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Light Gauge Steel (LGS) Panels

Randy Woodard, CEO - Valience

Light Guage Steel (LGS) Panel construction offers cost savings and shorter timelines, with actual savings depending on the panel type. Panels can be made from either dimensional lumber or light-gauge steel.

Light gauge steel panels are lighter than wood, making them easier to transport and install while strong enough for structural and load-bearing applications. Clients often find that steel-framed buildings retain their value better than wood ones.

These panels are ideal for multi-story structures like hotels and multifamily buildings, as they can provide structural support with no or minimal iron or concrete columns. I-beams may be added for large spans or openings.

Steel framing is manufactured using specialized roll formers, which have become smaller and more affordable, allowing for builders to more easily create custom-length metal studs based on CAD or BIM designs.

Finish

Panel construction involves off-site manufacturing, with components transported to the site and installed using cranes or manual labor. Factory finishes can vary and clients may choose basic panels or those that are sheathed, stuccoed, insulated and cladded minimizing on-site work.

Load-Bearing

Load-bearing steel wall panels perform like traditional frame walls, supporting vertical and lateral loads while providing a durable finish on-site. Structural panels typically use 3 5/8-inch deep, 18-gauge steel studs, with deeper and thicker options available for extra support based on local codes and building requirements.

Insulated Panels

Builders often opt for factory-insulated panels, using materials like fiberglass batts or blown-in expanded polystyrene (EPS). Insulated panels are particularly effective for creating airtight buildings and achieving good LEED ratings.

Cladded Panels

Façade panels, consisting of a light gauge steel frame with plywood or OSB sheathing and finished with stucco, brick, or other cladding material are primarily used in multi-story projects and can be cost-effective for smaller buildings.

Design and Fabrication

While panels can expedite construction, involving the factory's engineer early in the design process is vital. This engineer will collaborate with the structural engineer and architect. Factors like recessed doors in designs can increase project complexity and cost due to structural modifications.

After finalizing the design, a software-generated build list guides the roll formers manufacturing the necessary studs and tracks. Finished panels undergo quality checks before being loaded for delivery, each marked for its specific position in the structure.

Shipping

Wall panels can be stacked vertically or horizontally on a flatbed truck, but loads must not exceed an 8-foot 6-inch width and 13 feet 6 inches height. A 53-foot flatbed truck can carry about 7,000 to 12,000 square feet of panels, depending on thickness.

Installing Panels

Panels are typically installed using cranes. To optimize crane use, they should be staged near each other and require careful planning. The time and labor savings with light-gauge steel panels vary, but buildings that incorporate light-gauge steel generally provide significant savings compared to wood, especially in regions with higher labor costs.

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