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AND LABELLING OF CHEMICALS**

**Sub-Committee of Experts on the Globally Harmonized
System of Classification and Labelling of Chemicals**
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COMMENTS ON THE GHS

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Addendum 1

Attached is ISO/FDIS 3864-1:2001

"Graphical symbols – Safety colours and safety signs
Part 1: Design principles for safety signs in workplaces and
public areas."

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Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs in workplaces and public areas

Symboles graphiques — Couleurs et signaux de sécurité — Partie 1 : Principes de conception pour les signaux de sécurité sur les lieux de travail et dans les lieux publics

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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 3.

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.

International Standard ISO 3864-1 was prepared by Technical Committee ISO/TC 145, *Graphical symbols*, Subcommittee SC 2, *Safety identification, signs, shapes, symbols and colours*.

This edition partly cancels and replaces the first edition (ISO 3864:1984).

ISO 3864 consists of the following parts, under the general title *Safety colours and safety signs*:

- *Part 1: Design principles for safety signs in workplaces and public areas*
- *Part 2: Design principles for product safety labels*

Annex A of this part of ISO 3864 is for information only.

Introduction

There is a need to standardize a system of giving safety information that relies as little as possible on the use of words to achieve understanding. Continued growth in international trade, travel and more recently in the extensive mobility of labour requires a common communications method for safety information.

Education is an essential part of any system that provides safety information. Lack of standardization may lead to confusion and perhaps accidents.

The use of safety colours and safety signs does not replace proper work methods, instructions and accident prevention training and measures.

Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs in workplaces and public areas

1 Scope

This International Standard prescribes safety identification colours and design principles for safety signs for the purpose of accident prevention, fire protection, health hazard information and emergency evacuation. It establishes basic principles for safety signs seen in workplaces and in public areas.

This part of ISO 3864 shall be applied generally to workplaces and all locations and all sectors where safety-related questions may be posed. However, it does not apply to signalling used for guiding rail, road, river, maritime and air traffic and, generally speaking, to those sectors subject to a regulation which may differ as regards certain points of this document.

This part of ISO 3864 prescribes the basic principles to be applied when developing standards containing safety signs.

NOTE Some countries statutory regulations may differ in some respect from those given in this International Standard.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 3864. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 3864 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 7000, *Graphical symbols for use on equipment; index and synopsis*.

ISO 7001, *Public information symbols*.

ISO/DIS 7010, *Graphical symbols - Safety signs in workplaces and public areas*

ISO 9186, *Graphical symbols - Test methods for judged comprehensibility and for comprehension*.

ISO/CIE 10526, *CIE standard illuminants for colorimetry*.

CIE 15.2, *Colorimetry, second edition*.

CIE 54, *Retroreflection definition and measurement*.

IEC 60050:1987, *International electrotechnical vocabulary (IEV) – Chapter 845: lighting*.

IEC 60417-2:1998, *Graphical symbols for use on equipment – Part 2: Symbol originals*

3 Terms and definitions

For the purpose of this part of ISO 3864 the following terms and definitions apply:

3.1

coefficient of retroreflection (of a plane retroreflecting surface)

Quotient of the luminous intensity (I) of a plane retroreflecting material in the direction of observation by the product of the illuminance (E_{\perp}) of the retroreflecting surface on a plane perpendicular to the direction of the incident light and its area (A):

$$R^r = \frac{I}{E_{\perp} A}$$

3.2

combined materials

materials which combine the optical characteristics of photoluminescent and retroreflective materials

3.3

critical detail

element of a graphical symbol without which the graphical symbol cannot be understood

3.4

fluorescence

photoluminescence in which the emitted optical radiation results from direct transitions from the photo-excited energy level to a lower level, these transitions taking place generally within 10 nanoseconds after the excitation [IEC 60050-845-04-20:1987]

3.5

luminance contrast

quotient k of the luminance of the contrast colour L_1 to that of the safety colour L_2

$$k = \frac{L_1}{L_2}$$

NOTE This definition applies only to white luminance contrast colour with L_1 as the greater luminance and L_2 the lesser luminance.

3.6

luminance factor

ratio of the luminance of the surface element in the given direction to that of a perfect reflecting or transmitting diffuser identically illuminated

3.7

luminescence

emission, by atoms, molecules or ions in a material, of optical radiation which for certain wavelengths or regions of the spectrum is in excess of the radiation due to thermal emission from that material at the same temperature, as a result of these particles being excited by energy other than thermal agitation [IEC 60050-845-04-18:1987]

3.8

ordinary materials

materials which are neither retroreflecting nor luminescent

3.9**retroreflecting materials**

materials which reflect radiation in a direction close to the opposite of the direction from which it came

3.10**phosphorescence**

photoluminescence delayed by storage of energy in an intermediate energy level [IEC 60050-845-04-23:1987]

3.11**photoluminescence**

luminescence caused by absorption of optical radiation [IEC 60050-845-04-19:1987]

3.12**safety colour**

colour of special properties¹⁾ to which a safety meaning is attributed

3.13**safety marking**

marking adopting the use of safety colours and/or safety contrast colours to convey a safety message or render an object or location conspicuous

3.14**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

3.15**supplementary sign**

sign that is supportive of another sign and whose main purpose is to provide additional clarification

4 Purpose of safety colours and safety signs

4.1 The purpose of safety colours and safety signs is to draw attention rapidly to objects and situations affecting safety and health and to gain rapid understanding of a specific message.









