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MEMORANDUM

Case # 18-08

DATE: May 2, 2018

TO: MAG Specifications and Details Committee Members

FROM: Warren White, City of Chandler Representative

SUBJECT: Revisions to Section 740 Polypropylene Pipe and Fittings for Storm Drain, Irrigation and Sanitary Sewer

- Adding in ASTM F2881 spec which now covers all sizes for polypropylene storm drain pipe.

SECTION 740

POLYPROPYLENE PIPE AND FITTINGS FOR STORM DRAIN, IRRIGATION AND SANITARY SEWER

740.1 GENERAL:

This specification covers the requirements of profile wall (both dual wall - Type S and triple wall - Type D) polypropylene (PP) pipe manufactured per ASTM [F2881](#)[2736](#) and AASHTO M330 for storm drain, or ASTM [F2736](#) or ASTM [F2764](#) for sanitary sewer systems. When noted on the plans or in the special provisions, storm drains, irrigation and sanitary sewers may be constructed using PP pipe. PP pipe approved sizes are 12 inch diameter through 60 inch diameter. Trench excavation, backfilling and compaction for flexible pipe shall be in accordance with Section [601](#) and manufacturer's installation recommendations. Construction and installation shall be in accordance with Section [618](#) for storm drain and irrigation water or Section [615](#) for sanitary sewers.

740.2 MATERIALS:

740.2.1 Base Material Composition: Profile pipe base material and fittings shall meet polypropylene materials requirements as stated in Section 4, Table 1 of ASTM [F2736](#), Section 5, Table 1 of ASTM [F2764](#), [ASTM F2881](#), [Section 5](#), or Section 6, Table 1 of AASHTO M330.

740.2.2 Gaskets: Elastomeric gaskets shall comply with the requirements in ASTM [F477](#) and be as recommended by the pipe manufacturer.

740.2.3 Water Stops: Elastomeric water stop gaskets shall conform to the requirements of ASTM [C923](#).

740.2.4 Lubricant: The lubricant used for assembly shall comply with manufacturer's recommendations and have no detrimental effect on the gasket or pipe.

740.3 JOINING SYSTEMS:

740.3.1 Gasket Type: Joints for the piping system and fittings shall consist of an integrally formed bell and spigot gasketed joint. The joint shall be designed so that when assembled, the elastomeric gasket located on the spigot is compressed radially on the pipe or fitting bell to form a water tight seal. The joint shall be designed so to prevent displacement of the gasket from the joint during assembly and when in service. The elastomeric gasket shall meet the provision of ASTM [F477](#). Gasketed watertight joints shall meet laboratory test pressure of 10.8 psi when tested in accordance with ASTM [D3212](#).

All pipes shall have a home mark on the spigot end to indicate proper penetration when the joint is made.

The bell and spigot configurations for fittings shall be compatible to those used for the pipe.

Joints shall provide a seal against exfiltration and infiltration. All surfaces of the joint upon which the gasket may bear, shall be smooth and free of any imperfections, which would adversely affect the seal. The assembly of the gasketed joints shall be in accordance with the pipe manufacturer's recommendations.

740.3.2 Pipe to Concrete Structure Connections: An approved flexible connection, mechanical seal, or water stop shall be provided at manhole entry or concrete structure connections to reduce infiltration and exfiltration. When grouting is necessary at a water stop connection, non-shrink grout shall be used.

740.4 FITTINGS:

Fittings for PP pipe may include tees, elbows, manhole adapter rings, plugs, caps, adapters and increasers. Fittings shall be joined by gasket type joints in accordance with Subsection [740.3](#).

The material used for thermally welding the fitting shall be compatible with the base pipe material.

740.5 CERTIFICATION:

The manufacturer shall furnish a certification that all delivered materials comply with the requirements of ASTM [F2736](#), ASTM [F2764](#), [ASTM F2881](#), or AASHTO M330.

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740.6 MARKINGS:

Markings on pipe and fittings shall be per ASTM [F2736](#), ASTM [F2764](#), [ASTM F2881](#), -or AASHTO M330. The markings shall be clearly shown on the pipe, at least, at each end of each length of pipe and spaced at intervals of not more than 10 feet. Markings shall include the following information: the manufacturer's name or trademark, nominal size, the specification designation, plant designation code, date of manufacture or an appropriate code. All fittings shall be marked with the designation number of the specification and with the manufacturer's identification symbol.

740.7 CARE OF PIPE AND MATERIALS:

All pipe, fittings, gaskets, and water stop materials shall be manufactured, handled, loaded, shipped, unloaded, and installed in such manner as to be undamaged and in sound condition, in the completed work. Particular effort shall be exercised to protect the ends of pipe. Repairs on damaged pipe shall be made to the satisfaction of the Engineer or removed from the project site. At all times elastomeric gaskets shall be covered in a factory applied protective wrap until ready for use.

- End of Section