BRITISH STANDARD

BS 7959-2:2000

Materials used for the control of liquid spillages —

Part 2: Determination of water repellency or buoyancy for hydrophobic (oil sorbent) materials

Confirmed January 2011

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Committees responsible for this British Standard

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AEA Technology
British Oils Spill Control Association
British Safety Industry Federation
Chemical Industries Association
Environment Agency
Fire Service College
Personal Safety Manufacturers' Association

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Foreword

This British Standard has been prepared by Technical Committee CII/63, Chemical spill control.

BS 7959-2 gives a method for the determination of water repellency (buoyancy) for hydrophobic materials used for the control of spilled liquids. General test methods for all materials used for the control of spilled liquids are given in BS 7959-1. These materials, which are generically known as "sorbents", include those which act by adsorption, absorption and gelling. The test methods generally apply to sorbents of all types, which allows user to make reliable comparisons between materials of different types for specific applications.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 2, an inside back cover and a back cover.

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1 Scope

This part of BS 7959-2 describes methods of sampling and determining the water repellency of materials for the control of oil spills on water.

Such materials are hydrophobic in nature (i.e. reject water), and they retain their buoyancy for sufficient time to allow use on water.

A variety of materials of different composition and format is used in this application and for the purposes of this standard has been divided into the following categories.

Type I	web type	sheet, pad or roll
Type II	loose material	discrete particles of variable size
Type III	filled products	socks, booms, pillows, cushions
Type IV	agglomerates	masses of strands for pick-up of viscous liquids

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this British Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references the latest edition of the publication referred to applies.

BS 7959-1, *Materials used for the control of liquid spillages — Part 1: Determination of sorbency*.

3 Terms and definitions

For the purposes of this part of BS 7959 the terms and definitions given in BS 7959-1 and the following apply.

3.1

water repellency

property of hydrophobic materials whereby they reject adsorption of water when subjected to gentle agitation

3.2

buoyancy

ability to spring readily to the surface of water and/or float on the water surface, not below or at the water surface

4 Sampling and preparation of test samples

Take representative samples of the materials as described in BS 7959-1:2000, **4.1**.

Prepare and condition the material as described in BS 7959-1:2000, **4.2**.

5 Determination of water repellency

5.1 Principle

A small sample of material is placed on the surface of water in a test tank. Signs of "water logging" or sinking are assessed after a fixed time on the water, and after agitation for some materials.

NOTE This method of test is a qualitative determination of suitability of hydrophobic sorbents for use on water.

5.2 Reagents

Clean tap water, free from detergents, emulsifying agents and surfactants.

5.3 Apparatus

All apparatus shall be completely free of detergents, surfactants, emulsifying agents and other materials.

5.3.1 *Ordinary laboratory apparatus*.

5.3.2 *Test vessel*, constructed of glass or clear plastic, of suitable size to allow sample to:

a) float freely on the surface;

b) absorb its maximum volume of water;

c) sink to its full depth.

5.4 Procedure

5.4.1 *Test pieces*

Prepare the test pieces as follows.

— For Type 1 cut a sample of size suitable to cover the surface of the water in the test vessel.

— For Type II measure out sufficient volume of loose material to cover the entire surface area of the liquid to about 10 mm thickness.

— For Types II and IV use the sample as described in clause **4**. Where feasible use a full-size product sample.

5.4.2 *Test liquid*

Start each test with fresh water (**5.2**) to avoid any surface effects due to contamination of the water.

5.4.3 *Determination*

For all types, place the sample of sorbent material on the surface of the water.

In the case of Type II, loose materials, spread the sample evenly to a thickness of about 10 mm. Leave the sample to stand for 30 min and then agitate with a glass rod for 30 s.

NOTE A 1 l glass beaker may be the most appropriate vessel for Type II evaluation.

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For all types, the samples shall be observed for a minimum of 8 h. During the test period, the test sample shall be examined for signs of sinking, water logging or significant loss of buoyancy. If any of these physical changes occurs within 8 hours the product shall be deemed to have failed the test.

NOTE 2 For some products, failure may occur in the very early part of the test.

The test may be continued for whatever time is considered necessary for product end use.

5.5 Test report

The test report should include the following minimum information:

a) material description and BS material type;

b) supplier/manufacturer and product code;

c) date of test;

d) reference to this British Standard;

e) observations during test;

f) result of test (pass/fail) after 8 hours;

g) time to failure if it fails after 8 hour test.

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