



FREQUENTLY ASKED QUESTIONS



ABOUT FABCON

► Who is Fabcon?

Fabcon is an innovator of precast concrete solutions for the new construction market. The company designs, manufactures and installs precast wall panels with numerous performance benefits. A commitment to customer service and to continuous improvement of our products and processes are keys to our success.

► How long has Fabcon been in business?

Fabcon was first started in 1970 with incorporation in 1971. The first plant was in Savage, Minnesota. In 1973, Fabcon introduced sandwich panel technology and exposed aggregate finishes. In 1986, Fabcon, Inc. purchased the Span-Deck technology and became the franchise holder. In 1995, we expanded operations through the acquisition of American Precast plants near Columbus, Ohio. The Ohio plant was followed by the construction of our Pennsylvania plant in 2000. In 2001, Fabcon developed VersaCore technology, and in 2007 we introduced VersaCore+Green™. In 2015, Fabcon added a fourth plant in Pleasanton, Kansas.

► Where are Fabcon's wall panels produced?

Fabcon currently has five plant locations: Savage, Minnesota; Grove City, Ohio; Mahanoy City, Pennsylvania; and Pleasanton, Kansas.

► What type of precast products does Fabcon manufacture?

Fabcon specializes in the design, manufacture and installation of structural precast concrete wall panels. These wall panels can be used in either a load-bearing or non-load-bearing configuration and are available in a variety of R-values as well as finishes and colors. Fabcon follows PCI (Precast Concrete Institute) MNL-116 guidelines for structural components and MNL-117 for architectural products.

► What innovations has Fabcon pioneered?

Fabcon pioneered the first non-composite insulated wall panel system, developing the first effective top-face finishing process that allowed the owner to use steel form finish on the interior. **Current patents include:**

October 18, 2005 | Patent No. US 6,955,014 B2
Insulated Concrete Cast Panels with Voids in Billets

March 20, 2007 | Patent No. US 7,191,999 B2
Variable Height Side Forms

April 3, 2007 | Patent No. US 7,198,429 B2
Segmented Concrete Screed

May 15, 2007 | Patent No. US 7,216,462 B2
Insulated Concrete Panel Billets

October 5, 2010 | Patent No. 7,806,676
Automated Concrete Casting System

December 27, 2011 | Patent No. 8,083,510
Concrete Finishing Machine

OUR PRODUCTS

► What heights, widths and thicknesses are available?

Fabcon has been refining and re-engineering precast concrete wall panels since the early 1970s. Our expanded manufacturing capabilities offer you more choices, more flexibility and higher performance than any other panel. Our panels can reach heights up to 65', variable R-values up to R-28.2 and depending on the plant of origin, widths up to 13'16".

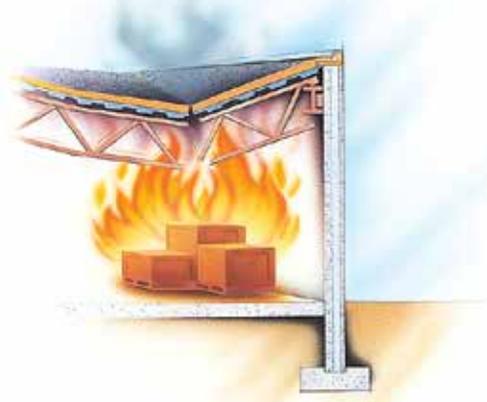
	VersaCore+Green	VersaCore+Green Sandwich
Max Height	Up to 73'	Up to 73'
Widths	20"–13'6"	20"–13'6"
Sound Attenuation (STC)	50–51	52
R-Value	R-13.6 and up	R-28.2
Concrete Strength	7,000–9,000 psi	7,000–9,000 psi
Recycled Content	Up to 58%	Up to 58%
Fire Rating	Up to 4 hours	Up to 4 hours



► Are fire ratings available?

