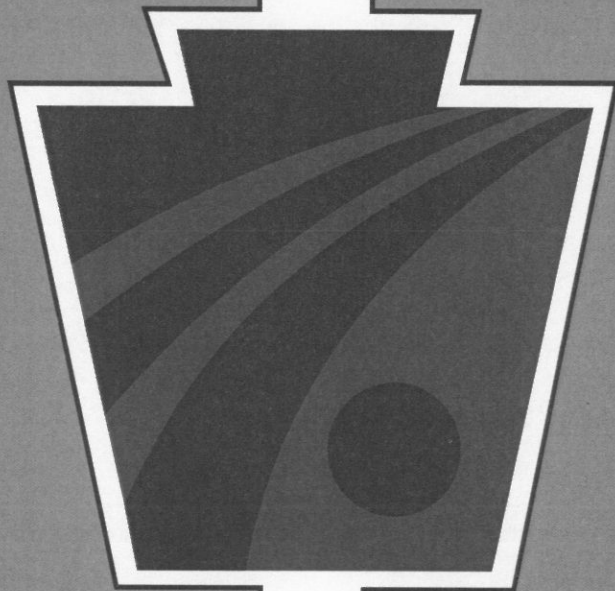


SPECIFICATIONS



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SECTION 1002—REINFORCEMENT BARS

1002.1 DESCRIPTION—This work is the furnishing and placement of reinforcement bars for cement concrete construction.

1002.2 MATERIAL—

(a) Reinforcement Steel. Reinforcement bars, Section 709.1. As indicated, provide epoxy coating for reinforcement bars as specified in Section 709.1(c). Galvanized reinforcement bars as specified in Section 709.1(e) may be substituted for epoxy-coated reinforcement bars as specified in Section 709.1(e). As indicated, provide stainless steel reinforcement bars as specified in Section 709.1(f). Uncoated, corrosion-resistant steel reinforcement bars may be substituted for epoxy-coated reinforcement bars as specified in Section 709.1(g).

(b) Other Material.

- Annealed Iron Wire—ASTM A 684 as described in Section 1002.3(d)1.
- Cement—Section 701
- Water—Section 720.1
- Welding Material—Section 1105.02(t)

(c) Mechanical Splice System. From a manufacturer listed in Bulletin 15 and conforming to the following physical requirements:

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| • Ultimate tensile strength of mechanical splice system | 90% of specified ultimate tensile strength of reinforcement bars, minimum |
| • Allowable slip | See Table A |
| • Yield strength of mechanical splice system | 100% of specified yield strength of reinforcement bars, minimum |
| • Fatigue resistance, allowable slip
(California Test No. 670,
+25 kips per square inch to
-25 kips per square inch for 10,000 cycles) | 0.05 inch, maximum |

Table A	
Reinforcing Bar Number	Total Slip (inch), Maximum
3	0.010
4	0.010
5	0.010
6	0.010
7	0.014
8	0.014
9	0.014
10	0.018

listed in Section 709.1(f) for stainless steel reinforcement bars. Use stainless steel supports with plastic coated feet above steel beams or metal stay in place forms.

2.c Plastic Supports. Use chairs and bolsters that do not deflect more than 1/4 inch under the minimum point load requirement of 350 pounds-force as described in PTM No. 430. Use supports molded in a configuration that does not restrict concrete flow.

3. Adjustments. Adjust reinforcement used in post-tensioned concrete, or relocate it during the installation of prestressing ducts or tendons, as required to provide planned clearances to the prestressing tendons, anchorages, and stressing equipment, as approved by the Representative.

(e) Splicing and Lapping. Furnish all reinforcement in the full lengths, as indicated, unless otherwise allowed by the Representative.

Do not splice bars, except as indicated or directed. If splicing is allowed, lap the reinforcement bars as shown on the Standard Drawings and as indicated, and wire together securely. Do not substitute alternate bars unless allowed by the Representative. Stagger splices as far as possible.

In lapped splices, place and wire the bars maintaining the minimum distance to the surface of the concrete as indicated. Do not use lapped splices for Nos. 14 and 18 bars, except as provided in Articles 5.11.5.2.1 and 5.11.5.5.1 of the AASHTO LRFD Specification.

As indicated, use welded splices or mechanical splice systems. For welded splices, use butt splices only. Stagger welded splices or mechanical splice system connections if possible. Do not weld uncoated, corrosion-resistant steel reinforcement bars.

Only use welded splices if indicated or if the Chief Bridge Engineer gives written authorization to do so. Ensure that welding conforms to the Structural Welding Code, Reinforcing Steel, AWS D1.4 of the American Welding Society and applicable special provisions.

Do not use welded splices on epoxy-coated reinforcement bars or galvanized reinforcement bars. Do not weld so close to epoxy-coated reinforcement bars to cause any heating of the coating.

Do not use welded splices on uncoated, corrosion-resistant steel reinforcement bars. Do not weld close to uncoated, corrosion-resistant steel reinforcement bars to prevent any heating of those reinforcement bars.

Assemble all mechanical splice systems according to the manufacturer's recommendations. Furnish a copy of the manufacturer's recommendations to the Representative. Mark reinforcing bars with scribe marks or indelible ink before splice attachment to ensure equal embedment.

When epoxy coated or galvanized mechanical splice systems are used, clean, assemble and repair any visible damage to the coating with an acceptable repair material according to the manufacturer's recommendations. For epoxy coated mechanical splice systems, seal off the epoxy coated rebar at the point of entry into the mechanical coupler using an acceptable epoxy repair material.

Use a mechanical splice system manufactured from uncoated, corrosion-resistant steel as specified in Section 709.1(g) to splice uncoated, corrosion-resistant steel reinforcement bars as specified in Section 709.1(g).

Do not encase mechanical splices in concrete until visual examination and required testing have been completed and approved.

(f) Epoxy-Coating Exposed Stirrups. If stirrups in precast bridge elements are not epoxy-coated during fabrication, epoxy-coat the exposed portion of the bars. Wire brush the bars before applying the epoxy coating. If epoxy-coated stirrups are expected to be exposed for more than 6 months, cover with opaque polyethylene, or other suitable material, to prevent ultra-violet damage to the epoxy coating.

(g) Epoxy-Coated Reinforcement Bars. In addition to the above, the following requirements apply if using epoxy-coated reinforcement bars:

1. Storage, Handling, and Placement. Where possible, do not store epoxy-coated reinforcement bars at the jobsite for more than 2 months. If field storage on site is expected to exceed 2 months, cover the epoxy-coated reinforcement bars or bundles with opaque polyethylene or other protective material. Provide ventilation to prevent condensation from forming under the covering.

Store, handle, and place epoxy-coated reinforcement bars at the jobsite according to ASTM D 3963. Inspect the bars before placement. If the epoxy coating is damaged and the damages do not exceed 2% of the surface area in any 1-foot section of the epoxy-coated reinforcement bars, repair all visible damage according to ASTM D 3963