LIGHT GAUGE STEEL BUILDINGS

Future Of Building Construction

Pakistan Insulations (Pvt). Limited

Introduction:

- Pakistan Insulations (Pvt). Limited was established in 1986 as a manufacturing company dedicated for improving thermal efficiency.

- Alhamdulillah, We are the first manufacturer of high quality Rockwool in Pakistan.

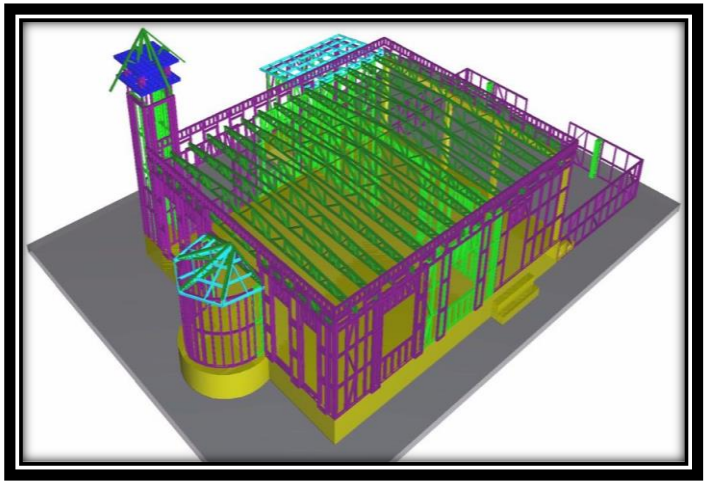
- Pakistan Insulations (Pvt). Limited entered the field of light Gauge Steel in 2011.

Why Light Gauge Steel Structures?

- Offers Improved quality, speed of construction, design flexibility and environmental performance.
- Offers financially attractive alternative to slower , resource-heavy traditional brick and mortar construction.
- Suitable for extension of existing building.

Design and Specification Phase:

FRAMECAD software is in use at Pakistan Insulations (Private). Limited for design, engineering calculations, structural analysis, detailing and roll forming machine control.



It Provides extreme accuracy and efficiencies in the construction process, reduces cost of engineering, design, waste and labor.

Our software provides end-to-end process integration in the design and production of cold formed steel buildings with FRAMECAD manufacturing solutions. With FRAMECAD software you can get best design efficiency and minimize project delays.

Manufacturing Phase:

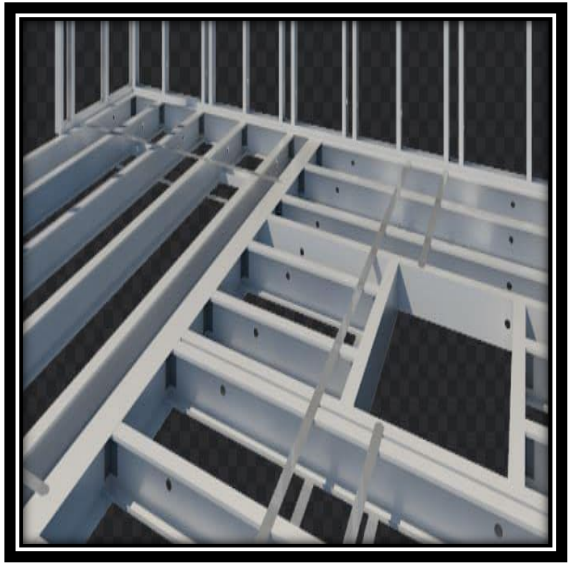
LGS frames and components are produced and fabricated from structural quality steel coils and are shaped at ambient temperatures by roll-forming machines.

They can be produced in large quantities and at high speed with consistent quality and precision.

Erection Phase:

Erection starts from base structure by assembly a factory made cold formed galvanized light gauge steel sections and subsequently fixing of paneling materials to form walls and floors with insulation.

Special self driven tapping screws and fasteners are used.



Light Weight Partitions:

Pakistan Insulations Pvt Ltd offers a wide range of non-load bearing lightweight partition systems. These partition systems can be implemented in the design of many types of buildings including residential housing, flats and apartments, residential and commercial properties.

