

# Guide Specifications



## Insulated Precast Concrete Wall Panels (Section 03412)

### PART 1 – GENERAL

#### 1.01 DESCRIPTION

##### A. RELATED WORK SPECIFIED ELSEWHERE:

*Edit for project conditions. Revise section numbers if they differ from those used in the project manual.*

1. Shop drawings, product data, and samples. Section 01340.
2. Cast-in-place concrete. Section 03300.
3. Cast-in-place, post-tensioned concrete. Section 03365.
4. Precast concrete Hollowcore slabs. Section 03412.
5. Architectural precast concrete. Section 03450.
6. Fabricated steel not cast into concrete. Section 05500.
7. Waterproofing. Section 071 \_\_\_\_.
8. Dampproofing. Section 071 \_\_\_\_.
9. Sheet metal flashing. Section 07620.
10. Sealants and caulking not specified herein. Section 07920.
11. Painting. Section 09900.

##### B. WORK FURNISHED BUT INSTALLED BY OTHERS:

1. Steel connection plates and anchoring devices for embedding into cast-in-place concrete. (Specify elsewhere, if appropriate, that foundation plates must be installed within the following tolerances: alignment, 3/8 inch; levelness, 1/4 inch.)

##### C. WORK INSTALLED BUT FURNISHED BY OTHERS:

1. Reglets to receive sheet metal flashing. Section 07620.
2. Reglets to receive metal windows. Section 08500.
3. Anchoring devices to receive equipment. Division 11.
4. Anchoring devices to receive mechanical and electrical work. Divisions 15 and 16, respectively.

#### 1.02 QUALITY ASSURANCE

##### A. APPROVED MANUFACTURER:

1. Morse Bros, Incorporated  
Prestressed Concrete Group  
P.O. Box 181, Harrisburg, OR 97446  
(541) 995-6327

##### B. REFERENCED STANDARDS:

1. Unless otherwise specified herein, comply with requirements specified in MNL-116, Manual for Quality Control for Plants and Production of Precast Prestressed Concrete Products, published by the Prestressed Concrete Institute at 209 W. Jackson Blvd., Ste 500, Chicago, IL 60606, (312) 786-0300



**MBI**  
MORSE BROS INC



### **1.03 SUBMITTALS**

#### **A. DESIGN DATA:**

1. Submit design calculations prepared by an engineer registered in the state where the project is located, in accordance with Section 01340.

#### **B. SHOP DRAWINGS:**

1. Submit \_\_\_\_\_ copies of shop drawings including the following information, in accordance with Section 01340:
  - a. elevation view, plan view, and location of each panel; include panel identity numbers
  - b. dimensions and finishes
  - c. sections and details showing connections, cast-in items, and their relations to the structure
  - d. descriptions of all loose, cast-in, and field hardware
  - e. field installed anchor locations
  - f. erection sequences and handling requirements

### **1.04 PRODUCT STORAGE AND HANDLING**

#### **A. GENERAL:**

1. Protect panels against damage, distortion, and discoloration.

#### **B. STORAGE:**

1. Store panels off the ground.
2. Place stored panels so that identification marks are discernible.
3. Store panels on edge.
4. Storage areas shall be stable and provide with foundations that will prevent differential settlement or twisting of panels.

#### **C. HANDLING:**

1. Handle only with the lifting devices provided.

### **1.05 FIELD MEASUREMENTS**

#### **A. PRIOR TO FABRICATION:**

1. The general contractor shall verify and submit field measurements to the fabricator prior to fabrication.

#### **B. MEASUREMENT DISCREPANCIES:**

1. If field measurements differ slightly from drawing dimensions, modify the work as required for an accurate fit. If measurements differ substantially, notify the architect / engineer prior to fabrication.

## Insulated Precast Concrete Wall Panels (Section 03412)

### PART 2 – PRODUCTS

#### 2.01 MATERIALS

Delete or add materials to the following list as required for the particular job.

