

## **SECTION 03450**

### **ARCHITECTURAL PRECAST CONCRETE**

#### **SCOPE:**

The work performed under this section of the specifications shall include all labor, material, equipment, services and supervision required for the manufacture of the architectural precast concrete units shown on the drawings.

Related work specified elsewhere:

1. All anchors, inserts and other hardware or attachments cast into poured-in-place concrete or welded to supporting structural framework
2. The provision and/or application of any insulation or vapor barrier material
3. Inserts, embedment, sleeves, holes or other attachments required by other trades.
4. Window frames, sash or glazing, louvers, grilles or other items and including the installation or weatherproofing of these items.
5. Joint fillers, sealants and caulking

#### **REFERENCES**

##### **A. American Concrete Institute (ACI)**

1. ACI318 - Building Code Requirements for Reinforced Concrete

##### **B. American Society for Testing and Materials (ASTM)**

1. ASTM A615 - Spec for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
2. ASTM A767/A767M - Spec for Zinc Coating (Galvanized) Steel Bars for Concrete Reinforcement.
3. ASTM A780 - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
4. ASTM C33 - Spec for Concrete Aggregates.
5. ASTM C150 – Spec for Portland Cement.
6. ASTM C26 – Spec for Air-Entraining Admixtures for Concrete.

**C. Precast Concrete Institute (PCI)**

1. PCI Design Handbook for Precast and Pre-stressed Concrete.
2. PCI MNL-117 – Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products.

**QUALITY ASSURANCE:**

**Acceptable manufacturer:**

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1. **Production of architectural precast concrete units shall comply with the provisions of Precast Concrete Institute (PCI) MNL 117, “Manual for Quality Control for Production of Architectural Precast Concrete Products”**
2. **A minimum of 5 years production experience in architectural precast concrete work of quality and scope for a specified project is required.**
3. **Manufacture shall be by a company specializing in providing architectural concrete products and services**
4. **Manufacture of architectural precast concrete units shall meet the allowable tolerances as set forth in PCI MNL 117.**
5. **A competent Erection Contractor having experience in the erection of this type of material shall perform installation of architectural precast concrete units.**

**SUBMITTALS:**

- A. **The Manufacture shall submit for approval, prior to production of precast units, one sample representative of the actual elements as to quality and type of finish. The sample shall be at least 12” x 12” x 1” in size.**
- B. **Upon request of the Architect, test cylinders and product data shall be available for review.**
- C. **The Manufacturer shall submit shop drawings for approval prior to undertaking any work. These drawings shall show all finishes, dimensions, connection, and related details.**

## **PRODUCTS**

### **MATERIALS:**

- A. All concrete and steel shall be outlined in ACI 318 AISC Manual of Steel Construction and confirm to the latest ASTM standards

### **STRUCTURAL DESIGN:**

- A. Concrete shall confirm to the requirements for 28-day minimum compressive strength as shown on the structural drawings or in approved design calculations.

### **FABRICATION**

- A. Architectural precast concrete units shall be fabricated in accordance with the provisions of PCI MNL 117.
- B. Finishes shall match in texture and color the approved sample and actual finishing techniques shall be developed by the Manufacturer so as to meet the architectural specifications. Due to the nature of the product, slight variations in color will occur.
- C. The dimensions of precast concrete units shall be as shown on the plans. Products shall be fabricated and furnished to the following tolerances:

#### **\*Bowling**

1. Bowling, Length of bow or  $\frac{3}{4}$ " maximum.  
360
2. Differential bowling, two adjacent members,  
 $\frac{1}{4}$ "

#### **\*Warpage:**

1. Maximum warpage of one corner from the nearest corner,  $\frac{1}{16}$ "/ft. to nearest corner

**Thickness:**  $-\frac{1}{8}$ ",  $+\frac{1}{4}$ "

**Squareness:**  $\frac{1}{8}$ " per 6ft. or  $\frac{1}{4}$ " max, whichever is greater

**Dimensions:** 10" or under, + or -  $\frac{1}{8}$ "

**Weld plates, anchors and inserts:** + or - 1" of centerline

**Block outs and reinforcements:** Within  $\frac{1}{2}$ " or the indicated position to meet structural requirements.

**Length and width of block outs:** + or -  $\frac{1}{4}$ "

### **DAMAGE AND REPAIR:**

- A. In house patching may be required by the Manufacturer prior to shipping. These repairs will be deemed acceptable if the structural integrity and/or aesthetic appearance is not impaired, subject to the approval of the Architect.

### **STORAGE:**

- A. Products shall be stored and handled in such a manner that prevents damage and protects the product. Aristone assumes no responsibility for the storing of our product on job site.

### **EXECUTION**

#### **Delivery, handling and storage:**

- A. Care shall be used in the delivery and handling of architectural precast concrete units and in their storage at the jobsite. Members shall be handled in such a manner so as to prevent physical damage.

### **ERECTION:**

- A. A Competent Erection Contractor having experience in the erection of this type of material shall perform installation of architectural precast concrete units. If required, members shall be lifted by means of suitable lifting devices at points provided by the Manufacturer.
- B. The erector shall execute a final clean down to remove dirt and stains that are direct result of the erection process.
- C. Any damage that occurs during the erection will be the responsibility of the erector. These repairs will be deemed acceptable if the structural adequacy and/or aesthetic appearance is not impaired, subject to the approval of the architect.
- D. After completion, any further soiling or damage to architectural precast concrete units is the responsibility of the General Contractor.

### **END OF SECTION**