

DuraLabel® European Union Pipe Marking Guide

This guide follows the specifications for Identification of Pipelines and Services set by BS 1710 and colour standards from BS 4800.

OVERVIEW: The British Standard 1710 specifies the colours for the identification of pipes conveying fluids in above ground installations and on board ships on a generic basis. It also includes ducts for ventilation and conduits used for carrying electrical services.




Listed in this guide are the colour standards for Basic Identification Colours, the Safety Colours and the Code Indication Colours as listed in BS 4800 (approximate RAL values are given as well). The contents of the pipe determine the appropriate Basic Identification Colour. If required, additional Safety Colour or Code Indication Colours should be added as specified under the Colour Banding section of this guide. Where banding is adopted do not use a Basic Identification Colour as the decorative or protective colour of the pipe.

DIRECTION OF FLOW: Show direction of flow with an arrow in either black or white to contrast the colour of the pipe marker (arrow should match text colour). When it is necessary to indicate both the flow and return pipes separately: mark the flow pipe with the word FLOW or the letter F and the return pipe with the word RETURN or the letter R. This is used for central heating systems or other closed circuits.

Pipe Contents	Example	Colour Name	BS Colour Identification	RAL Colour Identification
WATER	Drinking Water	GREEN	12 D 45	6025
STEAM	Waste Steam	SILVER-GRAY	10 A 03	9002
OILS - mineral, vegetable or animal Combustible Liquids	Diesel Fuel	BROWN	06 C 39	8008
GASES - in either gaseous or liquefied condition (except air)	Carbon Dioxide	YELLOW OCHRE[†]	08 C 35	1017
ACIDS & ALKALIS	Ammonia	VIOLET[†]	22 C 37	4005
AIR	Compressed Air	LIGHT BLUE	20 E 51	5024
OTHER LIQUIDS	Saline Solution	BLACK	00 E 53	9005
ELECTRICAL SERVICES & VENTILATION DUCTS	Ventilation Ducts	ORANGE	06 E 51	1034

[†]European colour standards assign Yellow (see BS4800/RAL values below) to gases and BS4800: 04 E 58 Purple/RAL: 4006 Traffic Purple to acids & alkalis.

Safety Colours

	BS4800	RAL
 Red 04 E 53 3028 Fire-fighting		
 Yellow[†] 08 E 51 1021 Warning		
 Auxiliary Blue 18 E 53 5017 Use with green Basic Identification Colour for pipes containing potable or non-potable fresh water.		

[†]Reference BS 5378 : Part 1 when supplementing warning colour with warning sign.

Code Indication Colours

	BS4800	RAL	BS4800	RAL
Crimson 04 D 45 3000			Primrose^{††} 10 E 53 1016	
Emerald Green 14 E 53 6024			Sea-Green 16 C 37 6033	
Salmon Pink 04 C 33 3015			Golden Brown 06 D 45 8023	
Blue 18 E 51 5024			Dark Mauve 02 C 37 3014	
French Blue 20 D 45 5010			White 00 E 55 9010	

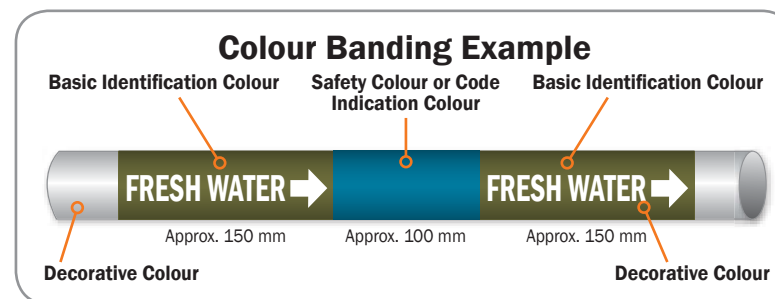
^{††}This colour reference was previously described as Yellow.

Colour Banding

The Basic Identification Colour should be approximately 150 mm in length, depending on the diameter of the pipe. When the contents of a pipe need to be identified more precisely a band of colour approximately 100 mm in length may be added. The Basic Identification Colour shall extend at least 150 mm on either side of the colour band (see Example section below).

Colour bands may be comprised of Safety Colours and Code Indicator Colours. Follow the Colour Banding Chart to see how colour bands are used to distinguish one pipe's contents from another with the same Basic Identification Colour. Whether a single colour is used, or a combination, they should have a width of approximately 100 mm.

