PRIORIT
Fire | Resistant | Components

Fire protection in office and administrative buildings

Product solutions for structural fire protection

With application examples

priorit.de

Fire protection in office and administrative buildings

New office and administrative buildings are often characterised by open, spacious architecture. Frequently, access to the interior of the building is through areas with high ceilings that extend across multiple storeys – called atria. According to the model building regulation MBO Sec. 2 (4) point 5 and 6, office and administrative buildings with a gross floor area for individual rooms of more than 400 m², or used by more than 100 persons, are considered special structures.

Important regulations apply to structural, system engineering and organisational fire protection in office and administrative buildings, such as:

- Model or state building regulation
- Model administrative specification technical building regulations
- Model high rise directive
- Model line system directive

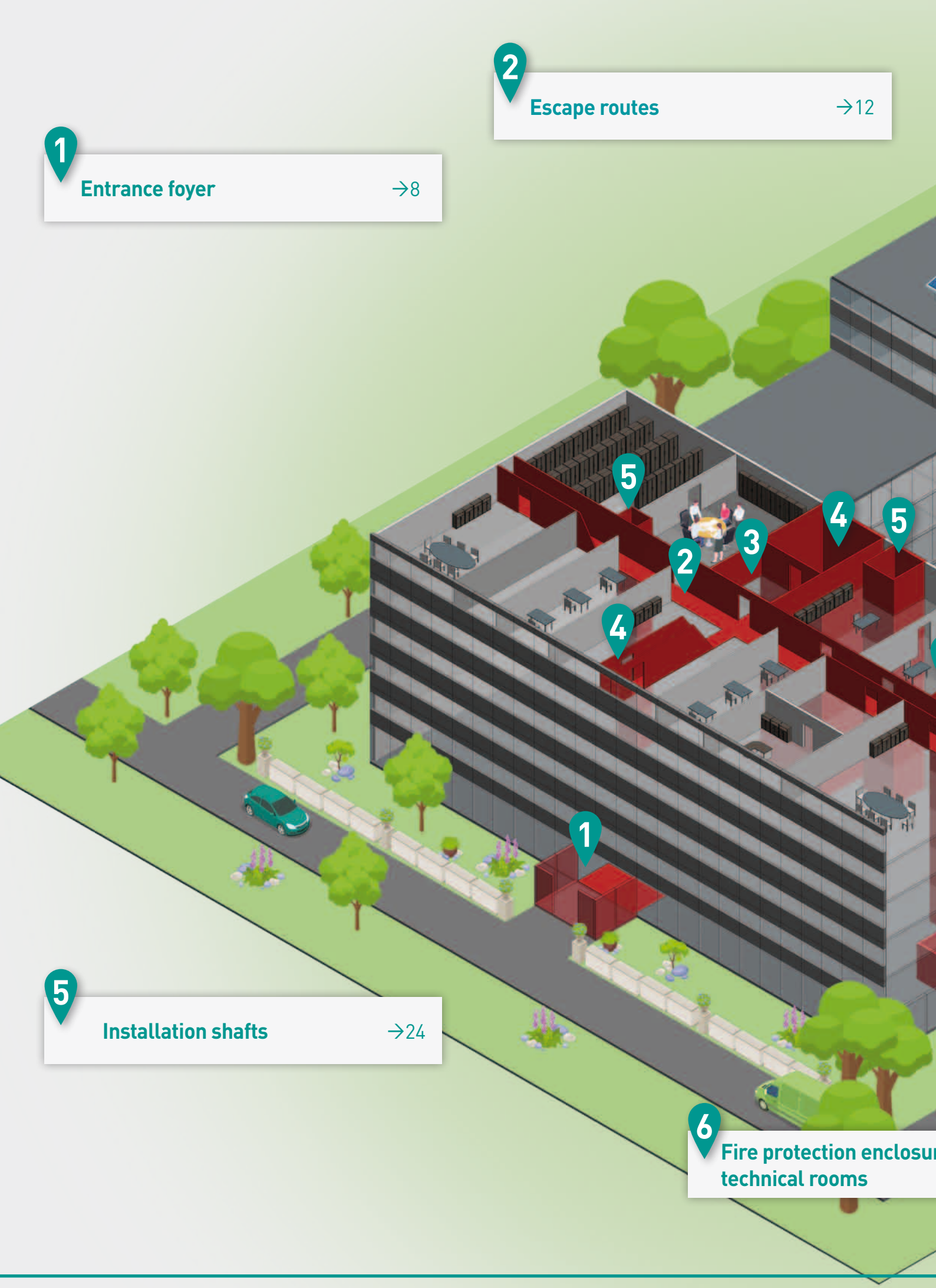
Other regulations may also apply if the building also houses assembly, sales, or lodging areas. These would include, for instance:

- Model shop regulation
- Model meeting place regulation
- Model lodging regulation

In addition, there are directives and occupational protection laws that regulate fire protection in workplaces.

