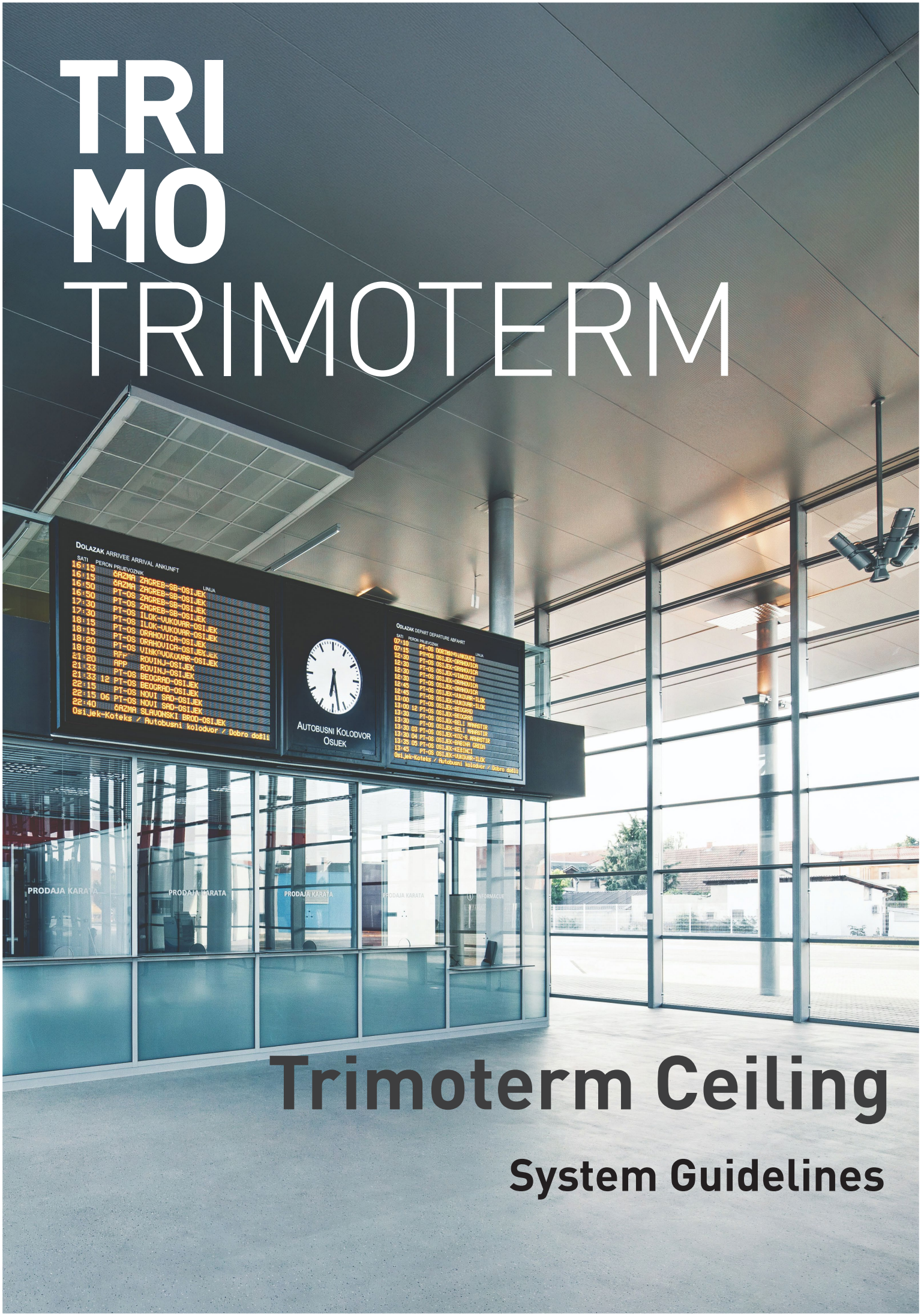
TRIMO

TRIMOTERM



Trimoterm Ceiling

System Guidelines

For design and installation teams!

