



Oldcastle Precast[®]

Standard Insulated Wall System



Summary:

The following document is a guide to using Oldcastle Precast's standard insulated wall panel system to compress project schedules, increase site safety and reduce project schedule dependence on availability of skilled field laborers.

For more information please contact us at 509-536-3300 or at opspokane@oldcastle.com for more information.

Overview

Availability of skilled trades, aggressive schedules and increasing safety requirements have major impacts in today's construction market. To support our client's needs in facing these market forces Oldcastle Precast has developed a standard insulated wall panel system to:

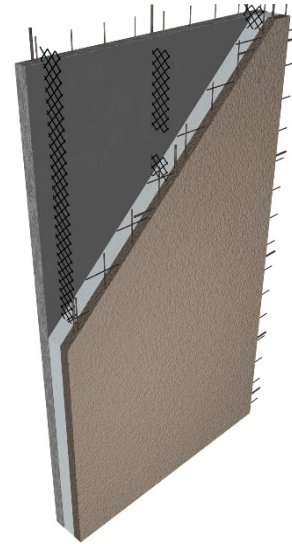
- Meet the continuous insulation (CI) requirements of ASHRAE 90.1
- Puts production into a certified facility that undergoes multiple third-party audits annually
- Allows client's to grow market share with their existing workforce

Design Details:

Standard Insulated CarbonCast Wall Panels:

CarbonCast[®] High Performance Insulated Wall Panels use state of the art carbon fiber grid to build light weight, thermally efficient and robust precast insulated building enclosures. The CarbonCast design is composed of two prestressed concrete wythes separated by continuous insulation and connected by carbon fiber "C-Grid" shear connectors.

C-Grid has many benefits but it's primary feature is that it provides a sandwich insulated panel with full structural composite action. This composite design can reduce wall weights up to 40% when compared to a typical non-composite sandwich panel. This savings in weight corresponds to reduced freight, crane and building structure costs.



Features

- Edge to edge insulation
- 23.5 R-Value
- Mold and mildew free design
- Passive fire resistance
- Year around availability

Benefits

- Reduced construction schedules
- Superior load bearing capabilities
- Reduced sound transmission
- Aesthetically versatile
- ASHRAE 90.1 Compliant

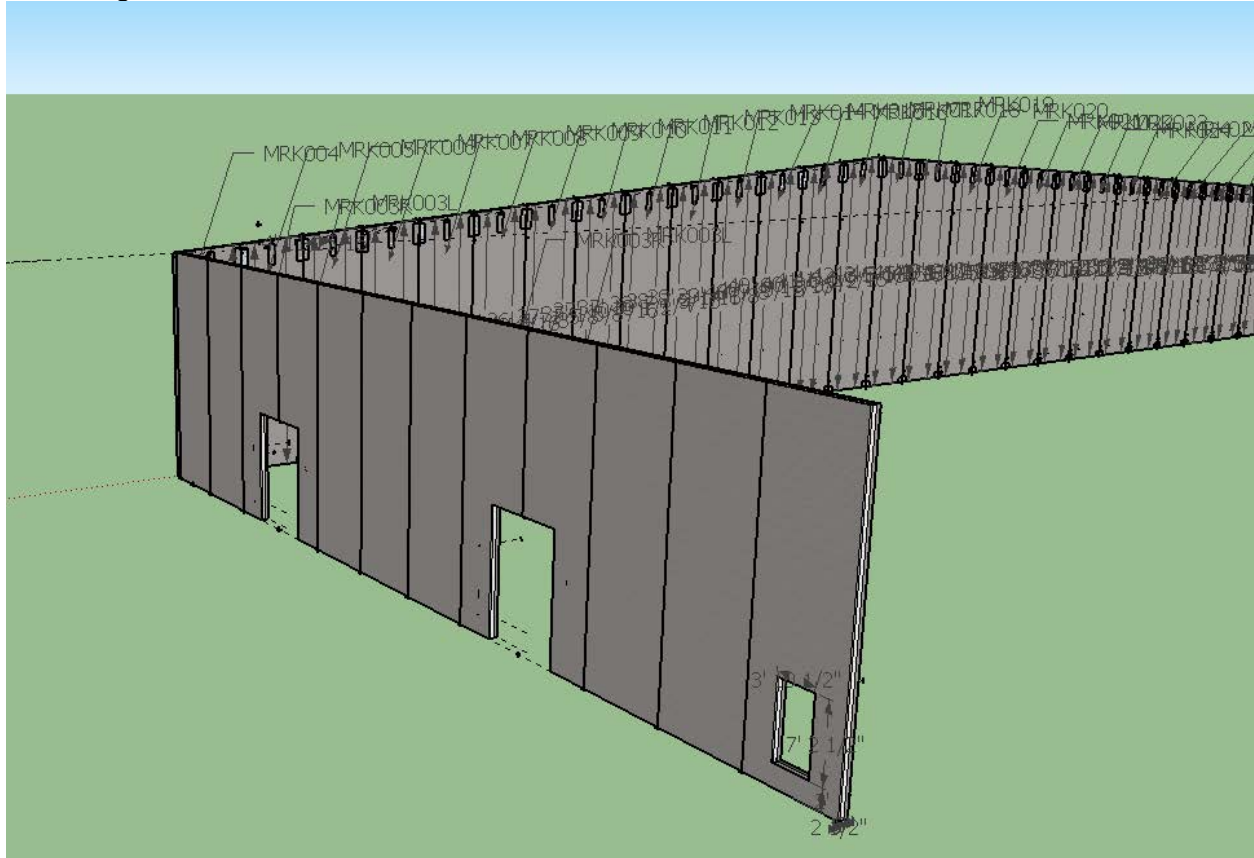
Panel Size:

