

# NORGIPS®

SUSPENDED CEILING CONNECTIONS - ASSEMBLY DETAILS



***Suspended  
Ceiling Connections  
- assembly details***

***NORGIPS solutions***

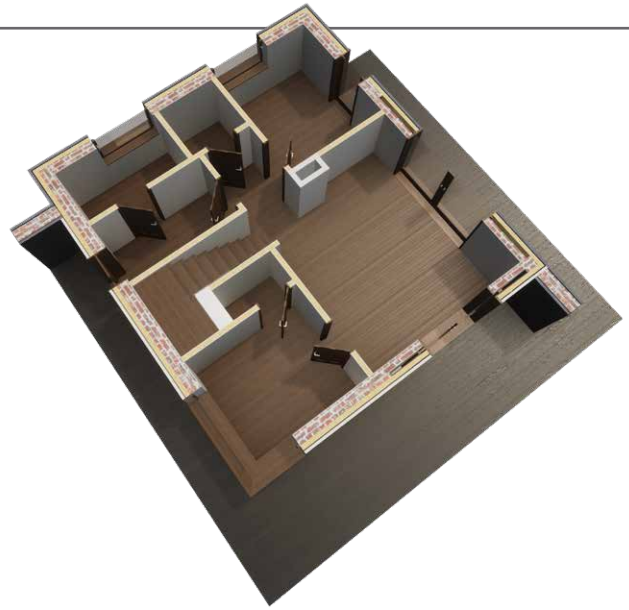




The Suspended Ceiling Connections - assembly details catalogue is a collection of NORGIPS tested and recommended ceiling solutions. This material presents the correct way to prepare various types of ceiling connections, such as: ceiling expansion joints, suspended ceiling connections with partition walls, ceiling attachment to the structure of the building, etc.



