

NFPA® 1 Fire Code Handbook

EIGHTH EDITION

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With the complete text of the 2018 edition of NFPA® 1, *Fire Code*



NATIONAL FIRE PROTECTION ASSOCIATION

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A Guide to Using the NFPA® 1 Fire Code Handbook

This eighth edition of the *NFPA 1 Fire Code Handbook* contains the complete text of the 2018 edition of NFPA® 1, *Fire Code*, and the nonmandatory annex material. Commentary is provided in this handbook to explain the reasoning behind the *Code's* requirements.

176 Chapter 10 • General Safety Requirements

Exhibit 10.7

Stair sign placement.

Exhibit 10.7 illustrates the placement required to ensure that the sign is readily visible, whether the door leaf is open or closed. The indication of the direction to the level of exit discharge can be extremely useful to occupants of a building, especially if the occupants are below the level of exit discharge. The natural tendency of occupants is to attempt egress by traveling downward in a stair; this is counterproductive where the exit discharge is located on an upper level. Also, many buildings have multiple levels of entrance, which create confusion with respect to travel direction in a given stair.

The requirements of 10.11.3 are not exempted for existing buildings, because it is feasible and cost effective to install signs providing the required information. Because stair enclosures are usually not as aesthetically well finished as occupied portions of a building, the requirement for the signage (other than for the tactile floor level designator) is often met by stenciling the information directly onto the walls.

The provision of 10.11.3.1.13 was revised for the 2009 edition of the *Code*. In prior editions, roof access or lack of roof access was required to be designated by a sign. In many cases, roof access was provided for emergency responders only, and a sign reading "Roof Access" was misleading to building occupants. The current provision requires that only the lack of roof access be designated by a sign.

The provision of 10.11.3.1.7 was new to the 2015 edition of the *Code*. It replaced a provision that required the signage to be located approximately 60 in. (1525 mm) above the floor landing. The *Code* user now has a definitive height range for placement of the sign above the floor landing. Other criteria were moved or combined for clarification.

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Exhibit 10.8

Stairway identification sign with tactile floor level designator.

The provision of 10.11.3.1.16 is needed so that signs installed prior to 2009, when subitems (L) through (O) were added, are not unfairly reclassified as noncompliant.

The provision of 10.11.3.1.8 was revised for the 2018 edition of the *Code* to add the words "from within the stair enclosure," because misinterpretations were being made that occupants must be able to see the sign before entering the exit stair enclosure.

Exhibit 10.8 shows a stairway identification sign with the information required by 10.11.3.1. The element reading Level 2 was provided for compliance with 10.11.3.1.2, which requires that the signage indicate the floor level, and for compliance with 10.11.3.1.10, which requires that the floor level designation also be tactile. In accordance with ICC/ANSI A117.1, *Accessible and Usable Buildings and Facilities*, the minimum 5 in. (125 mm) high floor level number — the large 2 in this case — that was provided for compliance with 10.11.3.1.14 cannot serve as the tactile floor level designation because ICC/ANSI A117.1 limits raised characters to being not more than 2 in. (51 mm) in height. Further, the floor level designation is provided in braille below the tactile element, because ICC/ANSI A117.1 requires that raised letters be duplicated in braille.

Δ 10.11.3.2 Wherever an enclosed stair requires travel in an upward direction to reach the level of exit discharge, special signs with directional indicators showing the direction to the level of exit discharge shall be provided at each floor level landing from which upward direction of travel is required, unless otherwise provided in 10.11.3.2.1 and 10.11.3.2.2, and both of the following also shall apply:

- (1) Such signage shall comply with 14.14.8.1 and 14.14.8.2.
- (2) Such signage shall be visible when the door leaf is in the open or closed position.

[101:2.7.2.5.3.2]

Commentary exhibits, including both illustrations and photographs, are set off in red frames.

Commentary tables are printed in red to distinguish them from the *Code* tables.