A standard 32'x10'x1'-1/2" wall panel has been designed to minimize panel costs and maximize value to our clients. Following is a brief overview of how sizes were selected:

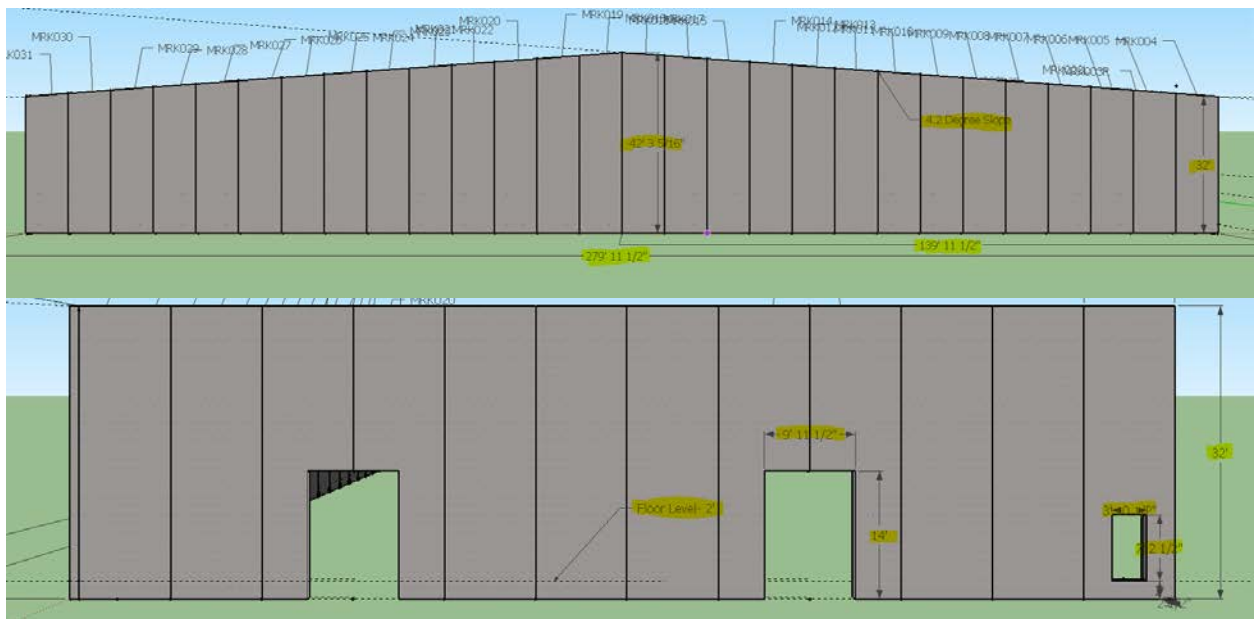
- Height: 32' allows for use in multiple industries while servicing a 11 bin stack height for the controlled atmosphere (CA) industry
- Width: 10' allows for multiple panels to be shipped on a dedicated truck, without pilot cars, to the jobsite reducing the impact of freight on project costs
- Depth: 1'-1/2" Allows sufficient concrete depth to maintain 5" insulation without "carving out" insulation at embed locations reducing the potential for cold spots on a building exteriors

