



Designation: F962 – 04 (Reapproved 2010) F962 – 04 (Reapproved 2018)

Standard Specification for Oil Spill Response Boom Connection: Z-Connector¹

This standard is issued under the fixed designation F962; 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.

1. Scope

1.1 This specification covers design criteria requirements, design geometry, material characteristics, and desirable features for oil spill response boom connections. These criteria are intended to define minimum mating characteristics and are not intended to be restrictive to a specific configuration.

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 *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 *ASTM Standards:*²

F818 Terminology Relating to Spill Response Booms and Barriers

F1523 Guide for Selection of Booms in Accordance With Water Body Classifications

3. Material Characteristics

3.1 End connector and cross pin materials shall be corrosion resistant in sea water and such other environments as the intended service may require. If dissimilar metals are used, care shall be used in design to avoid galvanic corrosion.

3.2 Any material is acceptable for construction of the boom connector provided consideration is given to such factors as weight, mechanical strength, chemical resistance, flexibility, and conditions of the environment in which it is to be used.

4. Design Requirements

4.1 The minimum tensile strength of a boom-to-boom connection shall equal or exceed the minimum fabric tensile strength specified in Table 1 of Guide **F1523**.

4.2 When the connector is designed as an integral part of the boom, it shall ensure distribution or transfer of the tension member loads from one boom section to the next through or around the end connector in such a manner that the integrity of the joint is not broken.

4.3 The connector or adapter shall not take more than 0.04 in. permanent set when a 250-lb load, distributed over 3 in., is applied. The load shall be applied at the location that results in maximum deflection and shall be resisted by supports placed ½ in. from each end as shown in **Fig. 1**.

4.4 In addition to the dimensional requirements shown in **Fig. 2**, the self-locking cross-pin/lanyard assembly shall have the following characteristics:

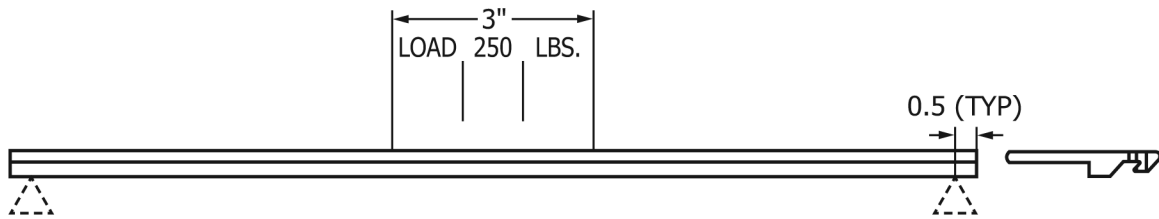
4.4.1 Its assembled strength shall resist a tensile load of 180 lbs placed upon the closed toggle by the test fixture to which the cross pin's lanyard is attached without deformation as shown in **Fig. 3**.

4.4.2 It shall have a ring or lanyard loop of a minimum diameter of 1-½ in. for the convenience of pulling the pin from the boom connectors.

¹ This specification is under the jurisdiction of ASTM Committee **F20** on Hazardous Substances and Oil Spill Response and is the direct responsibility of Subcommittee **F20.11** on Control.

Current edition approved April 1, 2010 Nov. 15, 2018. Published April 2010 December 2018. Originally approved in 1986. Last previous edition approved in 2004 2010 as **F962 – 04** **F962 – 04(2010)**. DOI: 10.1520/F0962-04R10.10.1520/F0962-04R18.

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.



NOTE 1—All items shown are generic and not intended to depict any manufacturer's specific product.