According to MBO Sec. 33, "primary and secondary escape routes" are required in special structures, two structurally separated escape routes. The atrium is normally used as an escape and rescue route since it is used as a vertical access core for the individual floors. Therefore, the units of usable area must be separated from public areas through fire protection technology in order to keep the atrium clear of fire and smoke.

Lines and installations that pass through multiple floors must be installed in installation ducts, which must conform to MLAR 3.5.1. The closures of these shafts should generally be made of non-flammable materials and should be fire-resistant.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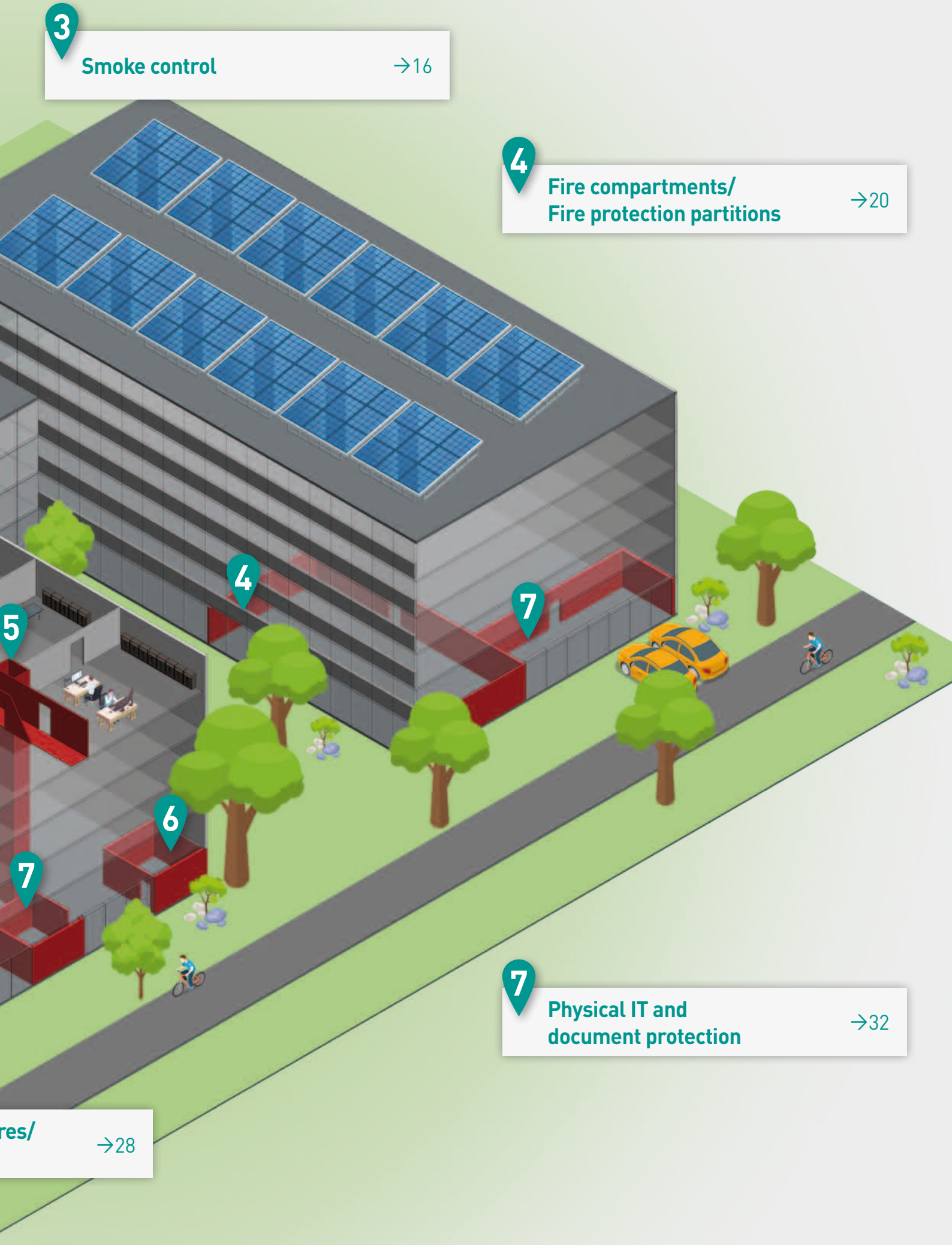
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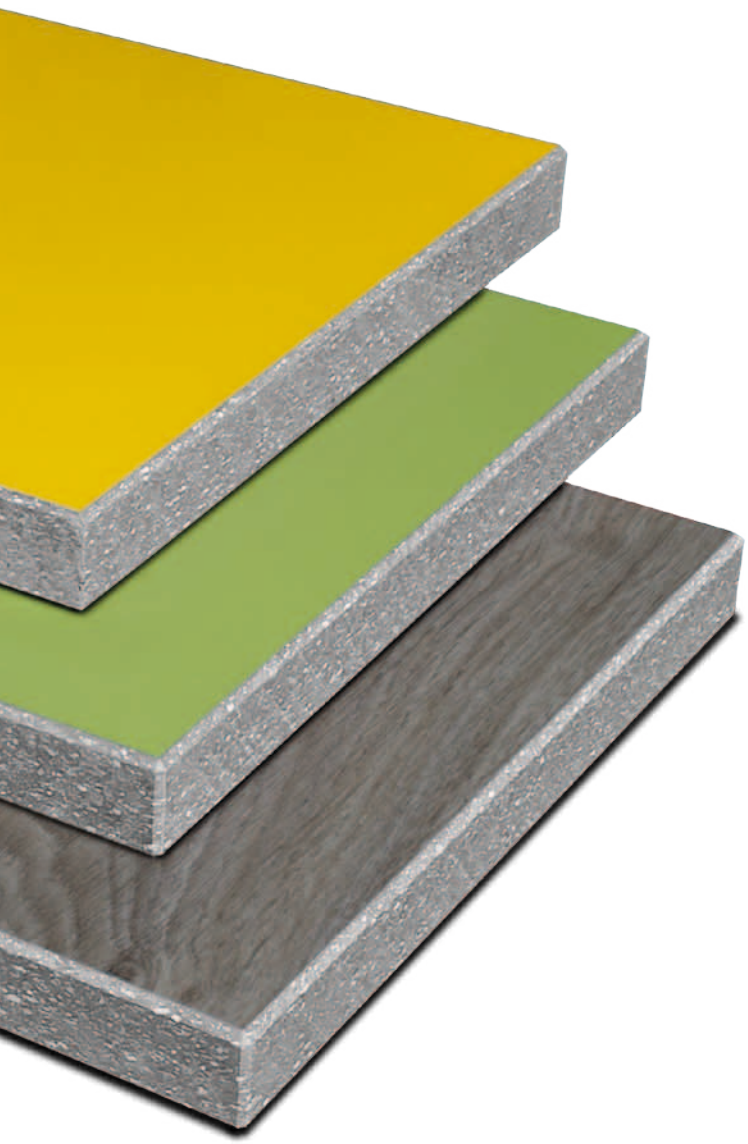


