



Standard Specification for Non-Metallic Expansion Joints¹

This standard is issued under the fixed designation F 1123; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This specification provides the minimum requirements for construction, materials, performance, and dimensional requirements of arch-type non-metallic expansion joints.

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

1.3 The following safety hazards caveat pertains only to the test method described in this specification. *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:

A 395 Specification for Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures²

D 1418 Practice for Rubber and Rubber Latices—Nomenclature³

2.2 Federal Standard:

Code of Federal Regulations, Title 30, Chapter I, Mine Safety and Health Administration⁴

2.3 ANSI Standards:

B16.1 Cast Iron Pipe Flanges and Flanged Fittings⁵

B16.5 Steel Pipe Flanges and Flanged Fittings⁵

B16.24 Bronze Flanges and Flanged Fittings⁵

3. Terminology

3.1 Definitions:

3.1.1 *floating metallic flange type*—expansion joint having the tube, fabric plies, and cover brought up from the joint body to form a bead.

¹ This specification is under the jurisdiction of ASTM Committee F25 on Ships and Marine Technology and is the direct responsibility of Subcommittee F25.11 on Machinery and Piping Systems.

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² Annual Book of ASTM Standards, Vol 01.02.

³ Annual Book of ASTM Standards, Vol 09.01.

⁴ Available from Superintendent of Documents, Government Printing Office, Washington, DC 20402.

⁵ Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Three Park Ave., New York, NY 10016-5990.

NOTE 1—This bead is molded into a groove in the metallic flange. Retaining rings are not required with this design.

3.1.2 *integral rubber flange type*—expansion joint having the tube, fabric plies, and cover brought up from the joint body to form a rubber flange.

NOTE 2—Additional plies or other reinforcement may be used in the flange to meet service conditions. Retaining rings must be used with this design.

3.1.3 *maximum allowable working pressure (MAWP)*—manufacturer's recommended maximum continuous operating pressure (lb/in.² (Pa)).

3.1.4 *non-metallic flanged expansion joint*—flexible connector fabricated from natural or synthetic rubber and fabrics, usually with metal reinforcement, to isolate vibration and noise and provide stress relief in piping systems caused by thermal changes and other system movements.

4. Ordering Information

4.1 Orders for products under this specification shall include the following information:

4.1.1 Inside diameter of connecting pipes (joint ID).

4.1.2 Face-to-face dimension that is the flange-to-flange dimension into which the expansion joint is to be installed.

4.1.3 Maximum and minimum operating pressure in pounds-force per square inch gage (pascals).

4.1.4 Maximum and minimum operating temperature in °F (°C).

4.1.5 Flange drilling in accordance with the appendix titled “Common Flange Dimension/Drilling Chart” of the *Technical Handbook on Rubber Expansion Joints and Flexible Pipe Connectors*⁶ (herein referred to as the *Technical Handbook*) or in accordance with special customer requirements.

4.1.6 Fluid to be handled.

4.1.7 This ASTM specification designation.

4.1.8 Movement data requirements (including shock or vibratory excursions if applicable).

4.1.9 Design certification burst test if required (see 9.1).

4.1.10 Hydrostatic or special tests if required (see 9.2).

⁶ The *Technical Handbook on Rubber Expansion Joints and Flexible Pipe Connections* is available from Fluid Sealing Association, 2017 Walnut St., Philadelphia, PA 19103.