# HRSS SPECIFICATION

## SANA BUILDING SYSTEM

SANA BUILDING SYSTEMS
we care

https://www.sbslftz.com/

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# HRSS SPECIFICATION

HRSS | SANA BUILDING SYSTEM

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

# Contents 2022




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# 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 SBSLagos 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 SteelBuildings industry in Africa. This team's humility, honesty, transparency, and flexibility coupled with their attention to details and obsession with quality has assured SBS's 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

SANA BUILDING SYSTEMS
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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**

This Certificate remains the property of
**Peers Quality Assurance Limited**
Suite 2, Austin Court
Walsall Road
Four Oaks
Sutton Coldfield
B74 4QY England
www.pqal.co.uk
For verification of this certificate, please contact the PQAL UK Office

IAF UKAS

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**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** |

Certificate approved by:

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PEERS QUALITY ASSURANCE LTD

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**SANA BUILDING SYSTEMS LFTZ**

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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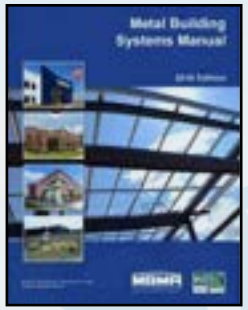
# Design Codes

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

# THE STEEL ADVANTAGES

THE STEEL ADVANTAGES

Steel outperforms concrete in most building applicationvisit

| | SANA BUILDING SYSTEM PEB, HRSS | SITE BUILT CONCRETE (RCC) |
|---|---|---|
| Fabrication | Fabricated in a controlled factory environment | Open – to – weather conditions |
| Materials | Steel alloys to defined chemistry and mechanical properties with complete test certificates detailed | Variable and not homogeneous. Wide variation in mechanical properties due to random mix; limited site quality control |
| Quality | Produced to engineered drawings, downloads from software CNC | All manual set – out dimensions, formwork, and insufficient vibration / cavities due to inadequate supervision and manual conditions |
| Strength | Steel has a high strength – to – weight ratio; carries up to 6 times its own weight. | Concrete has a 1 to 1 ratio of self – weight to strength; requires extensive steel reinforcement |
| Cost | Design, supply, foundations, and erection costs are very economical with time – to – occupancy significantly faster than concrete | Overall project costs higher due to separate costs for design and contrac–tor, coordination, increased site labour, difficulty maintaining schedules due to uncertainty about weather |



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# PRODUCTS & SERVICES

## STRUCTURAL

STEEL

Applications include Steel Buildings like Multi Storey residential / commercial / Industrial buildings, equipment supporting structures, pipe racks, Petro Chemical Plants, Power Plants, conveyor supporting structures, cement plants, precast concrete plants, etc. whose primary steel structures are constructed entirely out of hot rolled members.

SBS designs the hot rolled steel structures to ensure that the design is both economical and code compliant

## HOT ROLLED PROFILE SHAPES AND USE

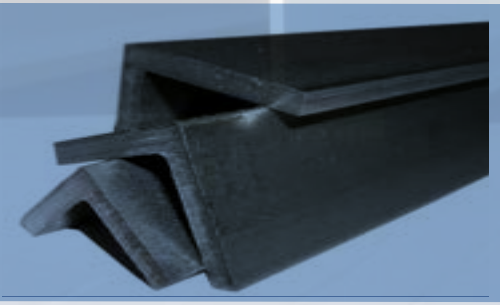
Various forms of rolled steel sections (HRSS) are as follows:

| | | | | |
|---|---|---|---|---|
| 1. Angle sections | 2. Channel sections | 3. T- sections | 4. I-H sections | 5. Circular WHollow Section |
| 6. Square Hollow Section | 7. Round bars | 8. Square bars | 9. Flat bars | |

### 1. Rolled Angle Sections

Angle sections are manufactured in "L" shape. It contains two legs. Some angle sections contain legs with similar dimensions are called as equal angle sections and some contains different legs are called as unequal angle sections.

