BS ISO 20712-3:2008

BSI Standards Publication

Water safety signs and beach safety flags

Part 3: Guidance for use

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

raising standards worldwide™

Full document details: BS ISO 20712-3:2008

National foreword

This British Standard is the UK implementation of ISO 20712-3:2008. It supersedes BS 8504-1:2006 and BS 8504-2:2006, which are withdrawn.

National Annex NA has been added by PH/8/1, to provide examples of feather flags.

The UK participation in its preparation was entrusted to Technical Committee PH/8/1, Graphical Symbols - Safety Signs.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© BSI 2011

ISBN 978 0 580 56875 6

ICS 01.080.10; 97.220.40

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 September 2011.

Amendments/corrigenda issued since publication

Date	Text affected

Documents
Document Sharing Hub

Full document details: BS ISO 20712-3:2008

INTERNATIONAL STANDARD

ISO 20712-3

First edition
2008-08-15

Water safety signs and beach safety flags —

Part 3: Guidance for use

Signaux de sécurité relatifs à l'eau et drapeaux de sécurité pour les plages —

Partie 3: Lignes directrices pour l'utilisation

Reference number
ISO 20712-3:2008(E)

Documents
Document Sharing Hub
© ISO 2008

Full document details: BS ISO 20712-3:2008

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

COPYRIGHT PROTECTED DOCUMENT

© ISO 2008

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

© ISO 2008 – All rights reserved

Documents
Document Sharing Hub

Full document details: BS ISO 20712-3:2008

Contents

Page

Foreword ... iv
Introduction ... v
1 Scope ... 1
2 Normative references ... 1
3 Terms and definitions ... 1
4 Guidance for selection and siting of signs and flags ... 2
4.1 Guidance for risk assessment ... 2
4.2 Siting ... 3
5 Water safety signs ... 3
5.1 General requirements for aquatic environments ... 3
5.2 Specific requirements for the swimming pool environment ... 6
6 Beach safety flags ... 7
6.1 General ... 7
6.2 Application of specific beach safety flags ... 7
6.3 Materials for beach safety flags ... 8
6.4 Operation of flags ... 8
6.5 Flag-pole ... 9
6.6 Inspection and maintenance of flags and flag-poles ... 9
6.7 Storage of flags ... 9
7 Multiple signs ... 9
7.1 General requirements ... 9
7.2 Presentation of information ... 9
7.3 Types of multiple signs ... 11
8 Tsunami signing system ... 14
Annex A (informative) **Distance factor** z ... 15
Annex B (informative) **Examples of signing swimming pools** ... 16
Annex C (informative) **Examples of positioning beach safety flags** ... 18
Annex D (informative) **Typeface for text** ... 20
Annex E (informative) **Examples of tsunami signing system** ... 22
Bibliography ... 26

© ISO 2008 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 20712-3:2008

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

ISO 20712-3 was prepared by Technical Committee ISO/TC 145, *Graphical symbols*, Subcommittee SC 2, *Safety identification, signs, shapes, symbols and colours*.

ISO 20712 consists of the following parts, under the general title *Water safety signs and beach safety flags*:

— *Part 1: Specifications for water safety signs used in workplaces and public areas*

— *Part 2: Specifications for beach safety flags — Colour, shape, meaning and performance*

— *Part 3: Guidance for use*

© ISO 2008 – All rights reserved
Documents
Document Sharing Hub
Full document details: BS ISO 20712-3:2008

Introduction

This part of ISO 20712 reflects good practice in the use of water safety signs and beach safety flags. The illustrations show examples of the selection and location of water safety signs and beach safety flags designed to provide information about aquatic hazards and the action necessary to avoid those hazards.

A standardized method of signing with the use of appropriate supplementary text throughout the working and public environment assists the process of education and instruction on the meaning of water safety signs and beach safety flags, and the appropriate actions to take. The intention of this part of ISO 20712 is to ensure a uniformity of application of water safety signs and beach safety flags which leads to increased familiarity, and therefore improved safety, for the users including visitors and for the general public.

The illustrations within this part of ISO 20712 are based on assumptions that some of the people may be unfamiliar with the features of the indoor or outdoor swimming pools or of the beach. The illustrations are not intended to cover every potentially hazardous situation and they should be interpreted as recommendations and not as minimum requirements.

The use of water safety signs and beach safety flags does not replace the need for proper working methods and safety instruction or for training in accident prevention and the actions to be taken in the event of an emergency, or for the provision of lifeguards.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

NOTE 1 Some countries' statutory regulations may differ in some respect from those given in this part of ISO 20712.

NOTE 2 Some countries may differ in some respect from the requirements given in this part of ISO 20712 where they use the diamond geometric shape for warning signs.