Trimoterm Ceiling System Guidelines

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A
Introduction

Trimoterm Ceiling System Guidelines provide guidance on the specific requirements and principles for the use of Trimo panels in ceiling applications. The document focuses on technical characteristics, design considerations and installation principles directly related to ceiling systems.

Trimoterm ceiling solutions can be used in a wide range of buildings, from industrial facilities with service installations above the ceiling to visually more demanding spaces such as halls, congress centres and retail buildings.

From a structural point of view, ceiling applications differ from façade applications, as the panel is subjected to a less favourable effect of self-weight. For this reason, ceiling systems require appropriate panel selection and careful design consideration. Special attention is also given to fire safety, which is one of the key performance aspects of ceiling applications.

The document is intended primarily for designers, installers, but also for contractors who need to understand the system and ensure correct execution of critical details. It does not replace project-specific design responsibilities or statutory requirements.

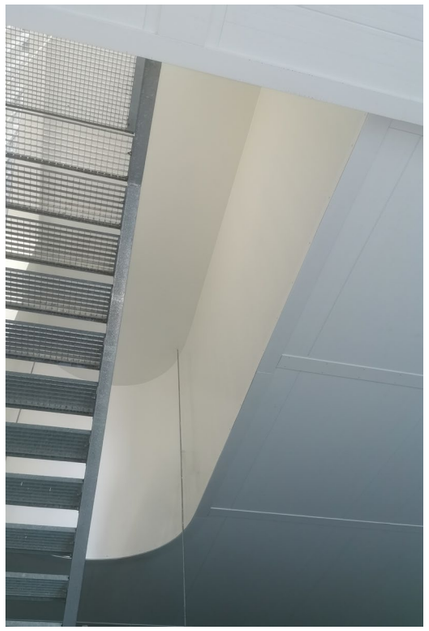


Fig.01
Trimoterm ceiling with HF140 prolongation detail

B
Ceiling systems

B.1 Ceiling system types

Self-supporting ceiling / Soffit

- Panels are fixed directly to the supporting structure.
- Fixing is performed from below or from above through the panel.
- Hidden fastening systems can be applied where required.

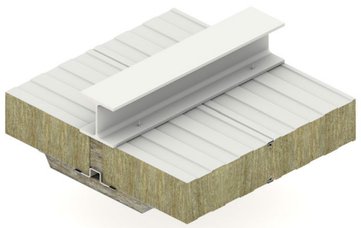


Fig.02
Trimoterm self-supporting ceiling

Suspended ceiling

- Panels are suspended from the supporting structure by hangers.
- The hanging structure must be stabilised in the horizontal direction.

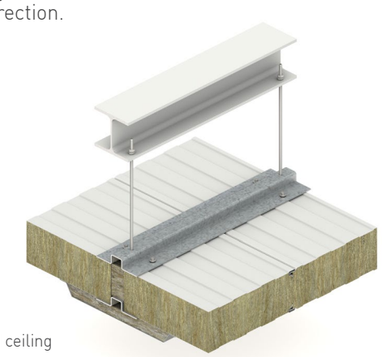


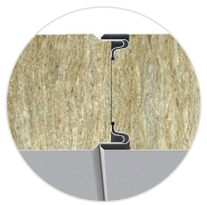
Fig.03
Trimoterm suspended ceiling

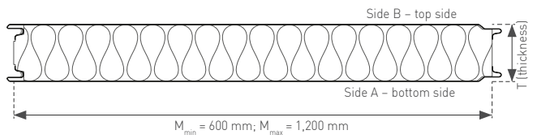
B.2 Products technical data

Ceiling applications can be realised using the following Trimoterm products:

