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Coastal slipway safety signs – Guidance for the selection and use

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Contents

Summary of pages

This document comprises a front cover, an inside front cover, pages i to ii, pages 1 to 14, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 March 2014. It was prepared by Subcommittee PH/8/1, *Safety signs*, under the authority of Technical Committee PH/8, *Graphical symbols.* A list of organizations represented on this committee can be obtained on request to its secretary.

Relationship with other publications

This British Standard draws upon BS ISO 20712-1 and BS EN ISO 7010 for registered safety signs and ISO 7001 for registered public information symbols. It is a companion to BS ISO 20712-3 concerning water safety in aquatic environments.

This British Standard conforms to the design principles of BS ISO 3864-1 and BS ISO 3864-3 and the colorimetric and photometric specifications of BS ISO 3864-4 for safety signs and ISO 22727 for public information symbols.

Information about this document

The colours represented in the electronic file of this British Standard can be neither viewed on screen nor printed as true representations. Although the copies of this British Standard have been produced to correspond (with an acceptable tolerance as judged by the naked eye) to the colour requirements, it is not intended that these printed copies be used for colour matching. Instead, consult BS ISO 3864-4 which provides colorimetric and photometric properties together with, as a guideline, references from colour order systems.

Use of this document

As a guide, this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification or a code of practice and claims of compliance cannot be made to it.

Presentational conventions

The guidance in this standard is presented in roman (i.e. upright) type. Any recommendations are expressed in sentences in which the principal auxiliary verb is “should”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

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

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

Introduction

A standardized method of signing with the use of appropriate supplementary text throughout the working and public environment can assist the process of education and instruction on the meaning of coastal slipway safety signs. The intention of this British Standard is to promote a uniformity of application of safety signs which can lead to increased familiarity, and therefore improved safety, for both visitors and the general public.

The figures included within this British Standard are done so based on the assumption that some people might be unfamiliar with the features of the coastal boating slipways. The figures are not intended to cover every potentially hazardous situation – they are examples, not minimum requirements.

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

1 Scope

This British Standard provides guidance on the selection and use of safety signs and public information symbols on sign boards. It provides guidance on the design, location, mounting positions and maintenance of sign boards which give information in a coastal slipway aquatic environment.

This British Standard does not apply to traffic signs for use on the public highway or to maritime signalling.

2 Normative references

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

BS EN ISO 7010, *Graphical symbols – Safety colours and safety signs – Registered safety signs*

BS ISO 3864-1:2011, *Graphical symbols – Safety colours and safety signs – Part 1: Design principles for safety signs and safety markings*

BS ISO 3864-3, *Graphical symbols – Safety colours and safety signs – Part 3: Design principles for graphical symbols for use in safety signs*

BS ISO 3864-4, *Graphical symbols – Safety colours and safety signs – Part 4: Colorimetric and photometric properties of safety sign materials*

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

ISO 7001, *Graphical symbols – Public information symbols*

ISO 22727, *Graphical symbols – Creation and design of public information symbols – Requirements*

3 Terms and definitions

For the purposes of this British Standard, the following terms and definitions apply.

3.1 coastal slipway
man-made or natural slope where boating craft can launch into the water (sea)

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

$z = l / h$

[SOURCE: BS ISO 3864-1:2011, **3.2**]

3.3 letter height
nominal height of the lower case letter "x"

3.4 public information symbol
graphical symbol intended to give information to the general public independently of language, the understanding of which is independent of specialist or occupational training

[SOURCE: BS ISO 17724:2003, **60**]

3.5 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

[SOURCE: BS ISO 3864-1:2011, **3.12**]

3.6 sign board
board carrying safety signs, public information and notices

3.7 sign height
diameter of a circular geometric shape or height of a rectangular or triangular geometric shape

[SOURCE: BS ISO 3864-1:2011, **3.13**]

4 Selection of safety signs, graphical symbols and supplementary text on sign boards

4.1 Risk assessment

A risk assessment should be carried out to determine the selection and use of signs. The risk assessment should take into account the following:

a) hazards and associated risks of the aquatic environment;

b) regulations or legislation (harbour byelaws);

NOTE 1 Attention is drawn to the Health and Safety at Work etc. Act 1974 [1] and the Port Marine Safety Code [2].

c) operation and management of the aquatic environment; and

d) slipway users and their foreseeable behaviour.

NOTE 2 Examples of foreseeable behaviour include users not being familiar with their environment, not wearing sight correction lenses (if needed) or having bare feet.