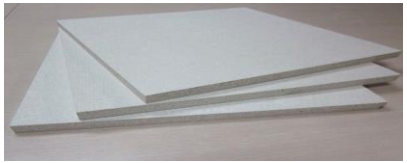
These light weight partition systems are designed to offer high performance to meet the most demanding fire resistance, sound insulation and height requirements.

System Designed To Meet Building Requirements :

We offer systems for a large variety of building requirements.

* Fire Protection
* Heavy Duty Walls
* Sound Insulation
* High Partitions
* Moisture Resistance
* Aesthetics

These systems are composed of Fiber cement boards/Gypsum boards and metal framing, Joint compounds and other materials such as joint tapes, seal ants, screws and insulation. System performance is achieved on following the correct installation details such as stud spacing and fixing centers, as well as using the nominated components such as Fiber Cement boards, compounds, studs and insulation.

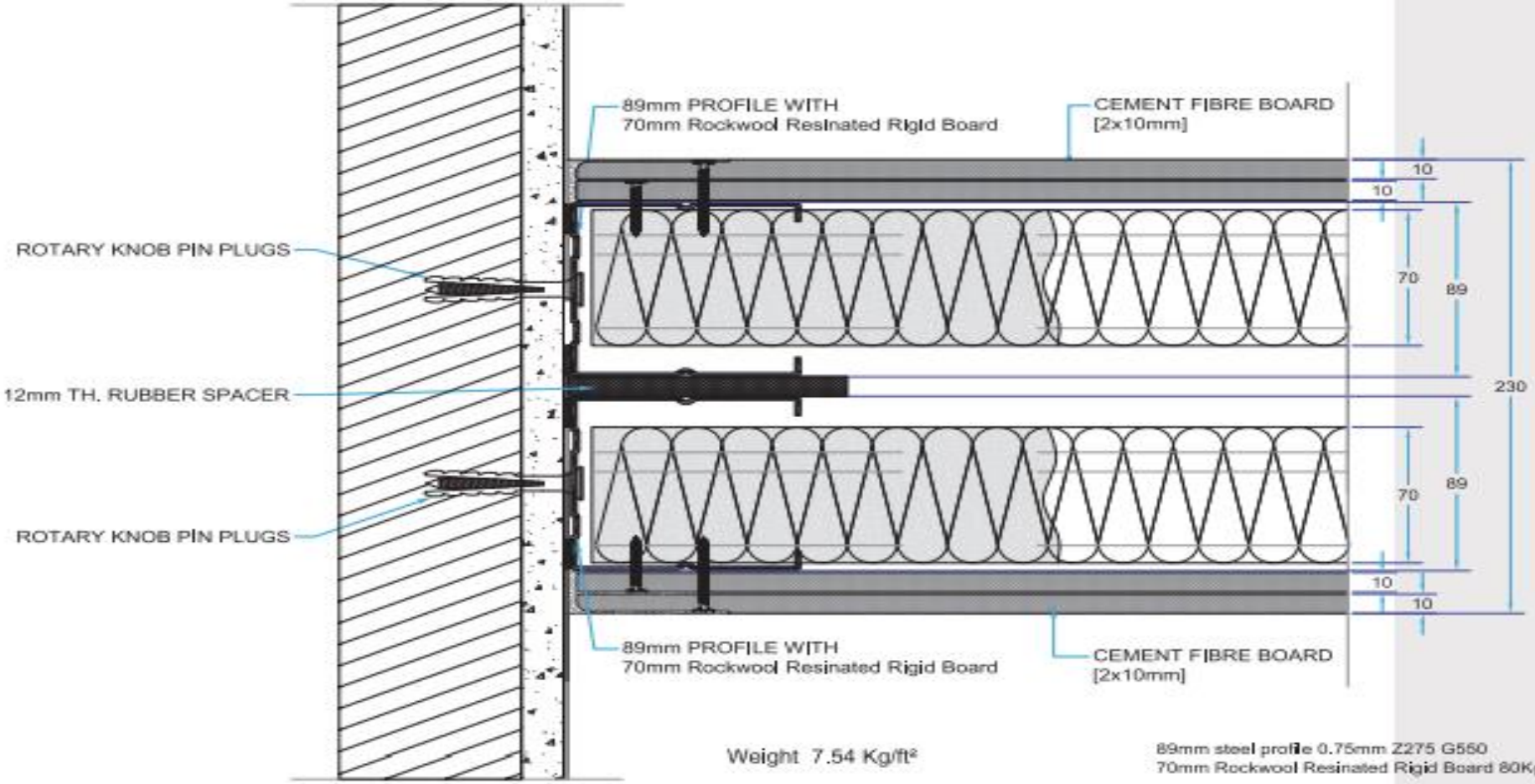


Gypsom Board

Fiber Cement Board

Systems	Performance	Fire resistance	Sound Reduction (RW)	Partition Width	Height
Type C 	■ Economical solution ■ Fast space division	Up to 30 min.	40 - 51 dB	110 mm	Up to 8.05 m
Type B 	■ Optimum solution ■ Meets most design criteria ■ Small footprint ■ High fire resistance	Up to 60 min.	50 - 56 dB	130 mm	Up to 9.70 m
Type A 	■ High acoustic performances ■ High fire resistance ■ Optimum for separation walls	Up to 120 min.	58 - 63 dB	230 mm	Up to 6.75 m
Type A-1 	■ Very good acoustic performance ■ Accommodates large service runs ■ High fire resistance ■ Adjustable footprint	Up to 120 min.	56 dB	300 - 460 mm	Up to 6.95 m

