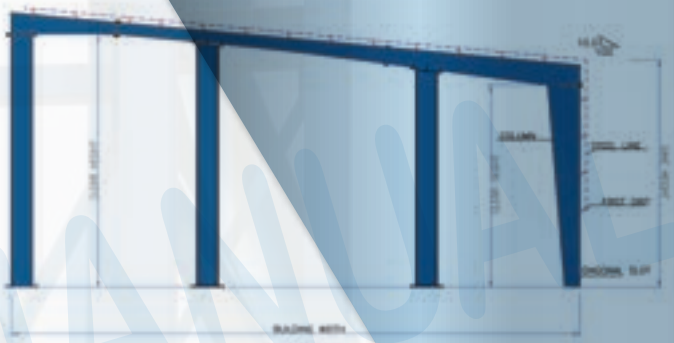
CLEAR SPAN (CS)

MULTI SPAN-2 (MS-2)

MULTI SPAN-1 (MS-1)

MULTI SPAN-3 (MS-3)

LEAN-TO



SINGLE SLOPE (MS-2)

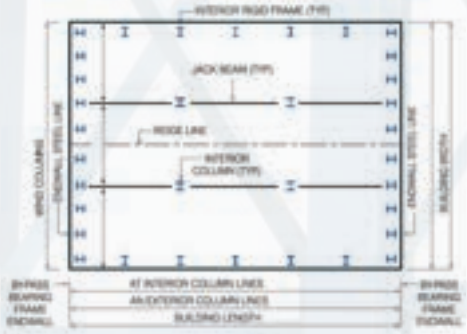
SINGLE SLOPE (CS)

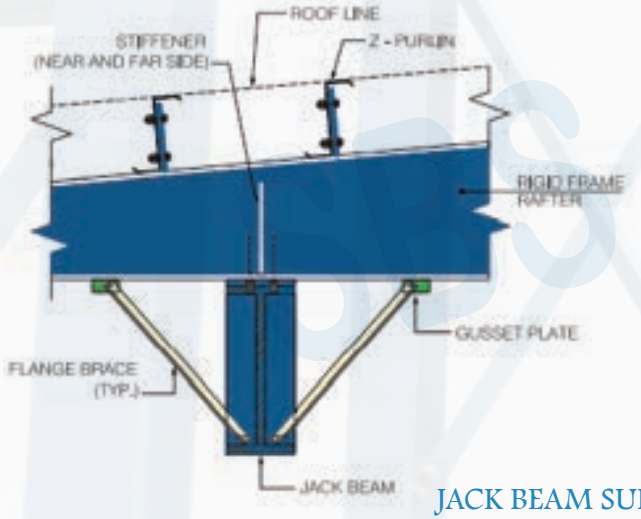
SINGLE SLOPE (MS-1)

JACK BEAMS

The use of jack beams is an economical and safe approach for creating longer bay lengths when large unobstructed space is required. Common bay lengths (6,7.5, 8, 9 and 10m) can be doubled with the use of jack beams making it possible to have 12, 15, 16, 18 and 20m clear bay lengths in areas where unobstructed space is required.

In the example below the customer specified 16m interior bay lengths instead of the more economical 8m. Jack beams were used in the interior of the building to make that ible. Jack beams may be used on the exterior sidewalls in the same way.



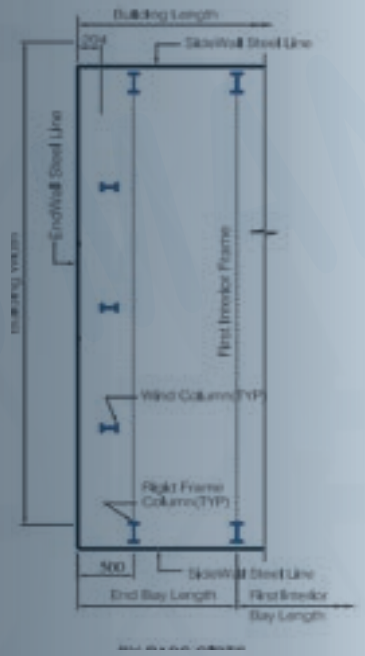


JACK BEAM SUPPORTING RAFTER AT DELETED INTERIOR COLUMNS

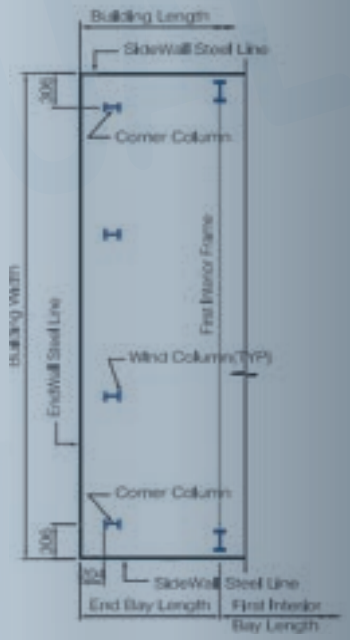
ENDWALLS AND BRACING SYSTEMS

End walls

are constructed with either Rigid Frames or more economical Bearing Frames (a PEB standard). End wall girts frame to corner columns and wind columns either in a flush manner or in a by-pass manner. SBS Bearing Frames and Wind Columns are manufactured from built-up I-sections instead of the less robust C-sections used by other PEB manufacturers in this region



RIGID FRAME ENDWALL



BEARING FRAME ENDWALL

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Bracing Systems.

All horizontal loads on a structure must eventually be carried to column bases and then to the building substructure (foundations and ground slabs). Horizontal loads result from the action of wind forces, seismic (earthquake) forces and overhead cranes on the building structure.

Diagonal Cable Bracing

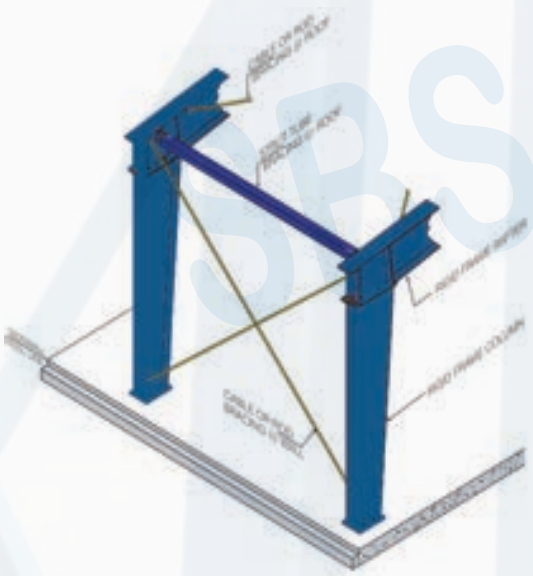
is used in the roofs and walls of buildings to transfer wind forces to the building substructure. The 12mm diameter cable and the brace ends are made from galvanized strand. The 24mm diameter eye bolt connecting the brace end to the steel structure is made of electro galvanized coated steel and the hillside washer at the end of the cable brace assembly is made of cast aluminum

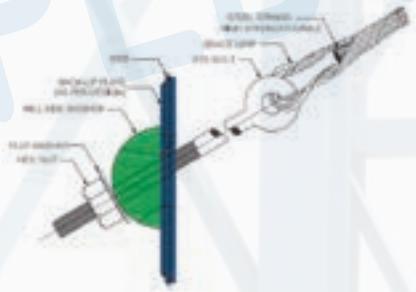
Diagonal Rod Bracing

is used to transfer the longitudinal horizontal loads of traveling overhead cranes to the substructure when the capacity of these cranes ranges between 5 MT and 20 MT.

