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Specification for identification of pipelines and services

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Summary of pages

This document comprises a front cover, an inside front cover, pages i to ii, pages 1 to 20, 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 December 2014. It was prepared by Technical Committee PSE/4, *Identification of piping systems*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

This British Standard supersedes BS 1710:1984, which is withdrawn.

Information about this document

This is a full revision of the standard and introduces the following principal changes:

- the labelling system has been refined;
- ship systems have been removed;
- the water systems section has been amended and the labelling for water services expanded; and
- colour coding and sizing of markings reviewed and amended.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall".

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.

Particular attention is drawn to the following specific regulations in respect of requirements for clear identification of services conveying fluids:

- The Water Supply (Water Fittings) Regulations 1999 [1];
- The Water Supply (Water Fittings) (Scotland) Byelaws 2014 [2]; and
- The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009 [3].

1 Scope

This British Standard specifies the colours and supplementary information for the identification of pipes conveying fluids in above ground and below ground installations. It also includes ducts for ventilation and conduits used for carrying electrical services.

The following two methods of identification are included:

a) basic identification colours only; and

b) basic identification colours and code indications and/or code colours.

NOTE 1 Examples of identification by basic colour and code indications are illustrated in Annex A.

NOTE 2 The marking and labelling requirements identified in this British Standard are the preferred methods where there is no British Standard that covers a specific pipe or pipeline sector.

This British Standard does not include identification of fluid services on ships.

NOTE 3 For piping systems on ships and marine technology applications, see BS ISO 14726.

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, *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*

3 Terms and definitions

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

3.1 above ground installations
pipes or services located in a building, including those concealed, which are not otherwise considered below ground

3.2 banding
individual bands of colour used in conjunction with others to form the service identifier

3.3 below ground installations
pipes or services laid in soil or ducts which are in the ground, but not contained within a basement or in a sub level of a building

3.4 potable water
water suitable for human consumption

NOTE 1 Attention is drawn to the requirements of Section 67 of The Water Industry Act 1991 [4] in England and Wales, and similar provisions in The Water (Scotland) Act 1980 [5] and The Water and Sewerage Services (Northern Ireland) Order 2006 [6].

NOTE 2 Potable water can also be referred to as "wholesome" or drinking water.

3.5 private water supply
water provided from a source which is not the public water supply, e.g. private borehole or well

3.6 public water supply
water supplied from the public water supply system by a water undertaker

3.7 service identifier
combination of the basic, safety or code colour bands/indications which form an identifier enabling individual services or pipelines to be identified

4 General

*COMMENTARY ON **CLAUSE 4***

Attention is drawn to the Water Fittings Regulations [1] [2] [3], which require pipes and fittings to be appropriately identified.

Where an alternative method of identification to that specified in this British Standard is proposed for water-related services, prior consent should be sought from the relevant water undertaker.

4.1 Every service shall be readily identifiable with a visible service identifier. The service identifier shall be directly applied to the service, e.g. pipe, fitting, cable or duct. Where a service identifier becomes obscured by a covering, e.g. insulation, or is not readily visible, additional service identifiers shall be applied to the covering.

4.2 The service identifier shall comprise of the following elements: a basic identification colour band and, where there are variants within the family group of fluids or the service being identified, additional information shall be provided in the form of code indicators (see **7.3**), code colour bands (see **7.4**), supplementary information (see **8.3**) or a combination of any of these methods (examples of the service identifiers applied to pipes are given in Clause **8**).

NOTE This may be supplemented with additional written information, e.g. labelling.

4.3 The application of the service identifier shall not have a detrimental effect on the service, pipeline or covering to which it is attached or the fluids contained within. The service identifier shall be robust and durable and suitable for the climatic or operating conditions to which it is to be subjected.

4.4 The decorative or protective colour of the service, pipeline or covering shall be a contrasting colour to the basic identification colours to enable the identification to be readily discernible. Where the service identifier is of a similar colour to its background, a black or white edging of a minimum of 10 mm shall be used to separate the colours.

4.5 The service identifier shall be included at junctions, at both sides of each valve and wall penetration and at any other place where identification is necessary. The service identifier shall be readily visible in every section or compartment (e.g. between floor joist sections). Where services are concealed, service identifiers shall be located at regular intervals of not more than 0.5 m.

4.6 Where maintenance or repair work is undertaken and requires the identification to be removed or disturbed, it shall be replaced.

4.7 The service identifier and any supplementary information, direction of flow arrows, etc. shall be of sufficient size to enable them to be readily visible from floor level or the platform/walkway, where provided.

5 Identification colours

The identification colours shall be in accordance with Table 1.

Pipelines carrying industrial gases from cylinders shall have a basic identification colour in accordance with Table 1.