Building products & components

Based on building products classified as non-combustible, PRIORIT manufactures fire-resistant components with decorative surfaces, offering the capability to harmonize safety and design aspects.

SYSTEM 42

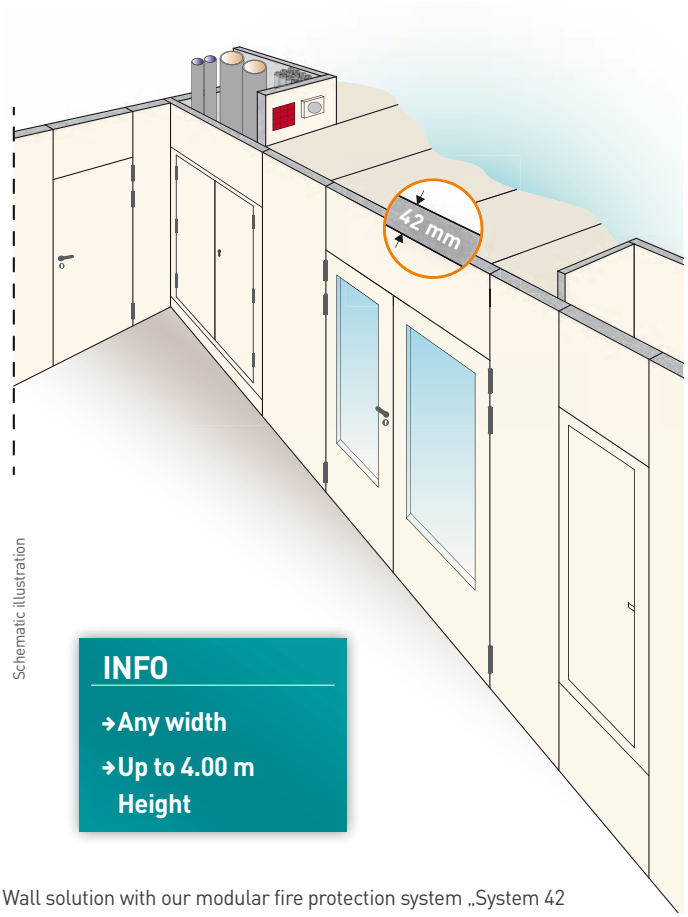
Fire Resistance 30 Min.

Fire Resistance 90 Min.