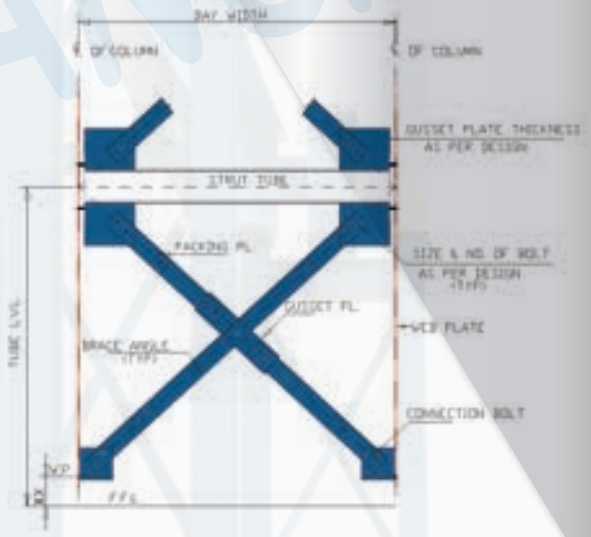
Diagonal Angle Bracing

is used to transfer the longitudinal horizontal loads of traveling overhead cranes to the substructure when the capacity of these cranes exceeds 20 MT. They are also used as wall bracing in extremely towering buildings.





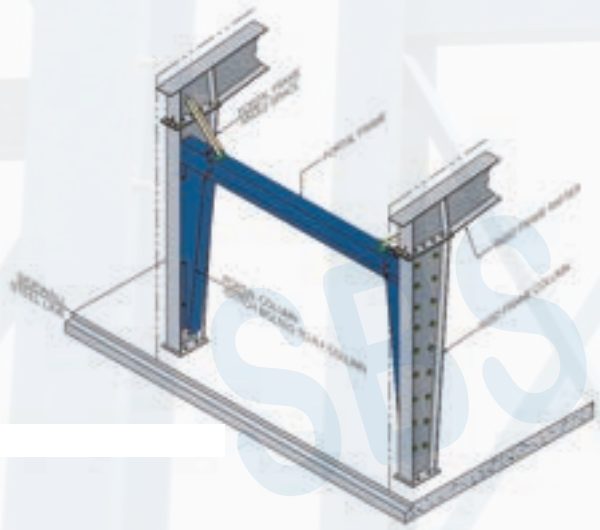
CABLE BRACING



ANGLE BRACING &SIDE WALL

Portal Frames

are used in exterior sidewalls or between the interior columns of Multi Span/Multi Gable buildings when diagonal bracing is not Allowed because of a requirement for clear Unobstructed space. Portal frames comprise of Built-up columns and beams.Their column flanges are bolted to the webs of the rigid frame columns and extend down to 150 mm above F.F.L. Care must be taken to ensure that the bottom of the portal rafter is higher than the required Unobstructed height.



PORTAL FRAME

MEZZANINE SYSTEMS

A mezzanine system consists of support columns, beams, joist s and a deck (that is fastened to the joists with self-drilling fasteners)

Mezzanine support columns

may be square tube Sections or built-up I-sections as required by design.

Mezzanine beams

are built-up I-sections normally Spanning in the direction of rigid frame rafters.

Mezzanine joists

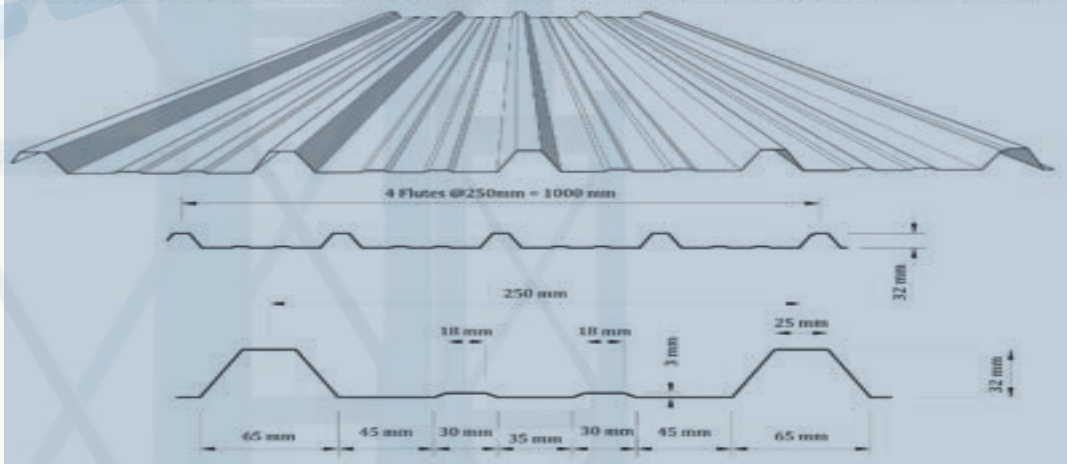
are built-up I-sections that are spaced 1.5m- 3.0m apart.

Mezzanine e deck panel

is intended to carry only the dead load of the wet concrete, acting as a permanent shuttering.

SANA ROOF PANEL (SR250x32)

A crisp and shiny roof sheeting and wall cladding panel that combines strength an beauty.

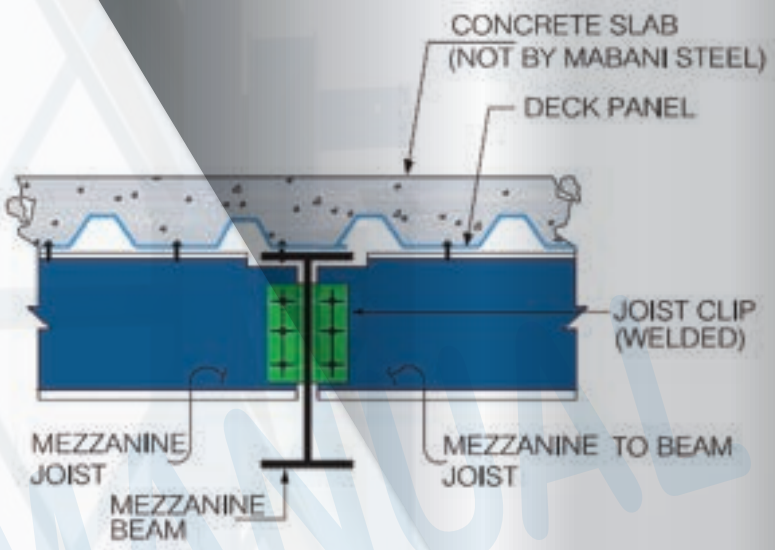


Mezzanine concrete slab

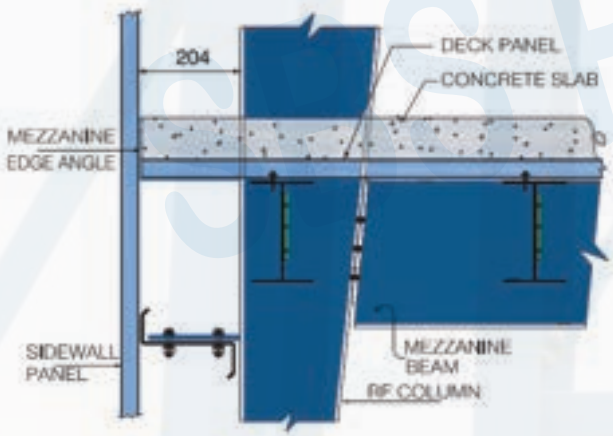
should be designed by a qualified structural engineer to span the joist spacing while supporting the specified dead, live and collateral loads. The most common slab thickness is 100mm (from the bottom of deck to top of concrete). The use of 125 mm & 150m slabs should be specified at time of request for Quotation.

