October 4, 2019

REVISION OF SECTION 412

DOWEL BARS FOR JOINTS

1. **NOTICE**

This is a standard special provision that revises or modifies CDOT’s *Standard Specifications for Road and Bridge Construction*. It has gone through a formal review and approval process and has been issued by CDOT’s Project Development Branch with formal instructions regarding its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by the Standards and Specifications Unit of the Project Development Branch. The instructions for use on CDOT construction projects appear below.

Other agencies that use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

**Instructions for use on CDOT construction projects:**

Use this standard special provision on projects with concrete pavement.

In subsection 412.13(b)2, first paragraph, delete the fourth sentence which states: “The horizontal support wires or shipping braces shall not be cut prior to concrete placement.”

In subsection 412.13(b)2, after the third paragraph, add the following:

The Contractor shall perform a pull test after baskets are staked. The minimum staking method will be determined using the pullout test. The pullout test shall be performed on all baskets placed in a test section and one basket per day thereafter when the minimum staking method is used. The test section for determining staking method shall be the first 10 joints with dowel bar assemblies for each base type. Each basket in the test section shall withstand a minimum of 25 pounds of force when pulled vertically at three equally spaced locations along the length of the basket frame using a fish scale, or approved equivalent. If any basket moves more than 0.5 inches, a new staking method and test section will be required.

When dowel bar assemblies are used and the shipping wires are cut or dowel bar inserters are used, the use of the MIT Scan-2 will be required and joint scores shall be calculated.

When dowel bar assemblies are used and the shipping wires are not cut, the use of the MIT Scan-2 will be required, however, no joint score will be calculated. Joint acceptance or rejection will be based on the Joint Map generated by the MIT Scan software. Should the joint map show missing or misaligned bars the Contractor will have the choice of either performing additional testing using a method approved by the Engineer or taking the corrective measures listed after Table 412-1. CP 79 will be used to determine if a basket is misaligned or missing. Dowel bar assemblies will be inspected by the Engineer prior to concrete placement for misalignment. If misalignments exceeding the rejection tolerances listed after Table 412-1 are found, the assembly shall be reset.

In subsection 412.13(b)2, after the 19th paragraph, add the following:

Due to potential magnetic interference from tie bars, dowel bars located within 15 inches of a tied joint shall not be included in the evaluation.

The Engineer will witness the use of the MIT-Scan-2 on the test section(s) and weekly section(s). The Contractor shall provide the Engineer a copy of the raw data files from the MIT Scan-2 prior to analysis, for verification of the Contractor’s analysis. Data files will be sent by the Engineer to [DOT\_Profiles@state.co.us](mailto:DOT_Profiles@state.co.us) for analysis. The Contractor’s analysis and the Department’s analysis will be compared, and if the bar alignments and joint score for each joint match, the Contractor’s analysis will be approved. If the Contractor’s analysis is not approved, analysis procedures will be reviewed and the Contractor may be required to re-test the joints representing the data. A minimum of 10 percent of the sections or test sections will be evaluated for verification by CDOT Staff Materials.