Angle sections are widely used for roof truss constructions and for filler joist floors.





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## 2. Rolled Channel Section

The channel section or C- section consists of two equal flanges connected to web at both ends. Channel sections are extensively used in steel framed structures.

## 3. Rolled T- Sections

T section consists of flange and web arranged in "T" shape. They are used in steel roof trusses to form built up sections. Two angle sections can also be joined to get T section.

## .4. Rolled I -H- Sections

I section which are also called as steel beams or rolled steel joist are extensively used as beams, lintels, columns etc. It consists of two flanges and a web connected as shown in figure.

## 5. Rolled Round Bars

Round bars contain circular cross sections, and these are used in steel grill work etc.

## 6. Rolled Square Bars

Square bars contain square cross sections, and these are widely used for gates, windows, grill works etc.

## 7. Rolled Flat Bars

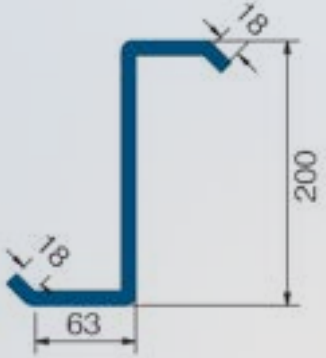
Flat bars are also used for gates, windows, grill works etc.

## SECONDARY MEMBERS FOR STEEL STRUCTURE

In the steel industry refer to longitudinal roof and wall members that are roll formed from galvanized coils or press broken from narrow galvanized sheets. Secondary members are produced in thickness of 1.5,1.75, 2.0and 2.5 mm.

The following building components are considered secondary members.

"Z" sectionsacting as longitudinal roof purlins and longitudinal wall girts that connect to columns & rafters and support the exterior roof and wall panels.

| SECTION | About X-X Axis | | | | About Y-Y Axis | | | Other | General Data | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Ix (cm4) | Gross Sxc=Sx (cm3) | Gross Sxc=Sx (cm3) | Rx (cm) | Iy (cm4) | Sy (cm3) | Ry (cm) | Ixy (cm4) | Weight (Kg/m) | Thick (mm) | Area (cm2) |
| 200Z15 | 308 | 31.71 | 27.23 | 7.76 | 48.16 | 6.42 | 3.02 | 90.19 | 4.06 | 1.50 | 5.18 |
| 200Z17 | 368 | 36.8 | 32.44 | 7.74 | 55.00 | 7.44 | 3.02 | 104.51 | 4.74 | 1.75 | 6.04 |
| 200Z20 | 418 | 41.82 | 39.30 | 7.73 | 63.00 | 8.44 | 3.00 | 118.63 | 5.42 | 2.00 | 6.90 |
| 200Z25 | 519 | 51.90 | 49.80 | 7.71 | 77.63 | 10.40 | 2.98 | 146.00 | 6.77 | 2.50 | 8.62 |



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Eave struts , located at the building eaves (corner of roof and wall sheeting) along sidewalls, support the roof and wall panels.

"C" sections used primarily in framed openings and as transition members between partial height block walls and wall panels

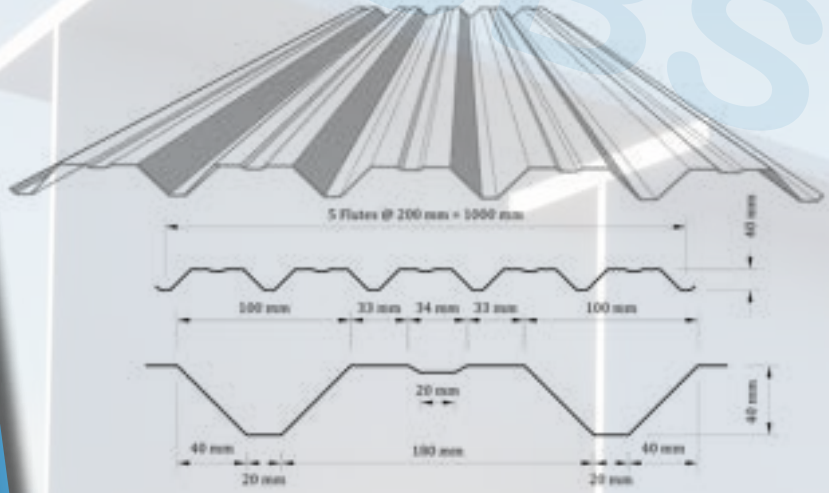
Mezzanine Deck (0.7mm) used to support concrete