Mezzanine deck fasteners

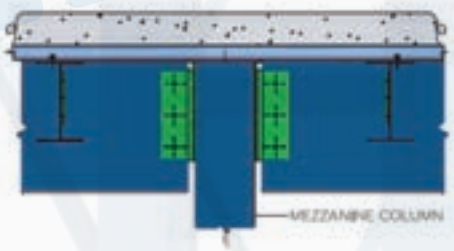
are 5.5 mm diameter, self-drilling screws without a sealing washer, spaced at 333 mm on centers



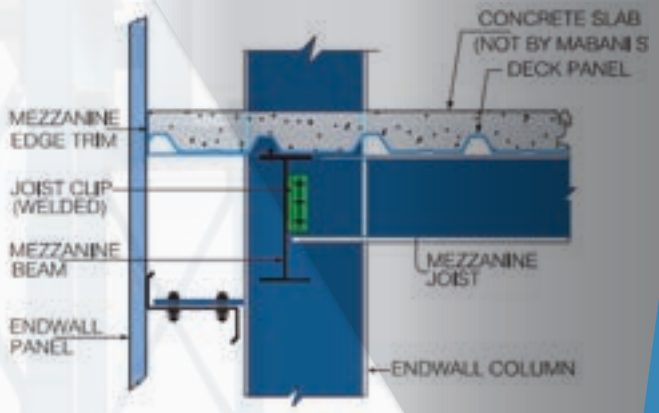
FLUSH MEZZ. JOIST CONNECTION TO MEZZ. BEAM



MEZZ. BEAM CONN TO MAIN FRAME COLUMN



BEAM/JOIST CONNECTION WITH TUBULAR COLUMIN

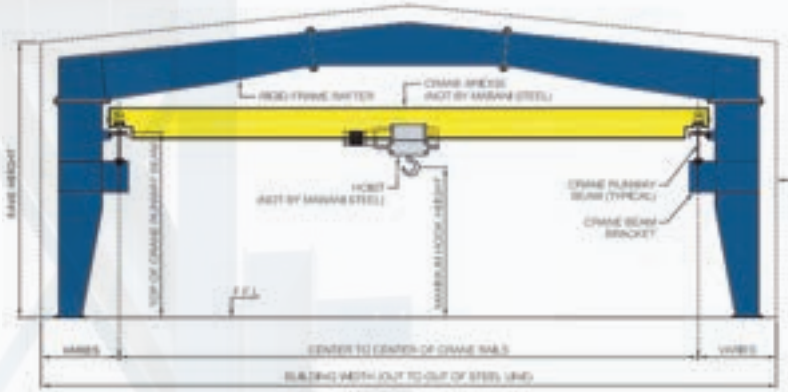


JOIST CONNECTION TO MEZZ. BEAM & ENDWALL

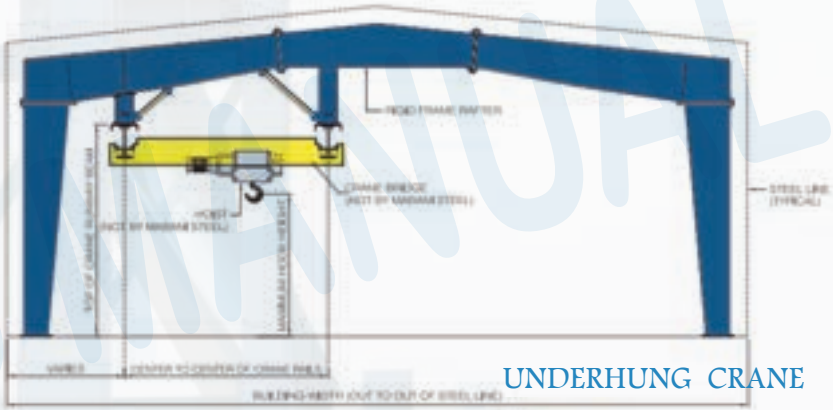
CRANE SYSTEMS

The most common type of overhead crane in PEB's is the overhead Top Running Crane. Buildings with Top Running Cranes are normally supplied with crane runway beams and crane brackets. Independent crane columns are supplied only when required by design or if specified by a customer.

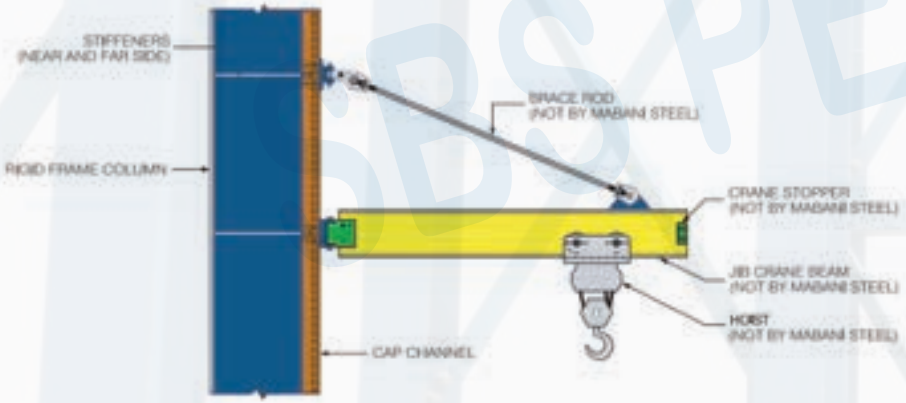
Buildings with Under Hung Cranes are supplied with crane runway beams, rafter brackets, lateral kicker angles and vertical bracings. Buildings with Monorail Cranes are supplied with rafter brackets lateral kicker angles and vertical bracings. The monorail beam is normally designed and supplied by the monorail system supplier. Buildings with Jib Cranes are generally supplied with cap channels (welded to the column flanges) and lateral wall bracings



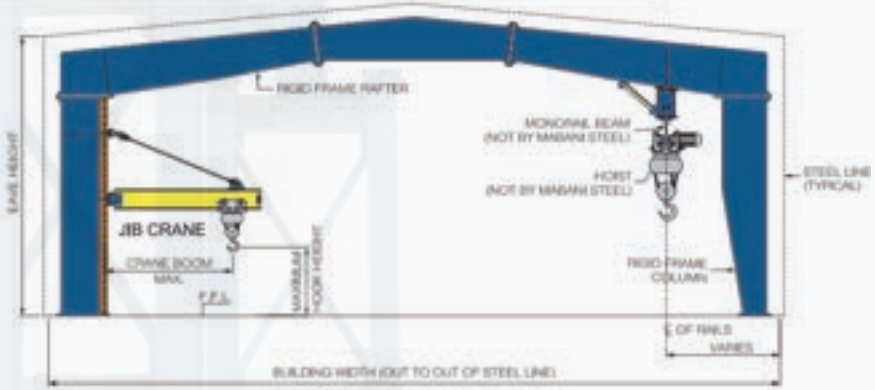
TOP RUNNING CRANE



UNDERHUNG CRANE



JIB CRANE



JIB & MONORAIL CRANE

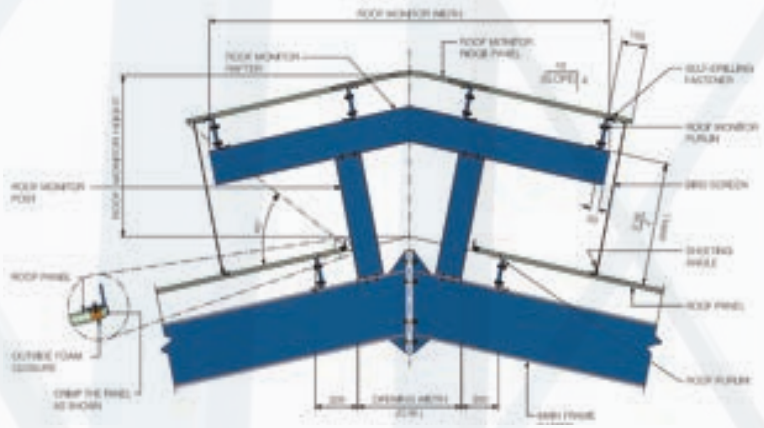
Crane rails

are excluded from our supply.In order for us to provide the most economical design for crane runway beams and for the supporting building elements, the Customer must provide the following crane data.

