

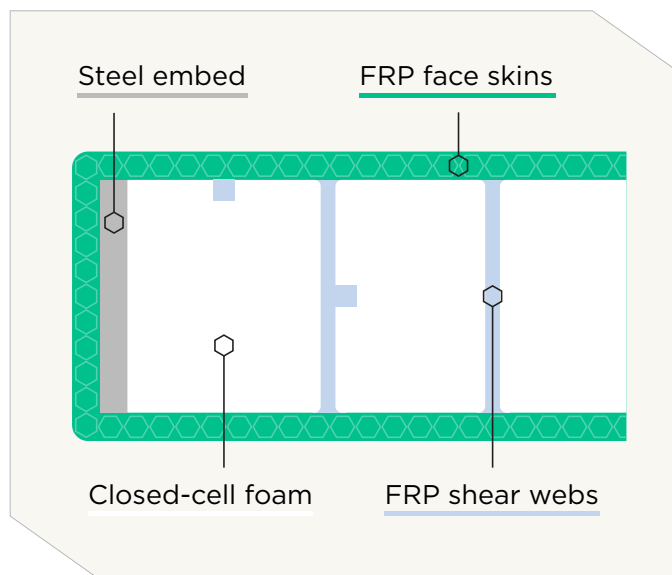
HyperWall™

Data Center Exterior Wall System

Achieve precast-like performance with less weight, faster installation and fewer site constraints

A Faster, Smarter Enclosure System

The HyperWall building enclosure system is a monolithic, fiber-reinforced polymer (FRP) structural wall panel system, prefabricated for mission-critical construction. Structure, insulation and environmental control layers (water, air and vapor control) are integrated into one panelized solution.



Why Architects and Owners Specify the HyperWall System

- **Faster enclosure:** Install up to 20 HyperWall panels per day per crane (assuming a typical 10x40-foot panel).
- **Fewer deliveries:** Get 6 to 8 HyperWall panels versus one precast panel per truck — reducing on-site congestion, increasing safety and lowering embodied carbon.
- **Smaller cranes and footprints:** Lift weights of 5,000 to 7,000 pounds per panel enable installs with 30-to-50-ton rough-terrain cranes instead of the 300-ton crawler cranes required for precast.
- **Better schedule stacking:** Smaller equipment and fewer deliveries can allow exterior work, underground utilities and concrete pads to proceed before or in parallel with wall erection.
- **Simpler handling:** HyperWall panels can be tilted up using designated lift points, with no special rigging or risk of cracking.



Metric	Insulated Precast	HyperWall
Panels per Truck	1	6-8
Panels Installed	10 per day per crane	20 per day per crane
Typical Handling Weight	31,000-44,000 lbs	5,000-7,000 lbs
Typical Wall Weight	90-100 psf	15-20 psf

Design and Performance Advantages

- **Thermal performance:** Standard panels are 7½ inches thick with a nominal R-20. They can range from 5 to 10 inches thick, depending on structural and thermal requirements. (R-values scale linearly across thickness)
- **Panel weight:** Panels weigh 15 to 20 psf (approximately 80% lighter than precast), reducing structural demands at the slab edge and allowing the use of smaller cranes.
- **Panel sizes:** 10-foot-wide panels are preferred for trucking efficiency. Panel heights can be up to 50 feet.
- **Attachments:** You can mount metal panels, facades, signage and more directly to the system.
- **Pre-installed glazing:** All windows in panels are pre-installed at the factory.
- **Exterior finish:** Shop-painted colors can be specified to match virtually any palette. Multiple grit profiles support a blendable, field-repairable finish. Panels also can be field-painted with many standard exterior coating systems.
- **Penetrations:** Penetrations can be molded or made on-site (similar to precast) to support louvers, doors, and mechanical, electrical and plumbing interfaces.
- **Panel-to-panel joints:** Panels are sealed with caulking or a pre-compressed, self-expanding foam joint seal.
- **Connections:** Panels are gravity-supported at the slab edge and secured with bolted connections for wind and lateral restraint. Because the panels are significantly lighter than concrete, projects can often reduce slab-edge reinforcement and embedding demands.
- **Security and resilience:** Compared with insulated metal panels, HyperWall panels form a monolithic system with greater forced-entry resistance and can be engineered for project-specific blast requirements.
- **Fire testing:** The HyperWall system meets all applicable life safety code requirements, such as NFPA 285, NFPA 268 and ASTM E84.

The HyperWall System Versus Precast and IMP

Mission-Critical Priorities	The HyperWall System	Insulated Precast Concrete	Pre-insulated Metal Panels (IMP)
Speed to Enclosure	Fastest path to dry-in: • Install potential of 20+ panels/day/crane • Can be tilted up without special rigging or risk of cracking	Slower install rate: • ~10 panels/day/crane • Requires special rigging to prevent cracking during tilt up	Fast install but often requires more: • Secondary framing • Trim and envelope detailing
Jobsite Logistics	Significantly reduces site congestion: • 6-8 panels/truck • Smaller crane requirements	Increases site congestion: • 1 panel/truck • Larger crane footprint • More delivery coordination	Moderate logistical impact: • Lightweight and easy to ship • More field pieces • More coordination points
Safety	Safer installation profile: • Lighter panels • Smaller picks and equipment • Fewer trucks and people • No welding	Lower safety profile: • Heavier picks • Larger cranes • More trucks • Higher handling risk	Lightweight, but more field assembly and detailing work can increase exposure hours
Durability	Ideal for mission-critical environments: • Corrosion resistant • Nonconductive • Dimensionally stable • Field repairable	Durable, but more susceptible to: • Cracking during tilt up • Spalling over time	More vulnerable to: • Dents • Finish damage • Oil canning • Long-term joint maintenance
Structure	Monolithic wall system: • Structure • Insulation • Environmental control layers	Proven structural system, but with significant weight and logistics impacts	Primarily an enclosure/cladding system; typically relies on backup structure
Security/Resilience	More robust than IMP: • Monolithic structural panel is harder to breach • Can be engineered for project-specific blast requirements	Strong mass and security benefits, but with heavy constructability tradeoffs	Lower forced-entry resistance compared with monolithic wall systems
Schedule Stacking	Enables better parallel work: smaller cranes and fewer deliveries allow exterior yard work, utilities and pads to progress alongside wall erection	Large crane footprint can restrict parallel work and site access	Can support fast enclosure, but field detailing and backup framing may limit sequencing gains
Best-Fit Profile	Best solution for clients who need to build faster with: • Less congestion • Safer installs • Durable, mission-critical performance	Best for traditional conservative delivery where weight and slower logistics are acceptable	Best for lower-risk enclosure needs where upfront simplicity is prioritized over structural/security performance