Typical Layout:

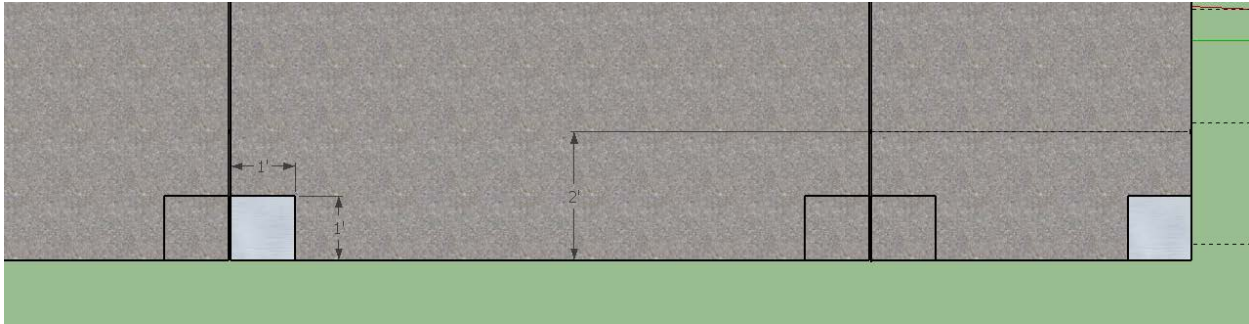
Following is a typical layout to demonstrate how the standard wall panels can be configured for a building shell:



