

(b) **Catch Basins and Manholes:**

1. **Masonry blocks** shall conform to the requirements of ASTM C139.
2. **Bricks** shall conform to the requirements of AASHTO M91, Grade MS, or ASTM C55, Grade N-I.

(c) **Sewer Brick:** Sewer brick shall conform to the requirements of AASHTO M91, Grade SM.**SECTION 223—STEEL REINFORCEMENT****223.01—Description.**

These specifications cover steel items designed to give added flexural strength to hydraulic cement concrete or to control and reduce cracking.

223.02—Detail Requirements.(a) **Reinforcement:**

1. **Deformed bars** shall conform to the requirements of ASTM A615, Grade 40 or 60.
2. **Plain bars** shall conform to the requirements of ASTM A615, Grade 40 or 60, deformation waived. When used as a dowel, material may be a plain bar, Grade 40 or 60 (ASTM A615), or a plain dowel (ASTM A709 Grade 36).
3. **Welded wire fabric** shall conform to the requirements of ASTM A185. When used in continuously reinforced pavement, wire fabric shall be deformed and furnished in flat sheets and shall conform to the requirements of ASTM A497 (high yield of 70,000 pounds per square inch).
4. **Longitudinal bars** for continuous reinforced concrete pavement shall conform to the requirements of ASTM A615, Grade 60.
5. **Structural steel** shall conform to the requirements of Section 226.
6. **Bar mats** shall conform to the requirements of ASTM A184.

7. **Spiral wire** shall conform to the requirements of AASHTO M32 (ASTM A82).
8. **Wire mesh** for use in gabions shall be made of galvanized steel wire at least 0.105 inch (12 gage) in diameter. The tensile strength of the wire shall be at least 60,000 pounds per square inch. Wire mesh shall be galvanized in accordance with the requirements of ASTM A641, Class 3. When PVC coating is specified, it shall be at least 0.015 inch in thickness and shall be black.

Wire shall be welded to form rectangular openings or twisted to form hexagonal openings of uniform size. The linear dimension of the openings shall be not more than 4 1/2 inches. The area of the opening shall be not more than 9 square inches. The unit shall be nonraveling. *Nonraveling* is defined as the ability to resist pulling apart at any of the twists or connections forming the mesh when a single wire strand in a section is cut.

- (b) **Prestressing Tendons:** Seven-wire stress-relieved strands, stress-relieved wire, and low-relaxation strands shall conform to the requirements of ASTM A416, Grade 270; ASTM A421; and ASTM A416, Supplement I; respectively, with the following modifications:
 1. Strands or wires used in units of any one-bed layout shall be manufactured by the same plant.
 2. A manufacturer's certification and load-elongation curve, in accordance with the requirements of ASTM A416 or A421, shall be obtained by the prestressed concrete fabricator for each lot of strand. The data shall be submitted to the Engineer for approval, in permanent record form.
- (c) **Reinforcing Steel To Be Epoxy Coated:** Steel shall conform to the requirements herein and shall be coated in accordance with the requirements of AASHTO M284.
 1. Plants that epoxy coat reinforcing steel shall be CRSI certified for epoxy coating. CRSI inspection reports shall be on file at the plant and shall be available to the Engineer.
 2. Handling and storage of the coated bars shall conform to the requirements of AASHTO M284.
 3. Visible damage to the epoxy coating shall be patched or repaired with materials compatible to the existing coating in accordance with AASHTO M284.
- (d) **Reinforcing Steel To Be Galvanized:** Steel shall conform to the requirements herein and shall be galvanized in accordance with requirements of ASTM A767.