



Standard Practice for Selection of Gravity Sewers Suitable for Installation of Optical Fiber Cable and Conduits¹

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1. Scope

1.1 This practice specifically addresses the criteria for determining the suitability of gravity sewers for secondary uses such as the installation of optical fiber systems.

1.1.1 This practice applies to the process of selecting gravity sewers that are appropriate for accepting an optical fiber system as opposed to standards for the installation, operation and maintenance of such system within sewers.

1.2 This practice applies to both man accessible and man inaccessible sewer systems.

1.3 The values stated in inch-pound units are to be regarded as the standard. The values provided in parentheses are for information purposes only.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

D 543 Test Method for Resistance of Plastics to Chemical Reagents²

D 1600 Terminology for Abbreviated Terms Relating to Plastics²

F 412 Terminology Relating to Plastic Piping System³

ASTM Safety Document—Reference to be Announced

2.2 Other Documents:

“Gravity Sanitary Sewer Design and Construction,” Manual of Practice No. FD-5, ASCE Recommended Specifications for Sewer Collection System Rehabilitation (NASCCO Standard)

Sewer Rehabilitation Manual (SRM) produced by the Water Research Center (WRC, Swindon, England)

3. Terminology

3.1 Definitions are in accordance with Terminology F 412 and abbreviations are in accordance with Terminology D 1600, unless otherwise specified.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *combined sewers*—sewers that carry both wastewater and storm or surface water.

3.2.2 *engineer*—the licensed professional designated by the owner/operator of the sewer system to represent the owner’s/operator’s interests during the selection process.

3.2.3 *installer*—the person(s) or body installing the optical fiber system within the sewer.

3.2.4 *manholes*—vertical shafts to connect intersecting sewers to allow transitions in size, alignment and grade and to allow entry to the sewers for cleaning, inspection, and maintenance.

3.2.5 *optical fiber cable*—cable formed of many strands of optical fiber for transmission of data, video, audio, voice, and other information.

3.2.6 *optical fiber conduit*—fully-supported tubes suitably affixed to or suitably incorporated into the wall structure of the sewer.

3.2.7 *optical fiber system*—the complete set of installed optical fiber components including cable, conduit and attachment components.

3.2.8 *owner/operator*—the person(s) or body charged with maintenance and operation of the sewer system.

3.2.9 *sanitary sewers*—sewers that carry wastewater from users to the treatment plant.

3.2.10 *service lateral*—portion of the sewer system that connects a user to the sewer.

3.2.11 *sewer*—buried piping designed to carry wastewater or storm run-off.

3.2.12 *storm sewers*—sewers that carry storm or surface water away from roadways or structures to waterways.

4. Summary of Practice

4.1 Optical fiber cable and conduit systems in existing sewers shall be designed and installed so that they have a minimal effect on the sewer’s hydraulic performance and no effect on their structural integrity. Their design and installation

¹ This practice is under the jurisdiction of ASTM Committee F36 on Technology and Underground Utilities and is the direct responsibility of Subcommittee F36.10 on Installation and Operation of Fiber Optic Cables in Existing Sewers.

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² *Annual Book of ASTM Standards*, Vol 08.01.

³ *Annual Book of ASTM Standards*, Vol 08.04.