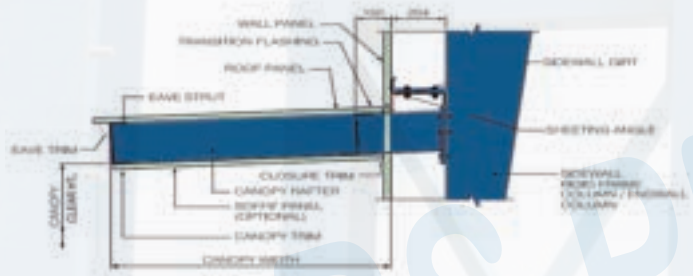
- Location of cranes in the building
- Travel length of cranes
- C.L to C.L distance of crane rails
- Crane hook height
- Static Wheel loads
- Vertical & horizontal clearances
- Wheelbase & bumper distances of end carriages
- Type of crane operations (cab or pendant)
- The crane duty cycle (full capacity lifts per hour)
- No. of cranes operating in a single bay

Crane Manufacturer Contact Information

For the most economical and accurate building design, please advise your crane manufacturer's contact details at time of request for quotation.

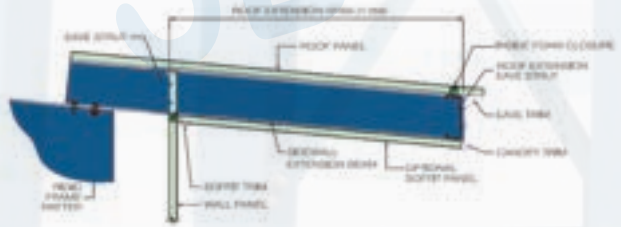


ROOF MONITOR CROSS SECTION



CANOPY AT SIDEWALL

(DETAIL APPLICABLE UPTO 1500 mm)



SIDEWALL ROOF EXTENSION

(DETAIL APPLICABLE UPTO 1500mm)

ROOF MONITORS, ROOF EXTENSIONS AND CANOPIES

Standard Roof Monitors

have a throat opening width (w) of 1000mm and are made of hot rolled or built-up I-sections. Wider throat opening widths are possible.

Panels for roof monitors are made of the same material as the building roof panels, unless otherwise specified. A bird screen mesh is provided along both sidewalls of the roof monitor.

Standard End Wall Roof Extensions

are 1500 mm wide that are achieved byextending the end bay purlins beyond the end wall steel line. They can accommodate an optional soffit panel without the need for additional 1 framing. Longer extensions may require heavier end wall purlins that may be deeper than 200mm.

Standard Sidewall Roof Extensions

are 1500mm wide. They are made of 200mm deep hot rolled or built-up 1-section rafters and 200mm flush eave channels and purlins making it possible to add an optional soffit panel without the need for additional framing.

Wider extensions, and extensions that support fascia are achieved using tapered built -up rafters and by-pass purlins.

Standard Canopies

are 1500mm wide. They are cantilevers beyond the steel lines of a building at a height that is below the eave.

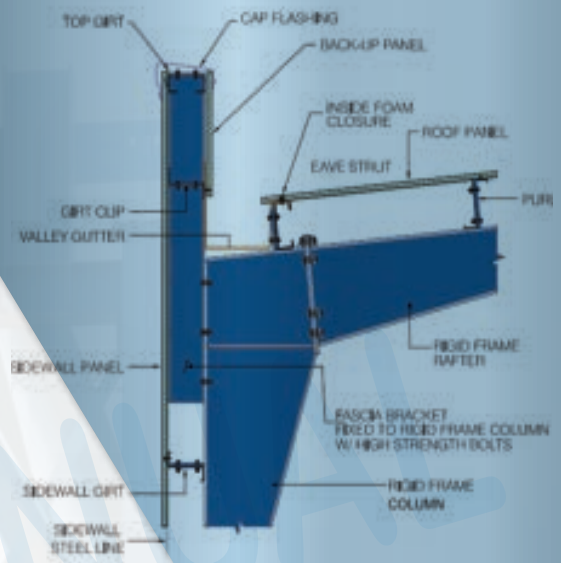
Their rafters are made of 200mm deep hot rolled or built-up I-sections. They have flush end channels and purlins and can accommodatean optional soffit panel. Wider canopies are construed of tapered built-up rafters and by-pass purlins

FASCIAS

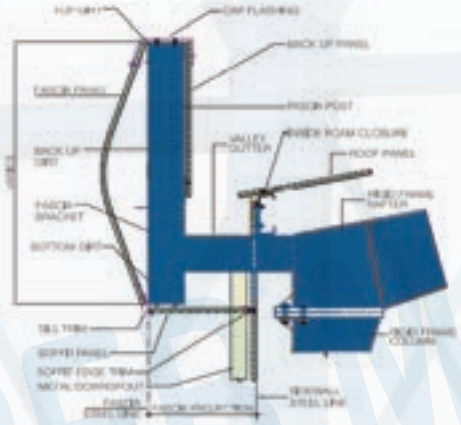
The main purpose of a fascia is to conceal the gable/roof slope ofa building. Fascias may be supplied with PVC downpipes or metal downspout. SBS recommends the use of metal downspouts (matchingthe wall panels color) due to their economy and aesthetic appearance.

The five common types of PEB fascias

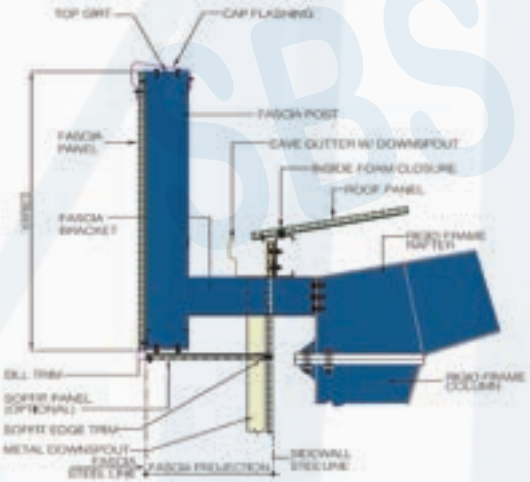
- Vertical Fascia
- Center Curved Fascia
- Bottom Curved Fascia
- Top and Bottom Curved Fascia
- Parapet Fascia



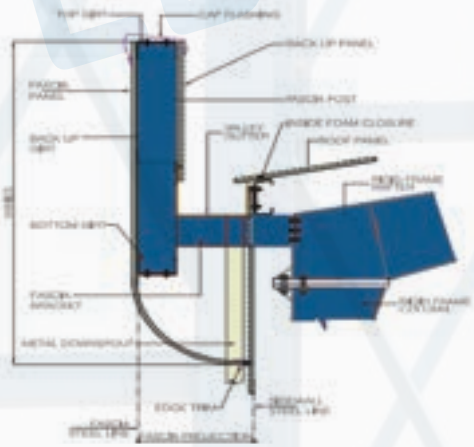
PARAPET FASCIA



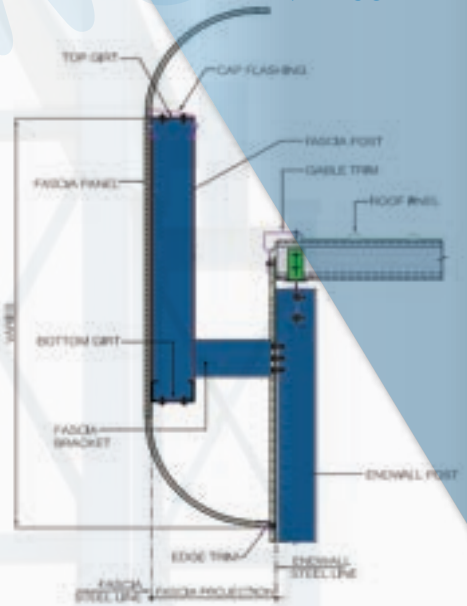
CENTER CURVED FASCIA



VERTICAL FASCIA



BOTTOM CURVED FASCIA (TYP.)