A risk assessment should also address any other issues applicable to the particular situation in which the signs are intended to be used.

The completed risk assessment should be used to form the basis of a detailed design and specification for the selection and use of signs.

4.2 Safety signs and graphical symbols

Safety signs should conform to the design principles of BS ISO 3864-1 and BS ISO 3864-3. The colorimetric and photometric properties of a safety sign should meet the requirements of BS ISO 3864-4. Registered safety signs should conform to BS ISO 20712-1 and BS EN ISO 7010.

Public information symbols should conform to the design requirements of ISO 22727. Registered public information symbols should conform to ISO 7001.

NOTE This includes "stay safe at sea" information.

4.3 Sign height and maximum viewing distances

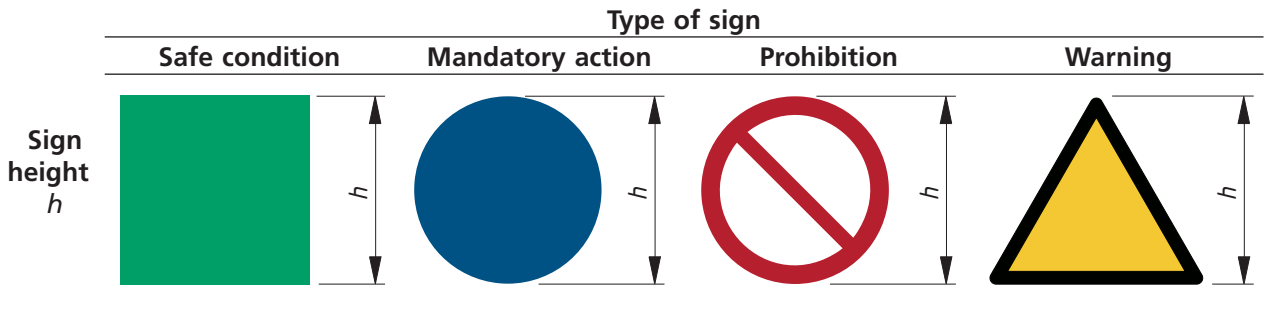
In order to determine the maximum size of a safety sign needed, the maximum viewing distance at which a safety sign is required to be conspicuous and identifiable, taking viewing angle into account, should be determined.

The measurement of safety sign height is given in Figure 1.

Registered safety sign originals in BS ISO 20712-1 and BS EN ISO 7010 are in a uniform 70 mm size with corner marks to enable accurate enlargement and reduction scaling. A border is not shown.

Registered public information symbols in ISO 7001 are in a uniform 70 mm size with corner marks to enable accurate enlargement and reduction scaling. A border is not shown. The height of a public information symbol is the height of the square of contrast colour to the graphical symbol. The "stay safe at sea" information symbols should use a blue square.

Figure 1 **Measurement of safety sign height**



NOTE Figure taken from BS ISO 20712-3.

The maximum viewing distance of a safety sign normal (perpendicular) to the sign, l, should be calculated from the sign height, h, using the appropriate distance factor, z_0:

$$l = z_0 h$$

where l and h have the same dimensional units (mm).

For safety signs in accordance with BS ISO 3864-1: 2011, Annex A, a distance factor, z_0, of 60 should be used.

The distance factor z depends upon the viewing angle. At an angle of α to the normal to the safety sign, z has the value of $z_0 \cos\alpha$. The effect of viewing angle should be taken into account, particularly the effect on viewing distances and standing positions due to the differences in eye height of the viewer and the mounted height of the safety sign.

NOTE The $\cos\alpha$ effect of viewing angle also applies to viewing distances for public information symbols and supplementary text.

The minimum height for safety signs is given in **6.1.5**.

The safety signs and graphical symbols should be in contrast to their background.

As public information symbols vary in content, care should be taken to ensure that the symbol is identifiable from the intended viewing distance. Minimum heights are given in **6.1.5**.

4.4 Supplementary text

Supplementary text should be provided to increase understanding of the message of the safety sign and may also be provided for public information symbols.

A distance factor, z_0, of 225 should be used for the lower case letters of supplementary text.

5 Siting and mounting of sign boards

5.1 Siting

Sign boards at coastal slipways should be sited in a location that is visible to all users in order to allow them to be aware of the existence of hazards and to take precautions.