© ISO 2008 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 20712-3:2008

Documents
Document Sharing Hub

INTERNATIONAL STANDARD ISO 20712-3:2008(E)

Water safety signs and beach safety flags —

Part 3:
Guidance for use

IMPORTANT — The colours represented in the electronic file of this part of ISO 20712 can be neither viewed on screen nor printed as true representations. Although the copies of this part of ISO 20712 printed by ISO have been produced to correspond (with an acceptable tolerance as judged by the naked eye) to the requirements of ISO 3864-1, it is not intended that these printed copies be used for colour matching. Instead, consult ISO 3864-1, which provides colorimetric and photometric properties, together with, as a guideline, references from colour order systems.

1 Scope

This part of ISO 20712 gives guidance for the selection and use of water safety signs as specified in ISO 20712-1 and beach safety flags as specified in ISO 20712-2, in aquatic environments. It provides guidance on their location, mounting positions, lighting and maintenance. It also provides guidance on the design and location of multiple signs.

This part of ISO 20712 does not apply to traffic signs for use on the public highway or maritime signalling. It is not applicable to flags for use on firing ranges or to flags used to indicate water quality. It does not cover means of escape signs and their illumination which may be present.

NOTE The illustrations in this part of ISO 20712 are as accurate as possible within the limitations of the printing process.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7001, *Graphical symbols — Public information symbols*

ISO 17724, *Graphical symbols — Vocabulary*

ISO 20712-1, *Water safety signs and beach safety signs — Part 1: Specifications for water safety signs used in workplaces and public areas*

ISO 20712-2, *Water safety signs and beach safety signs — Part 2: Specifications for beach safety flags — Colour, shape, meaning and performance*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17724 and the following apply.

3.1
beach
area forming a shoreline or sloping bank at the edge of the sea or a river estuary or lake

[ISO 20712-2:2007, 3.1]

© ISO 2008 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 20712-3:2008

3.2
beach safety flag
material that gives a particular safety message by means of a combination of one or more colours and a geometric shape, and is attached by one end to a pole or rope

NOTE A flag can also have additional support, e.g. a horizontal support.

[ISO 20712-2:2007, 3.2]

3.3
factor of distance
z
relationship between the height (h) of a sign and the observation distance (l), used to determine observation distances of signs

$$z = l/h$$

[ISO 17724:2003, 28]

3.4
multiple sign
two or more safety signs and/or associated supplementary information on the same carrier

3.5
pool basin
water tank where water related activities can take place

3.6
pool surround
area around a pool basin for entry and exit to the pool basin and general circulation space

3.7
safety sign
sign which gives a general safety message, obtained by a combination of a colour and geometric shape and which, by the addition of a graphical symbol, gives a particular safety message

[ISO 17724:2003, 68]

3.8
sign height
diameter of a circular geometric shape or height of a rectangular or triangular geometric shape of the type of safety sign

NOTE Any outer border to the safety sign is excluded. See ISO 3864-1.

4 Guidance for selection and siting of signs and flags

4.1 Guidance for risk assessment

Selection and use shall be determined following the results of a risk assessment. The risk assessment should take into account the following specific issues:

a) hazards and associated risks of the aquatic environment;

b) regulations or legislation;

c) operation and management of the aquatic environment;

d) users and their foreseeable behaviour.

© ISO 2008 – All rights reserved
Documents
Document Sharing Hub
Full document details: BS ISO 20712-3:2008

In specific situations, other issues may have to be considered in a risk assessment.

NOTE The users can be in unfamiliar environments, not wearing their normal sight correction lenses, or in bare feet.

As the result of the risk assessment, a comprehensive statement of requirements should be prepared and used as the basis for the detailed design and specification for the selection and use of signs and flags.

4.2 Siting

4.2.1 Water safety signs and multiple signs

The siting of water safety signs and multiple signs should allow hazards to be recognized and appropriate avoiding action to be taken by users.

The following matters (issues, factors) should be considered:

a) location of hazards and their signage;

b) location of entrances/access to facilities;

c) location of any other signs;

d) location of architectural features, décor, structures, vegetation or people that could conceal or divert attention from signs;

e) lighting level and characteristics under both normal and mains-failure conditions;

f) appropriate supplementary text to water safety signs;

g) appropriate information on multiple signs.

4.2.2 Beach safety flags

The siting of beach safety flags should allow hazards to be recognized and appropriate avoiding action to be taken by users.

The following matters (issues, factors) should be considered:

a) nature and location of hazards and their relevant signage;

b) zoning or boundaries of aquatic activities;

c) location of structures, beach furniture or vegetation that could conceal or divert attention from flags;

d) location of flag-poles;

e) appropriate information on multiple signs, such as an explanation of meaning of flags and the presence or otherwise of a lifeguard service.