Trimoterm FTV

with visible fastening





		Power T								Power S							
Panel thickness [mm]		60	80	100	120	133	150	172	200	60	80	100	120	133	150	172	200
Max. achiavable fire resistance (EN 14509)*		-	-	EI90	EI90	EI90	EI90	EI90	EI90	-	-	-	EI120	EI120	EI120	EI120	EI120
Airborne sound insulation Rw (C;Ctr) [db] (EN 14509)		30 (-2;-4)	30 (-2;-4)	31 (-3;-4)	31 (-3;-4)	31 (-3;-4)	31 (-3;-4)	31 (-3;-4)	31 (-3;-4)	31 (-2;-3)	31 (-2;-3)	32 (-2;-4)	32 (-2;-4)	32 (-2;-4)	32 (-2;-4)	32 (-2;-4)	32 (-2;-4)
Weight [kg/m²]	MW Core + Fe 0,55/0,55	15.7	17.5	19.3	21.1	22.3	23.8	25.8	28.3	17.5	19.9	22.3	24.7	26.2	28.3	30.9	34.3

Reaction to fire	A2-s1, d0
Certificates	CE (EN 14509:2013)
Width [mm]	600-1200 (1000 and 1200 standard widths)
Panel length [m]	Up to 14
Span	Single-span and multi-span
Colour range	Colour group I (very light colours), colour group II (medium colours), colour group III (dark colours)
Steel sheet thickness	0.55
Profile types	S, G, V, V2, M, M2, M3, M8

* Request for fire resistance must be clearly specified by customer. For spans and fixing check the Trimoterm Fire application document.

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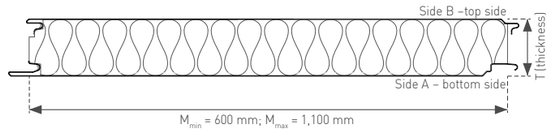
B

Trimoterm FTV HL

with hidden fastening

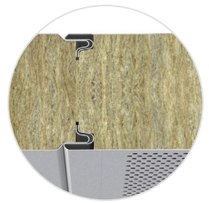


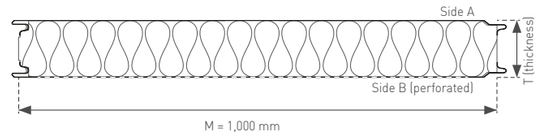
		Power T								Power S							
Panel thickness [mm]		60	80	100	120	133	150	172	200	60	80	100	120	133	150	172	200
Max. achiavable fire resistance (EN 14509)*		-	-	-	-	-	-	-	-	-	EI90	EI90	EI90	EI90	EI90	EI90	EI90
Airborne sound insulation Rw (C;Ctr) [db] (EN 14509)		30 (-1;-3)	30 (-1;-3)	31 (-2;-4)	31 (-2;-4)	31 (-2;-4)	31 (-2;-4)	31 (-2;-4)	31 (-2;-4)	31 (-1;-3)	31 (-1;-3)	31 (-2;-4)	31 (-2;-4)	31 (-2;-4)	31 (-2;-4)	31 (-2;-4)	31 (-2;-4)
Weight [kg/m²]	MW Core + Fe 0,55/0,55	15.7	17.5	19.3	21.1	22.3	23.8	25.8	28.3	17.5	19.9	22.3	24.7	26.2	28.3	30.9	34.3

Reaction to fire	A2-s1, d0
Certificates	CE (EN 14509:2013)
Width [mm]	600-1200 (1000 and 1200 standard widths)
Panel length [m]	Up to 14
Span	Single-span and multi-span
Colour range	Colour group I (very light colours), colour group II (medium colours), colour group III (dark colours)
Steel sheet thickness	0.55
Profile types	S, G, V, V2, M, M2, M3, M8

* Request for fire resistance must be clearly specified by customer. For spans and fixing check the Trimoterm Fire application document.