The following should be taken into account:

a) the location of hazards and their signage;

b) the location of slipway access points;

c) the location of any other signs;

d) sign boards should take precedence over other signs and any signs duplicating the information should be removed;

e) the location of architectural features, structures or vegetation, or the possibility of temporary obstruction by vehicles or people that could conceal or divert attention from signs;

f) the intended reading distances;

g) the conspicuity of sign boards;

h) the contrast of sign boards to their surroundings; and

i) sign boards should not create a hazard.

5.2 Mounting position

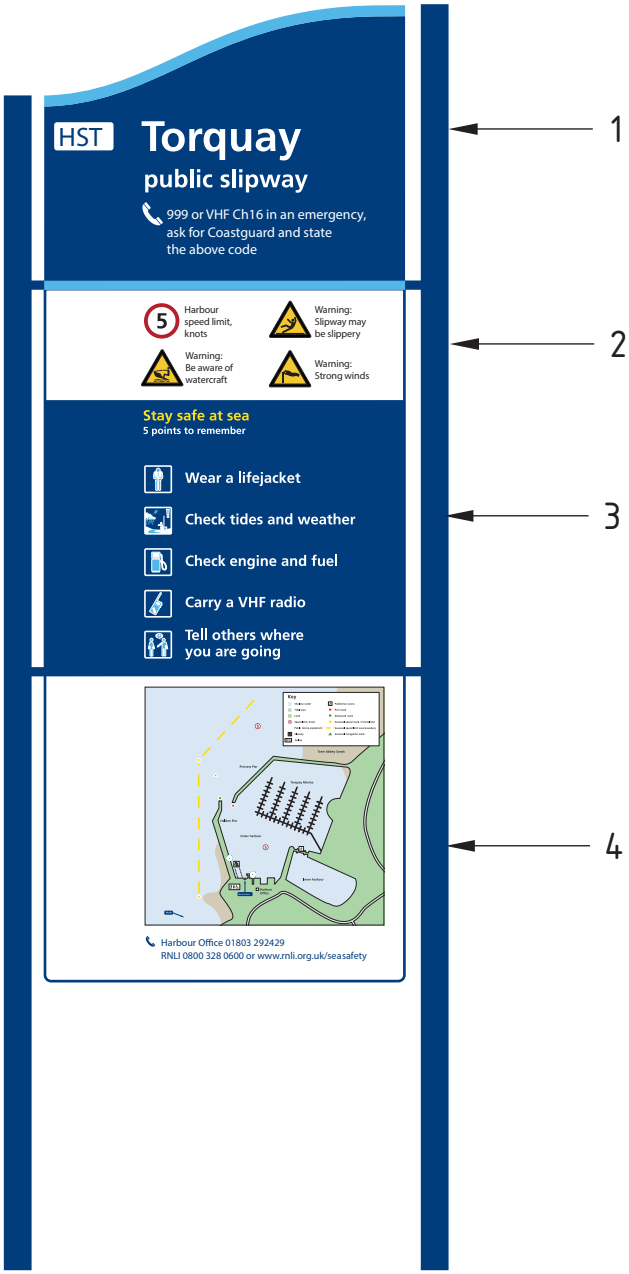
The following principles should be applied to help users find sign boards and safety information when they visit a coastal slipway.

a) Sign boards should be mounted such that the top of the sign board is less than 2 815 mm above ground level with the sections containing the safety signs and public information being between 1 200 mm to 2 200 mm from ground level (see Figures 2 and 3).

b) Signs that are free-standing should be placed so that they are not obstructive and do not become a hazard.

c) Wherever practicable, the space in front of the sign should be clear so that people with vision impairments are able to approach the sign to reduce their viewing distance.

Figure 2 **Example of a single panel access sign board design**



Key

1	Blue background: location name, Unique Slipway Location Code and emergency information	3	Blue background: stay safe at sea information
2	White background: safety warnings, safety prohibitions, mandatory actions and safe condition	4	White background: local area information, e.g. local area map and contact details in this example

NOTE Local area maps for use on sign boards should be in accordance with Annex A.

Figure 3 **Example of a double panel access sign board design**

Key

1 Blue background: location name, Unique Slipway Location Code and emergency information

2 White background: safety warnings, safety prohibitions, mandatory actions and safe condition

3 Blue background: stay safe at sea information

4 White background: local area information: local area map, contact details and slipway charges in this example

NOTE Local area maps for use on sign boards should be in accordance with Annex A.

6 Design of sign boards

6.1 Presentation of information

6.1.1 General

The layout and presentation of information should be consistent across a family of sign boards in order to help people to read a sign or be aware of a hazard. Grouping information into categories can make the information easier to understand. The scheme designer should apply a grid structure to the information content within the signs (see Figures 2 and 3).