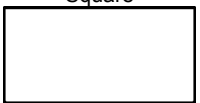
4.2 Safety signs shall be used only for instructions which are related to safety and health.

¹⁾ Properties of safety colours are given in clause 11.

5 General meaning of geometric shapes and safety colours

The general meaning assigned to geometric shapes, safety colours and contrast colours for safety signs is given in Table 1.

Table 1 — General meaning of geometric shapes, safety colours and contrast colours

Geometric shape	Meaning	Safety colour	Contrast colour	Graphical symbol colour	Example of use
 Circle with diagonal bar	Prohibition	Red	White*	Black	<ul style="list-style-type: none"> - No smoking - No unauthorised vehicles - Do not drink
 Circle	Mandatory action	Blue	White*	White	<ul style="list-style-type: none"> - Wear eye protection - Wear personal protective equipment - Switch off before beginning work
 Equilateral triangle	Warning	Yellow	Black	Black	<ul style="list-style-type: none"> - Danger Hot surface - Danger Acid - Danger High voltage
 Square  Rectangle	Safe condition Means of escape Safety equipment	Green	White*	White	<ul style="list-style-type: none"> - First aid room - Fire exit - Fire assembly point
 Square  Rectangle	Fire safety	Red	White*	White	<ul style="list-style-type: none"> - Fire alarm call point - Fire fighting equipment - fire extinguisher
 Square  Rectangle	Supplementary information	White or the colour of the safety sign	Black or the contrast colour of the relevant safety sign	Symbol colour of the relevant safety sign	As appropriate to reflect message given by graphical symbol

* The contrast colour white includes the contrast colour for phosphorescent material under daylight conditions with properties as defined in Table 4.

6 The process of standardization

6.1 The process for standardization and design principles to be used for the development of signs for specific safety messages

The process of development of graphical symbols for safety signs for possible future inclusion in ISO/DIS 7010 shall start with the clear definition of the specific message to be communicated and other details required for the completion of the application form for the standardization of safety signs. The proposed sign variants shall be designed according to the colour, shape and criteria of this part of ISO 3864.

NOTE Following the submission of the application form to ISO/TC 145, a search is carried out within ISO sources and from member countries for existing symbols or other variants from national and international sources. In the case that only one variant is defined, graphic designers from member countries shall be encouraged to offer alternatives.

The process for selection of variants for comprehension testing according ISO 9186 will be as follows:

- in a collection of variants with very similar content reduce to one variant;
- exclude variants already tested/included in ISO 7000, ISO 7001 and IEC 60417-2;
- ensure colour and shape conform to the grammar of ISO 3864-1;
- exclude variants which offer a strong possibility of confusion due to graphic similarity or duplication with standardized graphical symbols or graphic elements.

6.2 Comprehension testing of safety signs

For consideration for standardization in ISO/DIS 7010, a safety sign shall pass comprehensibility testing according to the procedures defined in ISO 9186. The criteria of acceptability are as follows:

- The Comprehension Judgement Test score shall obtain a mean response of 95%. If a safety sign passes this criteria of acceptance on the Comprehension Judgement Test, no further testing is necessary. If a safety sign scores between 85% and 94% on this test, the ISO 9186 Comprehension Test shall be performed.
- The criteria of acceptability on the Comprehension Test contains two requirements: (a) the sum of scores for response categories 1 and 2 shall exceed 85 (85% comprehension), and (b) the percentage of responses in category 4 (opposite meaning) shall not exceed 5%.

7 Layout of safety signs

7.1 General

The safety colours, contrast colours and geometric shapes (see clause 5) shall be used only in the following combinations to obtain the five basic types of safety signs (see Figures 1 to 7).

Where a graphical symbol is not available to indicate a particular desired meaning, the meaning shall be obtained preferably by using the appropriate general sign together with a supplementary sign (see Figures 8 to 16).

Borders are recommended to achieve contrast between the safety and/or supplementary sign and the surrounding. The value of the border is 0,025 to 0,05 of the geometric shape as shown in Figures 1 to 10 and using the dimensions "a_s" for rectangular signs. For practical reasons d is equal to d_s and b is equal to b_s within a tolerance of 5%.

For transilluminated safety signs borders shall not have a luminance greater than the contrast colour.