Table 1 **Identification colours**

Service	Colour	BS 4800:2011 colour code	Example (RGB)
Basic identification colours			
Water	Green	12 D 45	
Steam	Silver-grey	10 A 03	
Oils – mineral, vegetable or animal Combustible liquids	Brown	06 C 39	
Gases in either gaseous or liquefied condition (except air)	Yellow ochre	08 C 35	
Acids and alkalis	Violet	22 C 37	
Air	Light blue	20 E 51	
Waste effluents	Black	00 E 53	
Electrical services and ventilation ducts	Orange	06 E 51	
Safety colours			
Fire	Red	04 E 53	
Water from a public supply	Auxiliary blue	18 E 53	
Water from any other source	Flint grey	00 A 09	
Warning	Yellow	08 E 51	
Code and other colours			
Refrigeration	Blue	18 E 51	
Medical gases and refrigeration	Golden brown	06 D 45	

Table 1 **Identification colours**

Service	Colour	BS 4800:2011 colour code	Example (RGB)
Building services and refrigeration	Crimson	04 D 45	
Building services and refrigeration	Emerald green	14 E 53	
Building services	Salmon pink	04 C 33	
Building services and medical gases	Primrose	10 E 53	
Building services and medical gases	White	00 E 55	
Medical gases	French grey	12 B 21	
Medical gases	French blue	20 D 45	
Refrigeration	Sea green	16 C 37	
Refrigeration	Dark mauve	02 C 37	

NOTE The colours reproduced in this British Standard and the names of colours are given for guidance only. When ordering, only the BS 4800 reference number should be specified, as manufacturers often attribute different names to these colours.

6 Code indications

6.1 Safety colours

*COMMENTARY ON **6.1***

See Table 1 for information on safety colours.

Safety colours shall be as follows:

a) red for fire fighting;

b) yellow for warning;

c) auxiliary blue in conjunction with the green basic identification colour, to denote pipes carrying potable water provided from the public water supply. For water services provided from any other alternative water source, flint grey shall be used in conjunction with the green basic identification colour.

The shape and colour of each safety sign shall conform to BS ISO 3864-1 and the design of the graphical symbols shall conform to BS ISO 3864-3 and, where required, to BS EN ISO 7010.

NOTE If the pipeline has been coded with safety colours, see Annex A for examples of how to apply these.

6.2 Information

Information shall be given regarding the nature of the contents of the pipe by using the following systems either individually or in combination:

a) name in full;

b) abbreviation of name;

c) chemical symbol; and

d) appropriate code indications or code colour bands (see note).

NOTE 1 Annex B gives information on indicating pipe contents and direction of flow.

NOTE 2 Code colours and code indications for medical gas services are given in Annex C; code colours for general building services are given in Annex D; code colours for refrigeration services are given in Annex E and code colours for water services are given in Annex F.

7 Method of application

7.1 General

The service identifier or any descriptor labels shall be applied using a material sufficiently durable and resistant to deterioration for its expected life and the environmental conditions or surroundings where they are to be used, particularly where used below ground.

The service identifier may be applied using one of the following methods:

a) painting;

b) adhesive colour bands or labels;

c) colour clips;

d) wraps or coverings;

e) applied during manufacture.

NOTE 1 This list is not exhaustive and other appropriate methods may be used, subject to the environmental surroundings.

NOTE 2 The use of paints or adhesives as a fixing agent for the labels/banding can affect plastics pipe/fittings or the quality of the fluids being transported through permeation (e.g. adhesive labelling). In these cases, advice from the manufacturer of the plastics pipe should be sought to determine the suitability of any paint or adhesive compounds used.

For above ground installations, the service identifier shall be applied in accordance with **7.2**, **7.3** and **7.4** and applied during manufacture of the pipe or fitting or fitted to the service, e.g. pipework or fitting, directly following installation.

For below ground installations, a spiral of identification tape shall be continuously applied around the whole length of service pipe to ensure the service can be readily identified wherever it is exposed. Colour identification shall be in accordance with the requirements set out in **7.2** or **7.4**.

NOTE 3 This is in addition to any trench marker tape that is used for the avoidance of damage to the pipeline. It should be marked with text to enable identification of the basic fluid being conveyed.

NOTE 4 The biodegradable properties of some marker tapes should be taken into account to ensure it is fit for purpose.

7.2 Basic identification colour only

Where the nature of the service is such that only a basic identification colour is required, it shall be applied by one of the following methods:

a) applied over the whole length;

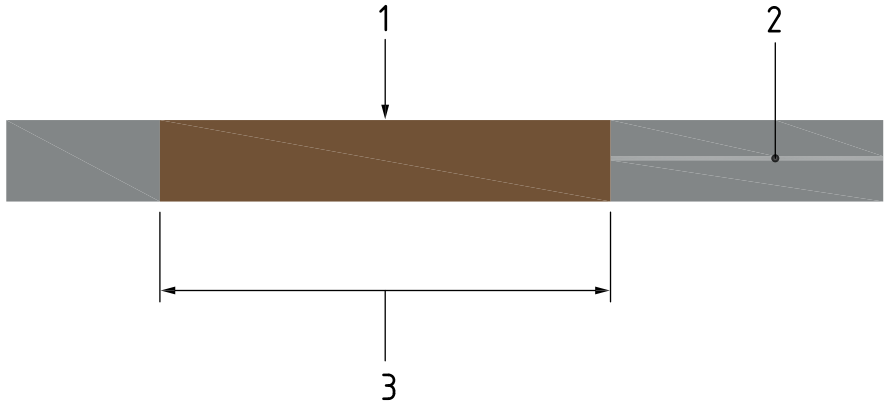
b) applied as a band (see Figure 1) using the banding dimensions below, depending on the diameter of the service or the external surface of any insulation or external covering at points specified in **4.5**;

1) diameters up to 50 mm, minimum band width 130 mm;

2) diameters 50 mm to 100 mm, minimum band width 275 mm;

3) diameters above 100 mm, minimum band width 450 mm.