Yes, PCI (Precast Concrete Institute) outlines calculations to determine various fire protection levels. VersaCore+Green can be modified for “solid” areas to meet Fire Manual requirements for fire ratings up to four (4) hours. Note that special treatment (fire-stop material) of panel-to-panel joints is required beyond one (1) hour.

- ▼ Precast walls (right) make it safer to fight fires due to the wall stability; firefighters are not endangered by collapsing walls.



► Are Fabcon products structural or architectural?

Both. Fabcon designs, manufactures and installs a structural wall panel under both designations. The structural wall panel offers a variety of decorative finishes that rival architectural panels. Under the guidelines of the PCI (Precast Concrete Institute), this is referred to as MNL-116. However, Fabcon also produces wall panels under PCI's designation of MNL-117 architectural precast.

► Can the wall panels carry roof or mezzanine loads?

Fabcon wall panels are designed to be load-bearing and are most efficient in that capacity. Fabcon wall panels can also be load-bearing with double tee, steel bar joist, wood laminate and pre-engineered roof and/or mezzanine systems. The wall panels can take shear loads as well as dead loads. Fabcon has engineers on staff to answer specific loading questions. These load-bearing panels can be and have been used as cladding only as well.

► What are Fabcon's R-values?

R-values represent the thermal resistance (transfer of heat) through materials and/or assemblies. The higher the value of R, the better thermal performance relative to resistance (convection and radiative) of heat moving through the material/assembly. R-values do not account for the radiative or convective properties of the material surface.

R-values are the inverse of thermal transmittance (U-value) of a material/assembly. R-values are easier to calculate for assemblies and are scalable for varying thicknesses of a material. R-values expressed in United States customary units are about 5.67 times larger than those expressed in metric (SI) units.

PRODUCT	R-VALUES	
	PARALLEL PATH (OLD)	FINITE ELEMENT ANALYSIS (NEW)
8" VersaCore+Green	9.6	13.6
8.5" VersaCore+Green	9.9	14.6
10" VersaCore+Green	11.9	16.9
10.5" VersaCore+Green	12.2	17.9
12" VersaCore+Green	13.9	20.2
12" VC+Green Sandwich	24/26	28.2

► Are Fabcon's panels sustainable?



Yes, concrete in general is a very “green” product, and Fabcon has taken sustainability to a new level. Our VersaCore technology replaces hollow cores with EPS billets to increase the energy efficiency of the panel while reducing the consumption

of cement and aggregate and maintaining structural capability. VersaCore+Green™ uses higher recycled content while further increasing the energy efficiency, making it a contributing component in a project’s qualification under LEED. Compared to conventional composite panel designs, VersaCore+Green weighs 32% less than conventional composite panels while offering a 30% increase in R-values.

► What is Fabcon's price per square foot of wall panel?

Price per square foot of wall panels varies depending on the type of project, location, finish, and functionality of the panels. While price per square foot may be a useful way to describe the wall panels, it is misleading in that different panels on a project have varying costs depending on the profile of the panel. For example, a single piece located at a non-bearing area of the building will be more economical per square foot than a load-bearing panel with openings in it that feature a premium finish. Your sales engineer can explain in greater detail and suggest value-engineering ideas.

INSTALLATION & PROCESS

► Does steel have to be put up first?

With Fabcon’s precast systems, either the steel or precast can be erected first. In the case where structural steel is erected prior to the panels (often referred to “freestanding”), wall braces and dead-man anchors are used.

► Does Fabcon set the steel and pour the footings?

Fabcon can install structural steel sections which attach to our wall panels. We do not set other structural steel, nor do we pour footings. Coordination of sub-contractors is by the general contractor or construction manager.

► Who erects Fabcon's products?

Fabcon has historically erected our own products. Our field crews are union members and can work on any job site including open-shop job sites. Field erection crews are highly-experienced and specialized in Fabcon products and can ensure timely, quality installation. It also creates one-party responsibility (Fabcon) for the design, fabrication and installation of the wall panels.