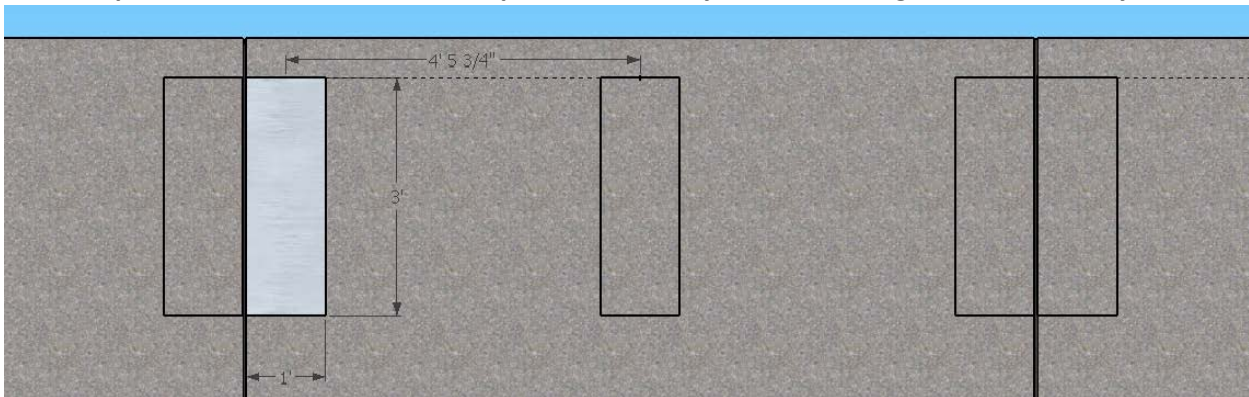
Elevation Views



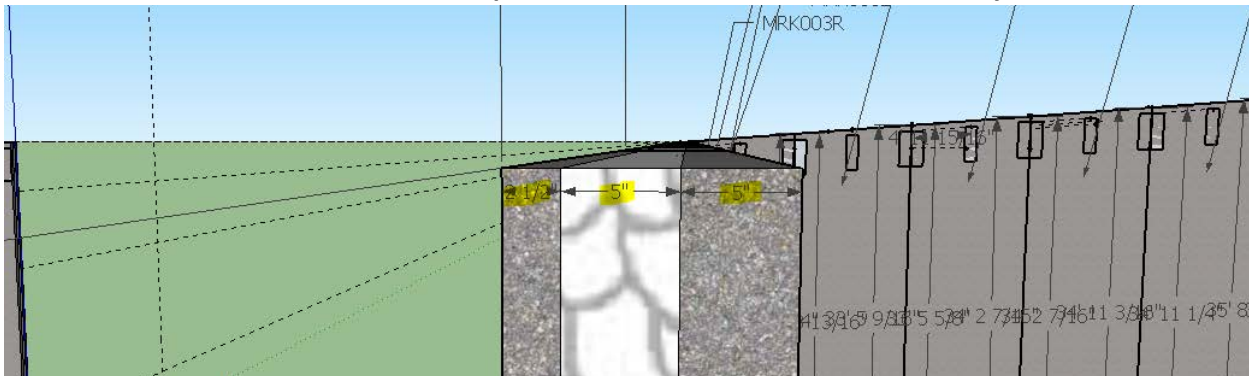
Bottom Connection



Top Connection- Hollow Core or Open Truss Roof System or Bearing On 5" Interior Wythe



Panel Section- 5" Expanded Insulation- R23 Thermal Efficiency



Roof Connections:

Oldcastle Precast has provided robust embed plates for roof connections. Multiple roofing systems can be utilized with the standard wall panel including:

- 12" Hollow core – Available from Oldcastle Precast
- Rebuilt Open Truss – [Provided by client](#)

Finish:

All base panels will be as-cast gray. Typical color variation in gray cement will cause noticeable color differences. These changes in color are visible and are more apparent on smooth-as-cast concrete. If these variations are not acceptable, a sandblast finish, and color, can be provided as an option.

Standard Wall Panel Design Summary

The panels Design Load Limits are based on IBC 2015 Codes:

- Wind (Ultimate):
 - Floor to Roof:
 - Pressure: 30.4 psf
 - Suction: 51.2 psf
 - Parapet (3'-6" Max Height):
 - Pressure: 136.9 psf
 - Suction: 93.9 psf
- Seismic (Design Category – D, Intermediate Precast Shearwall)
 - $F_p = 21.2\% \times \text{Wall Weight} = 20.5 \text{ psf}$
- Vertical Loads (using 2" eccentricity in from interior face of wall):
 - Max Dead Load: 3.25 klf along width of wall
 - Max Roof Snow/Live Load: 3.30 klf along width of wall
- Max Out of Plane Reactions at Connections (Ultimate):
 - Top of Panel: 12.10 kips (shared between 3 connections)
 - Bottom of Panel: 10.7 kips (shared between 2 connections)
- Max In-Plane Reaction at Top of Panel: 20.0 kips (shared between 3 connections)

CarbonCast Standard Wall Panel Design Details			
Item	Size	Part #	Weight (lbs)
Insulated Wall Panel – No Penetrations	32'x10'	3210-IWS	30,800
Insulated Wall Panel – Man Door	32'x10'	3210-IWM	28,095
Insulated Wall Panel – Loading Door (Left)	32'x10'	3210-IWL	24,075
Insulated Wall Panel – Loading Door (Right)	32'x10'	3210-IWR	24,075
Insulated Wall Panel – End Wall (Taper)	32-40'x10'	XX10-IWT	30,800+
Solid Wall Panels – Internal (Taper)	32-40x10'	XX10-SWT	30,800+
Solid Wall Panels – Centerline	XXx10'	XX10-SWC	30,800+
Insulation			
Insulation:	5" – EPS 2.0 PCF		
Panel Typical Insulation R-Value:	23.05		
Finish			
Finish Exterior:	As-Cast Gray – Form Finish		
Finish Interior	Class 3 – Light Trowel		
Panel Edge	½" Chamfer		
Optional Items – Available Upon Request			
12" Hollow Core Roof:	As requested		
Lateral Load Calcs:	Requires soils report and job location		
Finish:	Sandblast and Color (BASF MasterColor)		
Ship loose:	Footing plates, Weld ties, Ledger beams		
Installation:	As Required – Setting, Caulking, Grout		
Terms			
Upon completion of production:	Monthly billing (Net 30)		
Product Shipment:	As required -		

Drawings and Schedules:

Wall panel details are provided in PDF format. AutoCAD drawings are available upon request.