Figure 1 **Application of a basic identification colour only**



Key

1 Basic identification colour
2 Decorative or natural colour
3 Dimension as specified in **7.2**

7.3 Basic identification colour with code indications

The colours and widths of the basic colour identification shall be as specified in **7.2**.

Code indications as specified in **6.1** shall be placed at locations as specified in **4.5** and at any other place where identification is necessary. Code indications as specified in **6.1** shall be used in conjunction with the basic identification colour references given in Table 1.

The basic identification colour shall be applied either over the whole length of the pipe or by colour banding at points specified in **4.5**. Where the basic identification colour is applied over the whole length of pipe, the code indications in **6.1** shall be applied at intervals along the pipe with at least the minimum number of points as specified in **4.5**. Where the basic identification colour is in the form of banding (see **4.3**), the code indication shall be on or adjacent to the colour banding.

Where required, code indications as specified in **6.2**, as well as other information regarding the fluid, shall be placed on the basic identification colour. If the pipes are colour banded, the code indication shall be either on or adjacent to the colour band. The names, abbreviations or chemical symbols shall be either white or black in order to contrast clearly with the colour of the pipe or with the basic identification colour. They shall be placed directly on the pipe or on a label fixed to the pipe adjacent to the basic identification colour band. When labels are to be used on an installation in combination with a safety colour, the background colour of the labels shall be that of the safety colour.

NOTE Examples of the use of basic identification colours with code indications are given in Annex A.

7.4 Basic identification colour with code and/or safety colours

Within a group, there are many varieties for which it could be impossible to specify particular colours that would be unique to that fluid; when it is required to indicate the fluid more precisely, then the following procedures shall be adopted.

The service identifier shall be composed of the basic identification colour for the particular family of fluids (for example, for gas, the outside colour bands would be yellow ochre – 08 C 35) and a centre code or safety colour band indicating the variant within the family of the fluid (for example, natural gas centre band colour would be primrose – 10 E 53). The centre code or safety colour band shall be the colours specified in **6.1** and/or Annex C to Annex F.

Where no specification exists, the method of identification by the use of additional code colours (except for water services, see Annex F), or by supplementary information (see **8.3**) shall be agreed between the user and installer for the particular type of fluid to be identified.

The dimensions of the service identifier as it relates to the diameter of the service or the external surface of any insulation or external covering shall be of the dimensions detailed in a) to c) below. The centre code and/or safety colour band shall be of one colour or a combination of colours which enable the service to be identified. All code or safety colours shall be of equal width and accommodated within the dimensions of the code or safety colour. The minimum service identification dimensions shall be:

a) diameters up to 50 mm, minimum band widths: basic identification colour 50 mm, code or safety colour 30 mm;

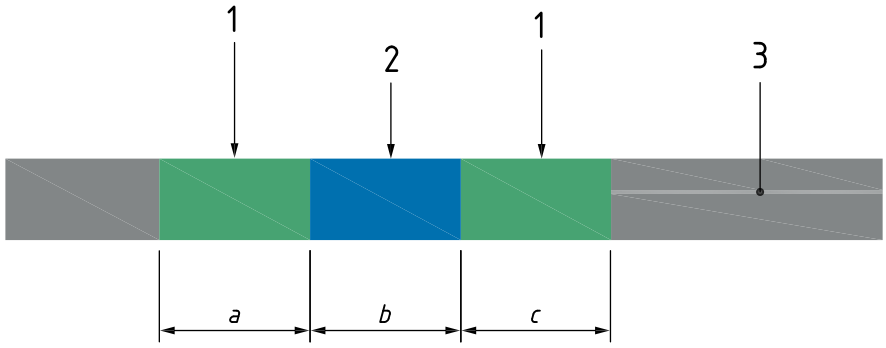
b) diameters 50 mm to 100 mm, minimum band widths: basic identification colour 100 mm, code or safety colour 75 mm;

c) diameters above 100 mm, minimum band widths: basic identification colour 150 mm, code or safety colour 150 mm.

NOTE 1 Further examples are given in Annex C to Annex F.

NOTE 2 The dimensions of the colour bands are illustrated in Figure 2.

Figure 2 **Application of safety colours and code colours**



Key

1	Basic identification colour	a	Dimensions as identified in **7.4**
2	Safety or code colours (equal widths)	b	Dimensions as identified in **7.4**
3	Decorative or natural colour	c	Dimensions as identified in **7.4**

NOTE The colours in these examples are illustrative only. Reference should be made to Table 1 for the relevant BS 4800 colour number.

8 Direction of flow and supplementary information

*COMMENTARY ON Clause **8***

Annex B provides examples of the use of direction of flow arrows and supplementary information. Figure 3 and Figure 4 provide examples of direction of flow arrows and supplementary information in use with the service identifier. The colours in Figures 3 and 4 are illustrative only. Reference should be made to Table 1 for the relevant BS 4800 colour number.

8.1 General

All supplementary information shall be of a suitable size to be readily discernible.