Trimoterm FTV Sound





		Power T							
Panel thickness [mm]		60	80	100	120	133	150	172	200
Airborne sound insulation Rw (C;Ctr) [db] (EN 14509)		32 (-1;-4)	32 (-1;-4)	33 (-2;-4)	33 (-2;-4)	33 (-2;-4)	33 (-2;-4)	33 (-2;-4)	33 (-2;-4)
Weight [kg/m²]	MW Power T + Fe 0,55/0,55	14.8	16.6	18.4	20.2	21.4	22.9	24.9	27.4

Reaction to fire	B-s1, d0
Width [mm]	1000
Panel length [m]	Up to 14
Span	Single-span and multi-span
Colour range	Colour group I (very light colours), colour group II (medium colours), colour group III (dark colours)
Steel sheet thickness	0.55
Profile types - side A	S, V, V2, M, M2, M3, M8
Profile types - side B (perforated)	S, V, V2

More product properties, technical data, and available options are provided in:
Trimoterm FTV Book, **Trimoterm Technical specification**, **Trimoterm Fire Guidelines** and **Trimoterm Load Span Tables...**

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C
Walkability and access conditions

C.1 Intended use and walkability

Trimoterm ceiling panels are designed to form a continuous ceiling system.
Walkability loads shall be considered in the design and remain within the defined limits (refer to Structural design section).

C.2 Access and protection

In case of **occasional access** such as:
- installation activities during construction
- periodic inspection of the ceiling area
- maintenance of installations located above the ceiling

to ensure walkability of ceiling panels, the **load distributing plates** (e.g. aluminium checker plates) shall be applied and aligned with the panel direction on:
- A Pathways
- B Landing zones

In cases of **increased access requirements**, such as:
- frequent access
- increased loads
- installation of heavy equipment

an **independent load bearing structure shall be provided** (see fig. 05). All loads shall be transferred directly to the supporting structure without loading the ceiling panels.
In cases of **fire event** ceiling panels are **not walkable**.

C.3 Limitations and special conditions

Ceiling panels are not intended for:
- permanent walkways
- working platforms
- load-bearing structures for suspended services or equipment
- resisting dynamic loading caused by activities such as jumping or impact from dropped objects

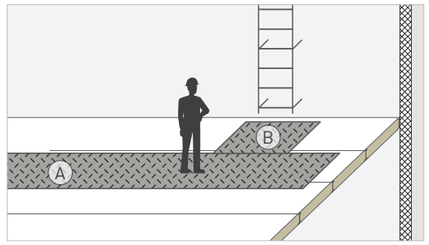


Fig. 04
Limited access for maintenance
A Pathways - 3.5/5 mm aluminium checker plate
B Landing zone - 3.5/5 mm aluminium checker plate

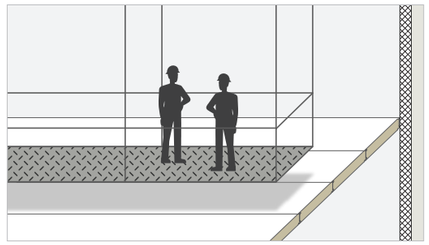


Fig. 05
Frequent access → independent walkway structure

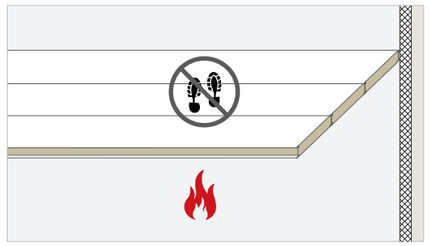


Fig. 06
Not walkable. No accesss in case of fire

!

Do not walk directly on the panels. Use protective load-distributing plates.

Do not walk on Trimoterm FTV Sound panels under any circumstances.

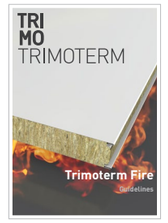
!

Ceiling panels are **not walkable in fire conditions**, including during and after a fire event.

D
Fire-resistant ceiling

Fire safety is an important consideration in ceiling design. Trimoterm panels used in ceiling applications are tested and classified in accordance with relevant fire safety standards, covering both reaction to fire and fire resistance, depending on the panel configuration and installation.

Trimoterm Fire Guidelines



Trimoterm Fire-resistant Internal wall system details

D.1 Reaction to fire

Trimoterm sandwich panels are composed of A1 steel and A1 mineral wool. The panels themselves are rated A2-s1,d0, (B-s1,d0 for Sound panels) with no significant contribution to fire growth.

