April 30, 2015

REVISION OF SECTIONS 603, 624, 705, 707 AND 712

DRAINAGE PIPE

**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 for 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 CDOT’s Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which 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 on projects having any type of culvert pipe.

Sections 603, 624, 705, 707 and 712 of the Standard Specifications are hereby revised for this project as follows:

Subsection 603.07 shall include the following:

Joint systems for siphons, irrigation systems, and storm drains shall be watertight.

Subsection 603.07(c) shall include the following:

Watertight joint systems for plastic pipe shall conform to subsection 705.03.

Subsection 624.02 shall include the following material type and requirement:

**Abbreviation Description Subsection**

ALT2 CSP Aluminized Corrugated Steel Pipe Type 2 707.11

Plastic Polyvinyl Chloride (PVC), Polyethylene (PE),

Steel Reinforced Polyethylene (SRPE)

and Polypropylene (PP) 712.13

In subsection 624.02 delete the third paragraph and replace it with the following:

Connecting bands shall receive the same corrosion protection as the pipe with which they are used. Coatings conforming to the requirements of Sections 706 and 707 will be permitted as applicable. Connecting bands and pipe extensions shall be of similar metal, or of non-metallic material, to avoid galvanic corrosion.

End sections for concrete or metal pipe shall be the same material as the pipe and meet the requirements for the same class as that specified for the pipe in accordance with Table 624-1.

Plastic end sections shall not be used. When plastic pipe is to be installed with end sections, steel or concrete end sections meeting the same class as that specified for the pipe in accordance with Table 624-1 shall be used.

In subsection 624.02 delete the fourth paragraph and replace it with the following:

The Contractor may furnish any pipe material allowed in Table 624-1 for the class of pipe specified in the Contract except for storm drains. The Contractor may furnish RCP, PVC, SRPE or PP allowed in Table 624-1 for the class of pipe specified in the Contract for storm drains. The Contractor shall state at the preconstruction conference the pipe materials intended to be furnished.

In subsection 624.02 delete Table 624-1 and replace it with the following:

**TABLE 624-1**

**Materials Allowed for Class of Pipe**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Material Allowed\*\*** | **Class of Pipe\*** | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6**4 | **7** | **8** | **9** | **10**4 |
| CSP | Y | N | N | N | N | N | N | N | N | N | N |
| ALT2 CSP | Y | Y | Y | Y | Y | N | N | N | N | N | N |
| Bit. Co. CSP | Y | Y1 | N | N | N | N | N | N | N | N | N |
| A.F. Bo. CSP | Y | Y | Y | Y | Y | Y | Y | N | N | N | N |
| CAP | Y | Y2 | Y2 | Y2 | Y2 | Y | N | N | N | N | N |
| PCSP - both sides | Y | Y | Y | Y | Y | Y | Y | N | N | N | N |
| PVC6 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| PE6 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| PP6 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| SRPE | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| RCP (SP0)3,5 | Y | Y | N | N | N | N | N | Y | N | N | N |
| RCP (SP1)3,5 | Y | Y | Y | N | N | N | N | Y | Y | N | N |
| RCP (SP2)3,5 | Y | Y | Y | Y | Y | N | N | Y | Y | Y | N |
| RCP (SP3)3,5 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| \* As determined by the Department in accordance with the CDOT *Pipe Selection Guide*. Determination is based on abrasion and corrosion resistance.  \*\* Y=Yes; N=No.  1 Coated Steel Structural Plate Pipe of equal or greater diameter, conforming to Section 510, may be substituted for Bit. Co. CSP at no additional cost to the project.  2 Aluminum Alloy Structural Plate Pipe of equal or greater diameter, conforming to Section 510, may be substituted for CAP at no additional cost to the project.  3 SP= Class of Sulfate Protection required in accordance with subsection 601.04 as revised for this project. RCP shall be manufactured using the cementitious material required to meet the SP class specified.  4 For pipe classes 6 and 10, the RCP shall be coated in accordance with subsection 706.07 when the pH of either the soil or water is less than 5. The Contract will specify when RCP is to be coated.  5 Concrete shall have a compressive strength of 4500 psi or greater.  6 In accordance with subsection 712.13. | | | | | | | | | | | |

Subsection 624.03 shall include the following:

Joint systems for siphons, irrigation systems, and storm drains shall be watertight. Watertight joint systems for plastic pipe shall conform to subsection 705.03.

Installation for Aluminized Corrugated Steel Pipe Type 2 shall conform to all requirements for Corrugated Steel Pipe (CSP) including the fill height tables and requirements in Standard Plan M-603-1.

Subsection 705.03 shall include the following:

Watertight joint systems for plastic pipe shall be in accordance with ASTM D3212.

Add subsection 707.11 as follows:

**707.11 Aluminized Corrugated Steel Pipe Type 2.** Aluminized Corrugated Steel Pipe Type 2 shall conform to the requirements of AASHTO M 274.

In subsection 712.13 (b), delete (1) and (2) and replace with the following:

(1) AASHTO M 304 (Profile) for nominal pipe sizes of 4 to 36 inches.

(2) ASTM F794 (Profile) for nominal pipe sizes 4 to 36 inches with 46 psi minimum pipe stiffness

Add subsection 712.13 and (c) and (d) as follows:

1. *Polypropylene (PP) Pipe.*

AASHTO M330 for nominal pipe sizes of 12 to 60 inches with the following exceptions: Type S and Type SP are acceptable (Type C, Type CP and Type D will not be accepted).

The Contractor shall provide a polypropylene (PP) pipe product that is prequalified under the AASHTO National Transportation Product Evaluation Program (NTPEP). Only products from suppliers whose manufacturing plant and PP pipe products comply with this specification shall be placed by the Contractor. The current list of plants and PP pipe products that meet these requirements is located at: www.ntpep.org. The Contractor shall use plants listed as compliant and a size listed in the NTPEP reports on PP Thermoplastic Pipe. Every Certificate of Compliance (COC) on each diameter PP pipe product delivered to the project shall include a statement that the product has been manufactured at a NTPEP inspected plant, has been tested by NTPEP, has a NTPEP product number, and is currently on the NTPEP website. The COC shall confirm that the supplied pipe meets the applicable specification limits in subsection 712.13. Manufacturers shall remain acceptable to CDOT as long as the results of verification samples and performance in the field are satisfactory. Any changes in the PP pipe formulation will require re-submittal for prequalification testing by NTPEP.

1. *Steel Reinforced Polyethylene (SRPE)*. SRPE pipe shall be AASHTO MP 20 ribbed pipe for nominal pipe sizes 12 to 60 inches with the following exceptions:
2. Nominal pipe sizes 30 to 60 inches are acceptable; nominal pipe sizes 12 to 27 inches will not be accepted.