REMINDER: do not use a Basic Identification Colour as a colour band.



This guide is for general purposes only. It is not a substitute for review of applicable standards.

Colour Banding Chart

GENERAL BUILDING SERVICES

Pipe Contents	Basic Identification Colour	Colour Code Identification	Basic Identification Colour
Water			
Drinking	GREEN	AUXILIARY BLUE	GREEN
Cooling (primary)	GREEN	WHITE	GREEN
Boiler feed	GREEN	C* W*	GREEN
Condensate	GREEN	C* E.G.* C*	GREEN
Chilled	GREEN	W* E.G.* W*	GREEN
Central heating < 100°	GREEN	B* C* B*	GREEN
Central heating > 100°	GREEN	C* B* C*	GREEN
Cold, down service	GREEN	W* B* W*	GREEN
Hot water supply	GREEN	W* C* W*	GREEN
Hydraulic power	GREEN	SALMON PINK	GREEN
Sea, river, untreated	GREEN	GREEN	GREEN
Fire extinguishing	GREEN	RED	GREEN

Pipe Contents	Basic Identification Colour	Colour Code Identification	Basic Identification Colour
Oils			
Diesel fuel	BROWN	WHITE	BROWN
Furnace fuel	BROWN	BROWN	BROWN
Lubricating	BROWN	EMERALD GREEN	BROWN
Hydraulic power	BROWN	SALMON PINK	BROWN
Transformer	BROWN	CRIMSON	BROWN

Pipe Contents	Basic Identification Colour	Colour Code Identification	Basic Identification Colour
Other			
Natural Gas	YELLOW OCHRE	PRIMROSE^{††}	YELLOW OCHRE
Compressed Air	LIGHT BLUE	LIGHT BLUE	LIGHT BLUE
Vacuum	LIGHT BLUE	WHITE	LIGHT BLUE
Steam	SILVER GRAY	SILVER GRAY	SILVER GRAY
Drainage	BLACK	BLACK	BLACK
Electrical conduits & ventilation ducts	ORANGE	ORANGE	ORANGE
Acids & Alkalis	VIOLET	VIOLET	VIOLET

*W = WHITE C = CRIMSON E.G. = EMERALD GREEN B = BLUE

REFRIGERATION SERVICES**

Pipe Contents	Basic Identification Colour	Colour Code Identification	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

**Refrigerant service pipe contents should also be indicated by the chemical symbol and refrigerant number where appropriate as specified in BS 4580.

MEDICAL GAS SERVICES***

Pipe Contents	Basic Identification Colour	Colour Code Identification	Basic Identification Colour
Oxygen	YELLOW OCHRE	WHITE	YELLOW OCHRE
Nitrous Oxide	YELLOW OCHRE	FRENCH BLUE	YELLOW OCHRE
N ₂ O/O ₂ Mixture	YELLOW OCHRE	WHITE FRENCH BLUE	YELLOW OCHRE
Anaesthetic Gas Scavenging	YELLOW OCHRE	PRIMROSE^{††} FRENCH BLUE	YELLOW OCHRE
Medical Air	LIGHT BLUE	WHITE BLACK	LIGHT BLUE
Medical Vacuum	LIGHT BLUE	PRIMROSE^{††}	LIGHT BLUE
Spare Medical Gas	YELLOW OCHRE	YELLOW OCHRE	YELLOW OCHRE

^{††}This colour reference was previously described as Yellow. ^{***}An additional GOLDEN BROWN band should be added to all pathological services.

