



Standard Practice for Classifying Water Bodies for Spill Control Systems¹

This standard is issued under the fixed designation F 625; 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 practice creates a system of categories that classify water bodies relating to the control of spills of oil and other substances that float on or into a body of water.

1.2 This standard 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.

1.3 *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. Terminology

2.1 Definitions:

2.1.1 Recommended units of measure are given for each of the following definitions.

2.1.2 *air temperature*—average or point temperature of the air measured at or near the ground or water surface, ($^{\circ}\text{C}$).

2.1.3 *current*—average water velocity relative to a reference point, (m/s).

2.1.4 *debris*—any solid or semi-solid substance that could interfere with the operation of a spill control system.

2.1.5 *water depth*—mean vertical distance measured from the surface of the water to the top of the continuous solid surface below at mean lower low water, (m).

2.1.6 *water temperature*—average or point temperature of a water body as measured within the top 300 mm (12 in.), ($^{\circ}\text{C}$).

2.1.7 *wave height*—(significant wave height) the average height, measured crest to trough, of the one-third highest waves, considering only short-period waves (that is, period less than 10 s), (m).

2.1.8 *wave period*—(significant wave period) the average period of the one-third highest waves, measured as the elapsed time between crests of succeeding waves, (s).

2.1.9 *wind*—the air velocity measured at a height 10 metres (33 ft) above the ground or water, (m/s).

3. Summary of Practice

3.1 General environmental conditions for spill control systems are grouped into four major types of water bodies (see Table 1). Additional factors that may affect spill control operations are listed in Section 5.

4. Significance and Use

4.1 This practice is to be used as a guide to classify water bodies for spill control systems. These classifications may be used in formulating standards for design, performance, evaluation, contingency and response planning, contingency and response plan evaluation, and standard practice for spill control systems.

4.2 Relatively few parameters of broad range have been used in Table 1 in order to enable the user to readily identify general conditions under which spill control systems can be used.

4.3 Satisfactory operation of any specific spill control systems may not extend over the full range of conditions identified by Table 1. Detailed discussion with systems suppliers is recommended.

4.4 Effective operation of oil spill control equipment depends on many factors, of which the prevailing environmental conditions are just a few. Factors such as, but not limited to, deployment techniques, level of training, personnel performance, and mechanical reliability can also affect equipment performance.

5. Use of Table

5.1 Wave height is recognized as the primary variable in describing marine environments for spill control systems. Where currents are significant, the four water body types listed in Table 1 can be modified by appending "C", as in "I-C".

5.2 In some situations, air temperature, water temperature, or presence of debris, or a combination thereof, may significantly affect the usage of Table 1 and should be considered.

5.3 Other factors such as presence of salt water or silt, or both, should be considered if significant.

6. Keywords

6.1 oil spill; oil spill control; water bodies

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 on Control.

Current edition approved March 15, 1994. Published May 1994.

TABLE 1 Water Body Classifications

Type ^A	Wave Height, ^B m (ft)	Examples of General Conditions
Calm Water	0 to 0.3 (0 to 1)	small, short, non-breaking waves
Protected Water	0 to 1 (0 to 3)	small waves, some whitecaps
Open Water	0 to 2 (0 to 6)	moderate waves, frequent whitecaps
Open Water (rough)	>2 (>6)	large waves, foam crests and some spray

^A If current is significant, approximately 0.4 m/s (0.8 knots) or more, append "C" to the descriptor type, as "I-C".

^B Significant wave height throughout. May include breaking waves. The ratio of wave height to wave length should also be considered. The orientation of waves to current direction should also be considered.

The American Society for Testing and Materials takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.

This standard is copyrighted by ASTM, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org).