Code identification labels shall allow the ready identification of different pressures, qualities and designated uses of services. The text font shall be of a type and of sufficient size to enable it to be easily read and shall be a minimum of 5 mm in height.

8.2 Direction of flow

Where fluids predominately flow in a single direction, a “single direction of flow arrow” shall be used. Where fluids are able to flow in either direction (e.g. in a ring main), a double headed arrow shall be used.

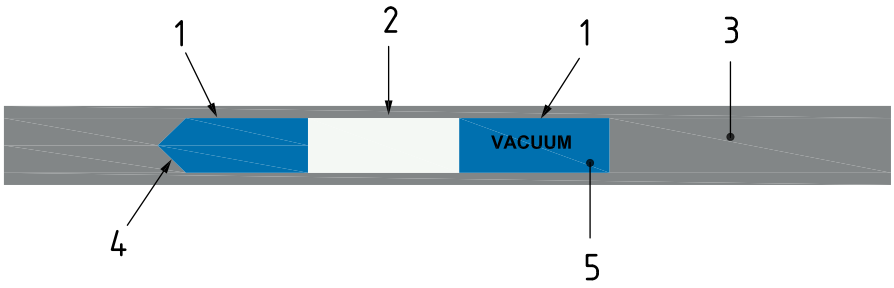
The direction of flow of the fluid shall be indicated by an arrow or arrows situated in the banding or immediately adjacent to it. The arrow shall be coloured white or black in order to contrast clearly with the basic identification colour or the background of the pipe or its covering.

8.3 Supplementary information

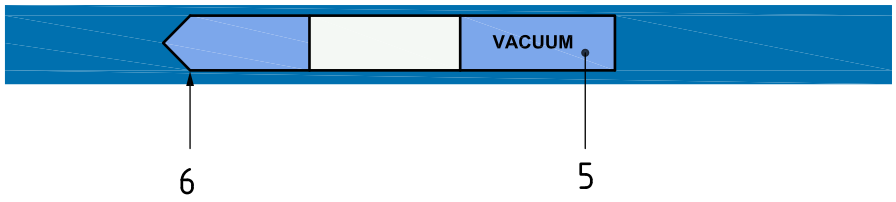
Supplementary information such as temperature, pressure, etc. shall be included in the banding or immediately adjacent to it.

For central heating systems and other closed circuits where it is necessary to indicate separately the flow and return pipes, the direction of flow arrows shall be supplemented by the use of the word FLOW or the letter F on the one pipe, and the word RETURN or the letter R on the other.

Figure 3 **Example showing a service identifier incorporating basic identification and safety or code colours, supplementary information and direction of flow arrow**



a) Example of a service identifier contrasting with its background



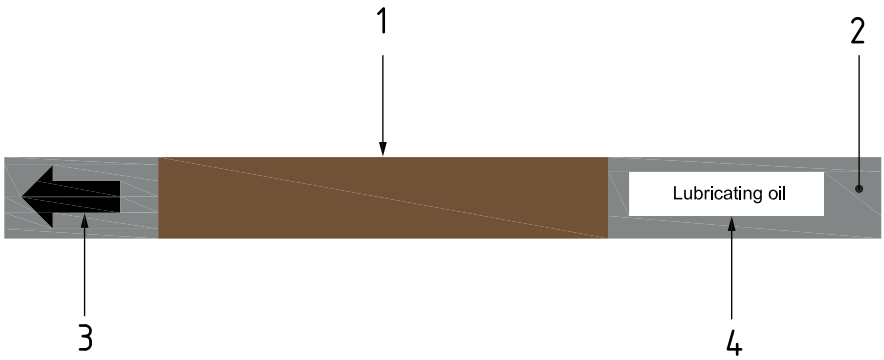
b) Example showing the additional application of a border colour to distinguish it from its background

Key

1	Basic identification colour	4	Direction of flow arrow
2	Safety or code colour	5	Supplementary information
3	Decorative or natural colour	6	Black border colour, minimum 10 mm

NOTE The colours in these examples are illustrative only. Reference should be made to Table 1 for the relevant BS 4800 colour number.

Figure 4 **Example showing the application of a band of basic identification colour, supplementary information and direction of flow arrow**