5 Water safety signs

5.1 General requirements for aquatic environments

5.1.1 General

The system designer should identify the locations of the hazards.

Signs should conform to ISO 20712-1.

© ISO 2008 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 20712-3:2008

The required sign height of the safety sign should be determined from the maximum viewing distance under different external illumination conditions and the relevant distance factor z according to Annex A (see Table A.1).

The following principles should be taken into account when planning water safety signage; signs should:

a) be sited conspicuously within the normal field of vision;

b) contrast to their surroundings;

NOTE The contrast and conspicuity may be increased by the provision of an outer border or by mounting on a sign board with a colour contrasting to the surroundings.

c) be visible from any place within the vicinity of the hazard;

d) be sited at the same height throughout the aquatic facility, as far as is reasonable;

e) take precedence over all other signs with the exception of escape route signing, if applicable;

f) be placed so that they are not a hazard;

g) be placed at sharp changes in depth, if applicable;

h) be illuminated, if applicable, to ensure that they are visible and legible.

Care should be taken to avoid over-provision of safety signs at one location as this can confuse viewers and result in individual safety messages not being noticed and understood.

5.1.2 Mounting height

The following principles should be applied to assist users of the facilities to predict the location of successive signs, whether they are mounted on walls, posts or overhead.

a) Signs should be mounted as close as practicable to the observer's line of sight in the vertical plane. For a standing adult, this will be approximately 5° up or down from a point 1 500 mm above ground level in front of the observer.

b) Signs that are freestanding or mounted overhead should be placed so that they are not a hazard.

c) Where practical, the space in front of the sign should be clear so that people without correction lenses or with visual impairments are able to approach the sign to reduce their viewing distance.

5.1.3 Lighting

If artificial lighting is provided, effective illumination is required both in normal and in mains-failure conditions, if applicable.

There are various ways of ensuring the satisfactory illumination of signs.

Some types of lighting, e.g. low pressure sodium, do not enable effective colour recognition and are therefore unlikely to be suitable for the illumination of water safety signs.

Where a sign is illuminated by an external artificial light source, the vertical illumination should be a minimum of 100 lx under normal lighting conditions.

5.1.4 Sign height and maximum viewing distance

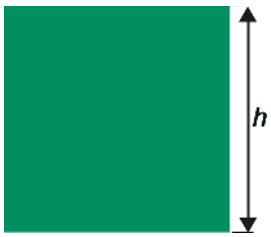
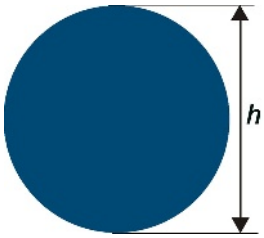
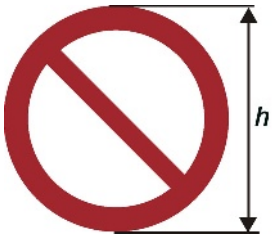
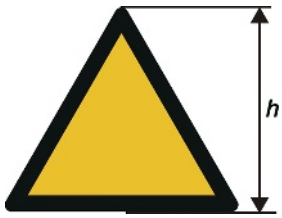
A sign should be both visible and legible at the maximum viewing distance.

© ISO 2008 – All rights reserved
Documents
Document Sharing Hub
Full document details: BS ISO 20712-3:2008

NOTE 1 The sign height necessary to achieve these criteria will depend upon the viewing distance and the illumination of the sign. Measurement of sign height is given in Table 1.

NOTE 2 In external environments, a sign may be made more visible by provision of a larger colour contrasting border or background.

Table 1 — Measurement of sign height

	Type of sign			
	Safe condition	**Mandatory action**	**Prohibition**	**Warning**
Sign height h				

The required maximum viewing distance of a sign should be determined by its position within the area and take into account the needs of people with normal sight and people with visual impairments. Distance factors z for different illumination conditions and visual acuity are given in Table A.1.

The recommended maximum viewing distance for a particular sign height h, in millimetres (mm), can be calculated from the following equation:

$$l = zh$$

where

l is the required viewing distance, in millimetres (mm);

z is the relevant distance factor from Table A.1.

Recommended maximum viewing distances for different minimum sign heights under normal/natural illumination are given in Table 2.

Table 2 — Recommended maximum viewing distances for different minimum sign heights under normal/natural illumination

Minimum sign height mm	**Maximum viewing distance** m	
	Normal visual acuity	**Visual acuity 6/60**
60	3,6	0,36
80	4,8	0,48
120	7,2	0,72
180	10,8	1,08
240	14,4	1,44

For intermediate viewing distances, the next largest available sign height should be used.

© ISO 2008 – All rights reserved

Documents
Document Sharing Hub
Full document details: BS ISO 20712-3:2008