



## TEC1.1

# Fire Safety



## Objective

Fire events do not only endanger life and safety of humans and animals but also damage the building fabric, emit pollutants and thus cause harm to the environment. This is why the issue “fire safety” forms an integral part of DGNB’s certification procedures.

**Please note: neither the DGNB certificate in total nor the fire protection evaluation points awarded by the DGNB replace official permits or official acceptance. In particular, due to the limited scope of checks and assessments, the awards do not contain confirmation that the project has actually been implemented and is utilized in accordance with the fire protection documents submitted and/or provided otherwise by the Applicant for certification purposes. Rather, the certificate and the fire protection evaluation points awarded are mainly based on declarations made by the Applicant and DGNB as well as its auditors rely on such declarations being complete, true and not misleading. The Applicant’s responsibility to ensure full conformity with the applicable fire protection regulation remains unaffected. For further restrictions please see preamble para 2 and section 13.2 of the Certification Agreement.**

## Benefits

The main benefits of fire safety measures are to reduce the potential loss of lives and injuries during a fire, as well as the destruction caused by fire, and hence the associated repair and liability costs in the aftermath. It is essential to prevent the occurrence of a fire and the spread of fire and smoke, which will affect not just the building itself, but also its surroundings. Equipping a building with sufficient fire safety measures will also bring reassurance to building users during normal operation by allaying safety concerns.

Fire safety measures include those that are

- intended to prevent ignition of an uncontrolled fire,
- used to limit the development and impacts of a fire after it starts,
- planned during the construction of a building or implemented in existing structures,
- taught to the building occupants.

Essential fire safety measures are installed within a building or premises as a vital function to prevent injury and loss of life in the event of fire. Furthermore, these ensure that people and animals can be rescued and extinguishing work can be carried out effectively in the event of a fire.

Examples of such measures are listed in indicator 2 and indicator 3 below.

## Contribution to overriding sustainability goals





CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOALS (SDGs) OF UNITED NATIONS (UN)		CONTRIBUTION TO THE GERMAN SUSTAIN- ABILITY STRATEGY
<b>1</b> <b>Low</b>	3.4 Reduction of premature death, promotion of good health/well-being	15.1 Biodiversity
	15.5 Natural habitats	



## Outlook

Ideally, this criterion will no longer be needed in a few years' time, when the topics addressed in the criterion have become the local standard practice.

## Share of total score

	SHARE	WEIGHTING FACTOR
Office Education Residential Hotel	2.5%	4
Consumer market Shopping centre	2.9%	4
Department stores		
Logistics Production	2.7%	4
Assembly buildings	2.6%	4



## EVALUATION

Fire safety is evaluated based on a checklist. A maximum of 100 points can be attained. For a positive evaluation of these indicators, the design documents must clearly demonstrate that the minimum standards have been achieved. Note that the building inspection authority allows for alternative fire safety concepts and permits deviations from the valid building regulation under certain conditions.

**NOTE: Buildings that are without basic fire safety features and do not comply with local building regulations cannot be certified.**

ADVICE: The checklist points of indicators 2 and 3 can only be achieved if the additional measures are not mandatory. This means when additional measures are voluntary options which are not part of the local building regulation or compensation measures as part of the fire safety plan. Other local fire safety features of the design and structure (indicator 2) or of the technical building system (indicator 3) not listed below could be considered after consultation from DGNB experts.

