

CATEGORY

PROVEN TECHNOLOGY CATEGORY : GHTC-INDIA



PRODUCT / TECHNOLOGY



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Technology Detail

LIGHT GAUGE STEEL FRAME STRUCTURE WITH INFILL CONCRETE PANELS

*Alternate to conventional RCC framed structure with
bricks/blocks as infill walling material*



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Video

CONTACT DETAILS

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BRIEF

Light Gauge Steel Framed Structures (LGSF) is based on factory made galvanized light gauge steel components. The components/sections are produced by cold forming method and assembled as panels at site forming structural steel framework of a building of varying sizes of wall and floor. The assembly is done using special types of screws and bolts.

The Light Gauge Steel frames consist of high yield strength (550 MPa) roll formed GI 'C' cross sections of 63 mm to 150 mm with built-in notch, dimpling, slots, service holes etc. produced by computerized roll forming machines. The frames are clad with Precast concrete panel on both side and in-filled with light weight concrete of density 700kg/cum. Other options for wall cladding include cement fibre board, MGO board etc. with insulation material in the core.

The flooring / slab can be with deck sheet supported on floor joists with in-situ reinforced concrete on the top or in-situ conventional RCC slab. Wall cladding used (high density cement fibre board, concrete panels etc.) shall resist the wind load & conform to the functional requirements.

The sequence of construction comprises of foundation laying, fixing of tracks, fixing of wall panels with bracings as required, fixing of floor panels, fixing of roof panels, decking sheet, fixing of electrical & plumbing services and finally fixing of insulation material & walling panels.



SALIENT FEATURES

- High strength to weight ratio. Due to light weight, significant reduction in design earthquake forces is achieved
- Fully integrated computerized system with Centrally Numerical Control (CNC) machine primarily employed for manufacturing of LGSF sections provide very high Precision & accuracy upto 1 mm
- The speed of construction is very high
- Structure being light, does not require heavy foundation
- Structural element can be transported any place including hilly areas to remote places easily and structure can be erected fast
- Structure can be shifted from one location to other without wastage of materials
- Steel used can be recycled multiple times
- Thermal efficiency of the building can be designed as per the requirement

ECONOMIC ASPECTS

- Light weight construction with reduced size of foundation & overall economical construction
- Reduces construction time significantly
- Do not require skilled manpower.





SUSTAINABILITY ASPECT

- Primarily employs dry wall construction, thus reducing water usage
- Steel can be recycled multiple times
- High thermal efficiency can be achieved resulting in reduced cooling load

SUITABILITY & AVAILABILITY

- Due to Good Insulation property it is suitable for all zones. Structures can be designed as per local climate and geographical requirements.
- Available at all places. Can be assembled easily at site

LIMITATIONS, IF ANY

- For buildings higher than G+3, it can be used with hot rolled Steel sections.
- The labors are required to be trained for fabrication/assembly works
- Plumbing & electrical services need to be pre-planned



MARKET LINKAGES

- Pan India Availability

MAJOR PROJECTS

- Police constable Quarter (G+1) for Karnataka State Police Housing Cor. Ltd.
- Construction of Field Hostel at Chhabra Super Critical Thermal Power Project, Chhabra for Rajasthan Raja Vidyut Utpadan Nigam Ltd.
- SC/ST Hostel for Institute of Advance Study in Science & technology, Guwahati

CERTIFICATION/INDIAN STANDARD/ ENDORSEMENT

- Recommended technology under GHTC- India
- Covered under CPWD Schedule of Rates (SoR)