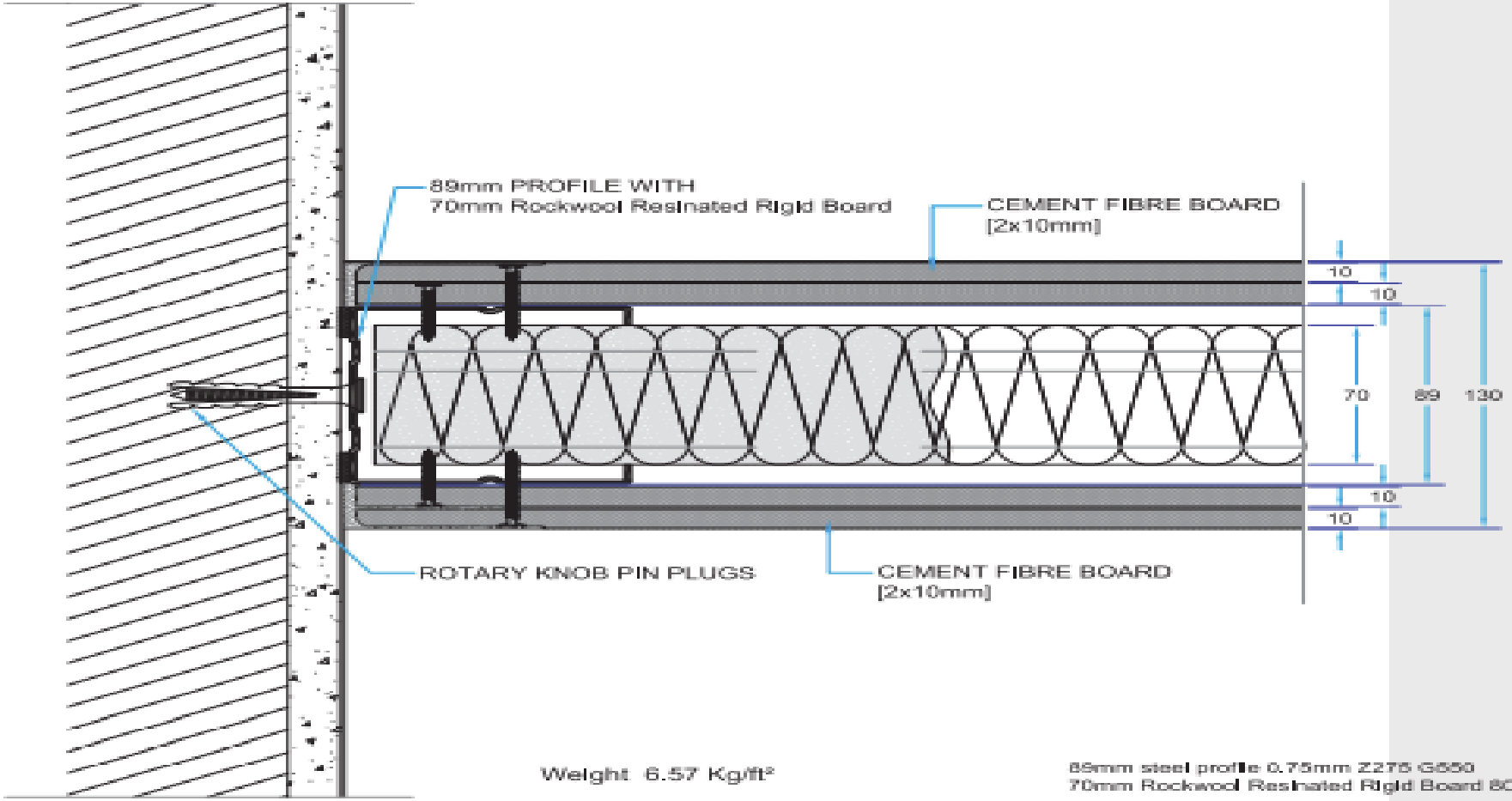
TYPE A DOUBLE WALL SYSTEM (230MM) WITH 120 MINUTES FIRE RATING



Weight 7.54 Kg/ft²

89mm steel profile 0.75mm Z275 G550
70mm Rockwool Resinated Rigid Board 80Kg/m³

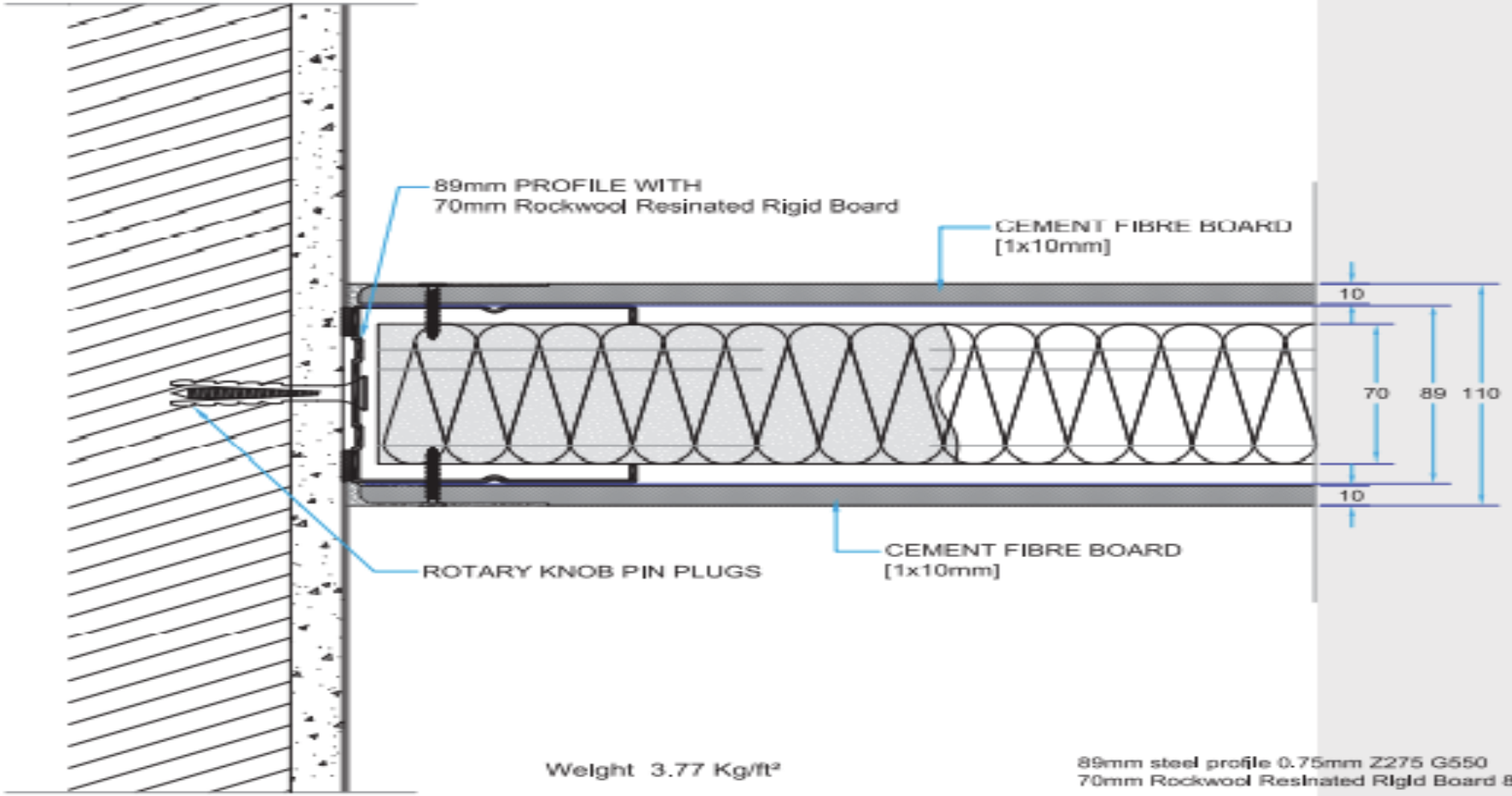
TYPE B SINGLE WALL SYSTEM (130MM) WITH 60 MINUTES FIRE RATING



