

503-R-582 DOWEL BARS AND DOWEL BAR ASSEMBLIES

(Revised 11-16-12)

The Standards Specifications are revised as follows:

SECTION 503, BEGIN LINE 25, DELETE AS FOLLOWS:

The epoxy coating on the ~~dowel bars and~~ bent and straight tie bars shall be protected in accordance with 703.04.

SECTION 503, BEGIN LINE 174, DELETE AND INSERT AS FOLLOWS:

- (c) Suitable struts or ties *wires* shall be provided to hold the assembly in correct position during installation. *The tie wires shall be size W 7.5 or smaller and there shall be a maximum of 5 tie wires for each dowel bar assembly.*
- (d) The assembly shall have an upright support welded to the spacer bar and a continuous bearing member at the end of each dowel.
- (e) If the upright support consists of a single vertical wire, the support shall be size W 7.5 (~~7 mm~~) or greater wire. Otherwise, the support shall be 1/4 in. (~~6 mm~~) or greater in diameter.
- (f) *At the time of placement, dowel bars shall be free of dirt, loose rust, or scale. If the Engineer suspects the epoxy coating has been damaged by exposure to ultraviolet light, a sample will be obtained and will be tested in accordance with 910.01(b)9.*
- (fg) The dowel bar assembly shall be held securely in place during placing, consolidating, and finishing the PCCP by means of metal pins. Pins used on granular subbase shall penetrate a minimum of 12 in. (~~300 mm~~) below the dowel bar assembly. Pins shall be size W 7.5 (~~7 mm~~) or greater wire and shall be provided with a hook or arm welded to the pin so that it shall secure the assembly in place. A minimum of 8 pins shall be used for each 10, 11, or 12 ft (~~3.0, 3.4, or 3.7 m~~) section of assembly. A minimum of 10 pins shall be used for assembly sections greater than 12 ft (~~3.7 m~~) and less than or equal to 16 ft (~~4.9 m~~).
- (gh) ~~After the dowel bar assembly is securely in place, all tie wires which parallel the dowel bars, and are welded to the 2 continuous parallel spacer bars, shall be cut near the center of the tie.~~ Dowel bars shall be coated with a bond breaking material and the coating shall be evident at the time of placement of the PCCP.
- (hi) Dowel bars shall be placed 6 in. (~~150 mm~~) from the edges of the pavement and spaced at 1 ft (~~0.3 m~~) on center across the joint.

SECTION 506, BEGIN LINE 29, DELETE AND INSERT AS FOLLOWS:

~~The epoxy coating on the dowel bars shall be protected in accordance with 703.04.~~ *Dowel bars shall be in accordance with 503.04(f).*

SECTION 507, BEGIN LINE 19, DELETE AND INSERT AS FOLLOWS:

~~The epoxy coating on the dowel bars shall be protected in accordance with 703.04.~~
Dowel bars shall be in accordance with 503.04(f).

SECTION 910, BEGIN LINE 145, DELETE AND INSERT AS FOLLOWS:

10. Dowel Bars

~~Dowel bars shall be in accordance with AASHTO M 254 and the metal core in accordance with AASHTO M 255, grade 60 (420) plain billet steel in accordance with ASTM A 615, grade 40 or higher, except that the bend test and elongation requirements will not apply.~~ The dowel bar area and weight (~~mass~~) for the nominal bar diameter shall be as follows.

| Nominal Bar Diameter, in. (mm) | Cross Sectional Area, sq in. (mm²) | Weight (Mass) lb/ft (kg/m) |
|--|---|---|
| 1 (25) | 0.79 (510) | 2.670 (3.973) |
| 1 1/4 (32) | 1.23 (794) | 4.172 (6.209) |
| 1 5/16 (33) | 1.35 (871) | 4.600 (6.846) |
| 1 1/2 (38) | 1.77 (1142) | 6.008 (8.941) |

Dowel bars shall be coated with an epoxy coating material selected from the list of approved Epoxy Coating for Steel. The coating thickness after cure shall be a minimum of 7 mils (~~175µm~~). Dowel bars shall not have burring or other deformation restricting slippage in concrete. Dowel bar ends shall be saw cut. Chips from the cutting operation shall be removed from coated bars.

Dowel bars shall be furnished by selecting bars made by a coater and manufacturer on the list of approved Certified Reinforcing Bar Epoxy Coaters and in accordance with ITM 301. When shipped to the project site, the dowel bars shall be accompanied by the types of certifications specified in ITM 301 and in accordance with 916.