1134 Chapter 66 • Flammable and Combustible Liquids

COMMENTARY TABLE 66.2 GHS Category

GHS Category	Flash Point, °C (°F)	Boiling Point, °C (°F)
1	<-23 (73)	≤35 (95)
2	<-23 (73)	>35 (95)
3	≥-23 (73)	NA
4	≥60 (140)	NA
	≥60 (140)	NA
5	≥93 (200)	NA

NA = Not applicable.

66.4.1.1* Boiling Point. See 3.3.2.7.

66.4.1.1.1 See A.3.3.2.7.

66.4.1.2 Combustible Liquid. See 3.3.169.1.

66.4.1.3 Flammable Liquid. See 3.3.169.2.

66.4.1.4* Flash Point. See 3.3.134.

66.4.1.4.1 See A.3.3.134.

66.4.1.5 Liquid. See 3.3.172.

66.4.1.6* Vapor Pressure. See 3.3.283.

66.4.1.6 See A.3.3.283.

66.4.2* Classification of Liquids. Any liquid within the scope of this *Code* and subject to the requirements of this *Code* shall be classified in accordance with this chapter. [304.3]

Δ A.66.4.2 The classification of liquids is based on flash points that have been corrected to sea level, in accordance with the relevant ASTM test procedures. At high altitudes, the actual flash points will be significantly lower than those either observed at sea level or corrected to atmospheric pressure at sea level. Allowances could be necessary for this difference in order to appropriately assess the risk. [304.3.3]

A comparison of the NFPA 30 classification scheme with GHS is shown in Commentary Table 66.3.

There are some differences besides nomenclature between the two systems. For example, while the flash point criteria for NFPA 30 Classes IA and IB match those for GHS Categories I and II, the boiling point criteria are different: 100°F (37.8°C) versus 95°F (35°C). This is relatively minor and could probably be accommodated with little negative effect; also, the flash point range for NFPA 30 Class IIIA is effectively identical with that for GHS Category 4. The problem lies with NFPA 30 Classes IC and II compared with GHS Category 3. NFPA 30 considers Class IC liquids to be ignitable at high ambient temperatures, while Class II liquids seldom are. So, for example, open use of Class IC liquids typically would require such precautions as area ventilation and the use of classified electrical equipment. Such is not required by the *Code* for Class II liquids, unless they are heated to their flash points. However, the OSHA GHS scheme treats these two categories of liquid the same, which likely would cause confusion for users.

Table A.66.4.2 presents a comparison of the definitions and classification of flammable and combustible liquids, as set forth in Chapter 66 of this *Code*, with similar definitions and classification systems used by other regulatory bodies. [304.3.4.3]

The Hazardous Materials Regulations of the U.S. Department of Transportation (DOT), as set forth in the 49 CFR 173.120(b)(2) and 173.150(f), provide an exception whereby a flammable liquid that has a flash point between 37.8°C (100°F) and 60.5°C (141°F) and does not also meet the definition of any other DOT hazard class can be reclassified as a combustible liquid [i.e., one having a flash point above 60.5°C (141°F)] for shipment by road or rail within the United States. [304.3.4.3]

COMMENTARY TABLE 66.3 NFPA 30 Liquids Classification vs. OSHA Globally Harmonized Standard

Liquid Class	NFPA 30		OSHA GHS	
	Flash Point, °F (°C)	Boiling Point, °F (°C)	Flammable Category	Flash Point, °F (°C)
IA	<73 (23)	<100 (38)	1	<73 (23)
IB	<73 (23)	≥100 (38)	2	<73 (23)
IC	73 to <100 (23 to <38)	—	3	73 to 140 (23 to 60)
II	100 to <140 (38 to <60)	—	—	—
IIIA	140 to <200 (60 to <93)	—	4	>140 to 200 (> 60 to 93)
IIIB	≥200 (93)	—	—	—

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