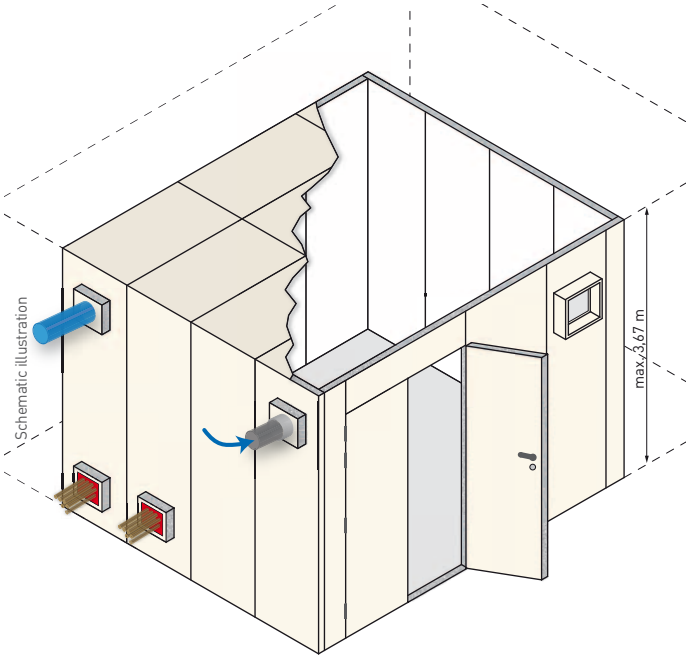
Smoke Protection min leakage

Material + Decor A2 Class

Modular fire protection system

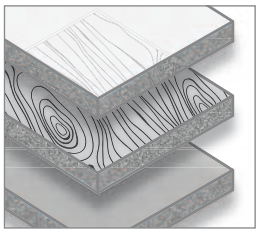


Wall solution with our modular fire protection system „System 42

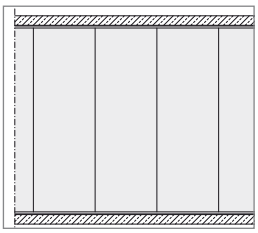


Room solution with our modular fire protection system „System 42

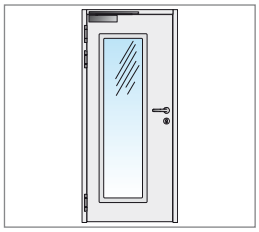
Basic components of System 42



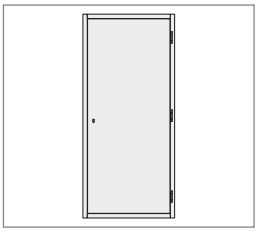
Non-combustible panel – PRIODEK H



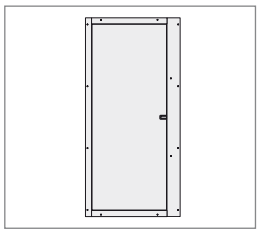
Wall – PRIOWALL



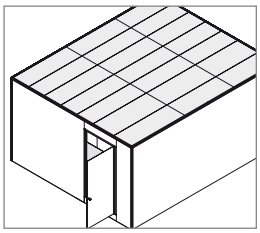
Doors – PRIODOOR FSA



Inspection opening closures – PRIODOOR ETX/RTX/RTH

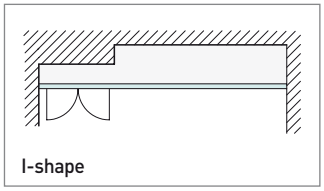


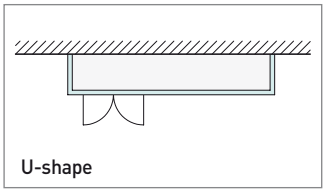
Smoke dampers – PRIODOOR ETX RDA

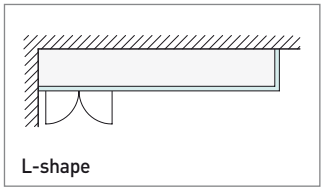


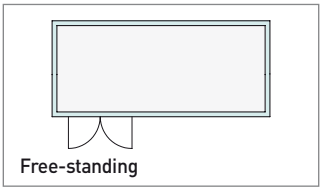
Ceiling – PRIOCEIL

Construction forms of the System 42









1 Entrance foyer


Bild: Carola Kohler

Risks and protection goals

In office and administration buildings, the foyer and reception area usually play a central role. This area of the building is frequented by employees as well as by the necessary public traffic. The protection objectives and requirements resulting from this regular use (user group) are defined in the respective fire protection concept.