► Who designs Fabcon's panels?

Fabcon employs professional engineers and drafters who design the overall structural and thermal properties as well as the connections and installation process. Coordination between Fabcon’s engineering department, other subcontractor/trade engineers as well as the Engineer of Record ensures our systems interface with others properly. Our customized engineering documents interface with manufacturing automation throughout our plants to meet strict MNL-II16 tolerances.



Fabcon ships panels wherever they're needed.
Most projects fall within a 600 mile radius of our four manufacturing plants.

► **How long does it take for Fabcon panels to arrive at the job site?**

Fabcon ships panels wherever they're needed. Seven to eight week lead times account for critical milestones including: complete architectural and structural information; final plan approvals; production time; and delivery to the jobsite. Variables such as production capacity, panel dimensions, finish and opening complexity can impact lead time. Fabcon can, and often does, process projects on a shorter schedule depending on project specifics.

► **Can electrical conduit be cast into the wall panel?**

Yes. There are two methods of placing electrical in Fabcon's wall panel system. First, boxes and conduit can be cast into the wall panels during production. There are special considerations, however, so talk to your Sales Engineer.

Secondly, special billets that contain an open chase can be cast into the panels easily and with nominal cost. This chase runs vertically in the panels (horizontally in the case of spandrel panels) in one or all six billets (3' wide product). Electrical can be run from the top of the wall panel or cut in above the ceiling elevation to allow electrical lines to be dropped to the appropriate elevation and electrical boxes mounted flush in the wall. Openings for electrical boxes are field-cut into the panels by others. This system allows the greatest future flexibility for electric work.

► **Is precast better than block construction?**

Precast wall panels are superior to block construction in a variety of aspects. During construction, precast wall panels can be erected faster and under harsher weather conditions. Precast is capable of handling larger structural loads and offers greater energy efficiency while reducing long-term maintenance costs. Fabcon wall panels also have the advantage of reducing air and moisture infiltration. Precast is less disruptive and requires less clean-up on site.

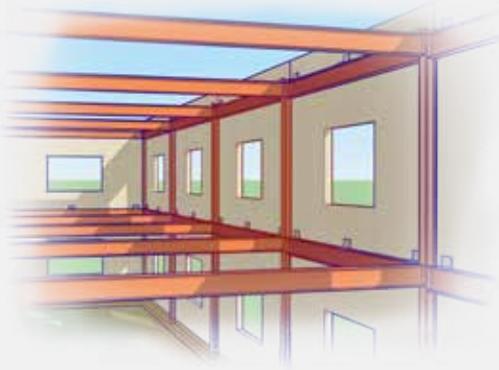
► **How does precast compare to site-cast?**

Precast and site-cast panels are both concrete products and therefore offer advantages over both CMU and metal; however, there are differences. Fabcon's precast is manufactured in a controlled environment with highly-skilled workers that specialize in the manufacture of precast products. Precast can be manufactured year-round with consistent, documented quality. Site-cast is subject to variable weather and restrictive pouring conditions. Site-cast manufacturing process limits access of other trades to the construction site and often impacts construction schedules. Pouring panels on the slab often causes critical damage to the quality of floor slabs. Slab repair and replacement impacts both costs and schedules.

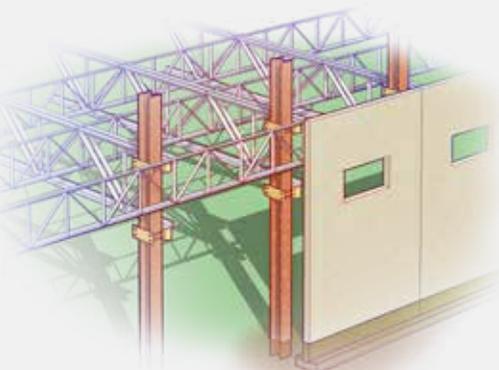
INSTALLATION TECHNIQUES



Freestanding Bracing is used when wall panels are erected prior to the structural steel system. A temporary brace is installed diagonally from the wall panel (either interior or exterior) and secured to a “deadman” anchor. This hold the panels in place until the steel arrives.