Sign boards should be selected in accordance with **6.3**.

6.1.2 Typeface

Typefaces and the use of upper and lower case letters should be in accordance with Annex B.

6.1.3 Type size

There are several factors that determine the choice of type size on signs, including:

a) intended viewing distance;

b) speed at which the sign is to be read;

c) sign position;

d) typeface chosen; and

e) sign colours.

The minimum text height of lower case letters should be 10.5 mm.

6.1.4 Colour

The use of colour in a signing scheme can establish a visual look for the scheme. Colour selection is important as a sign board needs to be easy to see in the aquatic environment. The colour contrast between the colour of the text and the colour of the sign background should be carefully selected to ensure legibility.

Safety signs, including warning, prohibition, mandatory action and safe condition, and their associated text should be displayed on the white section(s) of the sign board. The selected background colour for displaying other information should ensure legibility of the symbols and text. The blue square of "stay safe at sea" information should have a contrast border of white of sufficient width to make the presence of the symbol conspicuous within a blue background.

NOTE Examples of sign boards are shown in Figures 2 and 3.

6.1.5 Use of safety signs and public information symbols

The positioning of safety signs and public information symbols on a sign board affects how successfully it is read and understood. Supplementary text should be used adjacent to the safety signs and public information symbols, where appropriate, to explain their meaning and this text should clearly relate to the safety sign or public information symbol it accompanies.

Safety signs should be a minimum height of 65 mm on access sign boards and 90 mm on reminder sign boards. The blue square of "stay safe at sea" symbols should be a minimum height of 55 mm on access sign boards and 90 mm on reminder sign boards.

6.2 Sign board edging

The edges of the sign boards should be smooth to touch and with radius corners to prevent injury or snagging of clothing.

6.3 Types of sign boards

6.3.1 Access signs

An access sign should be placed at each main access point to a slipway area and should be used to cater to both vehicle and pedestrian entrances; the exact position should be determined by the slipway environment.

NOTE 1 Figures 2 and 3 show examples of access signs. The dimensions and proportions are not fixed nor is the exact shape.

Sign boards should comprise single or double panels, as appropriate for the information being displayed.

The top of the sign board should be no more than 2 815 mm above the ground level, and the bottom of the sign board should be higher than 525 mm from the ground level.

A hierarchy structure should be created within the sign to group information together, in the following order:

a) slipway name;

b) emergency contact information;

c) Unique Slipway Location Code (if applicable);

NOTE 2 The Unique Slipway Location Code is established with the Coastguard to give each slipway sign a precise location that helps the emergency services to locate an incident. This code will be confirmed with the local Coastguard before access signs are produced or installed. For further information, see The RNLI's guide to slipway safety signs and symbols *[3].*

d) safety signs (includes safety hazards and safety prohibitions, mandatory actions and safe condition);

e) additional relevant information related to public safety at sea;

f) information regarding slipway charges, where applicable;

g) local water area map showing water channels, landmarks and obstacles; and

NOTE 3 See The RNLI's guide to slipway safety signs and symbols *[3].*

h) local contact information.

NOTE 4 Additional information content might include information about the local area, environmental messages or public facilities.

6.3.2 Reminder signs

Reminder signs are commonly used in the immediate slipway area; these signs should be placed at visible points around the slipway to remind users of the risks of using the slipway and/or being at sea.

NOTE 1 Figures 4 and 5 show examples of reminder signs. The dimensions and proportions are not fixed nor is the exact sign shape. For further information, see The RNLI's guide to slipway safety signs and symbols *[3].*

Reminder signs should be fixed in positions that best suit the slipway, for example on railings or a wall alongside the slipway, or fixed near facilities such as toilets or the pay station. The panel of the sign board should be positioned 1200 mm to 1500 mm from ground level.

Figure 4 **Example of a reminder sign design**

Key

1 Blue background: Location name

2 White background: safety warnings, safety prohibitions, mandatory actions and safe condition

3 Red background: Emergency information

Figure 5 **Example of a stay safe at sea reminder sign design**

Key

1 Blue background: Stay safe at sea information

2 Red background: Emergency information

A hierarchy structure should be created to group information. The following information should be included for reminder signs:

a) location name;

b) safety signs (includes safety hazards and safety prohibitions, mandatory actions and safe condition) or stay safe at sea symbols; and

c) emergency contact information.

