

ITEM 25556.020101M -
ITEM 25556.020201M -
ITEM 25556.990001M -

DOWEL BAR SPLICER (#13 BAR - #36 BAR)
EPOXY-COATED DOWEL BAR SPLICER (#13 BAR - #36 BAR)
GALVANIZED DOWEL BAR SPLICER (#13 BAR - #36 BAR)

1. **DESCRIPTION:**

1.01 The Contractor shall furnish and install dowel bar splicer, epoxy-coated dowel bar splicer, and galvanized dowel bar splicer assemblies as detailed on and at locations indicated on the Contract Plans or as ordered by the Engineer.

2. **MATERIALS:**

2.01 The splicer assemblies shall be the dowel bar splicer, epoxy-coated dowel bar splicer, and galvanized dowel bar splicer as manufactured by Richmond Screw Anchor Co., Inc. or an approved equal.

Richmond Screw Anchor Co., Inc.
New England Sales Office
30 Manning Road
Billerica, MA 01821
800-969-3399

2.02 Materials for the dowel bar splicer assemblies shall meet the requirements of the following Subsections of Section 700, Materials:

Bar Reinforcement, Grade 400	709-01
Longitudinal Joint Ties- (Epoxy Coating)	705-14

2.03 **Galvanizing.** The bar reinforcement shall be class 1 galvanized after bar fabrication, in accordance with ASTM A767M, Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement, including Supplemental Requirements S1 and S3.

Prior to galvanizing, the material shall have all grease, dirt, mortar, mill scale, injurious rust, or any other foreign substance removed.

For the purpose of this specification, the term "injurious rust" shall be interpreted to mean rust which is not firmly bonded to the steel. Rust which is difficult to remove, even by vigorous scrubbing with a wire brush, shall be considered firmly bonded to the steel.

The galvanized threads of nuts and mechanical connectors used for assembly with galvanized bolts and reinforcement shall be tapped oversize prior to coating and need not be retapped afterwards. The minimum additional diameter for Class-2A threads galvanized to Class C is as follows:

<u>Class-2A Thread Diameter (mm)</u>	<u>Additional Diameter (mm)*</u>
11 mm and smaller	0.40
Over 11 mm to 25 mm	0.53
Over 25 mm	0.79

*applies to both pitch and minor diameters, minimum and maximum limits.

2. **MATERIALS:** (cont=d)

ITEM 25556.020101M -
ITEM 25556.020201M -
ITEM 25556.990001M -

DOWEL BAR SPLICER (#13 BAR - #36 BAR)
EPOXY-COATED DOWEL BAR SPLICER (#13 BAR - #36 BAR)
GALVANIZED DOWEL BAR SPLICER (#13 BAR - #36 BAR)

2.03 **Galvanizing** (cont=d)

Material galvanized in accordance with these specifications shall be free from any build up of unadhered wet storage stains (white rust). These corrosion deposits, if present, shall be removed in a manner satisfactory to the Authority prior to incorporation of the material in the work. After removal of these deposits, the coating shall have a uniform appearance free from uncoated spots, lumps, blister, gritty areas, acid flux and black spots. Materials with these defects, or not meeting the finish and adherence of coating requirements as defined in the above ASTM specification, will be rejected and immediately removed from the work site. Acceptable material will be provided to replace rejected material at no additional cost to the Authority.

2.04 **Galvanized Dowel Bar Splicers.** Galvanized Dowel Bar Splicers shall be galvanized in accordance with the requirements of ASTM A153M, Zinc Coating (Hot Dip) on Iron and Steel Hardware prior to installation.

The thread shall be tapped oversize prior to being coated per Subsection 2.03, Galvanizing.

The assembled connection on the galvanized reinforcing bars shall have no exposed uncoated steel. Any damage to the galvanized coating or uncoated area shall be repaired as indicated in Subsection 3.05, Field Repair.

The manufacturer of the mechanical connectors shall certify, in writing to the Engineer, that the mechanical connectors, with oversize threads (if applicable), meet the following three parameters:

- A. The maximum slip, at 50% of the yield strength of the reinforcing bar, shall be 0.25 mm. At least 70% of the maximum slip shall have occurred on the first cycle.
- B. the maximum slip, at 90% of the yield strength of the reinforcing bar, shall be 0.46 mm.
- C. The tensile strength of the splice shall be at least 100% of the specified minimum tensile strength of the reinforcing bar.

3. **CONSTRUCTION DETAILS:**

3.01 The splicer assemblies shall be installed as indicated on the Contract plans or as ordered by the Engineer.

3.02 Construction details shall be in accordance with the applicable provisions of subsection 556-3.

3.03 The Contractor shall coat the epoxy coated splicer joint connection with epoxy touch up material, after the threaded portion of the splicer assembly has been installed, but prior to the placement of the concrete.

3.04 **Field Repair - Galvanized Dowel Bar Splicers.** The Contractor shall be required to field repair any damage to the galvanized coating done during shipping and handling, and to replace dowel bar splicers exhibiting severely damaged coatings. Repairable damage is defined as any bare or loose spots, or breaks in the coating which affect an area smaller than 100 cm².

3. **CONSTRUCTION DETAILS:** (cont=d)

3.04 **Field Repair - Galvanized Dowel Bar Splicers.** (cont=d)

ITEM 25556.020101M -
ITEM 25556.020201M -
ITEM 25556.990001M -

DOWEL BAR SPLICER (#13 BAR - #36 BAR)
EPOXY-COATED DOWEL BAR SPLICER (#13 BAR - #36 BAR)
GALVANIZED DOWEL BAR SPLICER (#13 BAR - #36 BAR)

Field repair shall be allowed only when the total number of repairable damaged areas in any 3 m length of bar is less than 6. Any material with a total number of damaged areas greater than the amount specified above, or material with any damaged area greater than 100 square cm, shall be rejected, immediately removed from the work site, and replaced by the Contractor at no cost to the Authority.

The galvanized coating is to be repaired with a zinc-rich paint by the following method:

1. Clean the damaged area by power disk, wire brushing, sand or grit blasting, or any other suitable method approved by the Engineer to a near-white metal condition in accordance with SSPC-SP10 (0.25 mm to 0.50 mm anchor pattern), as a minimum. The surface shall also be clean, dry and free of oil, grease, flux residue, corrosion products, and any other foreign substance.
2. Using a minimum of two (2) coats, and the methods recommended by the manufacturer of the zinc-rich paint, spray or brush apply the zinc-rich paint to the area in a manner to achieve the applicable ASTM adherence and quality requirements of the original coating, and a minimum dry film thickness of 0.10 mm.

These repair procedures are allowed only for those field repairs directed by the Engineer. This method shall not be allowed for shop repairs. All repairs shall be made at no cost to the Authority.

4. METHOD OF MEASUREMENT:

- 4.01 The quantity to be paid under this item shall be the number of dowel bar splicer assemblies actually furnished and installed in accordance with the Contract plans, specifications and to the satisfaction of the Engineer.

5. BASIS OF PAYMENT:

- 5.01 The unit price bid for the dowel bar splicer assemblies shall include the cost of all labor, material and equipment necessary to satisfactorily complete the work.

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>PAY UNIT</u>
25556.020101M	Dowel Bar Splicer (#13 Bar - #36 Bar)	EACH
25556.020201M	Epoxy-Coated Dowel Bar Splicer (#13 Bar - #36 Bar)	EACH
25556.990001M	Galvanized Dowel Bar Splicer (#13 Bar - #36 Bar)	EACH