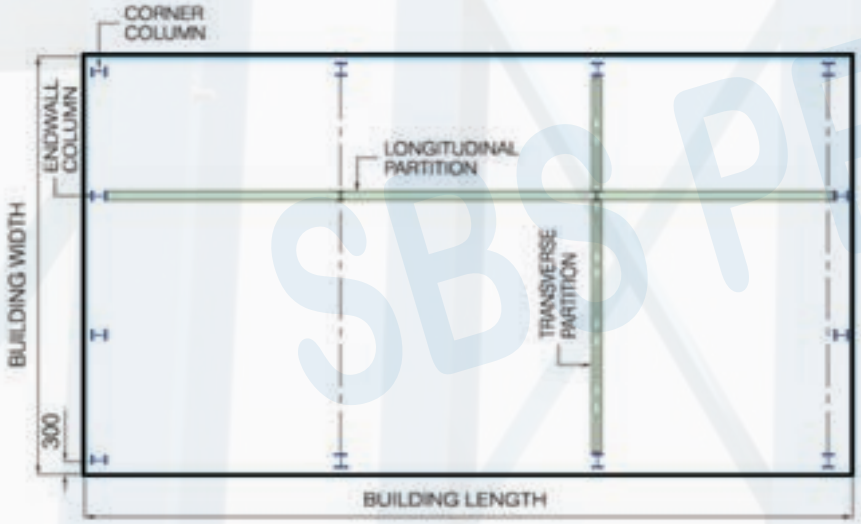


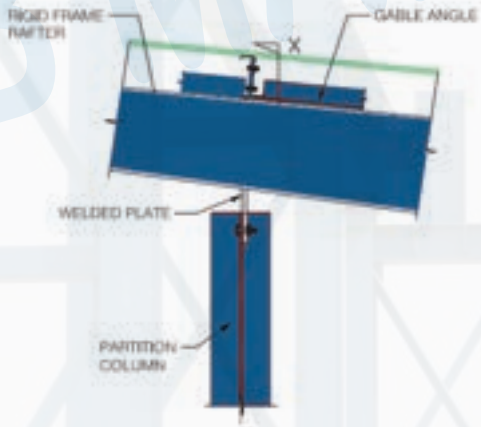
TOP & BOTTOM CURVED FASCIA

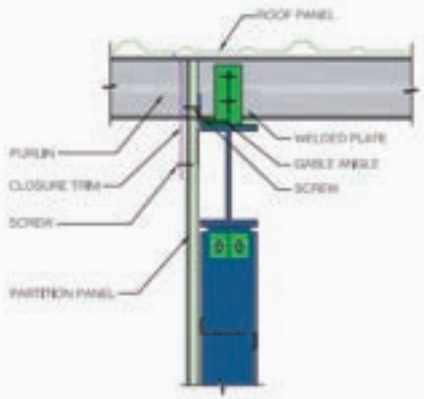
INTERIOR PARTITIONS AND ROOF PLATFORMS

Interior Partitions are non-load bearing walls that are meant to serve as space dividers
inside a building. Transverse Partitions may be located along a rigidframe line or in between rigid frames.
Longitudinal Partitions may be located anywhere between sidealls. Partitions are constructed of 200 mm deep hot rolled or uilt-up columns and flush or bypass girts.They are connected to the rigid frame rafters or to the purlins. Partition framng is normally designed for a lateral wind load of 0.25kN/m^2.

Partitions are most often sheeted on one side only but occasionally they are sheeted on bothsides.They may be sheeted full height, or theymay have a partial block wall (usually 2.25m to 3m high above FFL) with sheeting above.Standard wall accessories such as personnel doors, windows, louvers, framed openings, roll up doors, sliding doors and fiberglass insulation can be accommodated in partitions just as they would be in exterior walls



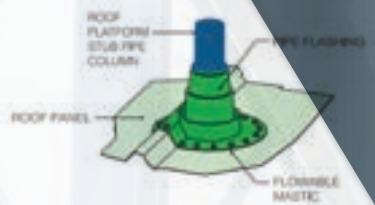


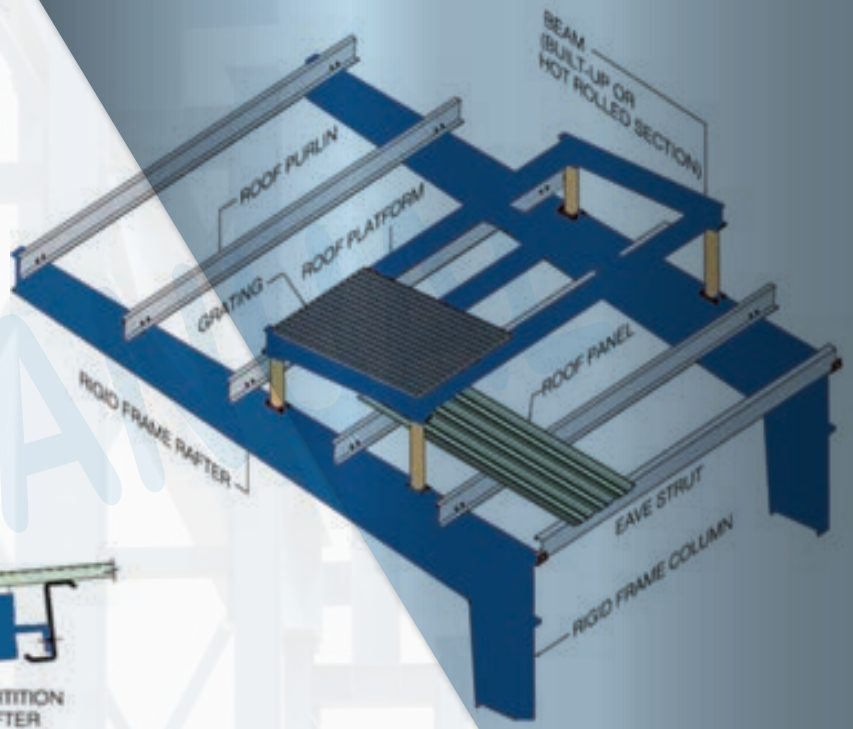


SECTION OF TRANSVERSE PARTITION AT RIGID FRAME

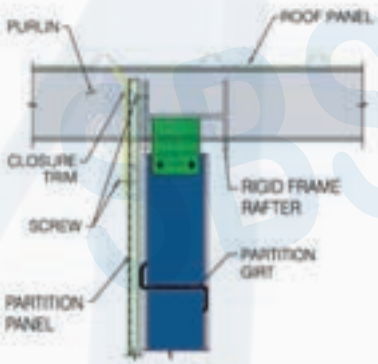
Roof Platforms

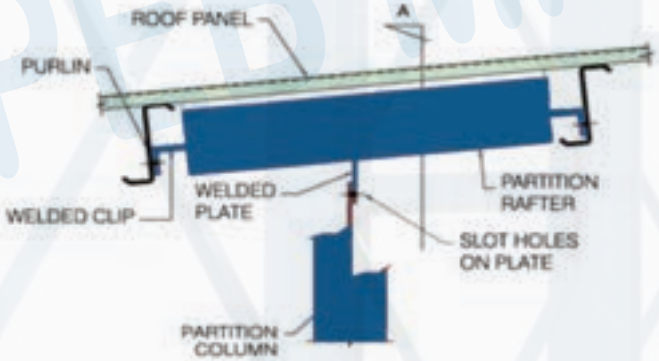
are comprised of hot rolled pipe stub columns and structural framing that is located above the roof panels, often for the purpose of supper ting A/C units, equipment, water tanks, etc. The strucural framing is made of built-up or hot rolled sections. Because the stub columns and the structural framing are constantly exposed to the atmosphere, they are epoxy painted to prevent rust. Pipe flashing is used around pipe columns to prevent potential water leaks.