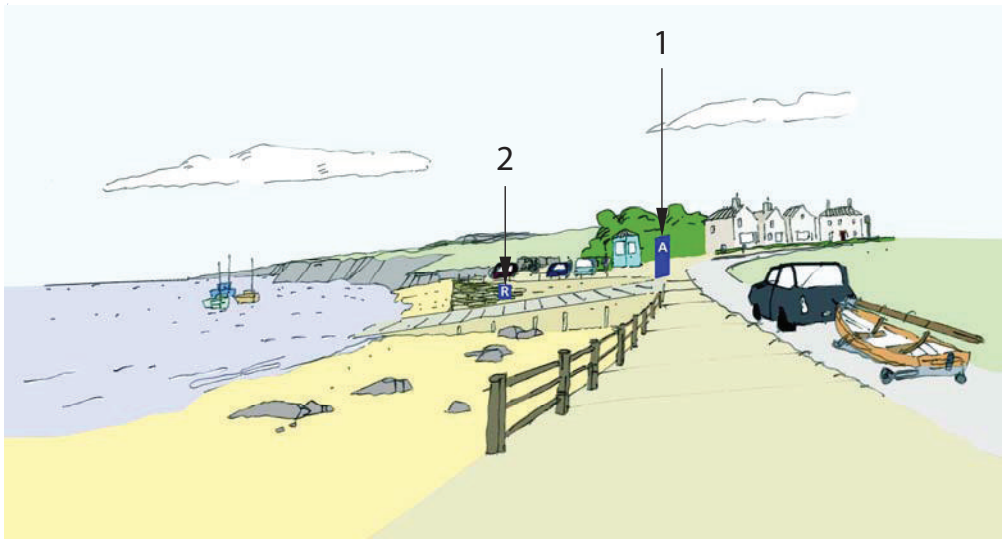
NOTE 2 Figure 6 gives an example of the locations of an access sign and a reminder sign at a public coastal slipway.

7 Construction, durability and suitability of signs

Signs that are suitable for their operating environment should be selected.

NOTE BS ISO 17398 covers aspects of performance and durability of safety signs.

Figure 6 **Example of sign locations at a typical coastal public slipway**



Key
1 A – access sign 2 R – Reminder sign

When selecting signs, the following factors should be taken into account regarding the composition of the sign:

a) the durability of base material;

b) the durability of graphical content;

c) the colour and light fastness;

d) the resistance to damage from user traffic or from cleaning;

e) the resistance to exposure to water;

f) the resistance to corrosion, for example as a result of sea spray;

g) the resistance to graffiti;

h) the flame resistance;

i) the type and suitability of fixings; and

j) the resistance to wind loads.

The expected environmental conditions of the location in which the signage is to be installed should be evaluated. The signs selected and installed should be suitable for withstanding these conditions.

Installers and designers should check sign specifications and, where necessary, check with the sign suppliers to be sure that the signs are suitable.

8 Servicing and maintenance

Procedures should be put in place to ensure that signs are cleaned and visually inspected at regular intervals. Where defects are found on signs, they should be fixed immediately. A sign which has been damaged or become faded should be replaced.

When a sign is no longer required, it should be removed.

Annex A (normative) Local area maps for use on sign boards on coastal public slipways

*COMMENTARY ON **ANNEX A***

The local area map shown in Figure A.1 is drawn using information from up-to-date Ordnance Survey map and maritime charts (Admiralty Leisure Charts). Maps often contain more information than is recommended and can be simplified by removing layers of information, simplifying shapes and the level of detail to leave only essential information. For example, contour lines, private buildings and unnecessary text labels can be removed. The essential information includes slipway approach roads, slipway access points, car parking and prominent area features, with text labels where necessary.

An over-simplified map can be hard to understand. Similarly, a map that is too cluttered with information can be difficult to read. The map should provide information to the reader to help them become orientated, find the facilities they need and help them navigate the water safely. The map should be cropped to show only the immediate water area around the slipway.

