

S-1 (3302) DOWEL BAR

Always use when concrete pavement is on the project.

NEW WRITEUP 03/20/2020 <DO NOT REMOVE THIS. IT NEEDS TO STAY IN FOR THE CONTRACTORS.

SP2018-259

MnDOT 3302 is hereby deleted and replaced with the following:

3302.1 SCOPE

Provide dowel bars for use in Portland cement concrete pavements and other concrete applications as shown on the plans.

3302.2 REQUIREMENTS

A Epoxy Coated Steel Dowel Bars

Provide Grade 40 or Grade 60 steel dowel bars meeting the requirements of AASHTO M 31.

Epoxy coat the steel dowel bars in accordance with AASHTO M254 and as modified:

- (1) Apply epoxy coating in a fusion bonded epoxy coating plant certified by the CRSI or another organization approved by the Materials Engineer.
- (2) Apply 7-13 mils epoxy coating thickness.
- (3) Do not epoxy coat the ends of the dowel bars unless required by the Manufacturer.

If cutting dowel bars to length by shearing, immediately repair all damaged epoxy coating and verify dowel bars have not exceeded the maximum deformation limits. Ensure that sheared dowel bars are not more than 0.04 in out of round, and that such damage does not extend more than 0.40 in from the end of the bar.

B Tubular Dowel Bars

Provide welded carbon and alloy steel tubular dowel bar meeting the requirements of ASTM 513 and Table 3302-1.

Table 3302-1 Tubular Dowel Bar Requirements		
Specified Dowel Bar Diameter	Required Tubular Dowel Bar Outside Diameter	Required Tubular Dowel Bar Wall Thickness
1.25 in	1.3125 in or 1.375 in	0.120 in
1.50 in	1.625 in	0.120 in

Provide a galvanized coating providing a minimum 20 year life. Cap the ends of the tubular dowel bar in a way to prevent intrusion of concrete or other materials.

Galvanize the exterior and interior of the tubular steel dowel bars using G90 coverage zinc galvanized coating.

Epoxy coat the exterior of the galvanized tubular dowel bars in accordance with ASTM A1078 Type 2 coating (ASTM A934 Annex A1) and as modified:

- (1) Apply epoxy coating in a fusion bonded epoxy coating plant certified by the CRSI or another organization approved by the Materials Engineer.
- (2) Epoxy coating of the entire dowel bar assembly is not required.
- (3) Do not epoxy coat the ends of the dowel bars unless required by the Manufacturer.

C Bond Breaker Material

Provide bond breaker material listed on the Approved/Qualified Products List.

Prior to delivery to the project site, coat the entire dowel bar assembly or dowel bar bundles with a bond breaker material in accordance with the Manufacturer's recommendations.

D Certification of Dowel Bars

Ensure the manufacturer's plant quality control office maintains documentation containing the data required by certification, including test data and measurements taken at times and locations as required by the CRSI, the Materials Engineer, or both.

Include the following standardized statement with delivery invoices: "(insert company name) certifies that the dowel bars and basket assemblies are coated with a bond breaker material and meet the requirements of MnDOT Specification 3302."

E Storage and Protection of Dowel Bars

Do not store dowel bars in a manner that will cause, induce, or accelerate corrosion or contamination of the metal at any time. Locate timbers (dunnage) on the ground to support the bundles and keep them free of contamination.

Protect coated dowel bars before handling or shipping to prevent damage to the coating. Pad bundling bands and lift bundles using an OSHA-approved spreader bar, multiple supports, or platform bridge to prevent bar-to-bar abrasion from sags in the bar bundle. Do not drag or drop bars or bundles. Support bars or bundles in transit to prevent damage to the coating.

Store materials at the project site to allow the Engineer to visually inspect and check the various types of reinforcement for conformance to the dimensions as shown on the plans. Store bars of the same type together. Identify dowel bars with tags bearing the identification symbols as shown on the plans.

If the epoxy-coated steel is incorporated into the Project and is exposed to the weather or stored exposed to the weather for more than 60 calendar days, cover the steel to protect the material from sunlight, salt-spray and weather exposure. Provide for air circulation around the covered steel to minimize condensation under the protective covering.

3302.3

SAMPLING AND TESTING

Sample and test dowel bars and dowel basket assemblies in accordance with the Schedule of Materials Control. The Department will visually inspect the bond breaker material coating on the dowel bars.