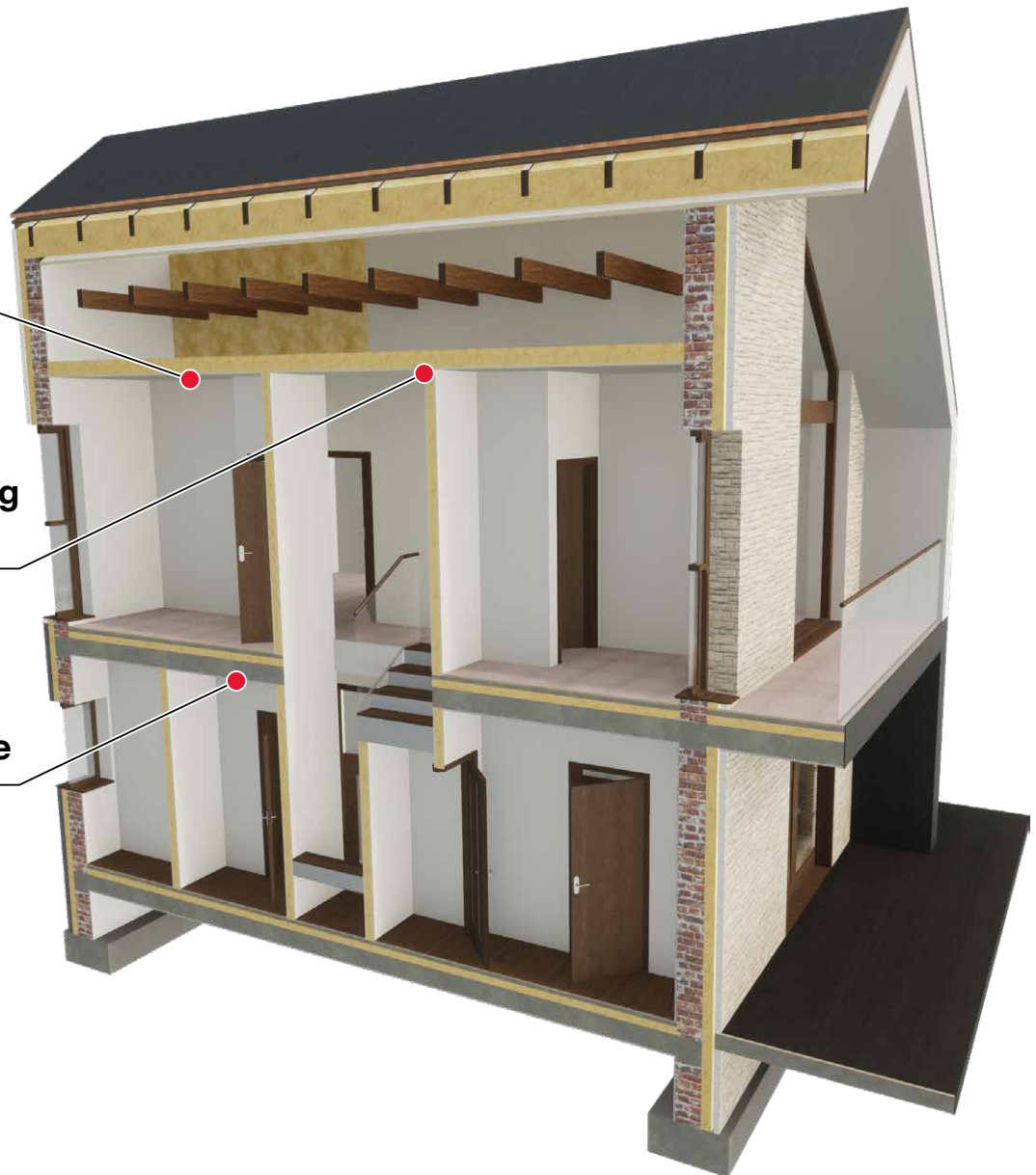
# ***You will make it with us***



**Ceiling expansion joints, installation fixing and detailed connections**

**Connections of the suspended ceiling with partition walls**

**Fixing ceilings to the building structure**



# NORGIPS HANGER TYPES

## NORGIPS ES or ES Plus hangers

The hanger is made of 0.8 mm thick galvanized sheet metal.

NORGIPS ES or ES Plus hangers are intended for attaching CD60 profiles to horizontal elements, e.g. reinforced concrete ceiling, wooden ceiling beams.

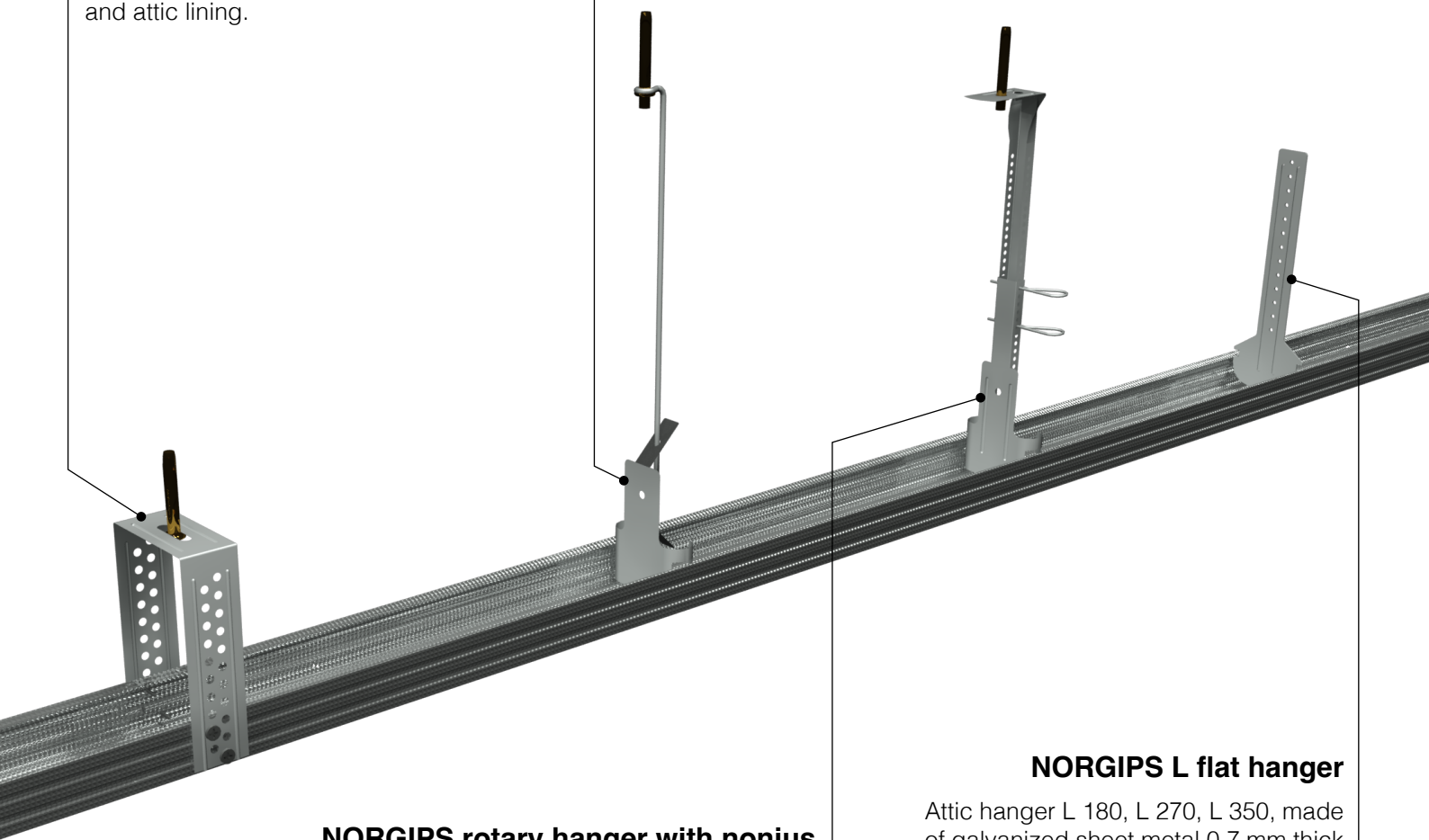
They are used as a component of NORGIPS solutions such as: ceiling lining, suspended ceiling and attic lining.