Key

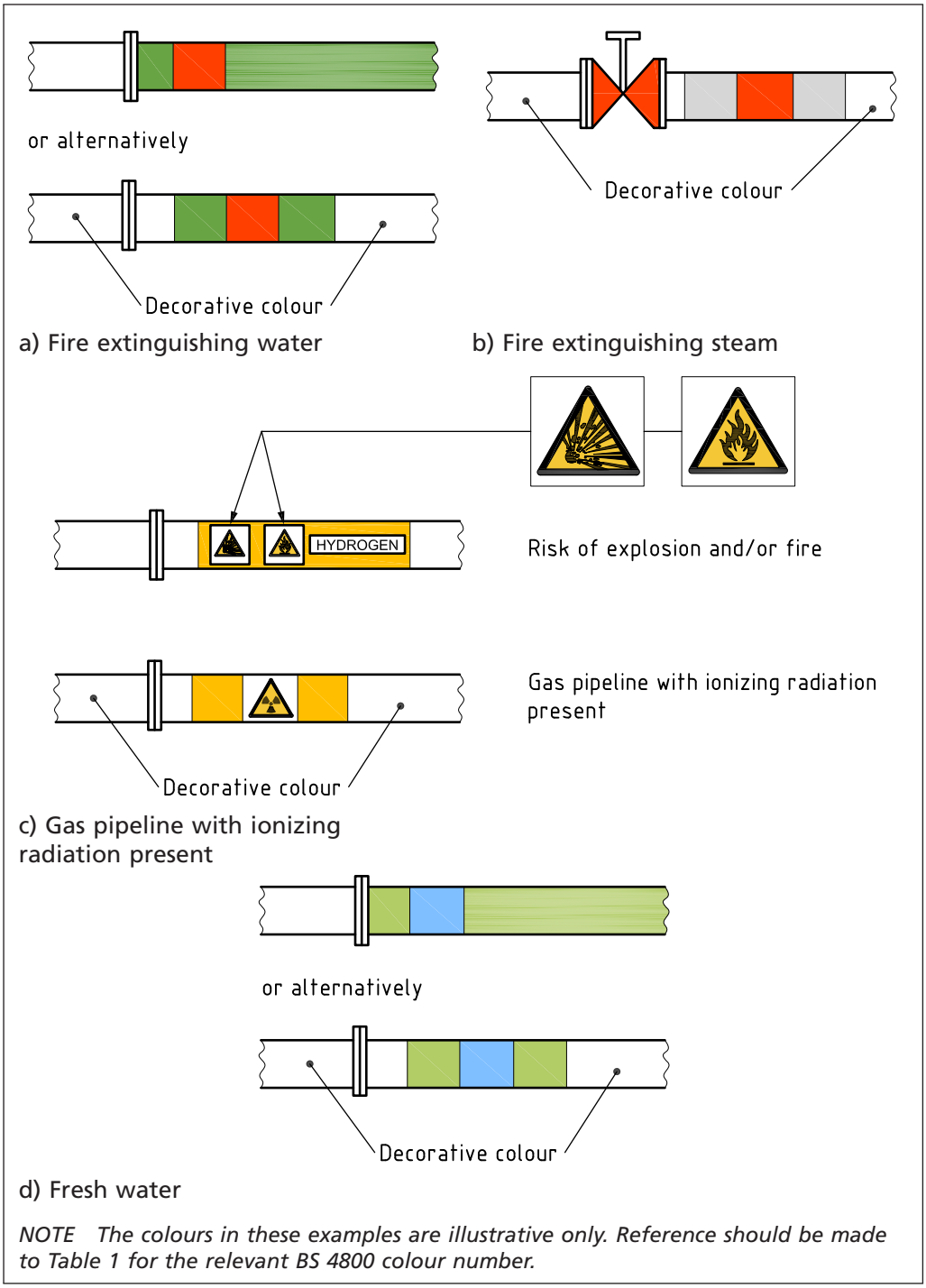
1	Basic identification colour	3	Direction of flow arrow
2	Decorative or natural colour	4	Supplementary information

Annex A
(informative)

Basic identification and code indications

Examples are given in Figure A.1 showing the basic identification and code indications for the marking of pipes. Additionally there are applications that not only require the colour coding but also safety colours and labels.

Figure A.1 **Examples of basic identification and code indications illustrating the application of safety colours**



NOTE The colours in these examples are illustrative only. Reference should be made to Table 1 for the relevant BS 4800 colour number.

Annex B (informative)

Information on pipe contents

As well as identifying pipe content by colour there is also the need for those pipes containing fluids to show information such as direction of flow, pressure and temperature. Figure B.1 and Figure B.2 provide alternative methods of displaying that information.

NOTE The colours in Figure B.1 and Figure B.2 are illustrative only. Reference should be made to Table 1 for the relevant BS 4800 colour number.

Figure B.1 **Methods of indicating contents and direction of flow on pipeline carrying lubricating oil**

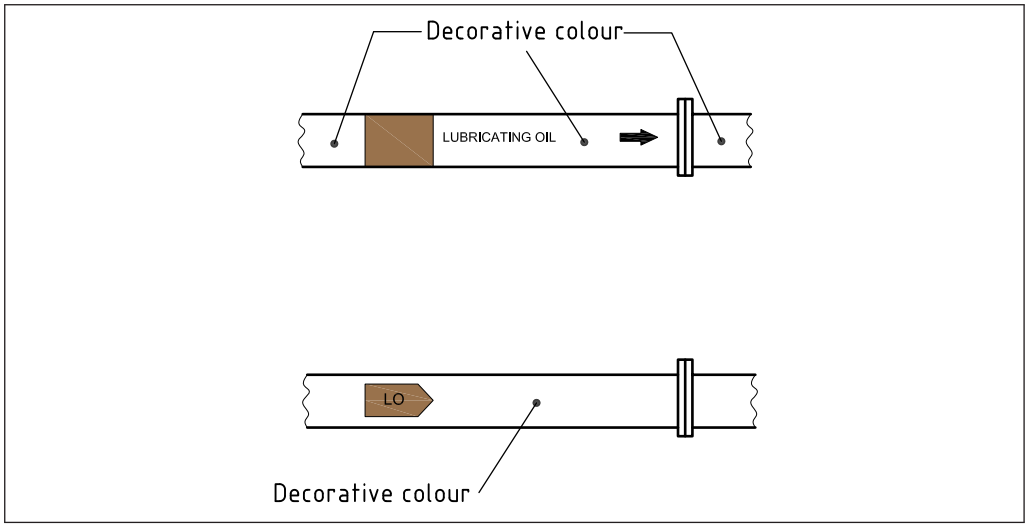
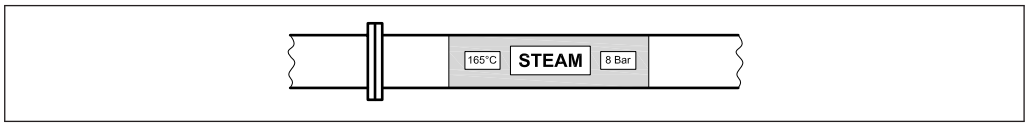


