

PRECAST CONCRETE WALL PANELS VS. BRICK AND CONCRETE MASONRY

The exterior façade of a building is its signature. But a building envelope’s materials are more than just a visual appearance. Aesthetics, function, and cost play a significant role in achieving a successful project. Precast concrete not only offers design freedom of architectural expression, but it also contributes to durability, sustainability, energy efficiency, versatility, resiliency, and improved occupant comfort and safety. At the same time, the plasticity of precast concrete allows the designer to achieve a degree of architectural expression and freedom that cannot be matched by brick and concrete masonry systems.

PRECAST CONCRETE PANEL ADVANTAGES AND BENEFITS

Durability

- Precast panels are exceptionally resistant to impact, corrosion, weathering, and abrasion, making it virtually maintenance free
- Precast panels are produced in factory-controlled environments with concrete compressive strengths in excess of 5,000 psi and low water-cement ratios which ensures a dense, exceptionally durable finish
- Precast panels with thin brick veneers are more durable and watertight because mortar joints between thin bricks are filled with 5,000 psi concrete unlike field installed brick mortar joints with compressive strengths of 2,000 psi or less

Aesthetics

- Wide variety of panel finishes are available including sandblasted, exposed aggregate, acid-etched, thin brick and stone veneers
- Unlimited variety of colors, forms, and textures are available



- Form shapes can include ribs, bullnoses, reveals, chamfers, or form liner textures

Commitment to Quality

- Precast panels are produced by PCI-Certified plants under strict quality controls ensuring a uniformly high-quality façade

- PCI-Certified producers must satisfy an array of production, administrative, and organizational procedures along with close tolerances unique to precast concrete
- To maintain certification, every PCI producer member must undergo two stringent unannounced inspections each year by independent auditors

Lower Costs

- Precast panels provide a durable, aesthetically pleasing exterior façade that is virtually air and watertight and does not require painting
- Minimal maintenance provides substantial long term cost savings
- Precast concrete's fast speed of erection and ability to be produced and erected year-round shortens project schedules
- Precast panel shop drawings and production can commence during permitting phase and as foundation work or supporting structure is completed, which improves the overall project speed of construction
- Faster speed of construction with precast panels reduces long term overall costs and makes the use of precast panels more economical than brick and concrete masonry
- Precast panels can be loadbearing and thereby reduce framing costs by providing a column-free building perimeter
- Pre-glazing of punched window openings in precast panels at the precaster's plant reduces field labor costs and job site risks

Energy Efficiency

- Precast panels can provide recessed window walls, vertical fins, and various other sculptured shapes as shading devices for window areas to

reduce glare and solar gain, which is not possible with brick and concrete masonry facades

- Precast panels may either have continuous insulation field applied to the back of panel or incorporated at the plant to create sandwich wall panels
- The inherent thermal mass inertia of precast concrete also reduces peak heating and cooling loads, thus saving energy year-round by reducing large daily temperature swings

Other Inherent Benefits

- Precast panels are inherently fire resistant which eliminates the need and cost of additional fireproofing measures
- Precast panels provide inherent sound attenuation properties, due to precast concrete's mass, and provide an economical acoustical barrier to exterior and interior noise penetration
- Precast concrete is an environmentally sound material, produced from natural materials
- Precast concrete has the added benefit of reflecting heat and light, thus reducing the "heat island" effect and higher temperatures in urban areas
- Precast panels provide a barrier wall or faced-sealed system with minimal panel joints unlike brick cavity wall systems where moisture penetration is always a concern

Precast concrete wall panels minimize job site disturbance and reduce field labor costs and job site risks compared with field installed brick and concrete masonry walls. Also, the quality of the design and installation process and subsequent inspection is critical to the success or failure of brick and concrete masonry cavity wall systems.

Precast concrete wall panels provide a single-source solution for supplying the exterior wall system for your building. When a precast concrete structural frame along with loadbearing panels are specified, the complete building superstructure can be supplied and installed by one certified producer. The unbeatable speed with which precast panels can be designed, produced, and erected to close tolerances and consistent uniform architectural finishes, generates time savings that can be critical to your project's success. Precast concrete wall panels provide numerous long term cost advantages with exceptional durability, lower energy costs and lower maintenance costs when compared with brick and concrete masonry wall systems.