| SECTION | | SECTION Data | | | | | | | About X-X Axis | | | About Y-Y Axis | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|   | | Depth (mm) | Flange(mm) | THK(mm) | Lip(mm) | Rad(mm) | Area ($cm^2$) | Wt (Kg/m) | IXX ($cm^4$) | Sx Top&Bottom($cm^3$) | Rxx (cm) | IYC Top&Botom (cm3) | Syy ($cm^3$) | Ryy(cm) |
| 200 C SECTION | 200C 15 | 200.0 | 63.0 | 1.5 | 18.0 | 6.0 | 5.17 | 3.97 | 305 | 30.00 | 7.68 | 26.00 | 15.45 | 2.25 |
| | 200C 18 | 200.0 | 63.0 | 1.8 | ١٨,٠ | 6.0 | 6.17 | 4.75 | ٣٦٢ | ٣٦,٠٠ | ٧,٦٦ | ٣١,٠٠ | ١٨,٣١ | ٢,٣٢ |
| | 200C 20 | 200.0 | 63.0 | 2.0 | 18.0 | 6.0 | 6.84 | 5.30 | 400 | 40.00 | 7.65 | 34.00 | 19.99 | 2.22 |
| | 200C 25 | 200.0 | 63.0 | 2.5 | 18.0 | 6.0 | 8.49 | 6.53 | 493 | 49.00 | 7.62 | 41.00 | 24.24 | 2.20 |

## Mezzanine Deck (0.7mm) used to support concrete

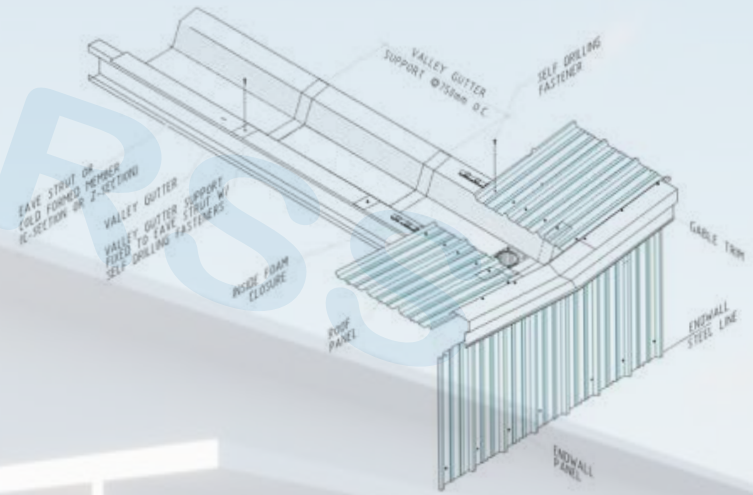
**SANA DECK PANEL (SD200x40)**

strong and functional floor and mezzanine panel that combines rigidity and ease of installation.




## Base, gable, and mezzanine edge angles.

Valley gutters (0.9mm) in Multi Gable Buildings.




VALLEY GUTTER DETAILS AT MULTI GABLE BUILDINGS WITH COMMON EAVE HEIGHT

## Steel Standard Buyouts (SSBO):

every Steel Structure. They are manufactured by others and stocked by the manufacturer. They include Anchor Bolts, Connection Bolts, Sag Rods, and Cable Bracing Components

Building Accessories and special buyouts (SBO) include sliding doors, rollup doors, personnel doors, fiberglass insulation, sand trap louvers, windows, ridges ventilators, power ventilators, etc. Some are produced in-house. Some are purchased from suppliers and included in our single source supply.

