



# Standard Specification for Entrainment Separators for Use in Marine Piping Applications<sup>1</sup>

This standard is issued under the fixed designation F1006; 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.

<sup>ε1</sup> NOTE—The Keywords Section was editorially added in November 2014.

## 1. Scope

1.1 This specification covers the minimum requirements for the pressure-temperature rating, testing, and making of pressure-containing vessels for entrainment separators.

1.2 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.

1.3 The following safety hazards caveat pertains only to the test methods portion, Section 6, of 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

## 2. Referenced Documents

### 2.1 ANSI Standards:<sup>2</sup>

~~B2.1 Pipe Threads (Except Dryseal)~~

~~B16.31 Non-Ferrous Pipe Flanges~~

### 2.2 ANSISME Standards:<sup>3</sup>

~~B2.1 Pipe Threads (Except Dryseal)~~

~~B16.1 Cast Gray Iron Pipe Flanges and Flanged Fittings~~ Fittings: Classes 25, 125, and 250

~~B16.3 Malleable Iron Threaded Fittings, Class~~ Fittings: Classes 150 and 300

~~B16.4 Cast Gray Iron Threaded Fittings, Class~~ Fittings: Classes 125 and 250

~~B16.5 Steel Pipe Flanges and Flanged Fittings~~ Fittings: NPS 1/2 through NPS 24 Metric/Inch Standard

~~B16.11 Forged Steel Fittings, Socket-Welding~~ Socket-Welding and Threaded

~~B16.15 Cast Bronze Threaded Fittings, Class 150 and 300~~ Copper Alloy Threaded Fittings: Classes 125 and 250

~~B16.24 Bronze Flanges and Cast Copper Alloy Pipe Flanges, Flanged Fittings, Class 150 and 300~~ and Valves: Classes 150, 300, 600, 900, 1500, and 2500

~~B16.25 Butt-welding Ends~~

~~B16.31 SA-278 Nonferrous Pipe Flanges~~ Cast Gray Iron Pressure Vessels

~~SA-395-60 Cast Ductile Iron~~

### 2.3 ASME Standards: ~~Boiler and Pressure Vessel Codes:~~<sup>3</sup>

~~SA278 Section II Cast Gray Iron Pressure Vessels~~

~~SA395-60 Cast Ductile Iron~~

~~Boiler and Pressure Vessel Code, Section VIII~~

<sup>1</sup> This specification is under the jurisdiction of 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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<sup>2</sup> Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

<sup>3</sup> Available from American Society of Mechanical Engineers (ASME), ASME International Headquarters, Two Park Ave., New York, NY 10016-5990, <http://www.asme.org>.

~~Boiler and Pressure Vessel Code, Section II~~

2.4 ~~MSS Standards:~~<sup>4</sup>

~~MSSSP-51~~~~MSS-SP-51~~ ~~150 LB Class 150LW Corrosion Resistant Cast Flanges and Cast Flanged Fittings~~

2.5 ~~Military Standards:~~<sup>5</sup>

~~MIL-F-1183 Fittings Tube, Bronze, Cast (Silver Brazings)~~

### ~~3. Definitions of Terms Specific to This Standard~~

~~3.1 *entrainment separator*—a mechanical device inserted in a pipeline which by centrifugal force, baffles, or other means will separate a liquid from a gas (vapor).~~

~~3.2 *hydrostatic test*—the act of filling an entrainment separator vessel with water and applying internal pressure to all parts of the vessel.~~

~~3.3 *master gage*—the calibrated gage used to verify the accuracy of the test gage. This gage shall be recalibrated traceable to the National Bureau of Standards.~~

~~3.4 *pressure rating*—the maximum working pressure of an entrainment separator when operated at a specific temperature.~~

~~3.5 *proof test*—the act of filling an entrainment separator vessel with water and applying internal pressure to all parts of the vessel for the purpose of causing yielding of the vessel and bursting of the vessel.~~

~~3.6 *temperature ratings*—minimum and maximum temperatures at which the entrainment separator may be operated while at specific pressures.~~

~~3.7 *test gage*—the pressure gage that is used to check the internal pressure of the entrainment separator. The test gage shall be calibrated at least annually or at any time it is suspected to be in error by a calibrated master gage.~~

### ~~3. Terminology~~

~~3.1 *Definitions of Terms Specific to This Standard:*~~

~~3.1.1 *entrainment separator, n*—a mechanical device inserted in a pipeline which by centrifugal force, baffles, or other means will separate a liquid from a gas (vapor).~~

~~3.1.2 *hydrostatic test, n*—the act of filling an entrainment separator vessel with water and applying internal pressure to all parts of the vessel.~~

~~3.1.3 *master gage, n*—the calibrated gage used to verify the accuracy of the test gage. This gage shall be recalibrated traceable to the National Bureau of Standards.~~

~~3.1.4 *pressure rating, n*—the maximum working pressure of an entrainment separator when operated at a specific temperature.~~

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### ~~4. Materials and Manufacture~~

4.1 The pressure-temperature ratings established under this specification are based upon the manufacturer's usage of high quality materials produced under regular control of chemical and physical properties by a recognized process. The manufacturer shall be prepared to submit certification of compliance, verifying that his product has been so produced and that it has been manufactured from material with chemical and physical properties at least equal to the requirements of the appropriate standard or specification listed in 4.3 of this specification or Section II of the ASME Boiler and Pressure Vessel Code.

4.2 For materials not having values of allowable stress tabulated in Section VIII<sub>2</sub>, Division I<sub>2</sub> of the ASME Boiler and Pressure Vessel Code, allowable stresses shall be determined in accordance with the procedures outlined in Appendix P of Section VIII, Division I<sub>2</sub> of the ASME Boiler and Pressure Vessel Code.

4.3 Materials of construction shall be suitable for the service intended.

4.4 Bolting materials shall be at least equal to those listed in Table 1B of ANSI/ASME B16.5. Bolting materials shall not be used beyond temperature limits specified in the governing codes.

<sup>4</sup> Available from Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), 127 Park St., NE, Vienna, VA 22180-4602, <http://www.mss-hq.com>; <http://www.mss-hq.org>.

<sup>5</sup> Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, DLA Document Services, Building 4/D, 700 Robbins Ave., Philadelphia, PA 19111-5098, <http://www.dodssp.daps.mil>; 19111-5094, <http://quicksearch.dla.mil>.