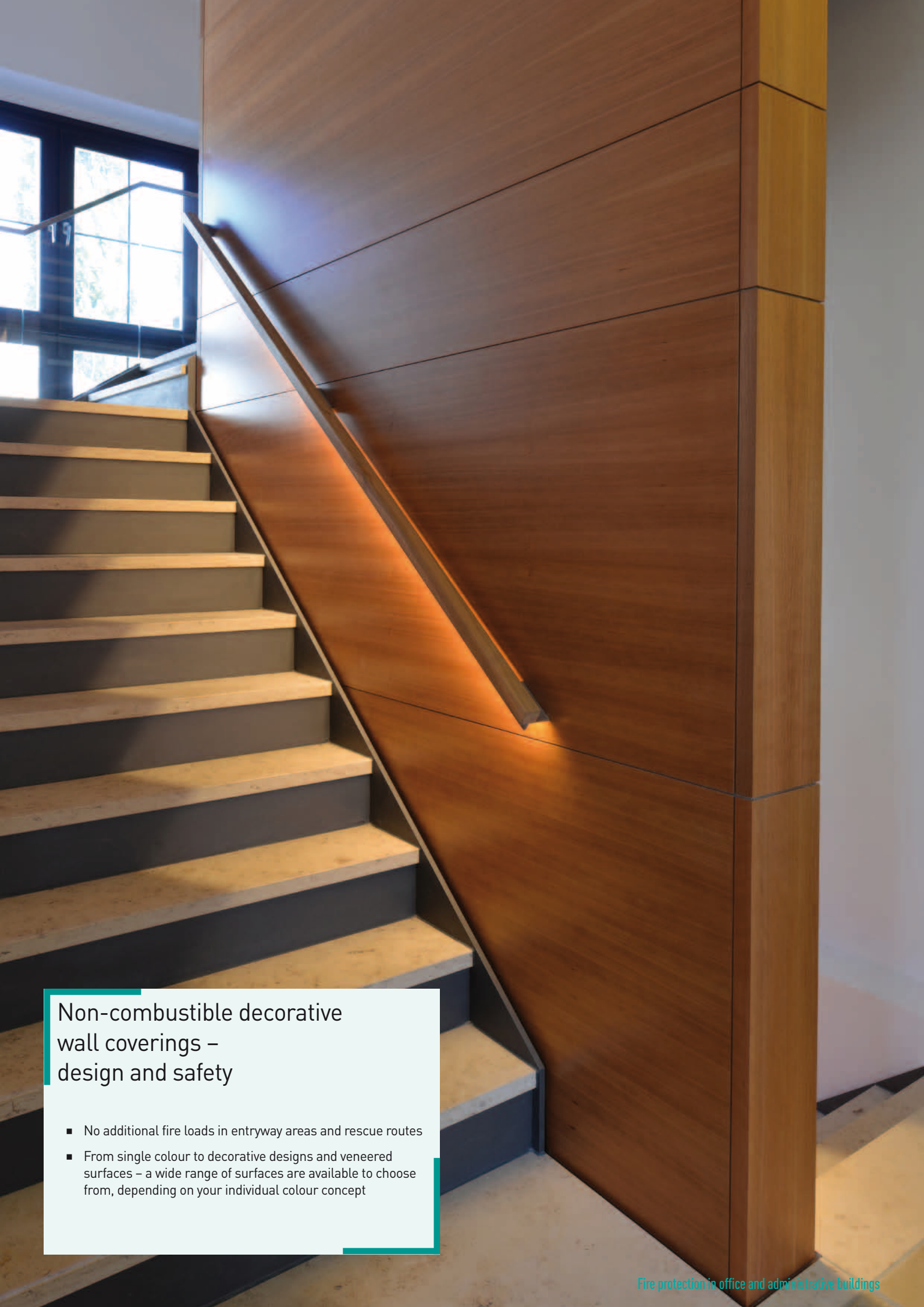
For entrance areas, this generally includes minimising fire loads as well as fire-resistant partitioning of fire hazards, e.g. through electrical distributors, installations or information displays.

Requirements

- Sealing off fire hazards such as electrical installations or distribution boards
- Fire-resistant separation of electrical devices
- No additional fire loads due to combustible material/wall panelling or stored goods

Solutions

- Non-combustible panelling
- Safe enclosure of monitors
- Design of areas separated by fire protection
- Fire-resistant partitions



Non-combustible decorative wall coverings – design and safety

- No additional fire loads in entryway areas and rescue routes
- From single colour to decorative designs and veneered surfaces – a wide range of surfaces are available to choose from, depending on your individual colour concept

Separation of electrical systems in waiting areas

Fire protection separation of electrical installations (fire risks) from a waiting area using a wall and room construction system with a fire resistance of 30 or 90 minutes. The large-format double-leaf inspection closures allow convenient access to the distribution boards and installations behind them.

Fire protection closures in the foyer

Fire protection closure clad on site for adaptation to an elegant ambience.

Safe monitor housings for screens in escape routes

Tested fire protection: Fire-resistant monitor enclosures offer a simple solution for greater safety on escape routes. The fire hazard posed by monitors is safely separated from the escape route. The enclosure consists of non-combustible fire protection panels including a decorative surface. Easy to install both horizontally and vertically.

2 Escape routes

Risks and protection goals

Structural escape routes are used for self-rescue of persons in the (in the event of fire) or for external rescue by rescue services and other persons providing assistance.

Escape routes are divided into vertical (stairwells) and horizontal escape routes (corridors, vestibules and airlocks).
According to legal requirements, escape routes must be designed in such a way that the development of a fire and the spread of fire and smoke (spread of fire) is prevented and, in the event of a fire the rescue of people and animals and effective extinguishing work is possible in the event of a fire.

The effectiveness of structural fire protection measures is significantly influenced by

- the arrangement of the structural separation,
- the fire resistance of the building components
- the fire behaviour of the building materials and products used.