7.2 Prohibition signs

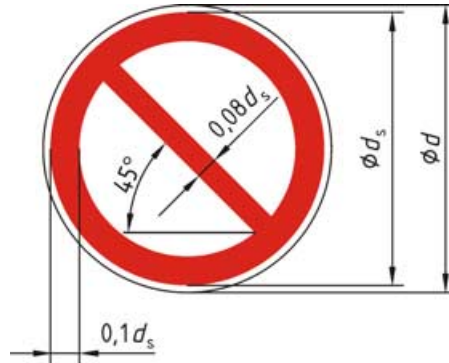


Figure 1

Background colour: white
Circular band and diagonal bar: red
Graphical symbol: black
Border: white
The safety colour red shall cover at least 35% of the total area of the sign.

7.3 Mandatory action signs

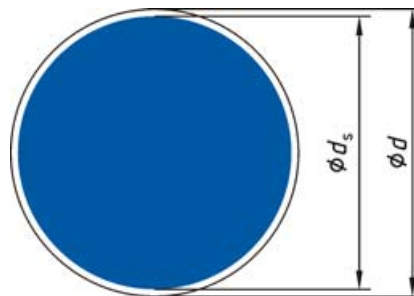


Figure 2

Background colour: blue
Graphical symbol: white
Border: white

The safety colour blue shall cover at least 50% of the area of the sign.

7.4 Warning signs

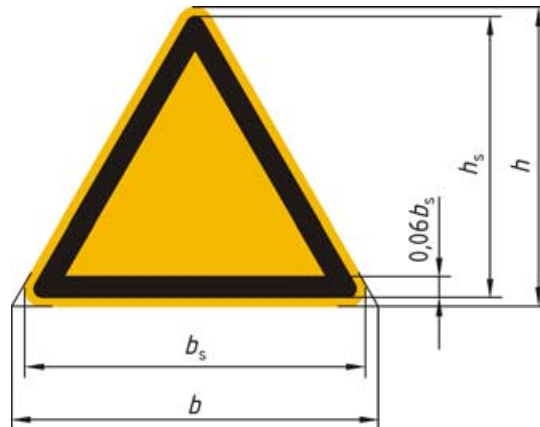


Figure 3

Background colour:	yellow
Triangular band:	black
Graphical symbol:	black
Border:	yellow or white

The safety colour shall cover at least 50% of the total area of the sign.

7.5 Safe condition signs

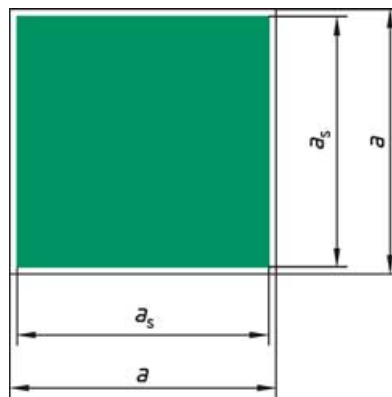


Figure 4

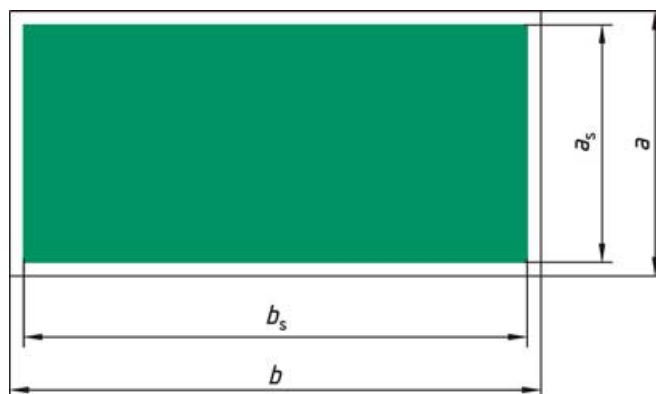


Figure 5

Background colour: green
Graphical symbol: white
Border: white

The safety colour green shall cover at least 50% of the area of the sign.

7.6 Fire safety signs

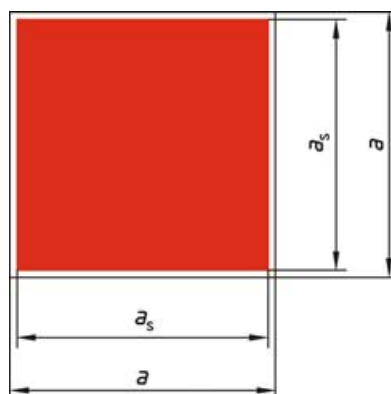


Figure 6

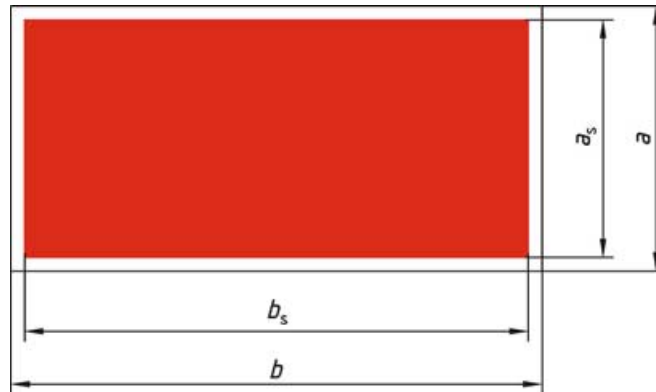


Figure 7

Background colour: red
 Graphical symbol: white
 Border: white

The safety colour red shall cover at least 50% of the area of the sign.