## NORGIPS rotary hanger with spring

Rotary hanger with spring made of 0.7 mm thick galvanized sheet metal. They are used to attach CD60 profiles (constituting the cross structure of suspended ceilings) to horizontal elements e.g. concrete ceiling, wooden ceiling beams.

The NORGIPS rotary hanger is attached to the profiles with a latch and to the ceiling with NORGIPS fastening rods.

It is possible to obtain suspension of the structure from 150 mm in the case of a single level grating and from 180 mm in the case of a two level grid



## NORGIPS rotary hanger with nonius

Nonius rotary hanger made of 0.7 mm thick galvanized sheet metal.

They are used to attach CD 60 profiles (constituting the cross structure of suspended ceilings) to horizontal elements, e.g. concrete ceiling, wooden ceiling beams.

The rotary hanger is attached to the ceiling using the NORGIPS nonius hanger top. Rotary hanger connected to the profiles with a latch and to the hanger top using two pins. It is possible to obtain structure suspension from 170 mm in the case of a single grating and from 200 mm in the case of a two level grate.

## NORGIPS L flat hanger

Attic hanger L 180, L 270, L 350, made of galvanized sheet metal 0.7 mm thick (L 180) and 0.8 mm thick (L 270, L 350).

Flat hanger for attaching CD60 profiles to a wooden structure (e.g. wooden beam ceiling, roof truss). Used for attic construction, ceiling lining and suspended ceiling.

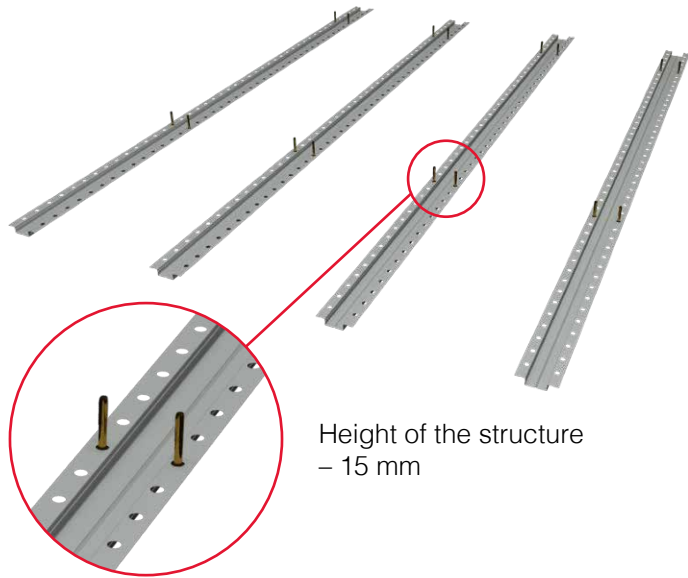
In the case of an L hanger, the structure can be lowered: L 180 by 150 mm, L 270 by 200 mm, L 350 by 300 mm.

Hangers attached to the structure with two screws and connected to CD 60 profiles with a latch. Can be used on horizontal and inclined surfaces.

