December 12, 2018

REVISION OF SECTIONS 105, 412, AND 601

FLEXURAL STRENGTH OF PORTLAND CEMENT CONCRETE PAVEMENT

# 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 that utilize flexural strength for acceptance of Portland Cement Concrete Pavement.

Sections 105, 412 and 601 of the Standard Specifications are hereby revised for this project as follows:

In subsection 105.06(f), delete the second paragraph, and replace it with the following:

When flexural strength is indicated in the Contract, the Contractor shall, in the presence of the Engineer, develop a correlation curve during the first week of concrete placement in accordance with AASHTO T198 (ASTM C496) Splitting Tensile Strength of Cylindrical Concrete Specimens. At least three splitting tensile strength specimens and four flexural strength specimens will be tested at 3, 7, 14, and 28 days. The splitting tensile strength and flexural strength specimens for each age used to develop the correlation curve shall be cast from the same batch of concrete being placed on the project.

When flexural strength is indicated, the Contractor may take cores at his own expense and in accordance with Colorado Procedure 65 to provide an alternative determination of strength to replace PC/OA test results with a flexural strength less than 570 psi. The cores for the alternate flexural strength evaluation shall be obtained after 28 days, but prior to 45 days following placement. The higher value of the 28-day flexural strength of PC/OA beams or the corresponding core’s flexural strength will be used for I/DP.

At any time during production, the Engineer may request a verification of the correlation curve developed during the first week of production. Verification of the curve shall be done by casting three splitting tensile specimens by the Department and testing them at the Region or Central Lab. The flexural strength of the correlated splitting tensile samples shall be compared to the Contractor PC flexural strength results cast from the same batch. For verification, both flexural strength specimens and splitting tensile specimens will be tested at 28 days. If the correlated flexural strength of the splitting tensile sample is not within 50 psi of the verification beam specimen’s flexural strength, a new correlation curve shall be developed within 3 days for future low strength evaluations. The new correlation curve will be used for any future low flexural strength evaluations that result from concrete placed on or after the date the new correlation curve specimens are cast.

Subsection 412.24(a) shall include the following:

All costs associated with developing correlation curves used to evaluate low flexural strength results in accordance with the Contract, or as requested by the Engineer, shall be included in the work. This shall include all materials, forms, testing, equipment and labor.

In subsection 601.05, after the second paragraph, delete item (7), and replace it with the following:

(7) Class E and P concrete shall include AASHTO T97 (ASTM C78) Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading). At least two specimens will be tested at 7 days and four specimens at 28 days.