Panel Standard Buyouts are items that are produced Building manufacturer. They include sheeting fasteners (carbon steel and stainless steel), bead mastic, pop rivets, foam closures, skylights, etc. These are packed by us for a specific building and shipped to the jobsite with the panels.

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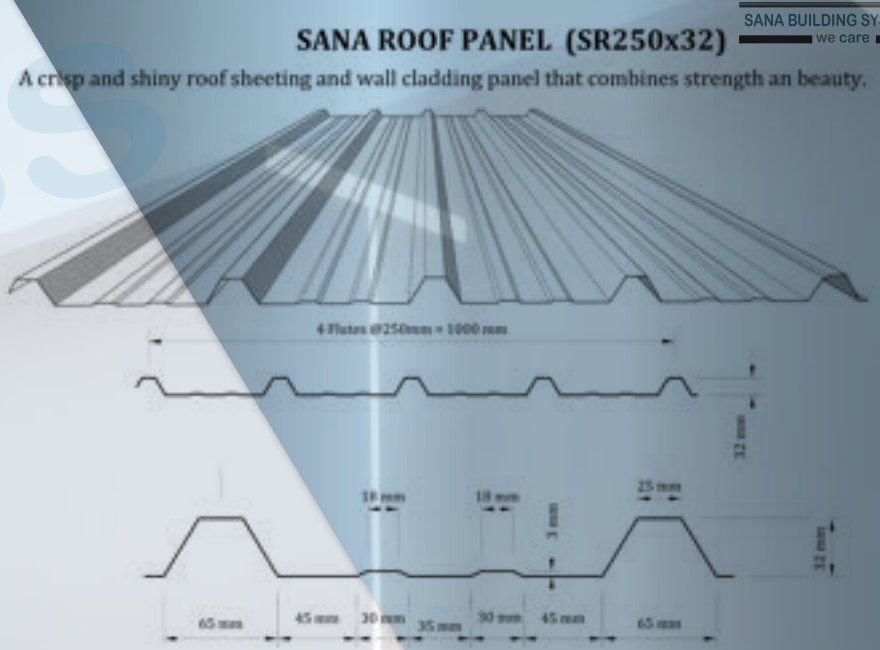
## Panels & Panel Accessories (PPA)

PPA includes single skin panels, sandwich panels, trims and flashing, panels standard buy-outs and building
accessories. Although all roofs have panels, walls are often partially or fully open for block wall, precast panels, or acess. Single Skin Panels are trapezoidal ribbed sheets roll formed from thin mill finish or pre-painted Aluzinc coated steel and aluminium coils and cut-to-length to meet the requirements of a specific building




Sandwich Panels have a polyurethane foam core sandwiched between two single skin metal panels (or an exterior single skin metal panel and an interior aluminium faced laminate). SBS does not produce sandwich panels but has an exclusive arrangement, for the purchase and resale of sandwich panels, to provide its customers with a single source supply responsibility.

SBS includes the preparation of engineering drawings for the sandwich panels, the production of trims and the supply of all sandwich panels accessories such as fasteners, bead mastic, purlin tape, etc.

Trims and Flashing include eave trim, eave gutters, downspouts, gable trim, curved eave panels, flashing around building accessories, etc. which are produced from pre-painted Aluzinc coated steel or aluminium sheets that are bent to the required shape using roll formers, presses, or folding machines. They weather seal the building and contribute to the neat finish appearance of a Steel Structure.

# BLAST & PAINT

## 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 be-ween 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 steel 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 steel industry.



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## 5.3 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

# WE CARE YOU BETTER

Visit us by link:

https://goo.gl/maps/wWv3cnCLwCMZVEPs5

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