8 Layout of supplementary, combination and multiple signs

8.1 General

Words may be used to supplement or clarify the meaning of the symbol(s) used on a safety sign. Words shall be placed in either a separate supplementary sign or as a part of a combination sign.

8.2 Supplementary signs

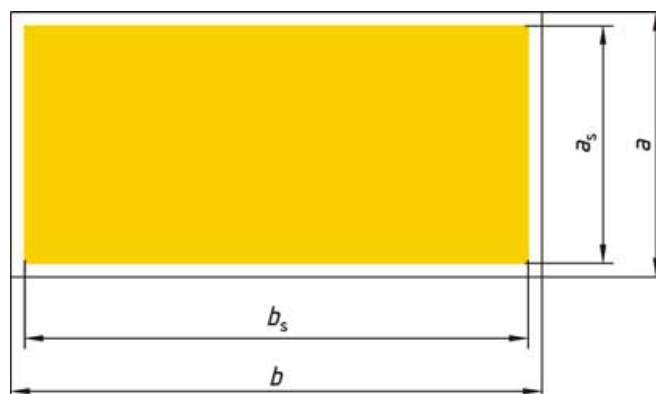


Figure 8

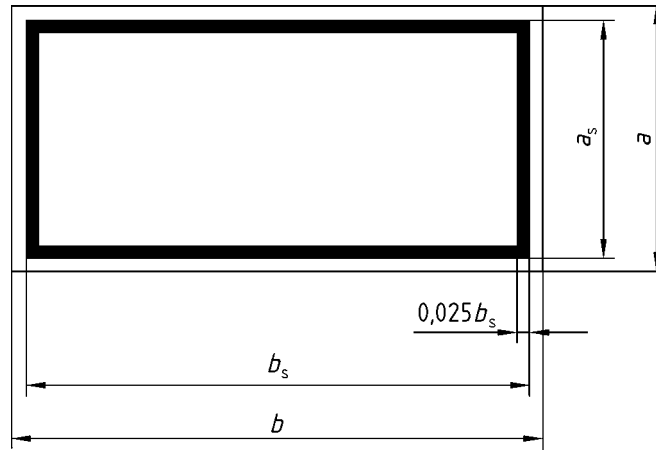


Figure 9

Background colour: white or safety colour of the safety sign
 Symbol or text colour: relevant contrast colour
 Border: white

8.3 Assignment of a supplementary sign

The supplementary sign shall be underneath or to the right or to the left of the safety sign.



Figure 10

8.4 Combination signs

Combination signs contain the safety sign and the supplementary sign on one rectangular carrier.

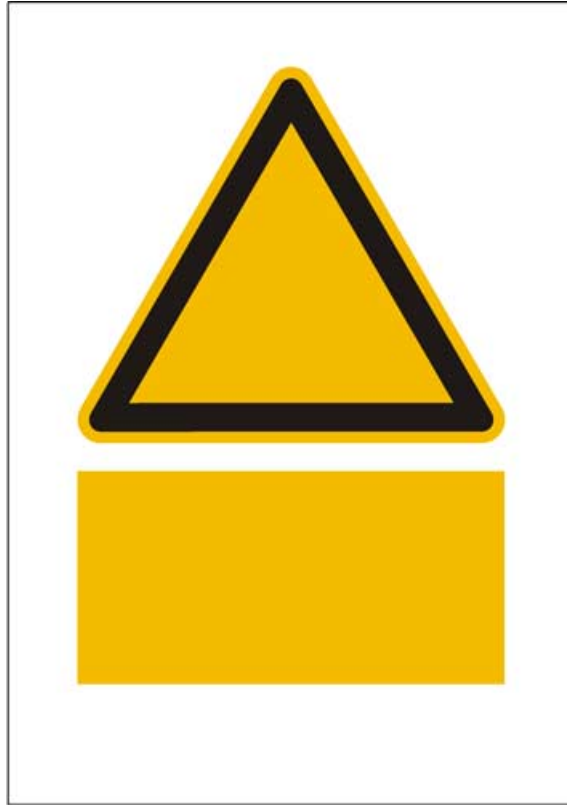


Figure 11



Figure 12

Colour of sign carrier: colour of the safety sign or white
 Symbol or text colour: relevant contrast colour

8.5 Multiple signs as a means of communicating complex safety messages

A multiple sign is a combination sign containing two or more safety signs and/or associated supplementary signs on the same rectangular carrier. To communicate a warning, a mandatory instruction to avoid risk of injury and/or provide a prohibition message the layout may be as follows:

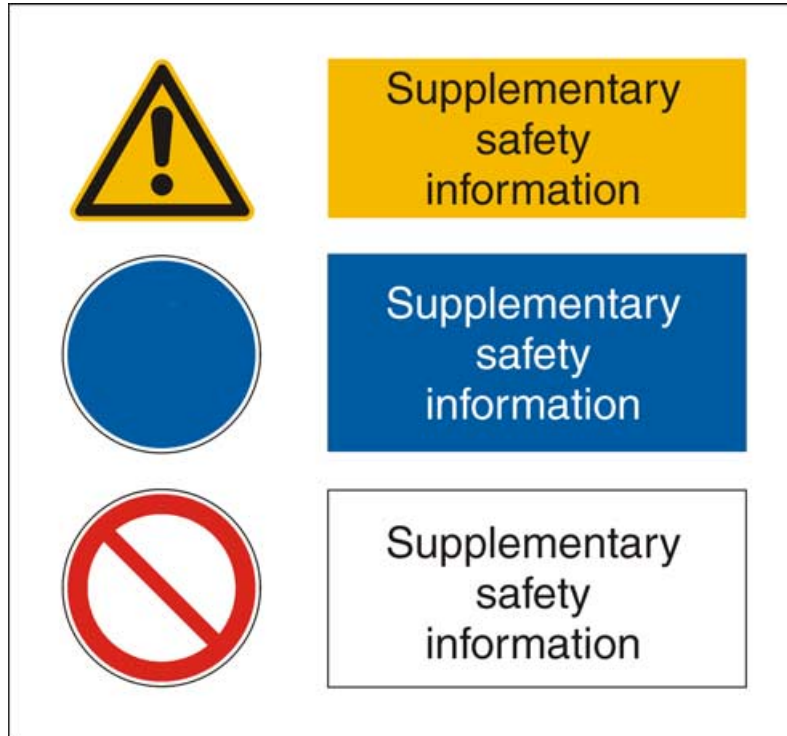


Figure 13

In multiple signs, the order of the safety signs (and/or the corresponding supplementary signs) should be arranged according to the importance of the safety messages. The horizontal layout may also be used.

8.6 Combination signs using the supplementary sign depicting an arrow; with and without supplementary text signs

A graphical symbol sign, a supplementary sign and a supplementary directional arrow sign may be combined to provide a comprehensive directional safety message. Examples are given as follows:

A combination sign on one carrier may omit internal borders.

Directional arrows shall be underneath or to the left or right of the safety sign.



Figure 14



Figure 15



Figure 16

9 Layout of safety marking

The bands are of equal width inclined at an angle of approximately 45° (see Figures 17 to 20).

The following combination of yellow and contrast black shall be used to indicate hazard locations:



Figure 17

The following combination of red and contrast white shall be used to indicate prohibition or location of fire fighting equipment:



Figure 18

The following combination of blue and contrast white shall be used to indicate a mandatory instruction:



Figure 19

The following combination of green and contrast white shall be used to indicate a safe condition:



Figure 20

10 Relationship between dimensions of safety signs and distance of observation

The relationship between the greatest distance from which the safety sign is legible and conspicuous in shape and colour and the height of the safety sign together with the distance factor Z is given by the formula

$$h = l / Z$$

where h and l have the same units (see Figure 21).

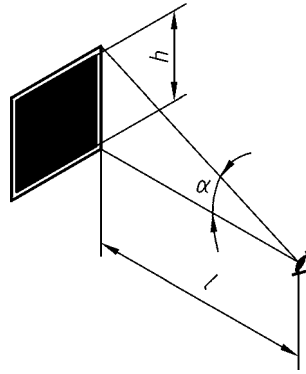


Figure 21 — Example for the angular extension of a safety sign

- l : distance of observation
 h : height of the sign
 Z : factor of distance = $1 / \tan \alpha$
 α : angular extension of the sign ($\tan \alpha = h / l$)

For the height h of the sign: take d_s for prohibition and mandatory signs, take h_s for warning signs, take a_s for safe condition signs, fire safety signs and supplementary signs (as shown in Figures 1 to 9).

The factor Z depends on the height of the sign, the size of the critical details, the luminance of the sign and its contrast against the surrounding.

The ratio r as a quotient of the height of the sign to that of the size of the critical detail shall be 15 or less. Where r is greater than 15, the value of Z shall be corrected by multiplying factor $15/r$.

Under this geometric condition the uncorrected factor of distance Z valid for illuminated signs will be 100 if the incident illuminance of the sign's surface is more than 50 lx preferably more than 80 lx.

Transilluminated exit signs and directional escape route signs with average luminance of the contrast colour greater than 500 cd/m^2 will double the factor of distance and therefore the observation distance. They also will be sufficiently conspicuous in bright surrounding. In dark surrounding the luminance shall be reduced to avoid glare or disturbance.