Support From Concept to Installation

Building Composites helps streamline your project with design assistance, engineering, BIM models, manufacturing and shipment to your site. In addition to fabricating the engineered panel system, we design and supply all required embeds and connection hardware.

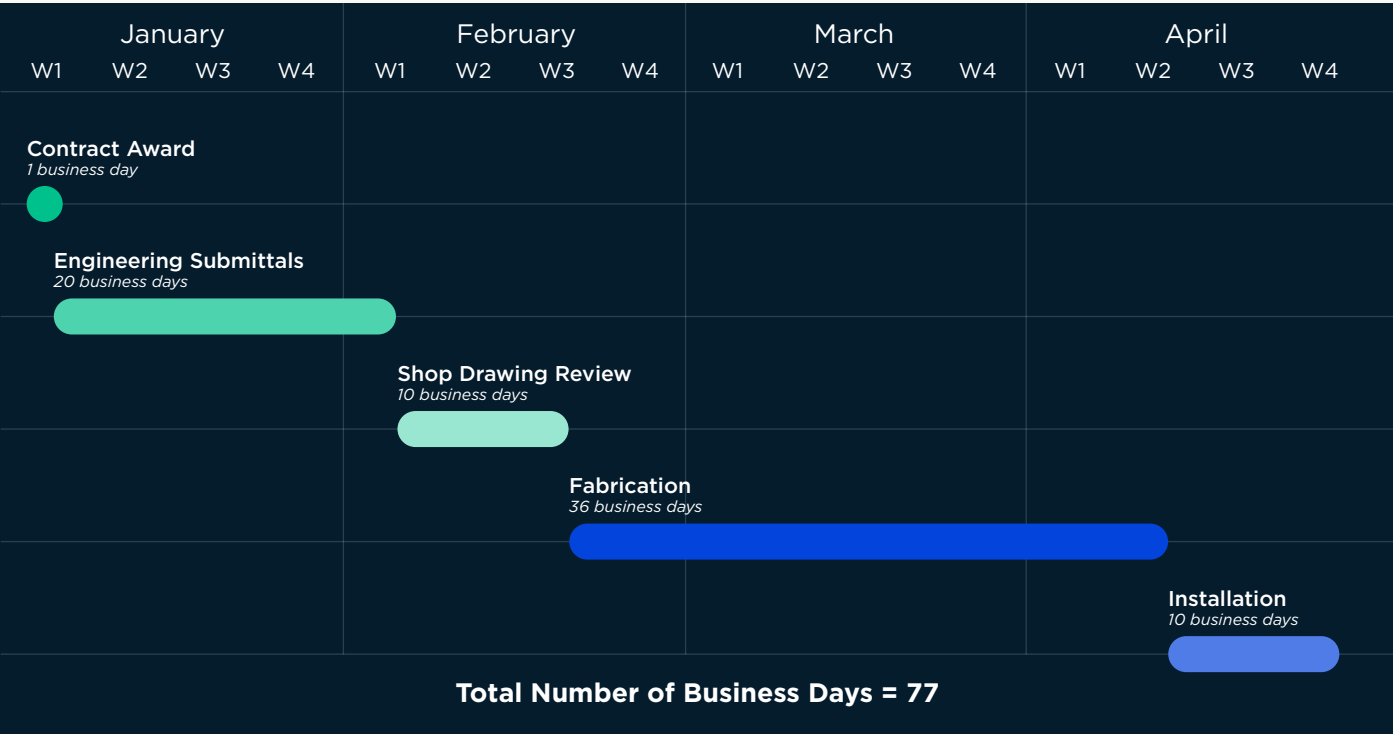
To reduce costs and leverage regional labor availability, installation is typically subcontracted using a local workforce (either managed by Building Composites or hired by the general contractor).

- **Predesign:** Project team and architect work on the design to approximately 80% completion.
- **BIM Model/Shop Drawings/Engineering Calculations:** 4 to 6 weeks, provided all required information and coordination is available

- **Shop Drawing Review:** Typically 2 weeks, depending on the general contractor and engineering firm
- **Fabrication:** Raw materials are kept in stock, so fabrication can begin immediately after drawing approval.
 - Current production capacity ranges from 25 to 40 panels per week, depending on panel size and complexity.
 - Panels typically can be shipped within 5 days of fabrication.
 - By comparison, precast concrete can require 26 to 30 days to cure.
- **Installation:** Crews have the potential to install 20+ panels/day/crane

Example Project Timeline*

- 350,000 square-foot data center
- 270 panels required



* Hypothetical scenario. Actual timing may vary based on project scope, approvals, raw material requirements and site conditions.