

PCI SAMPLE SPECIFICATIONS

SECTION 03400 - PRECAST & PRESSED CONCRETE PLANK

PART 1 • GENERAL

1.01 WORK INCLUDED

- A. Furnishing precast concrete hollow core planks.
- B. Erecting precast concrete hollow core planks.
- C. Furnishing and installing connection plates, brackets and associated embedded items.
- D. Grouting plank keys.

1.02 REFERENCE STANDARDS

- A. ACI 318 - Building Code Requirements for Reinforced Concrete.
- B. ASTM A36 - Structural Steel.
- C. AWS D1.1 - Structural Welding Code.
- D. PCI Design Handbook - Precast and Prestressed Concrete.
- E. PCI MNL - 116 - Manual for Quality Control for Plants and Production of Precast Prestressed Concrete Products.

1.03 SUBMITTALS

- A. Submit shop drawings and erection drawings in accordance with Section 01340. Indicate plank locations, connection details, dimensions, and relationship to adjacent materials, and any field cutouts required for piping, equipment, ductwork, etc.
- B. Submit plank design computations indicating stresses and deflections at various stages in accordance with ACI 318. Structural computations indicating handling stresses due to hoisting shall be included. All computations shall be stamped by a professional structural engineer registered in the state where the project is located.

1.04 QUALITY ASSURANCE

- A. Design Criteria:
 - 1. Conform to requirements of PCI Design Handbook.
 - 2. Design members to withstand their own weight, erection forces, and all live and dead loads.
 - 3. Design component connections to provide adjustment to accommodate misalignment of structure.
 - 4. Concrete: Minimum compressive strength of 5000 psi at 28 days.
 - 5. Roof members maximum deflection per ACI 318.
 - 6. Shop drawings shall be stamped by a professional structural engineer registered in the same state as the project.



- B. Fabricator: Concrete plank manufacturer shall be PCI plant certified for minimum of Group C2 precast/prestressed concrete products.
- C. Fabrication: PCI MNL-116
- D. Erector: Acceptable to precast fabricator.
- E. Use only qualified workers trained to handle and erect structural concrete members.

1.05 SOURCE QUALITY CONTROL

- A. Test concrete in accordance with ACI 318.
- B. Retain plant records and quality control program used during production of precast members. Make records and test results available to ENGINEER upon request.
- C. Mark units with date of production and final position in structure.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Precast concrete hollow core planks shall not be shipped until the concrete has attained a compressive strength of 3000 psi or until 5 days after fabrication and/or repair, whichever time is longer.
- B. Deliver products to site in accordance with section 01610.
- C. Protect edges of members to prevent chipping, or spalling.
- D. Conform to manufacturer's instructions for delivery and handling.
- E. Lift and support planks from support points using lifting or handling devices capable of supporting plank in positions anticipated when storing and during loading, transportation, unloading and erection.

PART 2 • PRODUCTS

2.01 MATERIALS

- A. Materials for Concrete: ACI 318
- B. Connecting and Supporting Devices: Plates, angles, items cast in concrete, inserts, bolts, and accessories, conforming to ASTM A36 steel, prime painted. Do not paint surfaces requiring field welding, field prime after welding.
- C. Grout: One (1) part Portland cement to two (2) parts sand.

2.02 FABRICATION

- A. Verify reinforcing steel, anchors, inserts, plates, angles, and other cast-in items are embedded and located as indicated on Shop Drawings.
- B. Mark each precast unit to indicate final position in structure corresponding to code on erection drawings.
- C. Finish: Exposed face shall have steel trowel finish, free of defects and suitable for painting.



PART 3 • EXECUTION

3.01 ERECTION

- A. Provide for erection procedure, temporary bracing, and induced loads during erection. Maintain temporary bracing in place until final support is provided.
- B. Erect members without damage to shape or dimension.
- C. Align and maintain uniform horizontal and vertical joints as erection progresses.
- D. Adjust differential camber between planks to tolerance before final attachment.
- E. Perform welding in accordance with AWS D1.1.

3.02 TOLERANCES

- A. Maximum Variation From Plane or Location: 1/4 inch in 10 feet and 3/8 inch in 100 feet, noncumulative.
- B. Maximum Out of Square: 1/8 inch in 10 feet.
- C. Maximum Offset From True Alignment Between Two Adjacent Members: 1/4 inch.
- D. Maximum Variation From Dimensions Indicated on Shop Drawings: Plus or minus 1/8 inch.
- E. Maximum Misalignment of Anchors, Inserts, Openings: 1/8 inch.

3.03 GROUTING

- A. Grouting: Fill grout key between plank joints. Remove any grout that seeps through joint before it hardens. Grout at ends and along sides of planks as shown on the Drawings.

