

## GUIDE SPECIFICATION

**Specifier Notes: This guide specification is written in Construction Specifications Institute (CSI) 3-Part Format in accordance with the SI Construction Specifications Practice Guide, including Master Format, Section Format, and Page Format.**

**This section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the project and governing building code. Coordinate this section with Division 01, other specification sections, and the drawings. Delete all Specifier Notes after editing this section.**

**Section numbers and titles are based on Master Format 2014 Update.**

### SECTION 03 11 13 MODULAR STAY-IN-PLACE METAL FORM SYSTEMS

#### PART 1 GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of contract, including General and Supplementary Conditions and Division 01 specification sections apply to the work of this section.
- B. The Work under this section shall be subject to all applicable provisions of the state and local building and safety codes and other codes and standards referenced in this specification.
- C. In case of conflict among documents, including architectural and structural drawings and specifications, notify the Architect prior to submitting proposal. In case of conflict between the structural drawings and specifications, the strictest interpretation shall govern. All references shall be latest edition.

##### 1.2 WORK INCLUDED

- A. Extent of work is shown on the Drawings, including schedules, notes and details which show size and location of formed concrete walls.
- B. Furnish RediCor modular stay-in-place metal form systems for cast-in-place concrete construction. Modular permanent systems include, but are not limited to, the following:
  - 1. Metal wall forms, factory assembled into modules for shipment to the project site.
  - 2. Designs, shop drawings and assembly instructions as required for proper performance and field assembly of the form systems in accordance with performance requirements established by this specification and the project drawings.
  - 3. Concrete reinforcing complete with required supports, spacers and related accessories.
  - 4. Anchors, plates, and inserts required for attachment and/or support of structural and/or architectural precast concrete, structural steel or other materials and furnished under other specifications.
  - 5. Anchors, plates, and inserts required for attachment of the metal form systems to the foundation.
  - 6. Connection materials and fasteners for joining of adjacent form modules during construction.
  - 7. When modular permanent metal form systems include pre-fabricated metal stairs, furnish stairs, landings and railings of style selected by Architect from among manufacturer's standard styles. To the maximum extent practical, stair and landings shall be factory-installed within the modules prior to shipment. Stair railings shall be shipped loose for field installation.

##### 1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. Division 03 – Concrete
- B. Division 05 - Structural Steel

## **1.4 REFERENCE STANDARDS**

- A. ACI 347R - Guide to Formwork for Concrete

## **1.5 QUALITY CONTROL**

- A. Design formwork under direct supervision of a Professional Structural Engineer experienced in design of concrete formwork and licensed in the State in which the Project is located.
  - 1. The manufacturer is responsible for in-house quality control, including workmanship and materials.
  - 2. The manufacturer shall maintain records of in-house inspections and documentation of materials incorporated into the form systems.

## **1.6 SUBMITTALS**

- A. Submit shop drawings and special instructions in accordance with the following:
  - 1. Submit (3) copies of each shop drawing. Reproducible copies of contract documents shall not be used as shop drawings. Shop drawings shall be reviewed by Contractor prior to submission. Drawings shall bear Contractor's approval stamp accepting responsibility for coordination of dimensions shown in the contract documents, quantities and coordination with other trades. Drawings not bearing contractors stamp may be rejected at the discretion of the Architect or Structural Engineer. One copy will be returned with Architect/Engineer comments. Allow 14 calendar days in the Structural Engineers office for review of shop drawings.
- B. Shop drawings shall include the following:
  - 1. Overall dimensions of each form module.
  - 2. Dimensional locations of all module splice locations.
  - 3. Dimensional location and sizes of all openings.
  - 4. Detail drawings of all concrete reinforcement bars and their placement.
  - 5. When stairs are provided, detail drawings of all stairs and railings.
  - 6. Detail drawings of all foundation embeds, and placement drawings for same.
  - 7. Identification marks as required for field assembly.
  - 8. Limitations on the height of concrete pours

## **PART 2 PERFORMANCE REQUIREMENTS**

### **2.1 DIMENSIONS**

- A. Form modules shall be manufactured to the overall dimensions shown on the drawings. Openings for doors, windows, and other penetrations shall be provided according to the sizes and locations shown on the drawings. The manufacturer shall designate module joint locations to facilitate manufacture, shipping and installation operations.
- B. When stairs are provided, stair layout dimensions, including rise, run, and landing sizes shall conform to the dimensions shown on the project drawings.

### **2.2 DESIGN CRITERIA**

- A. Forms shall be designed to safely withstand a maximum form pressure of 900 psf equivalent fluid pressure caused by the placement of concrete.
- B. Individual form modules shall be designed to be self-supporting during loading, shipping and erection. Form Modules shall be designed to be self-supporting when stacked vertically 3 modules high prior to and during placement of concrete. Additionally, forms shall be capable of safely supporting the following minimum construction forces, acting alone or in combination, prior to and during placement of concrete:
  - 1. A wind load of 25 psf applied normal to any exterior face.
  - 2. A uniform load of 100 pounds per linear foot applied vertically downward at the top surface of the module.
  - 3. A uniform load applied vertically downward at the top surface of any shelf angle equal to the weight of the floor deck being supported plus a 20psf construction live load.
  - 4. A point load acting vertically downward at each framing connection point equal to the weight of the framing member and floor deck being supported plus a 20psf construction live load.

- 5. When stairs are provided, each stair and landing shall be capable of safely supporting a load of 500 lbs.
- C. Reinforcing steel shall be proportioned and assembled to satisfy the steel reinforcement ratio for each structural element as required by the structural drawings.
- D. Anchors, plates, and inserts required for attachment and/or support of structural framing members shall be designed to support the reactions shown on the structural drawings.
- E. When required to satisfy these requirements for temporary strength and stability, temporary bracing, installed at the factory to the maximum extent practical, shall be provided by the manufacturer.
- F. When stairs are provided, the load bearing elements of all stairs and railings shall be designed to support loads required by the applicable Building Code.

### **2.3 MATERIALS**

- A. Reinforcing Steel Bars:
  - 1. ASTM A615, Grade 60, except as noted otherwise on drawings. Welding reinforcing bars not permitted except where specifically indicated.
  - 2. All reinforcing required to be welded shall conform to ASTM A-706, Grade 60.
- B. Metal form systems:
  - 2. Commercial quality steel sheet, plate and shapes.

## **PART 3 EXECUTION**

### **3.1 GENERAL**

- A. Delivery, Storage and Handling
  - 1. Deliver, store, handle and erect form systems in exact accordance with manufacturers latest published requirements, specifications, and shop drawings.
- B. Contractor coordinate sequencing, schedule, shop drawings, fabrication, delivery, and installation.

### **3.2 CONCRETE PLACEMENT**

- A. Place concrete in strict accordance with "Standard Specifications for Structural Concrete," ACI 301, and manufacturer's written instructions.

**END OF SECTION**