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Pipe Information

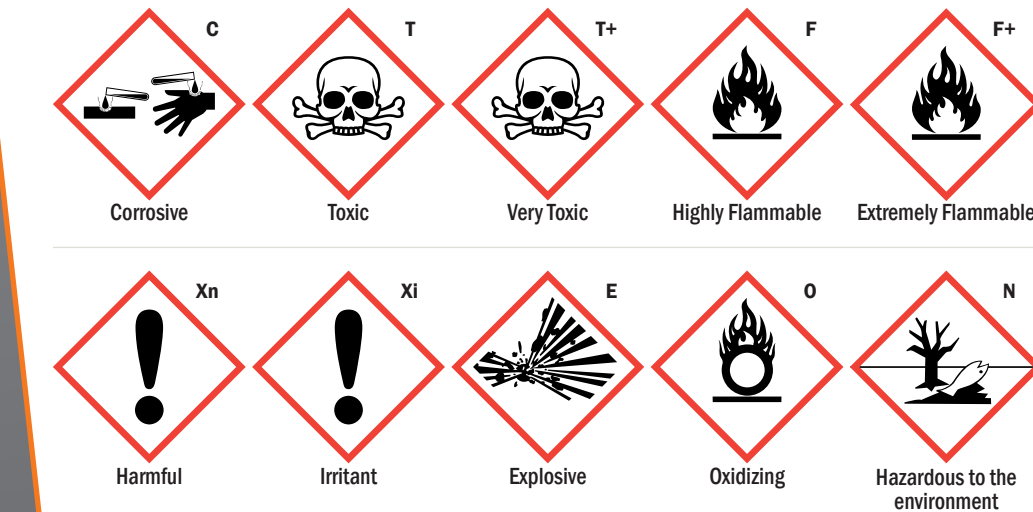
Mark pipe contents with one or more of the following:

- Full chemical name
- Abbreviation of the chemical name
- Chemical symbol
- Refrigerant number (if applicable)
- Safety colour code band where appropriate

NOTE: if pipeline is coded with safety colours for fire-fighting, the paint the valves red. In other cases the valves may be painted with the appropriate identification colours.

Danger Symbols

Include danger symbols on all pipe markers when applicable.



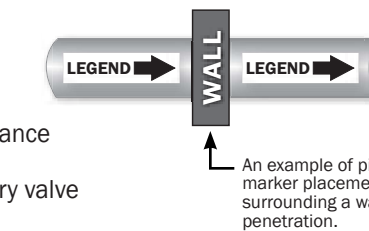
Danger Symbols:
 C = Corrosive
 E = Explosive
 O = Oxidizing
 F = Highly Flammable
 F+ = Extremely Flammable
 T = Toxic
 T+ = Very Toxic
 Xn = Harmful
 Xi = Irritant
 N = Hazardous to the Environment

NOTE: Orange and black Danger symbols are acceptable during OSHA's phase-in period of GHS standard.

Pipe Marker Placement

Place pipe markers:

- At each junction
- At every service appliance
- On both sides of every valve
- On both sides of each bulkhead
- On either side of every wall penetration
- Anywhere else that pipe identification is needed



An example of pipe marker placement surrounding a wall penetration.

Pipe Marker Size Chart***

Letter & Label Dimensions in accordance with pipe diameter.

Outside Pipe Diameter Including Covering	Minimum Length of Label Field Colour	Minimum Height of Letters
19 - 32 mm	203 mm	13 mm
38 - 51 mm	203 mm	19 mm
64 - 152 mm	305 mm	32 mm
203 - 254 mm	610 mm	64 mm
Over 254 mm	813 mm	89 mm

NOTE: It is recommended that pipes less than .75" (19.05 mm) in diameter be labeled with a permanent tag.

^{***} The pipe marker size chart above follows ASME A13.1 - 2007 standards per our recommendation.

Create all your pipe markers and safety labels/signs with DuraLabel



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Difficult to label pipe? Not a problem!

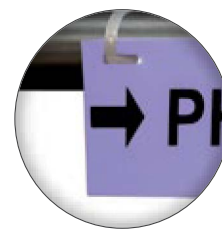
We offer a variety of specialty pipe marking supplies such as ultra-aggressive, low-halogen, DuraTag and more.

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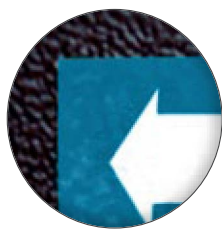
DuraLabelSupplies.com



Low-Halogen Label Tapes
Adhesive contains low levels of halogen to help protect stainless steel alloys from corrosive damage



DuraTag™ Tag Stocks
Use DuraTag to attach pipe labels with cable ties



Ultra-Aggressive Tapes
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Guides & Standards For European Union Pipe Marking

Pipe marking for general building services, refrigeration services, medical gas services



GRAPHIC PRODUCTS
800-788-5572
Intl: +1 503-644-5572 | info@GraphicProducts.com
GraphicProducts.com | DuraLabel.com
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