

## MetalStudCrete Thin-Wall Concrete Panels As An Exterior Solution For Pre-Engineered Structures



Above and right illustrate the erection process of the MetalStudCrete panels. Below is a view of the completed project which utilized approximately 10,000 sq. ft. of MetalStudCrete panels. Each one was 15' x 24'.



Submitted By Earl Composite Systems

A new theme from building owners around the country seems to be, "We want a metal building that doesn't look like a metal building." Even planning commissions and local

### Feature Articles

Exterior Options For PEMBs

architectural review boards are requesting a masonry or concrete look for the exterior skin of pre-engineered structures. The trend towards a concrete look is escalating and architects and metal building contractors are taking notice of a time tested product called MetalStudCrete (MSC) that has been used as a cost effective solution for national clients such as Texaco, Chevron, Target Stores and the U.S. Postal Service. Earl Composite Systems, the exclusive licensee, has been successfully marketing this system to the pre-engineered building industry for the last several years.

#### Unique, Lightweight System

MetalStudCrete panels create a durable, lightweight concrete exterior

that attaches easily to a pre-engineered building frame. What makes this panel so unique is the simple patented MSC shear connector which structurally fastens together a thin wall of concrete on the exterior (typically 2" thick) to common steel studs on the interior, thereby creating a loadbearing shear wall with the strength to carry both floor and roof loads as well as clad the building shell. Due to their lighter weight (approximately 30 lbs. per sq. ft.), these panels can be easily handled using a small crane and crew and are less expensive to transport allowing for faster panel erection. Because the interior face of the panel comes with steel studs attached in place, the rough-ins for plumbing, electrical and other utilities have a ready made cavity in which to run as well as a stud bay for insulation if needed. Backer rod and caulking of vertical and horizontal joints provides for a watertight building that has the attributes of both concrete and steel.

#### Wall Panel Applications

This wall panel is economical for all types of commercial and industrial buildings regardless of the project size and location. Utilizing technical assistance (both on-site and online) from ECS on an as-needed basis, the metal building contractor and his concrete team can site cast these wall



panels using standard concrete tilt-up procedures of forming and pouring panels. Site casting is the most economical with the walls standing and braced off ready for the attachment to the pre-engineered structure. Once the columns and/or girts of the pre-engineered structure are easily attached to the steel stud interior of the MSC panels, the building is fully enclosed. If speed is critical, ECS can supply panels from its national network of precasters. Precasting allows the panels to be fabricated offsite while the site work is being done, and erected immediately after the pouring of the building slab. ECS also provides panel engineering, shop drawings, patented MSC connector components and ICBO approval to meet the requirements of all local building departments.

Whatever can be done with concrete finishes can be done with MSC wall panels including sandblasted finishes, exposed/retarded aggregate finishes, colored concrete as well as textured coatings. Reveals and architectural patterns such as block, brick, slate, stone or wood patterns can also be cast in for enhanced exterior aesthetics.

#### Case Study

In a recent case study, Associated Construction Concepts (ACC), a metal building contractor located in Longmont, CO, completed the cladding of a pre-engineered structure using MSC panels. The building consists of 10,000 sq. ft. of wall area

site cast in the MSC system with panels attached to the structural steel building frame supplied by Brytex Building Systems of Edmonton, Alberta, Canada. The MSC panels were first cast on the slab, then erected and braced with standard tilt-up braces. The pre-engineered columns, girts and roof structure were then attached to the metal stud framing and the braces removed. Production and installation of wall panels were accelerated by pouring high-strength 5,000 psi concrete one day and lifting and bracing the panels the next day. Thirty-one panels were poured and installed in three days, a new record for production of MSC panels. In one single day, 15 panels (15' wide x 24' high each) were poured and then installed the next day.

After running its first ad in the *Metal Construction News* and *Metal Architecture* magazines a year and a half ago, Earl Composite Systems was surprised to find by the numerous responses that MSC wall panels are perfectly suited for the needs of the pre-engineered building industry. The ability to easily ship the patented MSC connector strip to all parts of the world at a moment's notice makes the system practical to use wherever pre-engineered structures are utilized.

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