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Standard Guide for Terminology and Indices to Describe Oiling Conditions on Shorelines and Other Terrain¹

This standard is issued under the fixed designation F1687; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This guide covers the standardized terminology and types of observational data and indices appropriate to describe the quantity, nature, and distribution of oil and physical oiling conditions on shorelines that have been contaminated by an oil spill.

1.2 This guide does not address the mechanisms and field procedures by which the necessary data are gathered; nor does it address terminology used to describe the cultural resource or ecological character of oiled shorelines, spill monitoring, or cleanup techniques.

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *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

[F1686 Guide for Surveys to Document and Assess Oiling Conditions](#)

[F2202/F2204/F2204M Guide for Describing Shoreline and Inland Response Techniques](#)

3. Terminology

3.1 Definitions:

3.1.1 *asphalt pavement*—a naturally formed cohesive mixture of weathered oil and sediments. Sediments in the mixture are usually in the sand/granule/pebble size range. In appearance, natural asphalt pavement may resemble the mixture artificially created to surface roads.

3.1.2 *habitat types and zones*—the land-water interface is typically subdivided into across-shore zones. Dry land terrain is typically distinguished by climate, altitude, and species. From Guide [F2204/F2204/F2204M](#);

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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.

3.1.2.1 Discussion—

Marine and estuarine shorelines, river banks, and lake shores will be collectively referred to as shorelines, shores, or shore-zones.

3.1.2.2 Discussion—

Shore types include a range of impermeable (bedrock, ice, and manmade structures), permeable (flats, beaches, and manmade), and coastal wetland (marshes, mangroves,) habitats.

3.1.2.3 Discussion—

Other non-shoreline, inland habitats include wetlands (pond, fen, bog, swamp, tundra, and shrub) and drier terrains (grassland, desert, forests), and will be collectively referred to as either wetlands or terrains, respectively

Tidal Environments

Lower Intertidal Zone—the lower approximate one-third of the intertidal zone

Mid Intertidal Zone—the middle approximate one-third of the intertidal zone

Upper Intertidal Zone—the upper approximate one-third of the intertidal zone

Supra-Tidal Zone—the area above the mean high tide that occasionally experiences wave activity; also known as the splash zone

Non-Tidal Waters and Lake Environments

Lower Swash Zone—the area between the mean annual water level and the lowest annual water level, the lower approximate one-half of the zone of wave activity

Upper Swash Zone—the area between the highest annual water level and the mean annual water level; the upper approximate one-half of the zone of wave activity

Supra-Swash Zone—the area above the highest annual water level that occasionally experiences wave activity, for example, during a surge or a storm event

River Environments

Lower Bank—exposed only during low flow conditions

Midstream—areas exposed in a channel that are separated from the river bank

Upper Bank—under water only during bank-full river stage

Overbank—flood plain-inundated only by over-bank flow during flood conditions

Dry Land Terrains

Desert—arid lands with little precipitation, of which there are four broad types: hot and arid, semi-arid, coastal, and cold

Forest—treed lands of which there are three broad types: tropical, temperate, and boreal/taiga

Grassland—grass-dominated lands of which there are two broad types: tropical and temperate

Tundra—cold, treeless areas of far northern latitudes or alpine altitudes, of which there are two broad types: arctic and alpine.

ASTM F1687-22

3.1.3 *weathered oil*—the oil that has had an alteration of physical or chemical properties, or both, through natural processes such as evaporation, dissolution, oxidation, emulsification, and biodegradation.

4. Significance and Use

4.1 In order to ensure data consistency, it is important to use standardized terminology and definitions in describing oiling conditions **(1)**³. This guide provides a template for that purpose.

4.2 Data on oiling conditions at a shoreline are needed to provide an accurate perspective of the nature and scale of the oiling problem and to facilitate spill-response planning and decision making. Data on oiling conditions would be used in assessing the need for cleanup actions, selecting the most appropriate response technique(s), determining priorities for cleanup, and evaluating the endpoint of cleanup activities.**(2-3)**

4.3 Mechanisms by which data are collected can vary (see Guide **F1686**). They can include aerial video surveys or ground-level assessment surveys. The composition and responsibility of the survey team will depend on the response organization and objectives. The magnitude and type of data sets collected can likewise vary with the nature of the spill and operational needs.

4.4 Consistent data sets (observations and measurements) on shoreline oiling conditions are essential within any one spill in order to compare the data between different sites or observers, and to compare the data against existing benchmarks or criteria that have been developed to rate the nature or severity of the oiling. To the extent possible, consistency is also desirable between different spills, in order to benefit from previous experiences and cleanup decisions.

³ The boldface numbers in parentheses refer to a list of references at the end of this standard.