NOTE 1 The above calculations are based on the statistical probability that 95% of the normal population will reliably detect the sign, reliably resolve the colour and reliably resolve the critical detail of the safety sign.

NOTE 2 For safety colour luminances lower than 2 cd/m^2 (Mesopic range of luminances) the colour rendition is considerably reduced. The observation distance is also reduced at luminances of 100 mcd/m^2 for instance by the factor 4 compared with illuminated signs under normal lighting conditions. For even lower luminances in the scotopic range of luminances a colour rendition is totally impossible. The observation distance in the scotopic range at luminances of 5 mcd/m^2 for instance is reduced by the factor 18 compared with illuminated signs under normal lighting conditions.

11 Colorimetric and photometric properties of safety colours and contrast colours

11.1 Conditions

The physical requirements which safety signs have to meet are primarily related to daytime colour.

Measurements of chromaticity coordinates and luminance factor β shall be made as specified in CIE-Publication No.15.2.

For the measurement of chromaticity coordinates and luminance factor β of ordinary, luminescent and retroreflecting externally illuminated signs the material is considered to be illuminated by daylight as represented by the Standard Illuminant D65 (IEC 845.03.12²⁾; ISO/CIE 10526) at an angle of 45° with the normal to the surface and the observation made in the direction of the normal (45/0 geometry).

For internally illuminated signs the measurement has to be done with a colorimeter according to the measurement of luminaires. The sign has to be transilluminated by the light source provided by the manufacturer.

The coefficient of retroreflection shall be measured in accordance with CIE-Publication No. 54, using Standard illuminant A (ISO/CIE 10526), with the condition that the entrance and observation angles are in the same plane.

11.2 Requirements

The permitted colour areas for safety signs shall be as shown in Figure 22 and Table 2. Colours that do not meet these chromaticity co-ordinates shall not be used for safety signs.

Signs may be offered as meeting precise colour requirements, in which case they shall also conform to the requirements of Table 3.

NOTE The colours of safety signs meeting the requirements of Table 3 are likely to take longer to deteriorate and therefore remain within the limits specified in Table 2 for longer.

Contrast colours and luminance factors for phosphorescent colours shall be as shown in Figure 22 and Table 4.

Table 5 contains the minimum coefficients of retroreflection for retroreflecting materials.

For transilluminated signs the x and y co-ordinates shall be in the colour area given in Table 2 and the luminance contrast as given in Table 6.

The appearance of the safety signs (combination of the specific colour, geometric shape and graphical symbol) shall maintain the same meaning under all lighting conditions specified as appropriate by the sign manufacturer.

Annex A gives practical information about safety colours.

NOTE 1 Retroreflecting materials (Table 5): if, in use, the photometric values of the retroreflecting material drop below 50% of the required minimum or if the chromaticity co-ordinates fall outside the area boundaries in Table 2, the materials are no longer considered suitable for safety use.

NOTE 2 Fluorescent materials: if, in use, the chromaticity co-ordinates fall outside the boundaries in Table 2, the materials are no longer considered suitable for safety use.

²⁾ The numbers refer to the International Electrotechnical Vocabulary (IEV), IEC 60050 (1987), chapter 845:Lighting

Table 2 — Chromaticity coordinates and luminance factor for ordinary, luminescent, retroreflecting and combined materials and chromaticity coordinates for transilluminated safety signs

Colour	Chromaticity coordinates of corner points determining the permitted colour area: Standard Illuminant D65 CIE 2° standard observer				Luminance factor β					
		1	2	3	4	ordinary materials	luminescent materials	retroreflecting materials		combined materials
								Type 1	Type 2	
Red	x	0,735	0,681	0,579	0,655	$\geq 0,07$	$\geq 0,30$	$\geq 0,05$	$\geq 0,03$	$\geq 0,25$
	y	0,265	0,239	0,341	0,345					
Blue	x	0,094	0,172	0,210	0,137	$\geq 0,05$	$\geq 0,05$	$\geq 0,01$	$\geq 0,01$	$\geq 0,03$
	y	0,125	0,198	0,160	0,038					
Yellow	x	0,545	0,494	0,444	0,481	$\geq 0,45$	$\geq 0,80$	$\geq 0,27$	$\geq 0,16$	$\geq 0,70$
	y	0,454	0,426	0,476	0,518					
Green	x	0,201	0,285	0,170	0,026	$\geq 0,12$	$\geq 0,40$	$\geq 0,04$	$\geq 0,03$	$\geq 0,35$
	y	0,776	0,441	0,364	0,399					
White	x	0,350	0,305	0,295	0,340	$\geq 0,75$	$\geq 1,0$	$\geq 0,35$	$\geq 0,27$	-
	y	0,360	0,315	0,325	0,370					
Black	x	0,385	0,300	0,260	0,345	$\leq 0,03$	-	-	-	-
	y	0,355	0,270	0,310	0,395					

