



Designation: F 1657 – 96

Standard Practice for Emergency Joining of Booms with Incompatible Connectors¹

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1. Scope

1.1 This practice provides a standard practice for the joining of oil spill containment boom connectors in emergencies.

1.2 The use of this connection method may adversely affect the total tensile strength of the connected booms.

1.3 These criteria are intended to define mating requirements that will allow the emergency or occasional connection of unlike connectors.

1.4 This practice is not intended to replace Specification F 962.

1.5 This practice does not address the compatibility of spill control equipment with spill products. It is the user's responsibility to ensure that any equipment selected is compatible with the anticipated spilled material.

1.6 There is no guarantee that all of the connectors in use today can accept the holes spaced as required without interfering with existing bolt holes or other connector features.

1.7 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.8 *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.* For a specific precautionary statement, see Note 1.

2. Referenced Documents

2.1 ASTM Standards:

F 818 Terminology Related to Spill Response Barriers²

F 962 Specification for Oil Spill Response Boom Connection²

F 1093 Test Methods for Tensile Strength Characteristics of Oil Spill Response Boom²

F 1523 Guide for Selection of Booms in Accordance With Water Body Classifications²

3. Significance and Use

3.1 The use of this practice for the emergency joining of booms will not guarantee the effective performance of the joined boom sections, since each boom design and the environmental conditions of each incident govern the overall performance.

3.2 Historically, different types of end connectors have been produced. This practice addresses the operational need to connect different types, during spill incidents.

NOTE 1—Caution: Use of this practice with similar or different sizes of boom may cause the transmission of unwanted loading such as, tension loading and bending moments on certain boom parts resulting in possible premature failure of the containment system.

3.3 There are a wide range of boom connector configurations presently in use. These connectors were based upon some or all of the following design criteria:

3.3.1 Connect and transfer tensile loads between boom sections,

3.3.2 Minimize oil leakage between boom sections,

3.3.3 Be easily connectable in the presence of dirt, oil or ice, or a combination thereof,

3.3.4 Be quickly and easily connected and disconnected, in and out of the water,

3.3.5 Maintain boom performance (freeboard, heave response, conformance, stability, and so forth),

3.3.6 Be unaffected by temperature extremes,

3.3.7 Have no protruding parts that could snag, injure, or puncture,

3.3.8 Be light weight and buoyant,

3.3.9 Be operatively symmetrical,

3.3.10 Require no special tools for installation or removal,

3.3.11 Require no loose parts for connection,

3.3.12 Extend to the full height and draft of the boom,

3.3.13 Resist distortion (that is, winding boom on a reel), and

3.3.14 Be inherently safe to personnel.

4. Design Criteria

4.1 In order to comply with this practice for the emergency joining of boom with incompatible connectors, each boom connector, regardless of design, will incorporate the requirements described herein or use the adaption method in 5.3:

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

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² *Annual Book of ASTM Standards*, Vol 11.04.