D.2 Resistance to fire

When installed as a ceiling in accordance with the approved system configurations and detailing, Trimoterm ceiling solutions can achieve fire resistance ratings up to EI 120 (120 minutes).

For detailed fire performance classifications, span tables, fastening, and limitations for ceilings, please refer to the **Trimoterm Fire Guidelines** document.

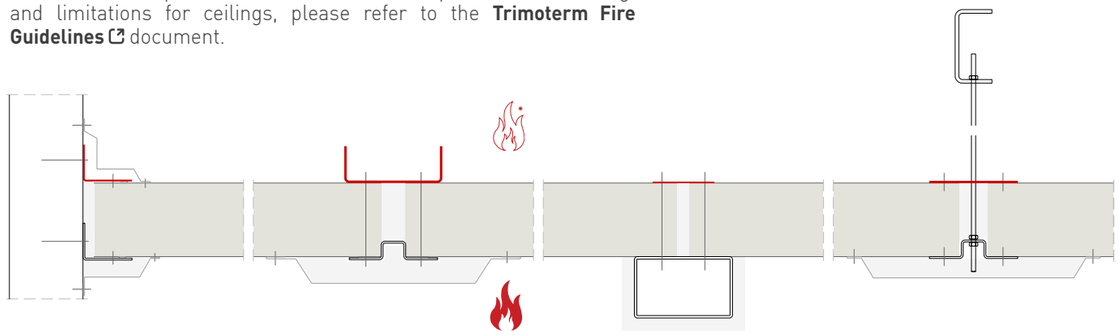


Fig.07
Metal sheet fixed to panels' upper steel sheet forming a continuous plane.

* If the support structure and fixing systems are protected in such a way that the temperature increase in these will not influence the behaviour of the ceiling panels, then EXAP rules (EN 15254-7) allows application in both directions.

NOTE

Due to fire safety requirements, the outer steel sheet is, in come cases, connected to the metal sheets on the top side to form a continuous plane.

For this reason, it is important that details are executed correctly (metal sheet at the panel joint; longitudinal stitching; metal sheet at suspended ceilings).

E
Structural design and load capacities

Structural design must consider all relevant loads and load combinations:
- Self-weight
- Thermal effects
- Wind suction
- Installation loads
- Access loads
- Additional loads from layers and services

E.1 Load capacities

Recommended load limits for design and use:
- Walkability load: max. 100 kg/m² (one person with tools)
- Point load: max. 250 kg at panel centre
- Permanent load: max. 20 kg/m²

E.2 Span verification

Span tables may be used for preliminary span estimation and are provided in the Trimoterm FTV Load Span Tables.

Technical Support is available for project-specific structural verification, based on actual boundary conditions and design loads.

Fig. 08
Trimoterm ceiling

F
Installation and detailing

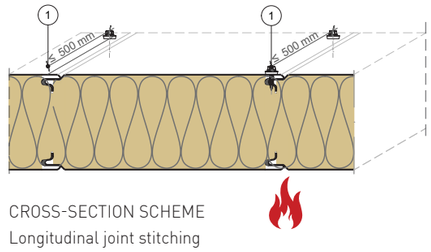
Ceiling applications require specific solutions that differ from standard wall applications. These details must be considered during design and correctly executed during installation to ensure the required structural performance, fire resistance, and durability of the system.

This section provides guidance on ceiling-specific details, including:
- panel joint stitching,
- panel prolongations,
- installation of additional mineral wool for fire protection,
- openings through the ceiling plane.

For additional details, refer to **Trimoterm Fire-resistant internal wall system details** and **Trimoterm Internall wall system details**.

Stitching and panel joints

- Panel joints may require stitching to ensure structural integrity and fire performance.
- Stitching connects the steel facings of adjacent panels; fasteners must penetrate both steel sheets.
- The typical spacing between fasteners is 0.5 m.