##### A. PORTLAND CEMENT:

1. ASTM C150 – Type I or III.

##### B. AGGREGATES:

1. ASTM C33.

##### C. WATER:

1. Potable and free from amounts of foreign materials harmful to concrete and embedded steel.

##### D. PRESTRESSING STRAND:

1. Uncoated, seven-wire stress relieved: ASTM A416, Grade 270K.

##### E. THERMAL INSULATION:

1. Material: rigid polystyrene.
2. Density; 1½ PCF.
3. Thickness: 2 inches. (3 inches may be used for increased R-value. This will increase overall panel thickness by 1 inch.)

##### F. GROUT:

1. Cement grout: Portland cement, sand, and water sufficient for placement and hydration.
2. Minimum 28-day compressive strength: 3500 psi.

##### G. JOINT SEALANT:

1. Designer's choice. Specify brand name.

#### 2.02 PANEL MANUFACTURE

##### A. STANDARDS:

1. Comply with applicable provisions of the referenced standards (see 1.02.A above).
2. Design and fabricate panels to withstand stresses induced by applied loads, wind loads, air temperature changes, and handling.
3. Design and fabricate panels to permit structural frame movement caused by air temperature changes and applied loads.

4. Prestress both panel faces to minimize panel cracking and ensure panel straightness.
5. Cast panels with openings shown on drawings.
6. Recess lifting hooks in panel edges.
7. Mark each panel edge with the appropriate identity number in the locations shown on the shop drawings.

##### B. MANUFACTURING TOLERANCES:

1. Manufacture panels within the following dimensional tolerances:
  - a. panel width: ±1/8 inch
  - b. panel length: ±1/2 inch
  - c. panel thickness: ±1/4 inch
  - d. opening locations: ±1 inch from centerline location on drawing
  - e. insert location: ±1 inch from centerline location on drawings
  - f. panel and opening squareness: ¼ inch per 10 feet maximum difference between two opposite diagonal measurements
  - g. maximum bowing or warpage: 1/360 of span
  - h. maximum warpage of one corner compared to other three: 1/8 inch per 10 feet

##### C. SHOP PAINTING OF EXPOSED METAL WORK:

1. Cover with 1.0 mil dry film thickness of shop primer.



## **PART 3 – EXECUTION**

### **3.01 PREPARATION**

#### **A. PREPARATORY WORK:**

1. Place anchor bolts, plates, and dowels accurately to receive panels.

### **3.02 INSTALLATION**

#### **A. PANEL ERECTION:**

1. Erect panels within specified erection tolerances and without cumulative dimensional error.
2. Stabilize panels securely during erection.
3. Anchor panels securely and permanently as indicated on approved shop drawings.
4. Remove any temporary bracework upon completion.

#### **B. MAXIMUM ERECTION TOLERANCES:**

1. Erect panels within the following dimensional tolerances:
  - a. joint widths:  $\pm\frac{1}{4}$  inch
  - b. adjacent panel alignment:  $\pm\frac{1}{4}$  inch

#### **C. WELDING:**

1. Comply with AWS D1.1.

### **3.03 GROUTING**

#### **A. SILL JOINTS:**

1. Saturate concrete contact surfaces prior to grouting. Remove excess water.
2. Compact grout thoroughly to eliminate air pockets. Do not vibrate.
3. Cure with moisture for at least 24 hours.
4. Do not retemper grout once set.

### **3.04 CAULKING**

#### **A. PROTECTION:**

1. Mask surfaces adjacent to joints as required for complete protection.

#### **B. SEALANT INSTALLATION:**

1. Mix and apply in accordance with the manufacturer's directions.

#### **C. CLEANING:**

1. Remove material as work progresses and leave surfaces neat, smooth, and clean.

### **3.05 PATCHING**

#### **A. CONCRETE PATCHING:**

1. Concrete patching will be acceptable providing structural adequacy and appearance are not impaired.

### **3.06 PAINTING**

*Due to variations in materials and manufacturing, some variation in panel color must be anticipated. If uniformity of panel color is essential, the application of a concrete stain to the complete structure should be considered.*