TYPICAL ROOF PLATFORM





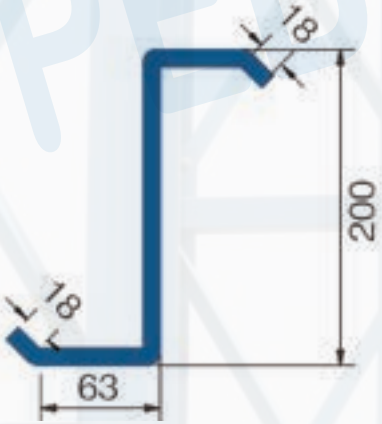
SECTION OF LONGITUDINAL PARTITION BETWEEN RIGID FRAMES

SECONDARY STRUCTURAL MEMBERS

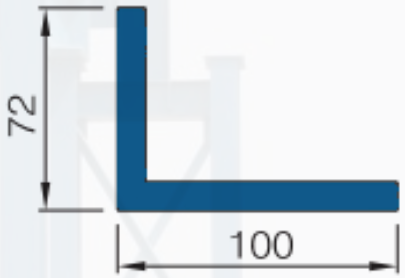
Secondary Structural members include roof purlins, wall girts, eave struts, C-Sections, flange braces, gable angles and base angles. Purlins, Girts, Eave Struts and C-Sections (used as base channels and as door jambs & headers in framed openings of Double Sliding Doors) are rolled formed from 345mm wide galvanized coils in thicknesses of 1.5, 1.75, 2, 2.25 and 2.5mm. They are made from material that conforms to ASTM A653M Grade SS: 340 Gass I G90 and are designed in accordance with the Cold Formed Steel Design Manual, published by "The American Iron and Steel Institute" (AISI).

A widespread practice in the PEB industry is to connect the sidewall girts to the sidewall rigid frame columns and to the end wall columns in a by-pass manner because it allows cables, pipes, etc. to be laid within the 200mm girt line all around the building. It also allows for a better construction of partial height block walls (normally 2.25 to 3.00m high), which are quite common in this region

C-SECTION



Z-SECTION



BASE/GABLE ANGLE

Tel +234 807 400 0000 Contact Sales@sbslftz.com

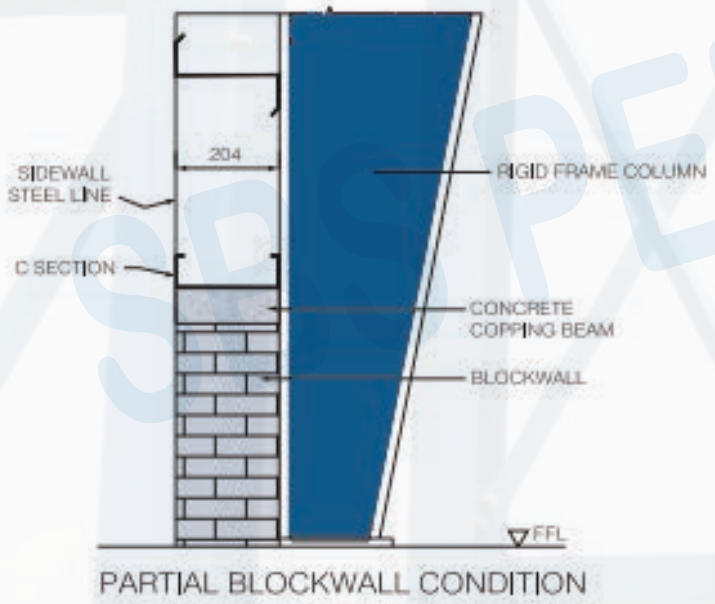
Flange Braces

are 4 or 5mm thick hot rolled angles sections used to prevent rigid frame members from twisting or buckling laterally under load. They are used on one side or both sides of the rafters I columns depending on the magnitude of the required restraining loads.

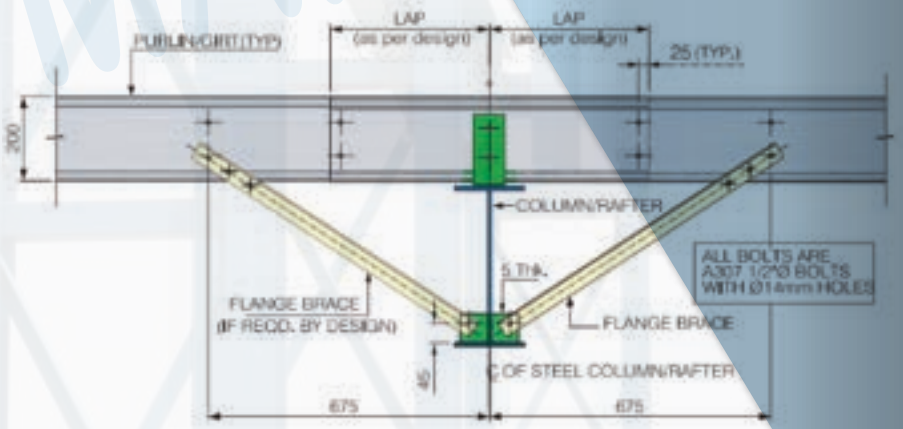
Base angles

are fastened to the concrete floor with masonry nails at 500mm on centers. They transfer the wind load from the wall panels directly to the slab. When interior wall liner is required, a base channel (C-Section) is used in lieu of a base angle.

Gable angles are connected to top flanges of roof purlins at building ends using self-drilling fasteners. They transferthe wind load from the end wall panels (which are fastened to this gable (angle) to the roof purlins, at the gable end of the building



BASE ANGLE



FLANGE BRACE WITH LAP

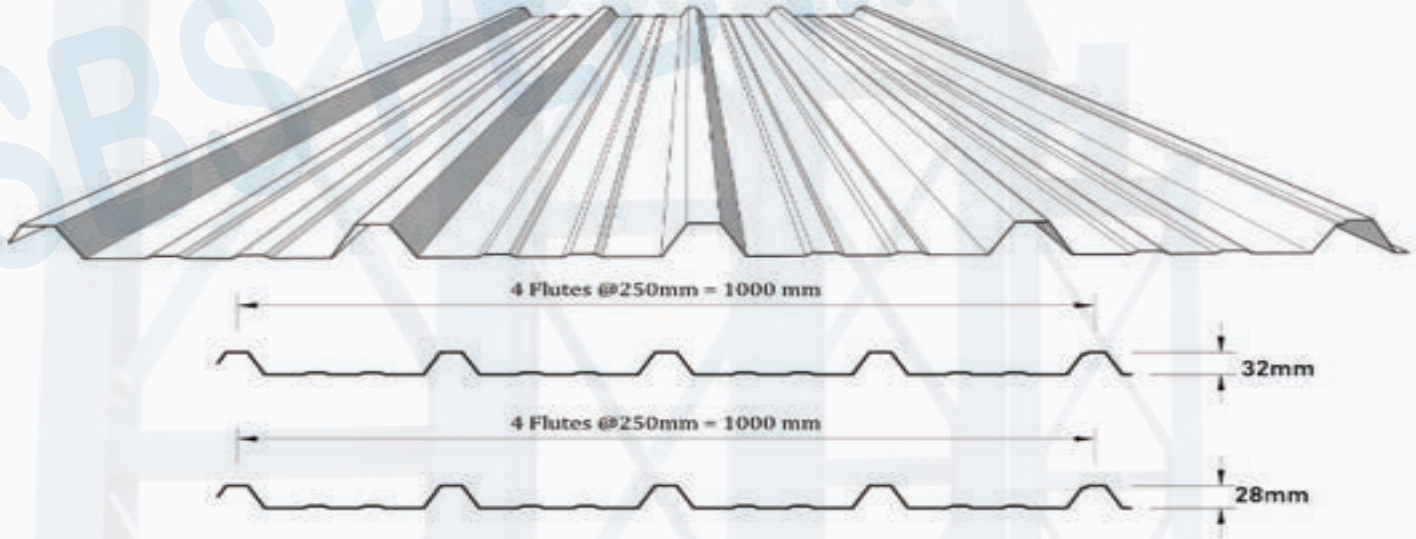
SKIN PANEL OFFERING

Single skin roof and wall panels are produced in an M32/333 profile in 0.5mm (0.7mm is optional) Aluzinc Coated Steel or 0.7mm Aluminum. They are available in either mill finish or polyester painted finish (in SBS four standard colors). Interior liner panels, partition panels, fascia panels and soffit panels are produced in the same profile in 0.5mmPolyester painted Aluzinc Coated Steel in Frost White Color.