The following submittals are included in the standard wall panel system:

- Panel Design
- Connection Details

Production of client's panels are based on plant loading at the time of award. Oldcastle Precast highly recommends that panels are release for production as early as possible to ensure immediate availability upon readiness of jobsite foundations. Extended payment terms are available for qualified clients.

Freight (Optional):

Freight is not included in our list pricing, but is available upon request. The following items will be required to develop a firm price freight quote:

- Parts list
- Project location
- Installation schedule including panel delivery requirements (i.e. panels/per day)

Installation (Optional):

Oldcastle Precast can provide an optional price to include the labor, equipment and tools for erecting the panels selected by our clients. Installation will be in accordance with the following applicable/pertinent codes:

- PCI MNL 135
- OSHA/WISHA Safety Guidelines

The installation will include:

- All Hoisting necessary for setting precast
- Weld all connections where required for complete precast installation
- Supply Korolath shims for installation
- Site Specific Installation and Site Specific Safety and Fall Protection Plan
- Full Coordination with GC/Panel Manufacturer to speed manufacturing and installation

Installation Overview – Scope Dependent				
	Cranes	Man Lift	Scissor	Forklift
Equipment (Up to the following)				
Installation Duration				
Hours/Day				
Mobilization				
Sealant	Dow CCS or equal			
Grout Package	Included			
Panel Delivery	Included			
Shuttle Truck and Driver	TBD			

1. All bearing surfaces/attachment points must be in place or on schedule to facilitate the safe, timely, and continuous erection of site work.
2. Schedule is to be mutually agreed upon. Time loss due to weather or job delays will be added to the installation schedule.
3. Client shall provide adequate space for truck access and personal work platforms
4. Client shall provide firm, reasonably level, drained, and adequate space at the site for the operation of equipment (crane, man lifts, etc.)
5. Client shall furnish (2) complete sets of contract documents and (2) complete sets of “E” drawings for the precast “approved for construction”.
6. All project correspondence must be transmitted to the designated project manager for distribution to our field personnel.
7. Any omissions, additions, and/or clarifications to the contract documents will require a signed Extra Work Order or Work Authorization Form before execution of the work and will become a change order to the contract amount.

Exclusions

The following items ***are not included*** in this proposal

1. Excavation, backfill, concrete slabs on grade, steel stairs and railings,
2. Man door frames, doors & door hardware
3. Roof insulation, roof membrane & ballast, wood perimeter roof edge & flashing.
4. Plumbing, air system, electrical or other items not specifically listed above.

Clarifications

The following items have been assumed to develop our bid or require clarification, as noted, for the development of a firm price proposal.

1. Budgetary pricing is based on the referenced drawing set. The following items may impact pricing
 - a. Additional reinforcing due to seismic and/or wind loads
 - b. Additional door, window or blank openings
 - c. Variance in architectural requirements
2. Panel Details
 - a. No galvanization of embeds or reinforcing
 - b. Expansion joint, if required, are not included
3. Connections:
 - a. Footing: 2/panel
 - i. Footing plates are optional and can be included as ship loose for CIP installation by others
 - b. Panel/Panel: 0/panel
 - c. Panel/Steel: 2/panel embed plates
4. Installation details:
 - a. Assumed clear access on all sides of building
 - b. Durations based on safe wind operating conditions
 - c. Staging areas, if required, shall be defined during bidding of freight
 - d. Assumed grouted base joint
 - e. Caulking to dissimilar materials not included (i.e. doors, windows, louvers, etc.)