Requirements

- Maintaining the function of safety equipment
- Separation of the risk of fire, such as electrical installations and distributors
- Keeping escape routes and stairwells smoke-free
- No fire loads due to flammable material/wall panelling

Solutions

- Fire protection housing
- Inspection opening closures
- Smoke extraction dampers
- Fire-resistant wall and room construction system
- Non-combustible panelling
- Copier housings

Separation of electrical systems on escape routes

Fire-resistant partitioning of installation shafts, electrical distribution boards and ventilation systems in the escape route. Large-format inspection access panels allow free access to the electrical distribution boards for reassignment or maintenance purposes.

Fire-resistant, double-leaf access panel installed in a solid wall for fire-resistant separation of the installations behind it.

Separation of electrical systems on escape routes

Discreet, unobtrusive inspection cover installed flush with the surface and subsequently clad on site with a metal surface for a visual design.

Wall and room construction system with large-format inspection closures for fire-resistant separation of the risk of fire arising from electrical installations.

Separation of electrical systems on escape routes

Room-high electrical distributors, fire-resistant partitioning with the wall and room construction system in an aluminium-look decorative surface.

Fire load insulation of electrical devices on escape routes

Enclosure made of fire-resistant components with a material thickness of just 42 mm for printers and copiers. Free access to the devices is made possible by sliding doors that close automatically in the event of smoke and fire. Assembly is quick and virtually dust-free thanks to prefabricated elements.

3 Smoke control

Smoke extraction using excess pressure

How it works

In a smoke pressure system, if a fire occurs the ventilation system is started first in order to bring additional air into the stairwell. This results in a controlled level of excess pressure in the stairwell. At the same time, the smoke dampers on the affected floor open automatically.

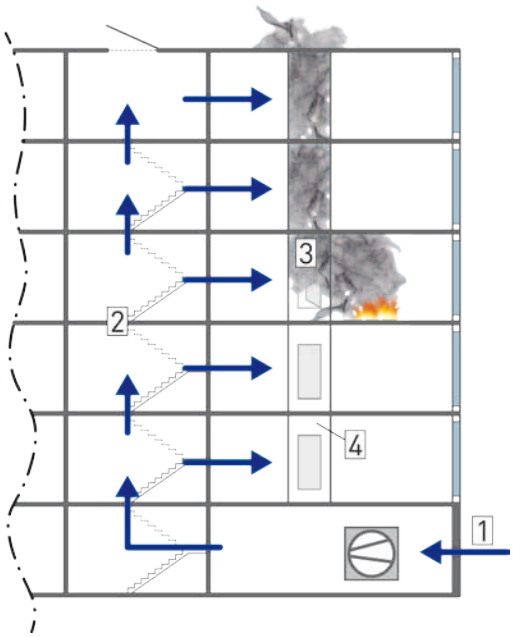
If personnel on the floor where the fire has occurred escape into the safety stairwell, the excess pressure provides protection. It pushes back the fumes and smoke, which dissipate through the smoke dampers and into the outflow shaft. This ensures that the safety stairwell remains smoke-free and can be used safely at all times.

In contrast, in a "regular" emergency stairwell, smoke from the fire flows out of the floor in which the fire occurred and into the stairwell. This makes the stairwell unusable for people who want to escape from higher floors. It also interferes with extinguishing the fire.

Advantage

A safety stairwell with a smoke pressure system eliminates the need for a second emergency stairwell. This makes more area in the building available for use, such as for office or living space.

Prinzip



1 Air supply to be used in case of a fire

2 Excess pressure in the (safety) stairwell keeps smoke out

3 Fumes flow out through the PRIODOOR ETX RDA smoke dampers

4 Internal outflow shaft

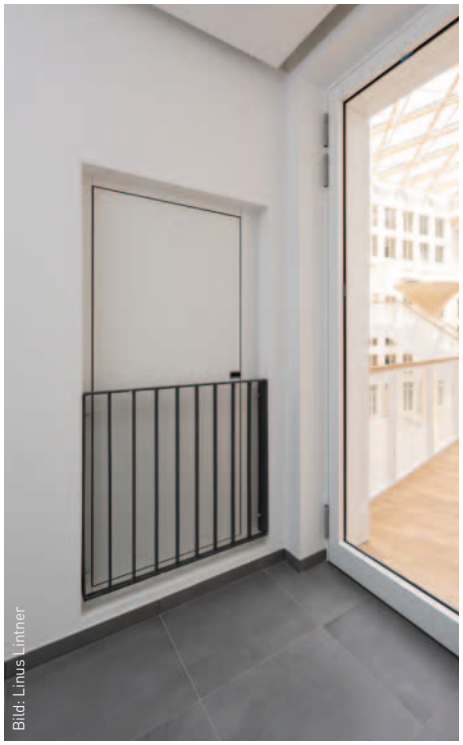
Keeping escape routes smoke-free in the event of fire

Smoke extraction damper with a fire resistance duration of over 90 minutes, discreetly and unobtrusively installed. The smoke extraction flap appears almost invisible thanks to the plaster applied on site. The resulting uniform surface of the wall and smoke control damper, combined with the small gap width, integrates the technical product inconspicuously into the building design.