Weight 6.57 Kg/ft²

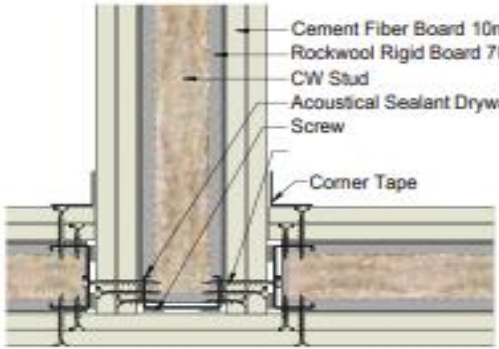
89mm steel profile 0.75mm Z275 G550
70mm Rockwool Resinated Rigid Board 80Kg/m³

TYPE C SINGLE WALL SYSTEM (110MM) WITH 30 MINUTES FIRE RATING

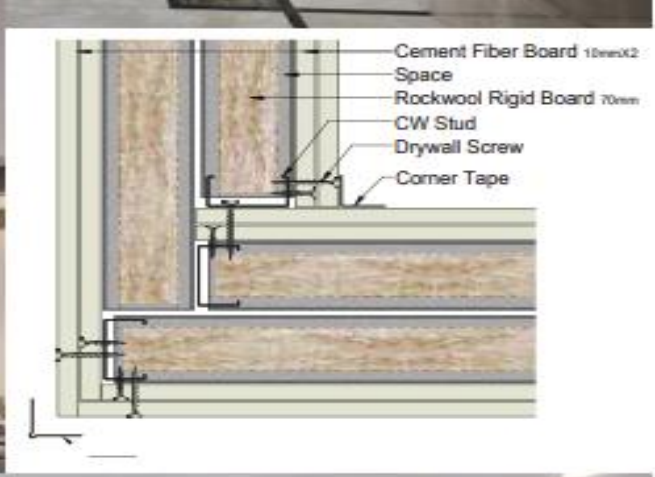


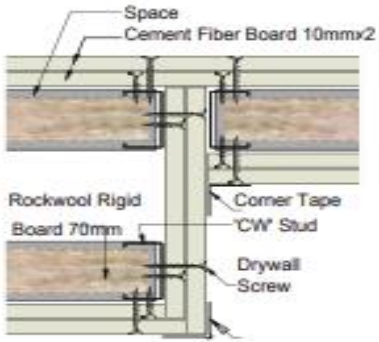
Weight 3.77 Kg/ft²

89mm steel profile 0.75mm Z275 G550
70mm Rockwool Resinated Rigid Board 80Kg/m³


Cement Fiber Board 10mmX2
Rockwool Rigid Board 70mm
CW Stud
Acoustical Sealant Drywall
Screw
Corner Tape


Stud spacing


Cement Fiber Board 10mmX2
Space
Rockwool Rigid Board 70mm
CW Stud
Drywall Screw
Corner Tape