Figure B.2 **Marking of pressure and temperature**



Annex C (normative)

Medical gas applications

Medical gas applications shall be identified by the basic identification and code colours, used together with code indications, specified in Table C.1. Medical gas service identifiers for standard and pathology services shall be applied in accordance with Figure C.1.

Table C.1 **Colours for medical gas applications**

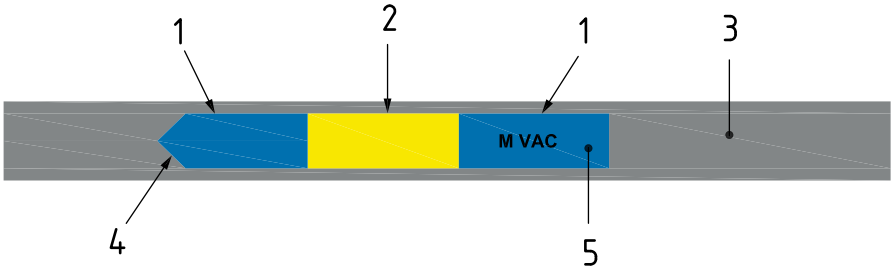
Pipe contents	Basic identification colour	Code colour			Basic identification colour
Oxygen	Yellow ochre	White			Yellow ochre (O_2) [A]
Nitrous oxide	Yellow ochre	French blue			Yellow ochre (N_2O) [A]
Anaesthetic gas scavenging	Yellow ochre	Primrose	French blue		Yellow ochre (AGS) [A]
Carbon dioxide	Yellow ochre	French grey			Yellow ochre
Exhaust from PSVs, etc.	Yellow ochre (EXHAUST) [A]				
Spare medical gas	Yellow ochre				
Surgical air	Light blue	White	Black		Light blue (SA)
Medicinal air	Light blue	White	Black		Light blue (MA) [A]
Medical vacuum	Light blue	Primrose			Light blue (M VAC) [A]
Surgical nitrogen (alternative label N_2)	Light blue	Black			Light blue (SN) [A]
Pathology medical vacuum	Light blue (PATH) [B]	Golden brown	Primrose		Light blue (M VAC) [A]
Pathology compressed air	Yellow ochre	Golden brown	White	Black	Yellow ochre
Pathology carbon dioxide	Yellow ochre	Golden brown	French grey		Yellow ochre

[A] The information in brackets denotes the code indications for service identification that may be applied.
[B] All pathology services should be identified by an additional golden brown code colour band and an additional PATH supplementary information label on the left side basic identification colour band.

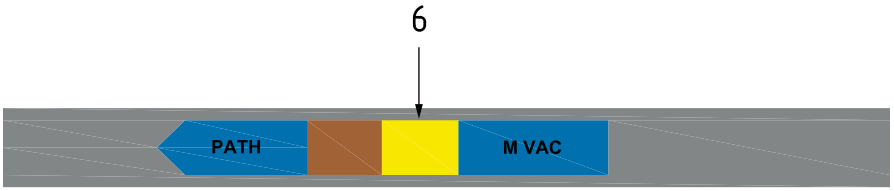
NOTE 1 The colour names in these examples are illustrative only. Reference should be made to Table 1 for the relevant BS 4800 colour number.

*NOTE 2 The widths of the basic identification and code indication colours should be as specified in **7.2**, **7.3** and **7.4**.*

Figure C.1 **Application of combined bands of basic identification and code colours**



a) Example of a medical vacuum service



b) Example of a pathology medical vacuum service

Key

1	Basic identification colour	4	Direction of flow arrow
2	Safety or code colour	5	Code indication
3	Decorative or natural colour	6	Safety or code colours (equal widths)

NOTE The colours in these examples are illustrative only. Reference should be made to Table 1 for the relevant BS 4800 colour number.

Annex D (normative) Code colours for general building services

*COMMENTARY ON Annex **D***

General building services refers to general services often found in buildings which are not water related. Examples include fuel oils, gases, electrical conduits, air.

General building services shall be identified in accordance with Table D.1. When specifying colours, the colour references given in Table 1 shall be stated.

