



Standard Guide for Selection of Booms for Oil-Spill Response¹

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1. Scope

1.1 This guide covers the selection of boom for the containment and recovery of marine oil spills.

1.2 This guide 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 anticipated products and conditions.

1.3 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.

1.4 *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:*²

F818 Terminology Relating to Spill Response Barriers

F1093 Test Methods for Tensile Strength Characteristics of Oil Spill Response Boom

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

F2152 Guide for In-Situ Burning of Spilled Oil: Fire-Resistant Boom

3. Significance and Use

3.1 This guide is intended to aid in the selection of oil spill containment boom for various response conditions. It is not intended to define rigid sets of boom selection standards.

3.2 This guide is intended to be used by persons generally familiar with the practical aspects of oil spill cleanup opera-

tions including on-scene response coordinators, planners, oil spill management teams, oil spill removal organizations, and plan evaluators.

3.3 Minimum requirements for boom dimensions, buoyancy, and tensile strength are specified in Guide **F1523**. This guide provides additional qualitative information to aid in boom selection.

3.4 Seven general types of boom systems are described in this standard. Each description includes a summary of the operating principle and a list of selection considerations.

3.5 Definitions relating to boom design, boom types, boom components, boom characteristics, and boom performance can be found in Terminology **F818**.

3.6 Selection considerations are included to help the user on the selection of a particular boom type or category. Users are cautioned that within each category there may be a wide variation in performance among the various booms.

4. Boom Selection Considerations

4.1 Selecting a boom for a particular application involves examining the boom's likely performance with regards to a range of operational requirements. The following recommendations are a guide to this process with the requirements grouped together according to the operating environment, the slick conditions, and boom performance criteria. Comments on each of these operational requirements, specific to each boom type, are given in Section 6.

4.2 The general statements below describe likely boom performance with regards to individual design elements, and should be used with the understanding that overall performance is affected by a combination of design elements. For example, lower than typical buoyancy may be counteracted by providing increased longitudinal flexibility.

4.3 *Wave and Current Conditions*—In general, booms work best in calm conditions or in a long, gentle swell with no current. Performance is degraded in high waves, in short, choppy or breaking waves, and in strong currents.

4.4 *Roll Response in Currents*—Good roll response is important to effective containment in high currents and waves. Roll response is improved with: sufficient ballast; ballast located low on the skirt; flotation located away from the boom centerline; and tension members located low on the skirt.

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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.