Keeping escape routes smoke-free in the event of fire

Large-format smoke control damper, specially designed for closing off discharge shafts as part of a pressurised smoke protection system, fire resistance over 90 minutes.

- Free large-format discharge surface
- Flush installation, no protruding components
- Elegant appearance
- Available in a wide range of surface colours and decors
- Component of the 42 mm modular system
- Sturdy construction with high-quality stainless steel hinges



Smoke extraction damper with on-site fall protection

Keeping escape routes smoke-free in the event of fire

Smoke extraction flap and fire protection closure installed within a wall and clad uniformly with black metal elements on site for an elegant ambience.

4 Fire compartments/ Fire protection partitions

In order to prevent the spread of fire and smoke within a building, individual fire compartments and fire-protection-separated areas are created. This is done using walls and ceilings with a defined fire resistance.

The wall and room construction system with a very thin wall thickness of just 42 mm is the ideal solution for creating a fire-resistant separation in a new or existing building. The single-layer wall, ceiling, door and inspection elements can be flexibly combined with each other. This means that almost all designs and construction types can be realised. Areas separated in terms of fire protection can be constructed, as can complex escape tunnels. The surface design options fulfil both functionality and high visual demands.

Risks and protection goals

- Subdivision of buildings to effectively prevent the spread of fire and smoke to neighbouring parts of the building.
- Fire-resistant and smoke-tight separation of fire hazards
- Openings in walls to form fire compartments.
- Separation of hazardous areas.

Solutions

- Fire-resistant wall and room construction system
- Fire protection closures

Fire protection closures

Double-leaf fire protection closure, fire resistance over 90 minutes, active and passive leaves in different decorative surfaces. Door leaves non-combustible A2 - s1, d0 classified.

Fire protection closures

Double-leaf fire protection closure, fire resistance over 90 minutes, active and passive leaves in different widths. Door leaves non-combustible A2 - s1, d0 classified.

Wall system for creating areas separated by fire protection

Before the refurbishment

After the renovation

After the refurbishment

Fire-resistant partitioning in existing buildings, fire resistance over 90 minutes, with various components from the modular fire protection system in customised decor: Wall construction system with inspection closures in combination with fire protection closure and ceiling elements

5 Installation shafts

Inside the building, the supply lines for electricity, telecommunications, water, gas, etc. are guided to the individual floors through vertical shafts.

These rising shafts are used to pass flammable installations throughout all floors of the building, connecting different fire compartments. To prevent the spread of flames and smoke in case of a fire, installation ducts in accordance with MVV TB (model administrative specification on technical building regulations) / MLAR (regulation on fire security of conduit installations) - including the closures of openings - must be made of non-combustible building materials and meet the highest required fire-resistance standards for separating components that penetrate through them.

All openings in these fire-resistant components must be sealed off with appropriate closures.

Risks and protection goals

- No spread of fire and smoke across storeys
- Separation of the risk of fire, e.g. through electrical installations and distributors
- No fire loads due to flammable pipes/cables

Solutions

- Fire-resistant wall construction system
- Inspection opening closures
- Fire-resistant partitions

Installation shafts with large-format inspection closures

Formation of installation shafts: The fire-resistant PRIOWALL wall system offers customised solutions for almost any structural situation. The large-format inspection closures allow optimum accessibility to the installations behind them.

- Fire-resistant partitioning
- Space-saving solution
- Inspection opening closures enable maintenance work and cable re-routing in the shafts
- Single-layer, highly stable prefabricated elements
- I-shaped, L-shaped and U-shaped design possible
- Project-related planning, production and installation
- Construction height up to 4 m, unlimited construction width
- Narrow and ceiling-high access panels offer optimum accessibility
- Pre-coated surface
- Different surfaces can be realised
- Fast, virtually dust-free assembly of the industrially prefabricated elements

Installation shafts with large-format inspection closures

Design and safety

The possibility of decorative surfaces makes it possible to harmonise building regulations and safety requirements with high demands on design options.

- Single or double-leaf inspection opening fasteners
- For the large-format, revisable partitioning of installation shafts
- Fire resistance of 30 or 90 minutes
- Suitable for different wall types
- Different surface designs possible - from decorative surfaces to primer film and veneer surfaces

Installation shafts with large-format inspection closures

Functionality and safety

Setting accents and adapting to the structural conditions.
Access cover in a special anthracite finish, installed in an installation shaft wall.

- Single or double-leaf inspection opening fasteners
- For the large-format, revisable partitioning of installation shafts
- Fire resistance of 30 or 90 minutes
- Suitable for different wall types
- Different surface designs possible - from decorative surfaces to primer film and veneer surfaces

6 Fire protection enclosures/ technical rooms

In addition to the building regulations, it is recommended that areas with an increased fire risk are housed in separate fire-resistant rooms.

The spread of fire and smoke as well as the transmission of gases into neighbouring rooms and building areas, e.g. including escape routes, should be prevented. It is recommended that fire-resistant partitioning, including fire-resistant and smoke-tight protection of openings necessary for operations to areas such as

- Firing and heating systems
- Building services installations such as ventilation centre
- lift machine room
- Central compressed air supply
- filter systems and
- with a special emphasis: battery charging station

Risks and protection goals

- Sealing off the risk of fire.
- Safe accommodation of battery charging stations.