Who We Are

Oldcastle Precast is passionate about providing practical precast solutions to engineers, owners, and contractors everywhere. It is not just about building precast products; it is about providing cost-effective and comprehensive solutions that work.

Oldcastle's precast structures are durable, fire-resistant, and energy efficient with sound attenuation properties that provide comfortable spaces for living and working.

Oldcastle Precast Spokane's (OPS) has been producing precast prestressed concrete in the Pacific Northwest since 1958 and specializes in the design and fabrication of:

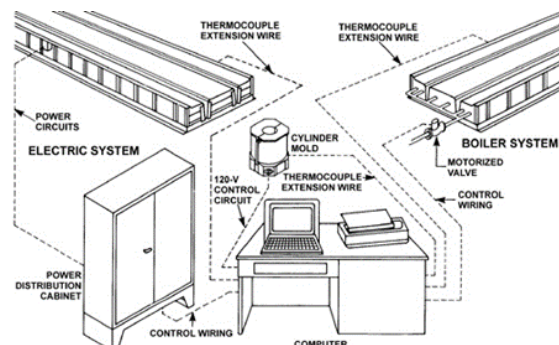
- Building systems
 - Hollow core plank
 - Structural members (beams, columns, spandrel panels, double tees)
 - Solid wall panels
 - CarbonCast Insulated Wall panels
- Bridge systems
- Utility vaults



OPS has over 100 employees that specialize in the design and fabrication of precast concrete systems.

This experience coupled with our dedication to quality and schedule are paramount to our success. To maintain our rigorous quality requirements, we own, operate and maintain the following on-site processes:

- On-site batch plant
- On-site quality control
 - Sure cure bed temperature monitoring
 - Cylinder mold match
- 20 casting beds
 - Rolling covers
 - Temperature controlled providing:
 - Enhanced curing
 - Daily cycling
 - Year around production
- 12 acres of laydown and storage



Sure Cure Bed Monitoring System

Precast /Prestressed Concrete Institute (PCI) Certified

OPS's plant is a PCI certified facility for architectural, bridge and commercial products. This certification ensures that OPS has developed and documented an in-depth, in-house quality system based on time-tested, national industry standards. OPS's PCI Certification, requires that we demonstrate appropriate experience and training in:

- Manufacturing precast concrete
- Quality systems and procedures are in place
- Commitment to quality throughout our organization.



[Click Here for
More Info](#)

OPS maintains a Quality Systems Manual (QSM) which is available upon request and defines in detail how our operations work and is reviewed and approved by PCI.

To maintain PCI certification, OPS plant undergoes two thorough, unannounced audits. They are conducted by third-party engineers who audit the plant per requirements specifically targeted to the products being manufactured in Spokane. The Inspectors also randomly inspect products to their project specifications to ensure that products meet their design intent and criteria.

A1 – Architectural Precast Concrete Products (MNL-117)

Architectural precast concrete products, through their finish, shape, color, or texture, contribute to a structure's architectural expression. These products may be custom designed or feature standard shapes. They may be manufactured with conventional mild-steel reinforcement, or they may be pretensioned or post-tensioned. These products typically have more stringent requirements for dimensional tolerances, finish variations, and color consistency than a structural category "C".

Includes exterior cladding, loadbearing and non-load-bearing wall panels, spandrels, beams, columns, and all products covered in AT.

B4 – Prestressed Deflected-Strand Bridge Beams (Superstructure) (MNL-116)

Bridge components consist of precast concrete or precast, prestressed concrete products and are usually produced with gray cement and local aggregates.

Precast concrete bridge members are reinforced with deflected pretensioning or post-tensioning strand. Included are box beams, I-girders, bulb-tee beams, stemmed members, solid slabs, and all products in B1, B2, and B3 categories.

C4 – Prestressed Deflected-Strand Structural Members (MNL-116)

This group includes structural and nonstructural precast or precast, prestressed concrete elements for buildings and other structures. These products have finish requirements referred to in our bid documents but are not intended to have an architectural finish and may be suitable for painting if specified.

Precast concrete structural members may be made with deflected pretensioning or post-tensioning strands for roofs floors, beams, walls, and all products in C1, C2, and C3 categories.