FIG. 1 Connector/Adapter

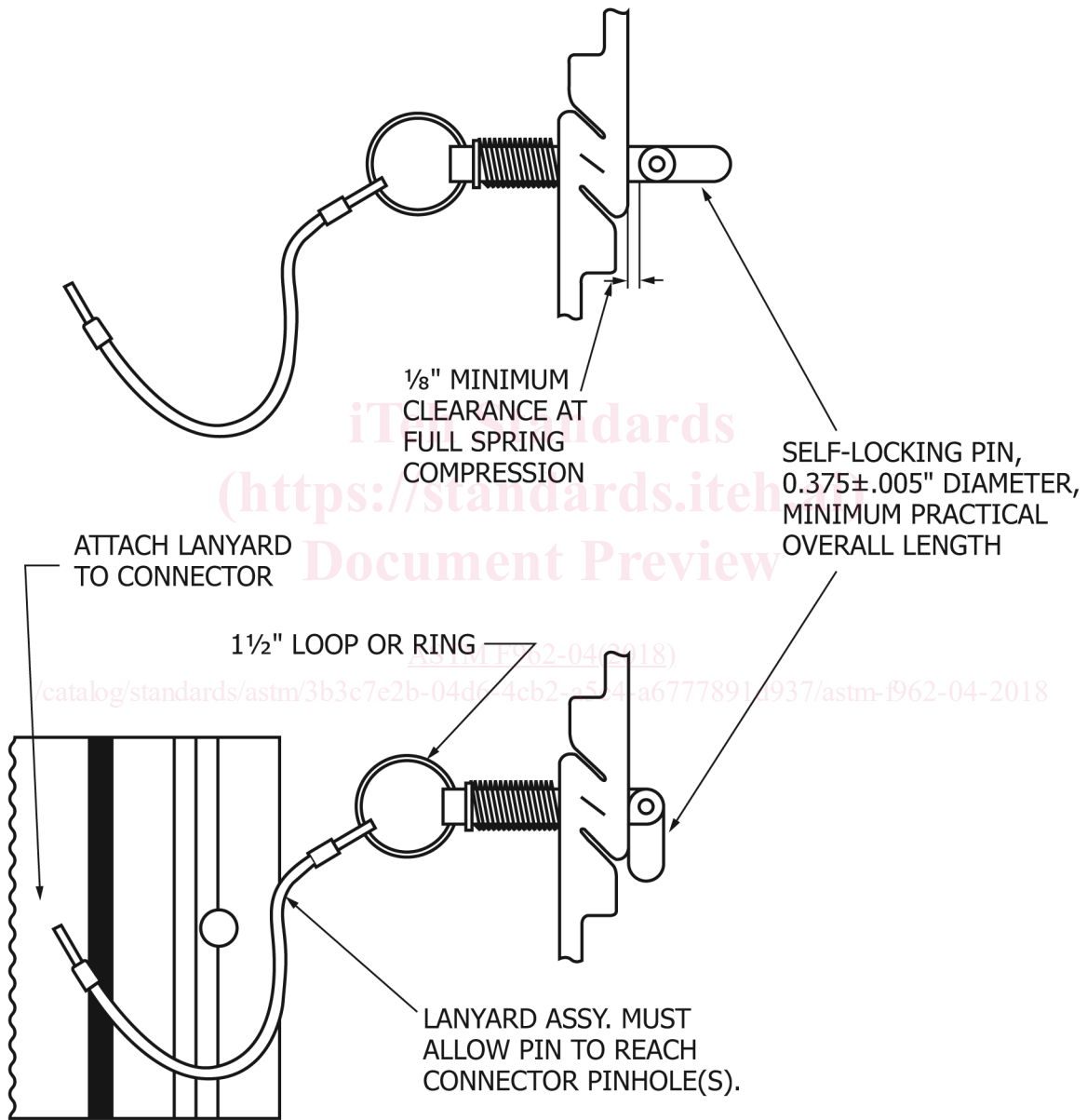


FIG. 2 Self Locking Cross Pin / Lanyard Assembly

4.4.3 The toggle shall turn freely and shall latch in either direction.

4.4.4 The cross-pin's spring shall be captured or locked to the assembly and shall exert a force on the toggle of between 16 and 22 lbs when connectors are assembled.

4.4.5 When the cross-pin's spring is compressed fully, there shall be a clearance of 1/8 in. between the short end of the toggle and the mated connector as shown in Fig. 2.