NO.	INDICATOR	POINTS
1	<b>Fire safety certificate</b>	max. 50
	<div> Consumer market Shopping centre Department stores Logistics Production Office Education Residential Hotel Assembly buildings </div>	
	Fire safety features have been designed in accordance with the local building regulations, or deviations from local building regulations have been approved by the relevant authorities and meet the required safety level.	
2	<b>Additional fire safety features of the design and structure</b>	
	<div> Consumer market Shopping centre Department stores Logistics Production Office Education Residential Hotel Assembly buildings </div>	max. 60
	<ul style="list-style-type: none"> <li>Creating smaller fire and smoke compartments</li> </ul>	10
	<ul style="list-style-type: none"> <li>Providing direct external access to fire alarm centre and equipment room / fire brigade control panel, or fire brigade information system.</li> </ul>	5
	<ul style="list-style-type: none"> <li>Providing escape routes which are at least 20% shorter than the maximum permissible length</li> </ul>	10
	<ul style="list-style-type: none"> <li>Providing escape routes which are at least 25% wider than the minimum required width.</li> </ul>	10
	<ul style="list-style-type: none"> <li>Installing a photoluminescent guiding pathway close to the ground</li> </ul>	10
	<ul style="list-style-type: none"> <li>Installing self-closing panic locks/bolts on the building entrance doors or emergency exit doors</li> </ul>	10
	<ul style="list-style-type: none"> <li>Providing a glass panel on all doors on escape routes</li> </ul>	5



### 3 Additional fire safety features of the technical building system

Consumer market	Shopping centre	Department stores	Logistics	Production	max.
Office	Education	Residential	Hotel	Assembly buildings	100
■ Installing a comprehensive fire reporting and alarm system beyond the extent required by building regulations					15
■ Installing a dynamic escape and rescue guidance system					12.5
■ Increasing illumination of safety lighting (at least 10 Lux)					7.5
■ Fitting smoke extraction systems with air vents / air supply apertures that open automatically.					7.5
■ Installing an additional (i.e. not required) automatic fire extinguishing system (e.g. sprinkler system)					12.5
■ Implementing the automatic fire extinguishing system as a low pressure water mist extinguishing system					7.5
■ Implementing the automatic fire extinguishing system as a high pressure water mist extinguishing system					12.5
■ Equipping the building with a radio system tuned to the Emergency services bandwidth and linked to the fire brigade where this is not required by building regulations					7.5
■ Installing safety equipment e.g. fire extinguishers, wall hydrants, emergency buttons with photoluminescent materials when this is not already required by fire safety regulations					2.5
■ Installing a lift for the fire brigade or designating a planned passenger lift as a fire brigade lift when this is not already required by building regulations					15



## SUSTAINABILITY REPORTING AND SYNERGIES

### Sustainability reporting

Not available

NO.	KEY PERFORMANCE INDICATORS / KPIS	UNIT

### Synergies with DGNB system applications

- **DGNB DISTRICTS:** There are synergies with indicator PRO1.10.3 Fire Safety concept from the scheme for event areas.
- **DGNB BUILDINGS IN USE:** There are synergies with criterion TEC9.1 from the scheme for buildings in use.



## APPENDIX A – DETAILED DESCRIPTION

### I. Relevance

Fire safety of buildings is of utmost importance. Therefore, this criterion contains a minimum requirement (i.e. indicator 1). If this is not met, the building cannot be certified. The minimum requirement is considered to be providing basic fire safety features and compliance with local building regulations.

### II. Additional explanation

Minimum requirements for fire safety are regulated in local building regulations.

With structural and technical measures, fire protection can be planned from a sustainable point of view that goes beyond the minimum requirements. In the sense of sustainability and the prevention of injury and life as primary goal, it is evaluated positively if additional measures are implemented, e.g. to reduce fire events risk or to increase the safety of escape and rescue routes.

The basis for the evaluation is the effectiveness of the measures as well as the costs of their implementation.

### III. Method

#### Indicator 1. Fire safety certificate

This indicator represents the minimum requirement for fire safety. It relates to basic fire safety features and their compliance with local building regulations. Requests for approvals of deviations from local building regulations are examined on a case-by-case basis.

#### Indicator 2. Additional fire safety features of the design and structure

Additional points may be allocated for each feature of the design or structure which enhances fire safety and contributes to the building exceeding minimum building regulation requirements. The effectiveness of any such features should be considered within the context of each individual building.

Additional fire safety measures such as smaller fire and smoke compartments, shorter escape route length or larger escape route width can be considered to attain additional points.