Retroreflecting material types are standardised by their coefficient of retroreflection in Table 5

Table 3 — Chromaticity coordinates for tighter areas in the chromaticity diagram for ordinary and retroreflecting materials

Colour	Chromaticity coordinates of corner points determining the permitted tighter colour area for Standard Illuminant D65 and CIE 2° standard observer												
	ordinary materials					retroreflecting materials							
						Type 1				Type 2			
	1	2	3	4	1	2	3	4	1	2	3	4	
Red	x	0,660	0,610	0,700	0,735	0,660	0,610	0,700	0,735	0,660	0,610	0,700	0,735
	y	0,340	0,340	0,250	0,265	0,340	0,340	0,250	0,265	0,340	0,340	0,250	0,265
Blue	x	0,140	0,160	0,160	0,140	0,130	0,160	0,160	0,130	0,130	0,160	0,160	0,130
	y	0,140	0,140	0,160	0,160	0,086	0,086	0,120	0,120	0,090	0,090	0,140	0,140
Yellow	x	0,494	0,470	0,493	0,522	0,494	0,470	0,493	0,522	0,494	0,470	0,513	0,545
	y	0,505	0,480	0,457	0,477	0,505	0,480	0,457	0,477	0,505	0,480	0,437	0,454
Green	x	0,230	0,260	0,260	0,230	0,110	0,150	0,150	0,110	0,110	0,170	0,170	0,110
	y	0,440	0,440	0,470	0,470	0,415	0,415	0,455	0,455	0,415	0,415	0,500	0,500
White	x	0,305	0,335	0,325	0,295	0,305	0,335	0,325	0,295	0,305	0,335	0,325	0,295
	y	0,315	0,345	0,355	0,325	0,315	0,345	0,355	0,325	0,315	0,345	0,355	0,325

Retroreflecting material types are standardised by their coefficient of retroreflection in Table 5

Table 4 — Chromaticity coordinates of contrast colours for phosphorescent materials under daylight conditions

Contrast colour for phosphorescent materials	Chromaticity co-ordinates of corner points determining the permitted colour area: Standard Illuminant D65 (45/0 geometry) CIE 2° standard observer					Luminance factor β
	x	y				
Yellowish white	x	0,390	0,320	0,320		> 0,75
	y	0,410	0,340	0,410		
white	x	0,350	0,305	0,295	0,340	> 0,75
	y	0,360	0,315	0,325	0,370	

Table 5 — Minimum coefficient of retroreflection R'

Observation angle	Entrance angle	Minimum coefficient of retroreflection *, in cd/lx m ² Illuminant: CIE Standard Illuminant A									
		Type 1					Type 2				
		White	Yellow	Red	Green	Blue	White	Yellow	Red	Green	Blue
12'	5°	70	50	14,5	9	4	250	170	45	45	20
	30°	30	22	6	3,5	1,7	150	100	25	25	11
	40°	10	7	2	1,5	0,5	110	70	16	16	8
20'	5°	50	35	10	7	2	180	122	25	21	14
	30°	24	16	4	3	1	100	67	14	11	7
	40°	9	6	1,8	1,2	0,4	95	64	13	11	7
2°	5°	5	3	0,8	0,6	0,2	5	3	0,8	0,6	0,2
	30°	2,5	1,5	0,4	0,3	0,1	2,5	1,5	0,4	0,3	0,1
	40°	1,5	1,0	0,3	0,2	0,06	1,5	1,0	0,3	0,2	0,06

* For coloured parts of the sign which are printed, the coefficient of retroreflection shall not be less than 80% of the value given in Table 5

Table 6 — Luminance contrast for transilluminated materials

Safety colour	Red	Blue	Yellow	Green
Contrast colour	White	White	Black	White
Luminance contrast	5<k<15	5<k<15	*	5<k<15
* Black as contrast colour or colour of the symbol is not translucent				

The uniformity of the luminance within the safety colour and contrast colour, measured as the ratio of minimum to maximum luminance within the colour, shall be more than 1:5.