Panel attributes (profile, metal thickness, coating type, paint type, paint thickness and paint color) may be upgraded subject to extended delivery and higher price.

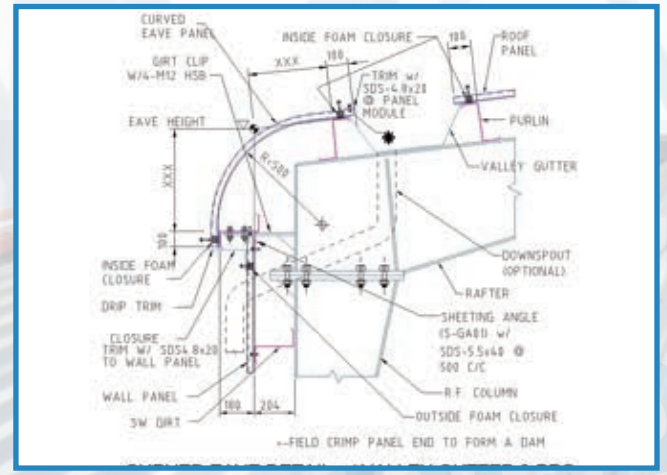
SANA ROOF PANEL (SR250x32)

A crisp and shiny roof sheeting and wall cladding panel that combines strength an beauty.

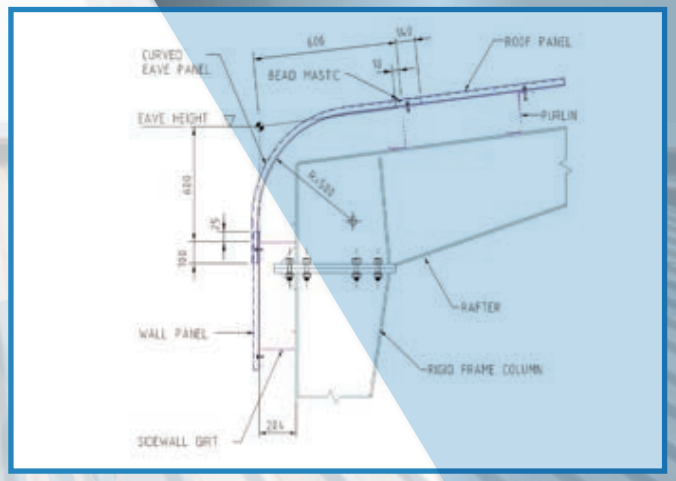


Curved eaves

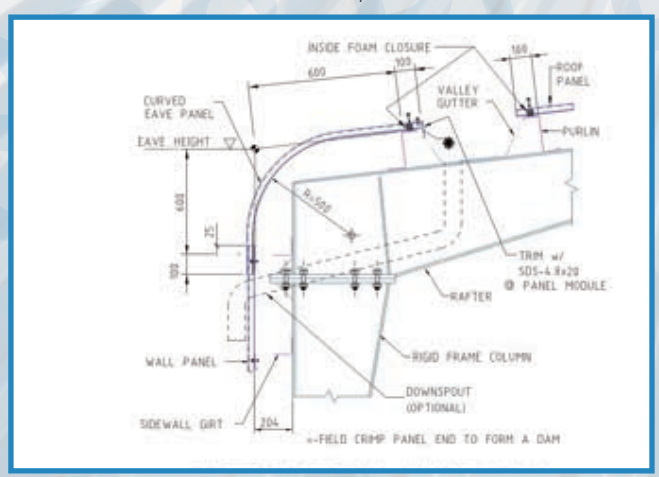
are an option in building eaves. There are two details for curved eaves. We recommend the curved eave with projection because it is easier to erect. Fitting the ribs of the curved eave panels simultaneously with the ribs of both the roof and wall panels is a challenging task whereas fitting the ribs of the curved eave panels with the ribs of the roof panels only is easier



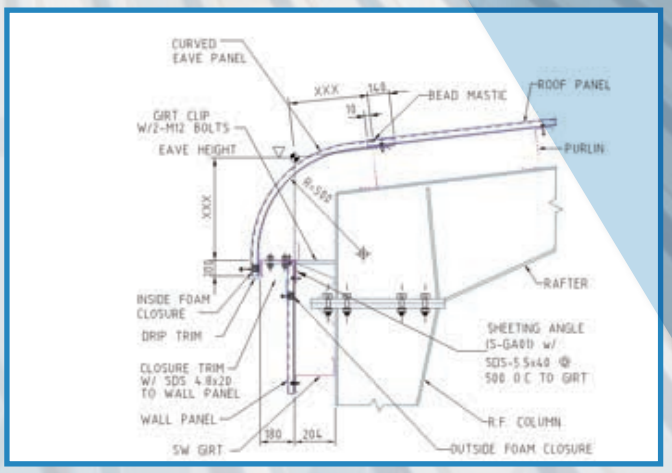
CURVED EAVE DETAIL w/VALLEY GUTTER&PRO



CURVED EAVE DETAIL w/o PROJECTION



CURVED EAVE DETAIL w/VALLEY GUTTER

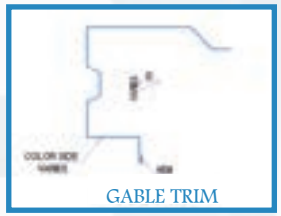


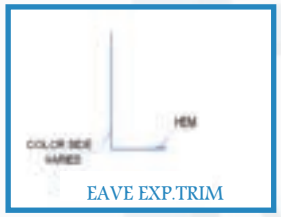
CURVED EAVE DETAIL w/ PROJECTION

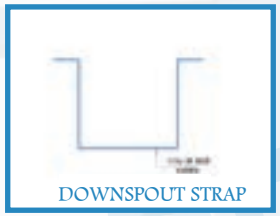
PANELS AND PANEL ACCESSORIES

TRIMS, GUTTERS, DOWNSPOUTS & SUNDRY ITEMS

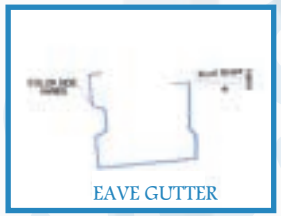
Wall Trims (corner trim, eave trim, gable trim, drip trim, accessory trims, expansion trim, eave gutters and metal downspouts) are produced from the same material as wallpanels.