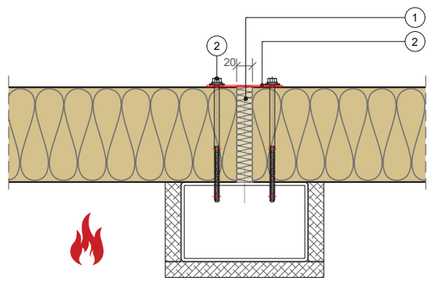


CROSS-SECTION SCHEME
Longitudinal joint stitching

1 Screw SLG-S 6,5×20 S14 or JF3-2-5,5x25 E19 (distance between screws ≤ 500mm)

Panel prolongation

- Panel prolongation must be executed using a connecting upper steel sheet.
- The connecting element ensures the load transfer and continuity of the system.
- All connections must comply with the project-specific detailing.

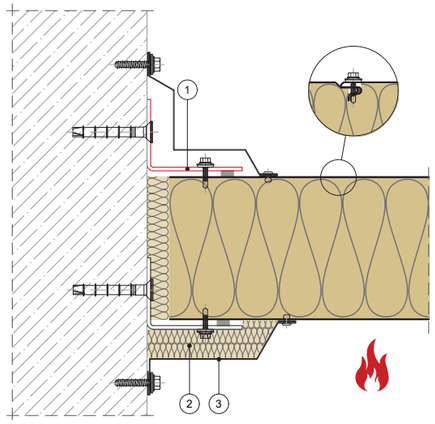


1 Stonewool (density 100 kg/m³)
2 Galvanised steel plate T= 2 mm

F

Mineral wool for fire protection

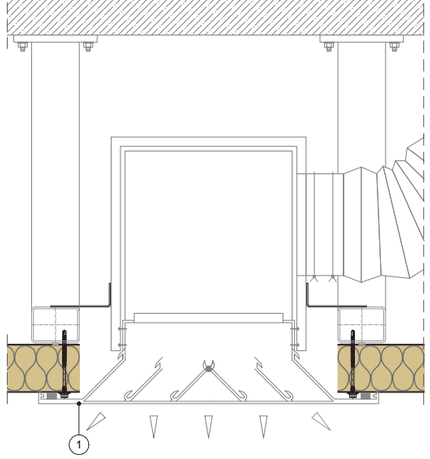
- Additional mineral wool must be installed in the details to fill voids between panels.
- The mineral wool protects supporting profiles located on the fire-exposed side.



1 Support profile (recommended minimum thickness 2 mm)
2 Stonewool (density 100 kg/m³)
3 Flashing

Penetrations and openings

- Panel cut-outs reduce structural capacity and typically require additional support from the substructure.
- Structural reinforcement or acceptance without reinforcement must be verified by a structural engineer based on project-specific conditions.
- Fire-resistant ceiling systems with panels do not allow penetrations through the ceiling plane.



1 Ceiling air ventilation system

G

Associated documents

Trimoterm FTV Book

Trimoterm FTV HL Book

Trimoterm Technical Specification

Trimoterm FTV Load Span Tables

Trimoterm Fire Guidelines

Trimoterm Fire-resistant Internal wall system details

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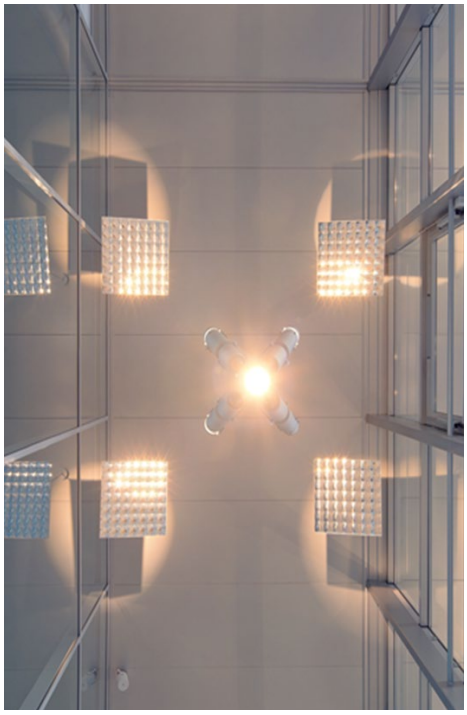

GLOBAL PRESENCE

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