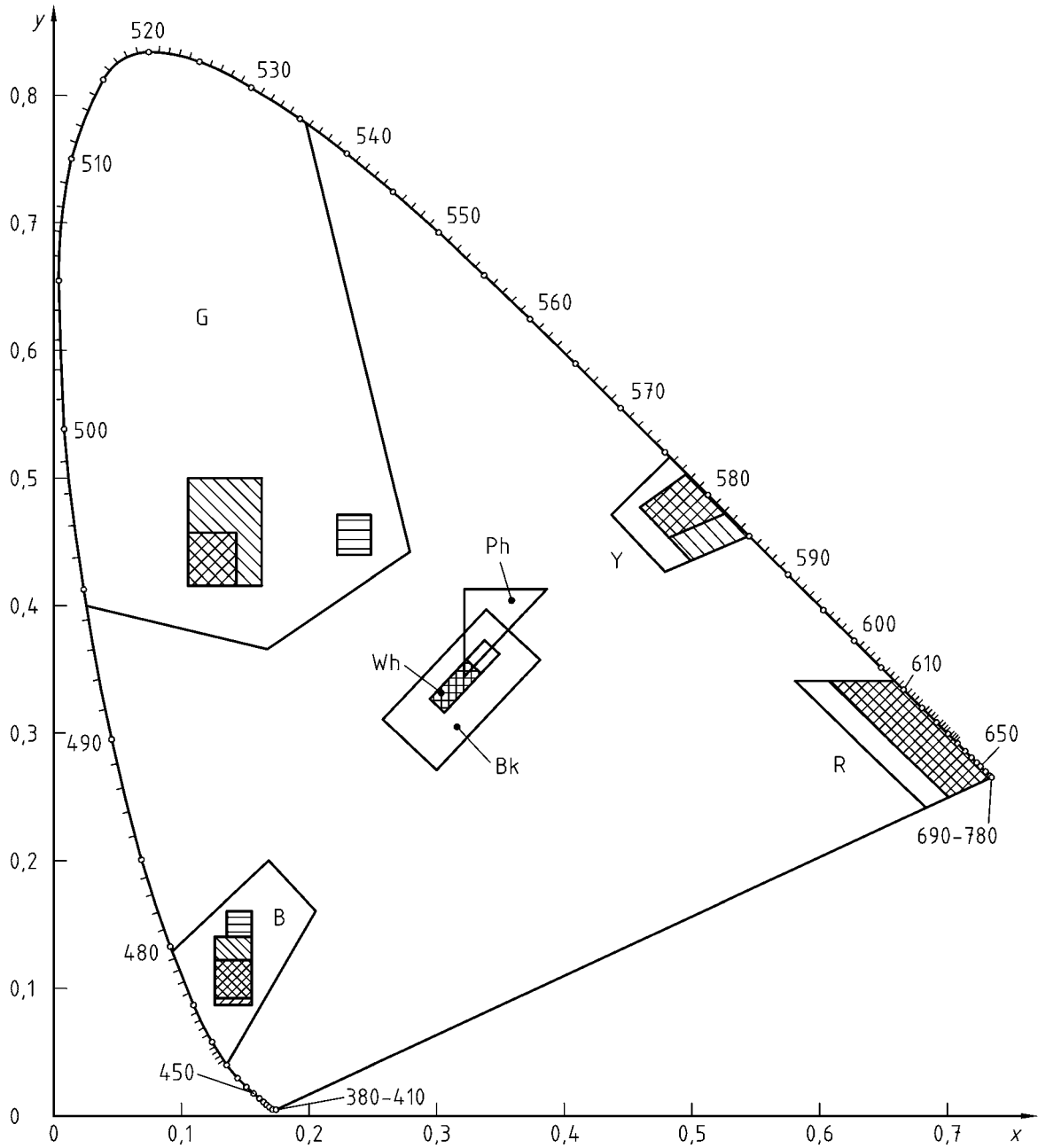






Figure 22 — Boundaries for red (R), yellow (Y), green (G), blue (B), white (Wh) and black (Bk) safety colours including white (Wh) and yellowish white (Ph) phosphorescent contrast colours

-  Boundaries for safety colours according to Table 2
-  Boundaries for safety colours according to Table 3, ordinary materials
-  Boundaries for safety colours according to Table 3, retroreflecting materials type 1
-  Boundaries for safety colours according to Table 3, retroreflecting materials type 2

Annex A (informative)

References from Colour Order Systems for Safety Colours

Colours are standardised in Tables 2 to 4 by their chromaticity co-ordinates. However, manufactures of safety signs might need a guideline concerning what the respective safety colours look like. For this purpose - and not for colour matching - the co-ordinates of centroid ordinary safety colours are given here as an example in some internationally known colour order systems.

Table A.1 — Examples for safety colours from colour order systems

Colour	DIN 6164	Munsell	AFNOR NF X08-002 and X08-010	NCS
Red	7,5 : 8,5 : 3	7,5R 4/14	N° 2805	S 2080-R
Blue	16,7 : 7,2 : 3,8	2,5PB 3/10	N° 1540	S 4060-R90B
Yellow	2,5 : 6,5 : 1	10YR 7/14	N°1330	S 1070-Y10R
Green	21,7 : 6,5 : 4	5G 4/9	N°2455	S 3060-G
White	N : 0 : 0,5	N 9,5	N°3665	S 0500-N
Black	N : 0 : 9	N 1	N°2603	S 9000-N

Bibliography

NF X08-002, *Limited collection of colours. Designation and catalogue of ccr colours. Secondary standard.*

NF X08-010, *Colours. Systematic general classification of colours simplified classification of colours.*

DIN 6164, *Colours. Systematic general classification of colours simplified classification of colours.*

Svensk Standard SS 01 91 02, *Colour atlas 96 (NCS)*

Munsell-Book of colour