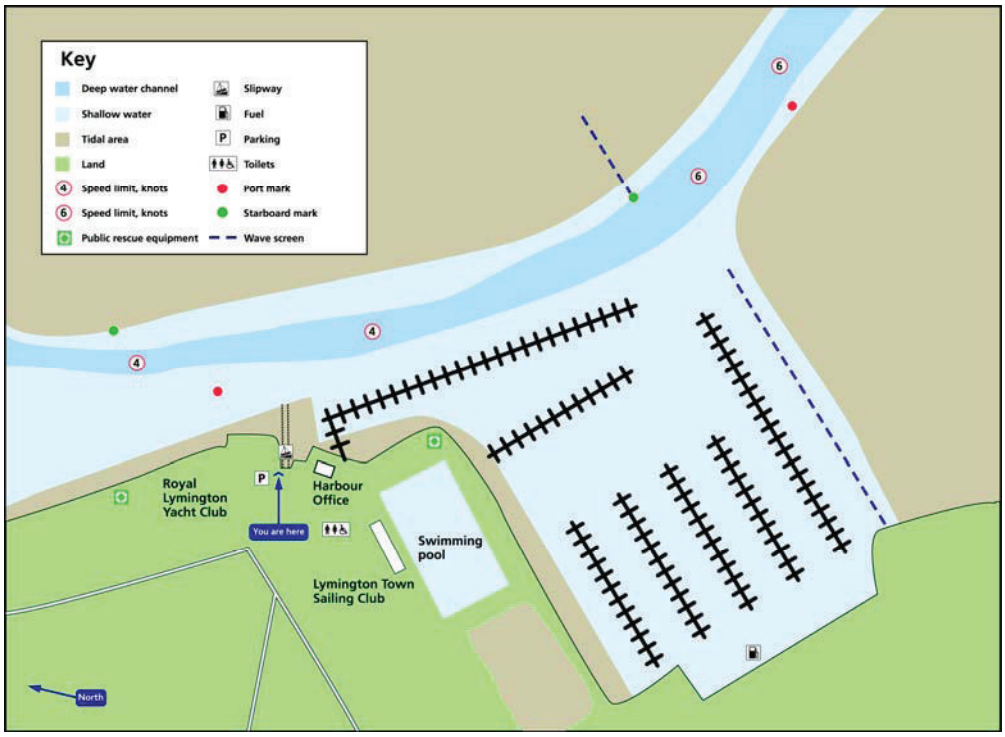
Information should be gathered from maritime charts regarding water channels, marks, water zones for activities and fuel locations, and these should be added to the simplified map.

The finished map should be orientated to relate to the actual environment and the position in which the reader is standing when reading the map at the slipway.

The key information that should be included is:

- deep water channels;
- shallow water;
- tidal areas, marks;
- water zones for activities;
- water speed limits;
- fuel locations;
- slipway access roads;
- slipway access points;
- car parking;
- facilities; and
- prominent area features.

Figure A.1 **Example of a coastal public slipway local area map**



NOTE *See* The RNLI's guide to slipways safety signs and symbols *[3] for further information.*

Annex B (normative)

Typeface for text

The supplementary text to safety signs should not detract from the graphical symbol. The supplementary text height should not be used to determine the maximum viewing distance. The supplementary text should not be used without the graphical symbol and might need to be in more than one language.

NOTE 1 *Figure B.1 gives an example of a safety sign with supplementary text.*

The initial letter of the first word should be in upper case and the remainder of the wording should be lower case.

NOTE 2 *For short messages all capitals may be used.*

The typeface used should be either a sans serif typeface or a typeface with very small serifs with the following characteristics:

a) widths of strokes throughout the letters constant within 10%;

b) widths of strokes at least one sixth of the letter height;

c) width of lower case letter "x" not less than 70% of the letter height;

d) not condensed, expanded, italic, script, outline or shaded; and

e) letters individually formed and not joined together.

Figure B.1 **Example of a safety sign with supplementary text**

Warning; Slipway
may be slippery

A typeface for use on sign boards should be carefully chosen based on the following guidelines:

1) sans serif typeface or typeface with very small serifs;
2) large x-height;
3) consistent stem thickness;
4) regular or semi-bold weight; and
5) open counters.

An example of a suitable typeface for use on coastal slipway signs is shown in Figure B.2.

Figure B.2 **Example typeface: roman and bold**

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz

Bibliography

Standards publications

For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS ISO 17398, *Safety colours and safety signs – Classification, performance and durability of safety signs*

BS ISO 17724:2003, *Graphical symbols – Vocabulary*

BS ISO 20712-3, *Water safety signs and beach safety signs – Part 3: Guidance for use*

Other publications

[1] GREAT BRITAIN. The Health and Safety at Work etc. Act 1974. London: HMSO.

[2] DEPARTMENT FOR TRANSPORT. *Port Marine Safety Code.* London: Department for Transport, 2009.

[3] ROYAL NATIONAL LIFEBOAT INSTITUTION. *The RNLI's guide to slipway safety signs and symbols*. RNLI, 2008.

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