

**Instructions for use****Construction Specifications 34—Steel Reinforcement****1. Applicability**

Construction Specification 34 is applicable to the placement of steel bar reinforcement and steel welded wire reinforcement for reinforced concrete or pneumatically applied mortar.

**2. Material specifications**

Material Specification 539, Steel Reinforcement (for concrete) complements Construction Specification 34.

**3. Included items**

Items to be included in contract specifications and drawings follow:

- a. Complete placing drawings prepared by the designer or instructions for the contractor to prepare placement drawings with steel schedules from the engineering drawings.
- b. Steel schedule and bar list with bending diagram if needed to facilitate the placement drawings. These items are generally needed for all except simple structures.
- c. Type and grade of steel if the contractor's choice from the list in Material Specification 539 must be restricted.
- d. Bar splice requirements are normally covered by the ACI Codes and should be referenced. Unique limitations or exceptions need be included to provide clarity.
- e. Standard methods would include the following to be used to specify bar splice lengths. One of two methods can be used in specifying lap lengths at bar splices. The required information varies depending upon the method used.

**Method 1**—Show splice locations along with lengths of bars in a schedule that is adequate to meet the design requirements and criteria.

**Method 2**—Include the following:

- (1) Locations where splices are permitted or not
  - (2) Type of splices at locations permitted: contact, noncontact, or butt
  - (3) Splice layout at locations permitted: staggered or coincident and alternating or repeated in section 10.
  - (4) Splice class for each respective location and mat
  - (5) Concrete design compressive strength,  $f'_c$
  - (6) Bar stress condition: tension or compression
  - (7) Designation of top bars and others
  - (8) Steel reinforcement design yield strength
- f. Method(s) of measurement and payment, if the standard specification includes more than one method.

**4. Methods****Section 5, Splicing bar reinforcement**

**Method 1**—Intended for use when construction drawings for reinforced concrete structures show bar placement details and steel schedules listing bar dimensions and bar shape. Splice locations and bar laps have been determined during design and fully detailed on the drawings. This method applies when national standard detail drawings are used.

**Method 2**—Intended for use when construction drawings do not contain complete bar placement diagrams and bar schedules. This method should be considered when quality control and other responsibilities are placed on the contractor.

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Complete bar placement—Drawings and schedules should normally be included in all construction drawings. However, in such cases when engineering drawings are prepared by a project sponsor or an A-E firm and complete bar placement drawings and schedules are not provided, they may be prepared by the steel fabricator based on engineering drawings as shown in ACI 315.

### Section 9, Measurement and payment

**Method 1**—Intended for use when all reinforcement is measured by weight.

**Method 2**—Intended for use when bar reinforcement is measured by weight and welded wire reinforcement is measured by area.

When all methods but one are deleted for use in a contract specification, delete from the last paragraph ***All Methods The following provisions apply to all methods of measurement and payment.*** Left justify the remaining text.

### 5. Items of work and construction details

Starting at the top of page 34-4, prepare and outline job specific "Items of Work and Construction Details" (IWCD) in accordance with these instructions.