Space
Cement Fiber Board 10mmx2
Rockwool Rigid
Board 70mm
Corner Tape
'CW' Stud
Drywall
Screw

Applications Of Light Gauge Steel Structures:

* Factory Buildings
* Ware houses
* Workshops
* Commercial Buildings
* Office Buildings
* Car Parks
* Sport Centers
* Exhibitions Halls
* Super Markets
* Cold Stores
* Dairy Farms
* Logistic Centers
* Poultry Sheds
* Distribution Centers
* Aircraft Hangers
* Animal Feed Sheds
* Shipyards
* Processing Mills

Seismic Behavior Of Light Gauge Steel Structures:

Due to very high strength to weight ratio light gauge steel framed structures behave better than traditional materials in an earthquake. LGS is strong and at the same time light weight so frames flex without breaking during an earthquake and absorb lateral movement without compromising the structural integrity of the building. Testing shows steel framing withstands earthquake up to Force 9. Unlike LGSS, RCC Structures are brittle in nature and exhibit less resistance against seismic forces.

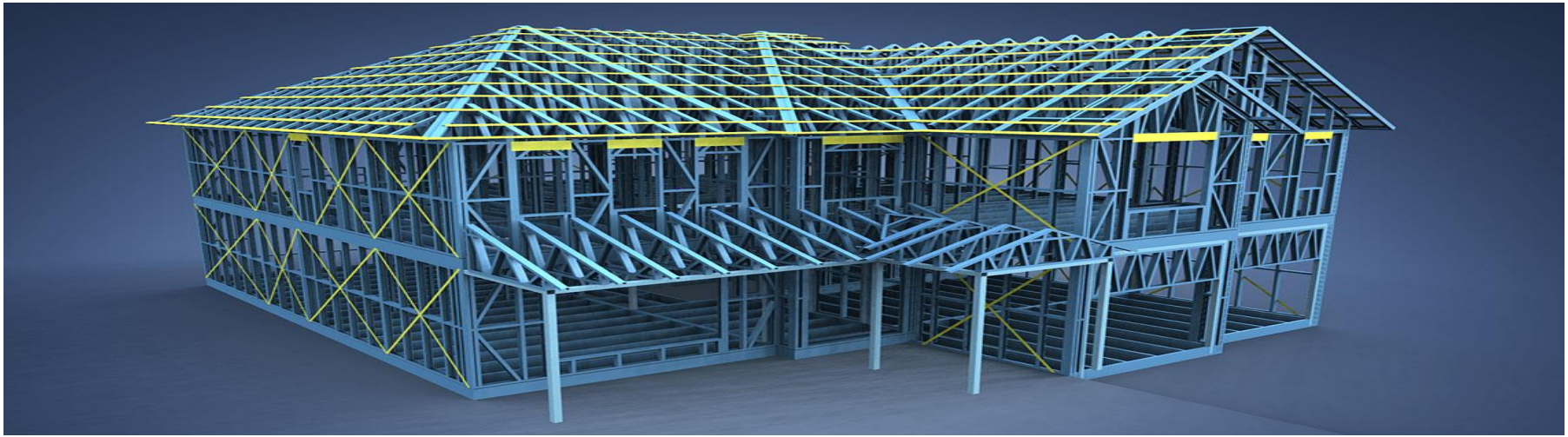
Comparison Between LGS and RCC Structures:

Light gauge steel structures are bringing revolution in the field of construction.

- Unlike RCC structures, LGS structures are more resistant to seismic and wind forces.
- Unlike RCC structures, LGS structures have high tensile strength.
- Unlike RCC structures, the erection of LGS structures is fast and simple.
- Unlike RCC structures, less labour is required on site.
- Unlike RCC structures, steel frames do not absorb moisture and there is no delay waiting for frames to dry.
- Unlike RCC structures, LGS construction generates minimal waste.

Faster Return On Investment:

Return on investment (ROI) is obviously a critical aspect of the financial analysis of any Property development opportunity. When a property can be acquired and developed in short period of time the return on investment is realized faster and the response to satisfy immediate market demand is greater



Delivered Projects:


DUHS Karachi


School Building


K-Electric


Private Bungalow


Agha Khan Education System