Table D.1 **Colours for general building services**

Pipe contents	Basic identification colour	Code colour	Basic identification colour
Oils			
Diesel fuel	Brown	White	Brown
Furnace fuel	Brown		
Lubricating	Brown	Emerald green	Brown
Hydraulic power [A)]	Brown	Salmon pink	Brown
Transformer	Brown	Crimson	Brown
Other contents			
Natural gas	Yellow ochre	Primrose	Yellow ochre
Compressed air	Light blue		
Vacuum	Light blue	White	Light blue
Waste effluents [B)] e.g. sewage waste, WCs, etc. and waste water from showers, baths or industrial processes	Black		
Electrical conduits and ventilation ducts	Orange		
Acid and alkalis	Violet		

[A)] Hydraulic power utilizing oil should be identified as a building service. Where water is utilized, these should be identified as a water service (see Annex F).

[B)] Waste effluents conveyed for treatment at municipal treatment works or similar facilities, prior to discharge back to the environment, should be identified as a general building service. This includes the conveyance of waste effluents upstream of any recycling or water reuse treatment system. Waste effluents which are for direct reuse (e.g. greywater for flushing WCs) should be identified as a water service. Waste effluents which have been subject to treatment and are intended for reuse (e.g. bathroom greywater) should be identified post treatment as a water service (see Annex F).

*NOTE The widths of the basic identification and code colours should be as specified in **7.4**.*

Annex E (normative)

Code colours for refrigeration services

Refrigeration services shall be identified in accordance with Table E.1. When specifying colours, the colour references given in Table 1, and Table E.1 shall be stated.

NOTE The nature of the contents of refrigeration service pipes should also be indicated by the chemical symbol.

Table E.1 **Colours for refrigeration services**

Pipe contents	Basic identification colour	Code colour	Basic identification colour
Refrigerant 12	Yellow ochre	Blue	Yellow ochre
Refrigerant 22	Yellow ochre	Sea-green	Yellow ochre
Refrigerant 502	Yellow ochre	Golden brown	Yellow ochre
Anhydrous ammonia	Yellow ochre	Dark mauve	Yellow ochre
Other refrigerants	Yellow ochre	Emerald green	Yellow ochre

*NOTE The widths of the basic identification and code colours should be as specified in **7.4**.*

Annex F
(normative)

Water services

*COMMENTARY ON Annex **F***

Attention is drawn to the Water Fittings Regulations [1] [2] [3], which set legal requirements for pipes and fittings to be readily identified (above ground and below ground) where they are not supplied from the public water supply (i.e. by the local water company) and/or where any fluid is not wholesome.

The term water services refers to services containing fluids in which water is a constituent and which have been drawn from a public or private water supply, or other alternative sources. These services include a range of uses where water might be the primary fluid, e.g. drinking or domestic hot water, or where water is used for topping up services, such as heating or cooling systems.

The primary purpose for ensuring pipework is readily distinguishable is to reduce the risk of alterations being made to pipes and fittings by those who are unaware of the nature of the fluids being conveyed. Alterations can result in drinking water and non-potable systems being directly connected, resulting in drinking water contamination.

The following method simplifies service identification to ensure maintenance staff, users or occupiers can readily identify the nature of the source water, safety systems and whether systems pose any risk to public health from fluids contained within, if they were to be inadvertently connected to a potable water system and subsequently contaminate it.

Water services shall be identified using the following assessment in accordance with Table F.1:

a) determine the source water:

   1) water derived from the public water supply – code colour used shall be auxiliary blue;

   2) water derived from an alternative source – code colour used shall be flint grey;

b) assess end use water quality:

   1) fluids which constitute a health hazard shall be identified by an additional black band within the source water code colour;

   2) potable water and other water systems considered not to present a health hazard – no additional band shall be applied to the source water code colour;

c) where the end use is a safety system, i.e. fire-fighting, an additional colour band shall be applied:

   1) safety systems shall include an additional band within the source water code colour appropriate for the safety system, e.g. fire-fighting systems shall use an additional red band.

Figure F.1 provides examples of water service identifiers in use.

Supplementary information (see **8.3**) shall also be used to provide maintenance staff, users or occupiers with a sufficient level of detail to enable services to be readily identified.

Water services shall be identified in accordance with the basic identification, safety and code colours for water services specified in Table F.2.

NOTE Figure F.1 provides examples of water service identifiers in use.

Table F.1 **Water service categorization**

Source of water [A] [B]	Public water supply [base code colour – auxiliary blue] • Water derived from a water undertakers' supply system.	Alternative sources [base code colour – flint grey] • Private water supplies • Borehole • Well water • River water • Water reuse systems • Rainwater • Greywater • Treated or recycled effluents • Condensates for reuse [B]
Water quality [C]	Potable [no additional code colour] • Drinking water • Domestic hot water [D]	Non-potable [additional code colour – black] • Domestic hot water [D] • Heating • Cooling • Boiler feeds • Non-domestic or industrial processes • Hydraulic power [E]
Safety systems	Fire-fighting [F] [additional safety colour – red] • Hydrant systems • Sprinkler systems • Water mist systems	

[A] Alternative sources include water provided from sources not being supplied from the public water supply as provided by a water supplier (water undertaker).

[B] Waste effluents which are for direct reuse (e.g. greywater for flushing WCs) should be identified as a water service. Waste effluents which have been subject to treatment and are intended for reuse (e.g. bathroom greywater) should be identified post treatment as a water service. Waste effluents conveyed for treatment, at municipal treatment works or similar, prior to discharge back to the environment, should be identified as a general building service (see Annex D). This includes the conveyance of waste effluents upstream of any recycling or water reuse treatment system.