In a **Permanent Steel Structure**, panels are erected against the steel frame and attached using connections that allow for vertical deflection of the steel members. Non-load-bearing panels can still be used to resist in-plane shear from wind or seismic forces.



Temporary Shores are used when a structural steel system is installed before the wall panels. Steel columns are erected on-site after footings have been poured. The temporary shores support a ledger beam by the use of a friction connection along the bearing walls on which bar joists are set. Panels are welded to the ledger beam and/or starter joist.

AESTHETICS

► What types of aesthetic options are available?

Fabcon manufactures a wide variety of finish profiles for both exterior (topside) and interior (formsid) applications. Exposed aggregate (local or specialty); different levels of sandblasting; rib and rake patterns; imprints and running bonds; and even cast-in brick are just some of many options available to you. We are also equipped to engineer and manufacture custom finishes; consult your Sales Engineer for more information.

In addition to our multitude of finishes, Fabcon offers a broad range of color options. By adjusting four very basic components (cement, aggregate, tinted pigments and matrix), our panels afford you an impressive spectrum of color depth and nuance.

If you are looking for something specific, several of our panel finishes (such as steel form) provide the perfect substrate for paint. Talk to your Sales Engineer about the benefits and challenges of painted precast panels and to request a Finishes & Capabilities Guide.

► What is Fabcon’s finish around openings?

Fabcon will either cast-in or cut an opening depending on the application for the wall panel. Edges will be a minimum of 3" of solid concrete; in the case of a cast-in opening, the edge surface is rougher in nature and may require some finishing. In the case of sawn openings, edges will be a sawn, smooth surface. In our 12" VersaCore+Green insulated sandwich panels, we can cast-in wood blocking around the perimeter of openings as an option.

► What are the aesthetic limitations of precast?

Fabcon works hard to ensure that every panel we produce lives up to the expectations of our customers. Each panel is subjected to no less than four quality inspections: on the casting bed, once stripped, when loaded for transport and during erection.

Concrete, however, is a natural material and is therefore subject to natural imperfections. As is true of granite, limestone and wood, slight imperfections and inconsistencies are inevitable. Certain angles of sunlight, for example, can expose variations even as small as 1 mm—about the thickness of a dime. Contact your Sales Engineer for more information regarding visual variations.

► What natural imperfections can occur in precast?

One of Fabcon's key differentiators is the fact that we manufacture our panels in a climate-controlled environment. As with any natural material, slight imperfections are inevitable; however, some are simply unacceptable by Fabcon's standards and will be addressed accordingly. **Panel imperfection facts:**

Hairline fractures or fissures will not affect the performance or the finish of your panel.

Deep cracks are an uncommon occurrence and will be addressed to meet MNLA tolerances.

Large chips can be the result of either the manufacturing process or the installation.



▲ Certain angles of sunlight can expose panel variations even as small as 1 mm—about the thickness of a dime. This does not affect the functionality of your panel.

MODIFICATION

► Does Fabcon do Work-to-Existing?

Yes. The modular nature of a Fabcon Precast building makes adaptation and modification an alternative to a full-scale move or rebuild. Even if you're not exactly sure what you need or what your options are, Fabcon can help you determine your next steps and likely handle the project from start to finish. Our engineering and field crews are uniquely qualified to make safe, attractive modifications to your structure's envelope. Enhancements range from simple windows to loading docks, man doors and other floor plan modifications. Results may include increased functionality and efficiency, or even just basic aesthetics. Our technicians can even repair panels, matching color and texture with remarkable accuracy.