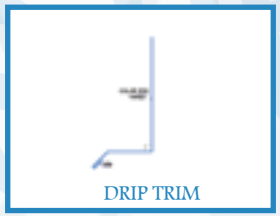

GABLE TRIM

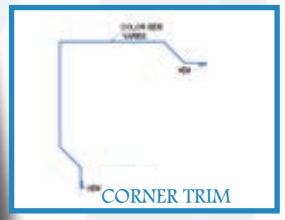

EAVE EXP.TRIM


DOWNSPOUT STRAP


ROOF EXP.TRIM


EAVE GUTTER


DRIP TRIM

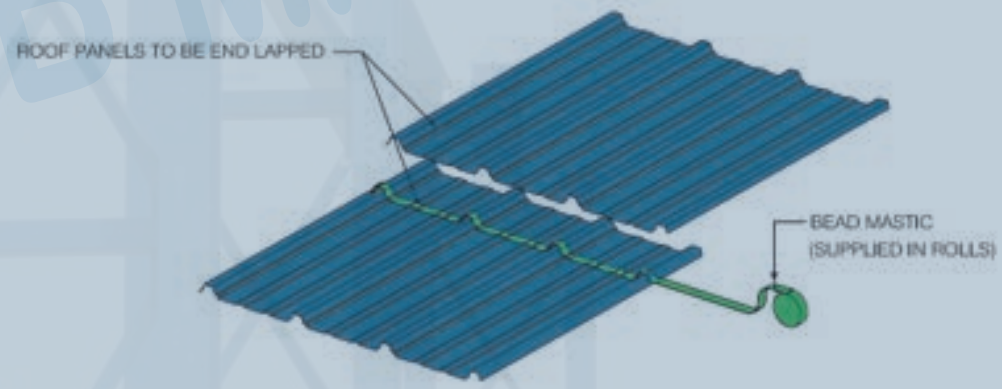

CORNER TRIM


TRANSITION TRIM

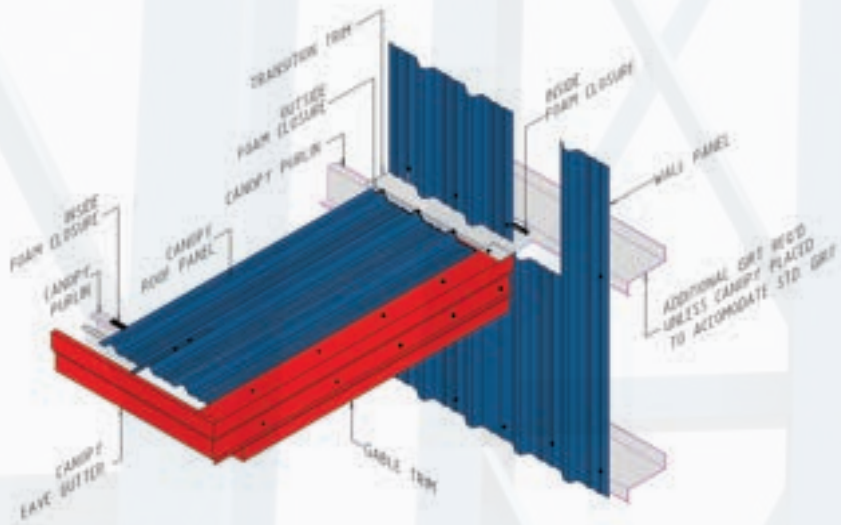

EAVE TRIM

Roof Trims (framed opening trims, expansion trims, ridge panels, etc.) are produced from the same material as the roof panels.

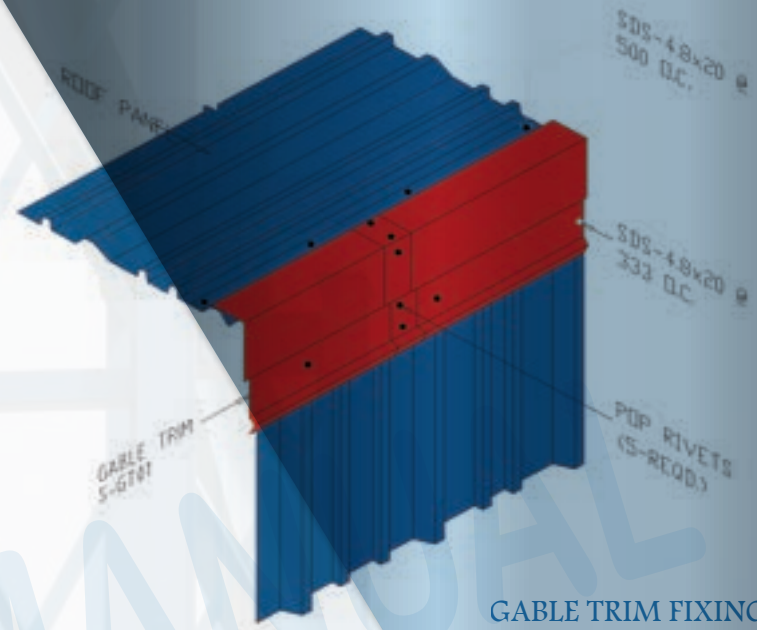
Valley gutters are made from 0.9mm thick G-90 galvanized steel. The inner surface of the valley gutters is factory coated with epoxy paint.Panel Sundry items: SBS uses self-drilling carbon steel fasteners with Aluzinc Coated Steel panels and stainless-steel fasteners with Aluminum panels. Both are 5.5 mm in diameter and have 19 mm diameter EPDM washers



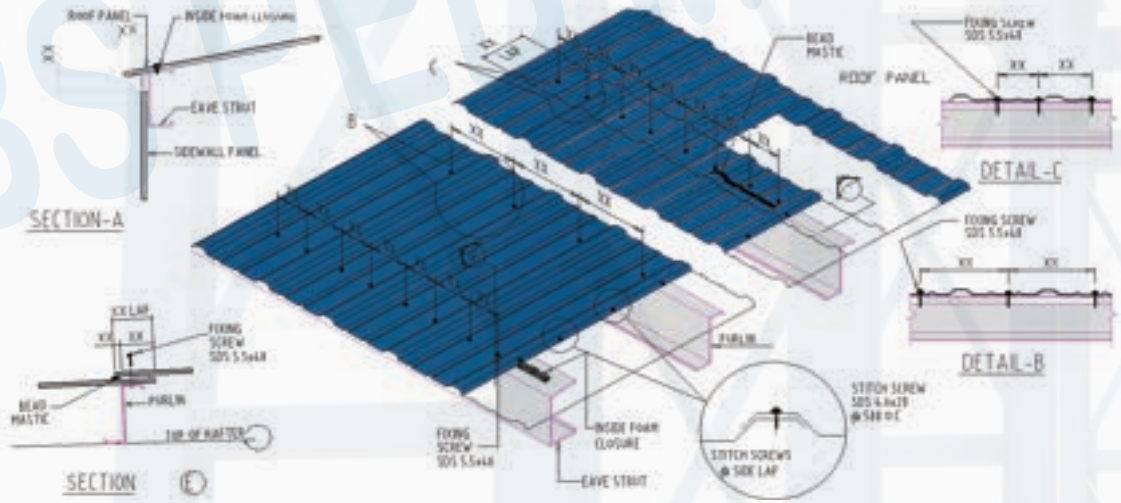
BEAD MASTIC



CANOPY DETAIL W/ EAVE GUTTER & BELOW ROOF LEVEL



GABLE TRIM FIXING DETAIL



ROOF PANEL FIXING DETAILS

SURFACE PREPARATION AND SHOP PAINTING

SURFACE PREPARATION OF STEEL COMPONENTS

SBS blast cleans all steel components to Swedish Standard Sa-2 (whether blast cleaning is specified or not) and to Sa-2.5 when specified. Blasted components are more resistant to rusting than those that are cleaned manually using solvents or mechanical brushing.

STANDARD SHOP APPLIED PRIMER

Shop applied primers reduce the risk of corrosion of steel by preventing direct contact between the moisture in the air and the surface of the steel.

MULTI COAT (2-3 COATS) PAINT SYSTEMS

SBS owns the most automated painting system in the PEB industry in this region. Our high-end painting system and its material handling equipment were custom designed by us in collaboration with world class equipment manufacturers. This system applies a specified uniform paint film thickness to all member surfaces while ensuring the fastest per hour throughput of painted components in the PEB industry.

FASTER DELIVERY OF MULTI-COATED PROJECTS

Our automatic paint systems are installed in line with a shot blasting machine. Both the blasting and painting machines are synchronized to work in tandem at equal operating speeds resulting in less handling of multi-coated components and much faster deliveries of multi-coated projects.

Tel +234 807 400 0000 Contact Sales@sbslftz.com

WE CARE YOU BETTER

Visit us by link:

https://goo.gl/maps/wWv3cnCLwCMZVEPs5

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