



Standard Specification for Excess Flow Valves for Natural Gas Service¹

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1. Scope*

1.1 This specification covers requirements and test methods for excess flow valves for use in thermoplastic natural gas piping systems. However, it is expected that excess flow valves manufactured to the requirements of this specification may also be used in other natural gas piping systems.

1.2 Excess flow valves covered by this specification are designed for insertion into components for natural gas systems such as pipe, tubing, or fittings in sizes from ½ CTS to 2 IPS.

1.3 The tests required by this specification are intended to determine the performance characteristics of an excess flow valve installed in a straight piece of pipe. An excess flow valve could possibly be installed in a straight piece of pipe, in a service tee outlet, as part of a mechanical coupling, or in other configurations. The performance characteristics of the excess flow valve may be significantly different for each installed configuration. Users should conduct their own tests to determine the installed performance characteristics or contact the EFV manufacturer for test data for the installed configuration. Additional guidance on selection and installation of excess flow valves is included in [Appendix X1](#).

1.4 The tests required by this specification are not intended to be routine quality control tests.

1.5 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.6 *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 requirements prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

[D1600 Terminology for Abbreviated Terms Relating to Plastics](#)

[F412 Terminology Relating to Plastic Piping Systems](#)

[F1802 Test Method for Performance Testing of Excess Flow Valves](#)

[F2897 Specification for Tracking and Traceability Encoding System of Natural Gas Distribution Components \(Pipe, Tubing, Fittings, Valves, and Appurtenances\)](#)

3. Terminology

3.1 Definitions:

3.1.1 Definitions are in accordance with Terminology [F412](#), unless otherwise specified. Abbreviations are in accordance with Terminology [D1600](#).

3.1.2 *bypass flow, n*—an intentional rate of passage of natural gas through an EFVB after trip, which will allow upstream and downstream pressure to equalize across the device to automatically reset to the open position after removal of a fault condition.

3.1.3 *excess flow valve, EFV, n*—a device installed in a natural gas piping system to automatically stop or limit the passage of natural gas when the rate of passage of natural gas through the device exceeds a predetermined level.

3.1.4 *excess flow valve bypass, EFVB, n*—an EFV designed to limit the flow of gas after trip to a small predetermined level and to reset automatically after the pressure is equalized across the valve.

3.1.5 *excess flow valve non-bypass, EFVNB, n*—an EFV designed to stop the flow of gas after trip and to be reset manually.

3.1.6 *leak rate, n*—the flow of natural gas through an EFVNB after trip.

¹ This specification is under the jurisdiction of ASTM Committee [F17](#) on Plastic Piping Systems and is the direct responsibility of Subcommittee [F17.60](#) on Gas.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.