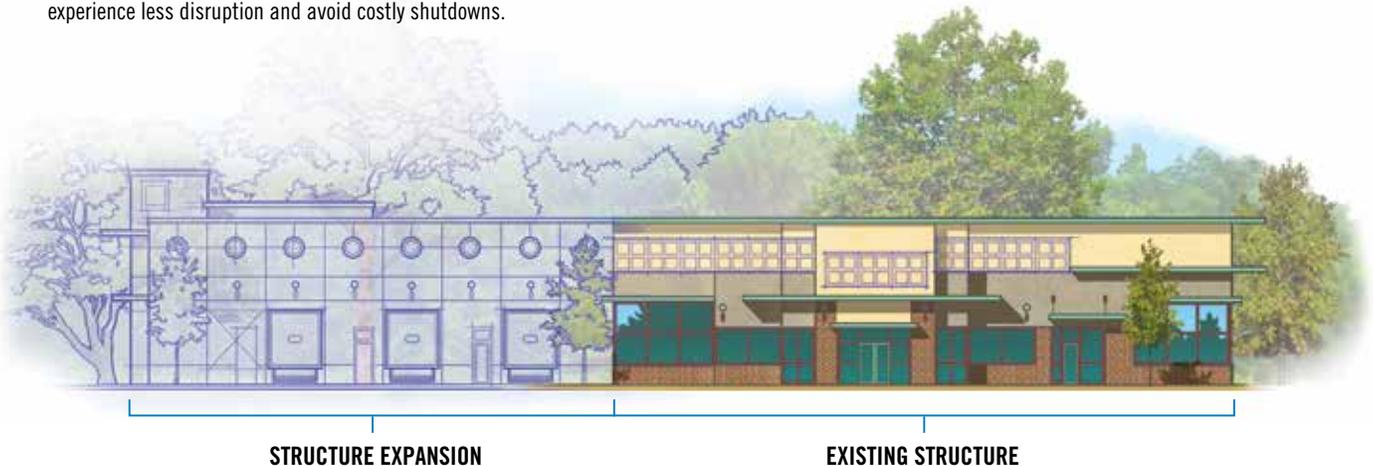
- ▼ Customize your facility to fit your needs. A "bump-out" is often an attractive alternative to relocating. In many cases, your business will experience less disruption and avoid costly shutdowns.

► Can openings be added to Fabcon panels in the future?

Yes. Fabcon requires notification prior to cutting new openings in existing buildings. If necessary, connections are added (either bolted or "mudded" in) to the adjacent panels to redistribute the load across the wall panels. The field crew will verify the location of drop-ins (insulation) and determine the most effective location for a connection plate. Single pedestrian door openings (3'4" wide) and window openings that are less than 4'8" wide can usually be sawn into the center of full width panels without additional connections to adjacent panels. This should be verified with Fabcon's engineering department.

► How do I start the process?

Call 800-727-4444 and we'll direct you to the person best suited to serve your needs, or visit our FabconPrecast.com.



OUR MISSION

Fabcon provides high-value precast concrete products and services in a seamless experience, taking risk out of constructing and maintaining buildings.

OUR VISION

Fabcon's vision is to be the only logical choice for precast concrete wall panels.

OUR VALUES

- Safety and quality above all.
- Creating a positive customer experience.
- Acting with integrity.
- Treating people with respect.
- Nurturing a spirit of innovation.
- Always finding a better way.



SALES OFFICES

- Minneapolis, Minnesota
- Columbus, Ohio
- Allentown, Pennsylvania
- Kansas City, Kansas
- Des Moines, Iowa

MANUFACTURING PLANTS

- Corporate & All Plants | 800-727-4444
- Savage, MN | 952-890-4444
- Grove City, OH | 614-875-8601
- Mahanoy City, PA | 610-530-4470
- Pleasanton, KS | 913-937-3021

FABCONPRECAST.COM | 800-727-4444

PRECAST WALL SYSTEMS - ENGINEERING - MANUFACTURING - INSTALLATION

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