This indicator is evaluated by computing the sum of the individual measures.

#### Indicator 3. Additional fire safety features of the technical building

Additional points may be allocated for each technical feature of the building system which enhances fire safety and contributes to the building exceeding the minimum building regulation requirements. The effectiveness of any such features should be considered within the context of each individual building.

The method is identical to those of Indicator 2. If the legally required engineering measures for fire safety are exceeded, further points can be attained. This includes the installation of a comprehensive fire alarm system, a dynamic escape and rescue guidance system or an automatic fire extinguishing system. This indicator is evaluated by computing the sum of individual measures.

### IV. Usage-specific description

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## APPENDIX B – DOCUMENTATION

### I. Required documentation

Examples of possible evidence include the following items. The allocation of points for individual indicators must be backed up by comprehensive and plausible evidence.

#### Indicator 1. Fire safety certificate

- Summary of legal requirements and any additional conditions attached to planning permission.
- Precisely formulated fire safety concept.
- Detailed fire safety plan and compensation measures.

#### Indicator 2. Additional fire safety features of the design and structure

- Evidence of additional fire safety features of design and structure, including e.g. extracts from fire safety plan, drawings and specifications for additional features, or photographic evidence.

#### Indicator 3. Additional fire safety features of the technical building

- Evidence of additional technical fire safety features, including e.g. extracts from fire safety plan, drawings and specifications for additional features, or photographic evidence.





## APPENDIX C – LITERATURE

### I. Version

#### Change log based on version 2017

PAGE	EXPLANATION	DATE
all	General: scheme “assembly buildings” has been added	16.09.2021

### II. Literature

- DIN EN 15269. Extended application of test results for fire resistance and/or smoke control for doors, shutter and operational window assemblies, including their elements of building hardware. The following parts of this Standard can be considered for this criterion:
  - DIN EN 15269-1. General requirements - Part 1. Berlin: Beuth Publisher. July 2010
  - DIN EN 15269-2. Fire resistance of hinged and pivoted steel doorsets – Part 2. Berlin: Beuth. February 2012.
  - DIN EN 15269-3. Fire resistance of hinged and pivoted timber doorsets and openable timber framed windows – Part 3. Berlin: Beuth Publisher. October 2012
  - DIN EN 15269-7. Fire resistance for steel sliding doorsets - Part 7. Berlin: Beuth Publisher. April 2010
  - DIN EN 15269-10. Fire resistance of steel rolling shutter assemblies - Part 10. Berlin: Beuth Publisher. July 2011
  - DIN EN 15269-20. Smoke control for hinged and pivoted steel, timber and metal framed glazed doorsets - Part 20. Berlin: Beuth Publisher. December 2009
- DIN EN 13501. Fire classification of construction products and building elements. The following parts of this Standard can be considered for this criterion:
  - DIN EN 13501-1. Classification using data from reaction to fire tests – Part 1. Berlin: Beuth Publisher. January 2010
  - DIN EN 13501-2. Classification using data from fire resistance tests, excluding ventilation services – Part 2. Berlin: Beuth Publisher. December 2016
- DIN EN 1634-1. Fire resistance test for door and shutter assemblies and openable windows – Part 1. Berlin: Beuth Publisher. April 2018
- DIN EN 12101. Smoke and Heat Control Systems. The following parts of this Standard can be considered for this criterion:
  - DIN EN 12101-1. Specification for smoke barriers – Part 1. Berlin: Beuth Publisher. October 2018
  - DIN EN 12101-2. Natural smoke and heat exhaust ventilators – Part 2. Berlin: Beuth Publisher. August 2018.
  - DIN EN 12101-3. Specification for powered smoke and heat control ventilators – Part 3. Berlin:



Beuth Publisher. December 2015

- DIN EN 12101-4. Natural smoke and heat exhaust ventilators – Part 4. Berlin: Beuth Publisher. August 2017
- DIN EN 12101-7. Smoke duct sections – Part 7. Berlin: Beuth Publisher. August 2011