Solutions

- Fire-resistant, modular rooms
- Fire-resistant wall and room construction system
- Fire protection closures

Customised technical rooms in various sizes

Bild: Carola Kohler

Modular fire protection system suitable for the construction of fire-resistant technical rooms. Project-related planning, production and assembly enable customised sizes.

- Fire resistance over 30 or 90 minutes
- Installation of ventilation and cable bulkheads
- Short construction time thanks to prefabricated components
- Virtually dust-free assembly
- Finished surface

Wall and room construction system for fire-resistant enclosure

Before the renovation

After the renovation

- Fire-resistant enclosure in the escape route
- Designed with F90 glass elements
- Short construction time thanks to prefabricated elements
- Elements positioned according to the display screens

Ideal for retrofitting existing systems

Wall and room construction system for fire-resistant enclosure

- Subsequent enclosure of an existing electrical system
- U-shaped remodelling with the PRIOWALL wall and room construction system
- Industrially prefabricated components
- Fast and virtually dust-free assembly
- Slim design
- Optional: door element with glass cut-out

8 Physical IT and document protection

IT systems for data processing, internet and communication have become an essential part of business and production processes in companies. They therefore require special protection, especially in the event of fire. PRIORIT solutions guarantee the functional integrity of IT systems in the event of fire and thus the safe functioning of IT-based business processes with products ranging from small to large.

Risks and protection goals

- Physical protection of IT components and data
- Comprehensive protection for files and documents
- Separating potential fire hazards posed by IT components
- Protection against unauthorised access

Solutions

- Safety racks
- Fire-resistant separations
- Modular fire-resistant rooms
- High security rooms
- Fire protection cabinets to securely store files and documents

Fire-resistant wall and room construction system for your IT security

Fire-resistant housing for data and telecommunications technology as a „room-in-room“ solution

PRIORACK IT fire-resistant safety rack for comprehensive protection of the installed IT components. The double-leaf doors at the front and rear allow easy access to the installations.

Modular, individually planned, fire-resistant room in the entrance area. The design with a small centre bar between the doors allows almost complete access to the room for assembly or maintenance work.

Office and administration building references (Excerpt)

Location	Object
Basel (CH)	Tower Grosspeter
Berlin	Bayer Pharma
Berlin	EDGE Suedkreuz Berlin
Berlin	Bundesvorstandsverwaltung
Berlin	MK 6
Berlin	HP High Park
Berlin	Bayer Pharma AG
Berlin	NEO - Büros am Ku'damm
Berlin	Weidt Park Corner
Braunschweig	Kontorhaus
Bremen	GEWOBA Bürohaus
Duisburg	Bürogebäude Krohne
Duisburg	Mercator One
Düsseldorf	Bürogebäude FortyFour
Düsseldorf	Horizon
Düsseldorf	KÖ-Quartier
Eschborn	New Wave
Frankfurt/Main	Mainzero North
Frankfurt/Main	KVH Bürogebäude
Frankfurt/Main	Eurotheum
Frankfurt/Main	VISTA
Frankfurt/Main	Westend Sky
Frankfurt/Main	WKS Bürogebäude
Frankfurt/Main	The Spin
Frankfurt/Main	Europazentrale Nintendo
Frankfurt/Main	Flat
Frankfurt/Main	Gateway Gardens
Frankfurt/Main	One Fourty West
Frankfurt/Main	Tower One
Frankfurt/Main	Senckenberg Turm/99 West
Frankfurt/Main	FAZ Tower
Garching	Business Campuss A10
Gersthofen	Bürogebäude
Göppingen	Landratsamt
Göppingen	Landes- und Sozialgericht
Hamburg	ConneXion Office
Hamburg	Height 1

Location	Object
Hamburg	DAV
Heilbronn	Triple
Koblenz	Debeka Verwaltungsgebäude
Köln	ID-Cologne
Kornwestheim	W & W Versicherung
München	Nove by Cittero
München	BayWa Hochhaus
München	Highrise One
München	Siemens Headquarter
München	Bayrischer Rundfunk
München	New Eastside
München	Bürohaus Businesspark München
Pratteln (CH)	Aquila
Stuttgart	Versicherungsgebäude
Stuttgart	Daimler AG
Stuttgart	Cloud 7
Waiblingen	Landratsamt
Wendlingen	Verwaltungsgebäude
Wetzlar	Carl Zeiss AG
Wien (AT)	Orbi Tower
Zürich (CH)	Westlink Tower
Zusmarshausen	Sortimo AG

Stand: 02.2022

Sortimo International GmbH - Customised fire protection solution

Mercator One – Fire protection solutions in an elegant ambience

PRIORIT
Fire | Resistant | Components

Production and safety

The ISO 9001 certification gives security. All PRIORIT fire protection product development and manufacturing processes comply with internationally recognised rules. You can count on that!
That's for sure!

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