[C] Attention is drawn to the Water Fittings Regulations [1] [2] [3] and the Water Industry Act 1991 [4] and similar legislation in Scotland [5] and Northern Ireland [6].

[D] Domestic hot water which would otherwise meet the requirements for potable water except for it being heated should be designated potable. Domestic hot water which has been treated or contain additives or chemical compounds in concentrations which exceed the standards for drinking water should be designated non-potable.

[E] Hydraulic power utilizing water is to be identified as a water service. Where oil is utilized, it is to be identified as a building service (see Annex D).

[F] Fire-fighting systems supplied direct from the drinking water supply mains and containing no additives may, following an assessment, be considered for potable designation. For all other systems, or where there is doubt regarding the water quality, these should be designated as non-potable systems. Examples include fire systems supplied from storage or containing additives.

NOTE The basic identification colour for water services is green.

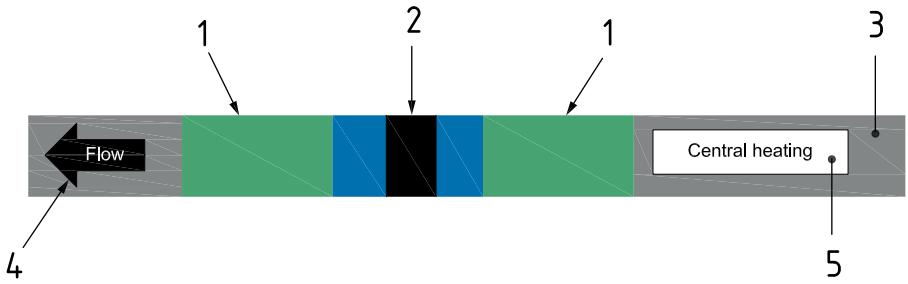
Table F.2 **Colours for water services**

Pipe contents	Basic identification colour	Safety and code colours					Basic identification colour
Source of water							
Potable water derived from the public water supply (i.e. water undertaker)	Green	Auxiliary blue					Green
Potable water derived from any other source (e.g. borehole)	Green	Flint grey					Green
Water quality							
Non-potable water system derived from any other source	Green	Flint grey		Black		Flint grey	Green
Non-potable water system derived from the public water supply (i.e. water undertaker)	Green	Auxiliary blue		Black		Auxiliary blue	Green
Safety systems							
Potable fire safety system derived from the public water supply, e.g. direct feed system	Green	Auxiliary blue		Red		Auxiliary blue	Green
Potable fire safety system derived from any other source, e.g. direct feed system	Green	Flint grey		Red		Flint grey	Green
Non-potable fire safety system derived from the public water supply, including storage	Green	Auxi-liary blue	Black	Red	Black	Auxi-liary blue	Green

NOTE 1 The colour names in these examples are illustrative only. Reference should be made to Table 1 for the relevant BS 4800 colour number.

*NOTE 2 The widths of the basic identification, safety and code colours should be as specified in **7.4**.*

Figure F.1 **Application of combined bands of basic identification and code colours and/or safety colours**



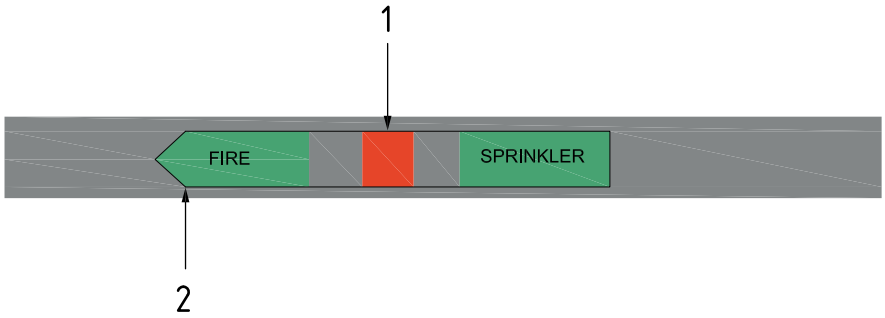
a) Example of service identification for a central heating system provided with water from the public water supply

Key

1 Basic identification colour
2 Safety or code colours (equal widths)
3 Decorative or natural colour
4 Direction of flow arrow
5 Supplementary information

b) Example of service identification of drinking water from the public water supply

c) Example of service identification of drinking water from a private water supply



d) Example of service identification for a fire system provided with water from an alternative water supply using a black border colour to distinguish it from the decorative background colour

Key

1 Safety and code colours (equal widths)
2 Black border colour, minimum 10 mm

e) Example of service identification for a rainwater harvesting system

f) Example of a non-potable fire-fighting system provided with water from the public water supply

NOTE The colours in these examples are illustrative only. Reference should be made to Table 1 for the relevant BS 4800 colour number.

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 4800, *Schedule of paint colours for building purposes*

BS 8515, *Rainwater harvesting systems – Code of practice*

BS 8525-1, *Greywater systems – Part 1: Code of practice*

Other publications

[1] GREAT BRITAIN. The Water Supply (Water Fittings) Regulations 1999 as amended. London: The Stationery Office.

[2] SCOTLAND. The Water Supply (Water Fittings) (Scotland) Byelaws 2014. Edinburgh: The Stationery Office.

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