Technical Note

TN 5.04 HDPE and HP Storm Connections to Manholes and Structures for Storm Sewer Applications

Introduction

A full line of pipe jointing options is available to fit the requirements of nearly any storm drain or gravity flow project specifications. The joints available range from soil tight split couplers to gasketed soil-tight (ST) and watertight (WT) pipe. When connecting pipe to drainage structures it is important to make those connections with a joint performance at least equal to that of the piping system.

Connection Options

Soil-Tight Performance

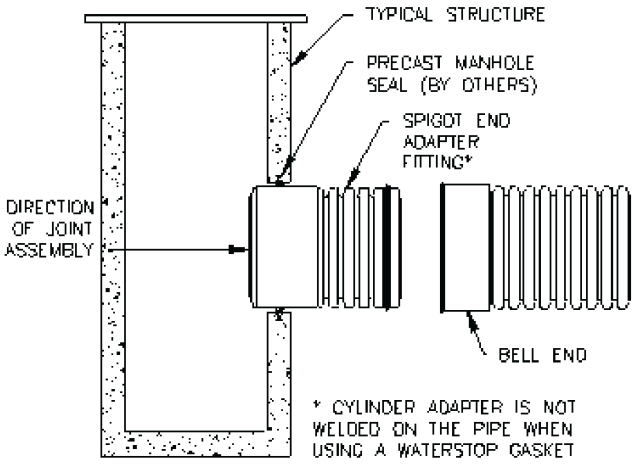
When using soil-tight pipe in non-watertight applications, it may be acceptable to grout the void space between the pipe and drainage structure.

Watertight Performance

When using watertight pipe for testable systems, requiring some degree of watertight performance, it is necessary to provide additional measures to insure a watertight connection between the pipe and structure. ASTM F2510/F 2510M, *"Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures and Corrugated High Density Polyethylene Drainage Pipes,"* is the governing standard for corrugated HDPE pipe-manhole connections, but specific performance/installation requirements should be verified for each specific project. Along with a full line of adapter fittings available, including the Waterstop® Gasket, are flexible boot fittings provided by other manufactures. Fitting dimensions should be supplied to the manufacturer to insure the proper fitting size and manhole boot connector are supplied.

Installation Recommendations

When installing a manhole adapter on the upstream end, the fitting may be over inserted into the structure temporarily while the adjoining pipe is laid. The spigot piece is then pushed back through the structure and connected to the bell end when pushing the joint together, as shown to the right.



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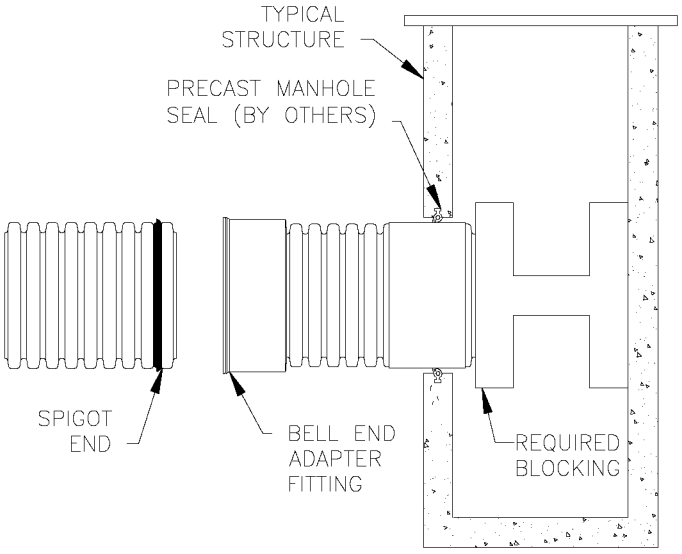

Alternately, when using the adapter fitting in the downstream end of the structure, before pushing the bell and spigot together from inside the structure, it is necessary to provide blocking at the structure to prevent the fitting from moving in the structure, as shown to the left.

Summary

The selection of which manhole connection is best suited for a project is based on the joint and connection requirements along with preferred manhole connection method for the region. It is imperative that prevailing regulations be consulted before selecting a manhole connection. Other options may be available for watertight manhole connections. Refer to 200 Series Standard Details for installation and connection-specific details. Contact your Regional Engineer or Application Engineering for further assistance.

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