# NORGIPS CEILING CONSTRUCTION TYPES

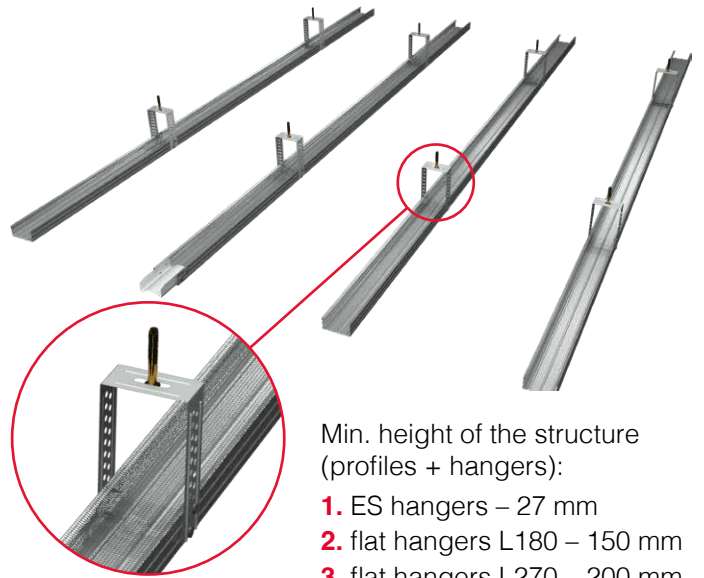
## Ceiling lining construction (OSF)

### Hat profiles



Height of the structure  
– 15 mm

### CD60 profiles

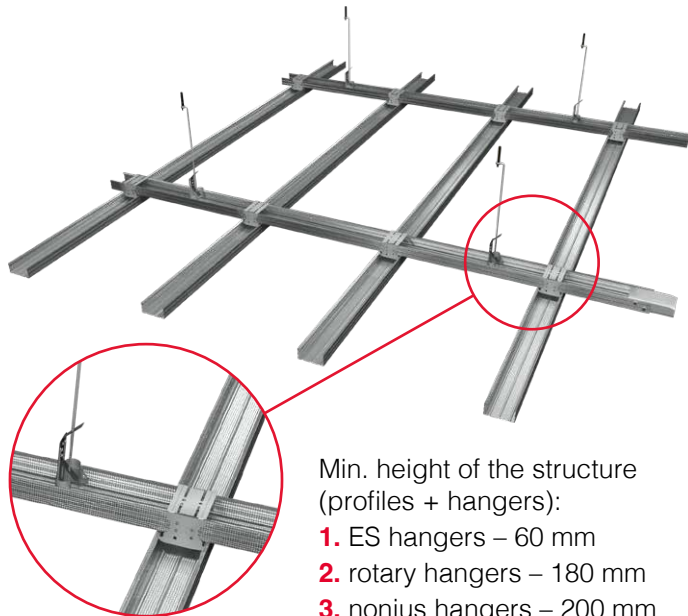


Min. height of the structure  
(profiles + hangers):

1. ES hangers – 27 mm
2. flat hangers L180 – 150 mm
3. flat hangers L270 – 200 mm
4. flat hangers L350 – 300 mm

## Suspended ceiling construction (SP, SPJ)

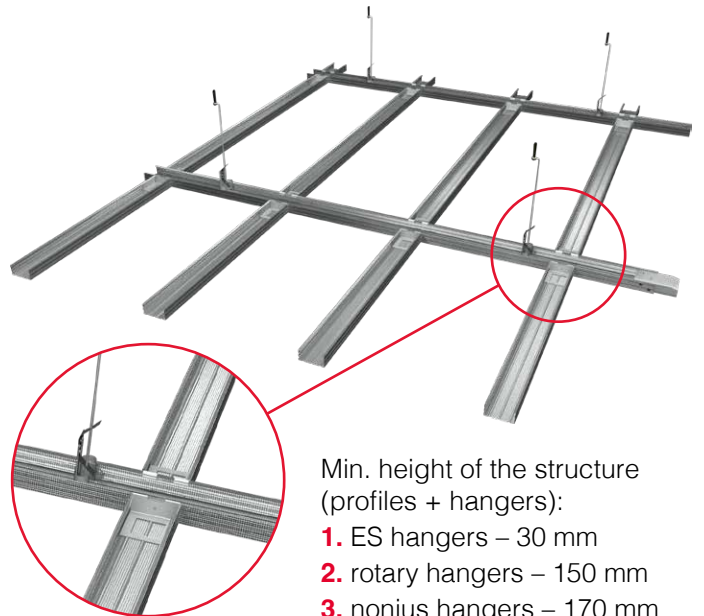
### Two-level grid on CD60 profiles (SP)



Min. height of the structure  
(profiles + hangers):

1. ES hangers – 60 mm
2. rotary hangers – 180 mm
3. nonius hangers – 200 mm

### Single-level grid on CD60 profiles (SPJ)



Min. height of the structure  
(profiles + hangers):

1. ES hangers – 30 mm
2. rotary hangers – 150 mm
3. nonius hangers – 170 mm

# SUSPENDED CEILING CONNECTIONS

## connections with partition walls

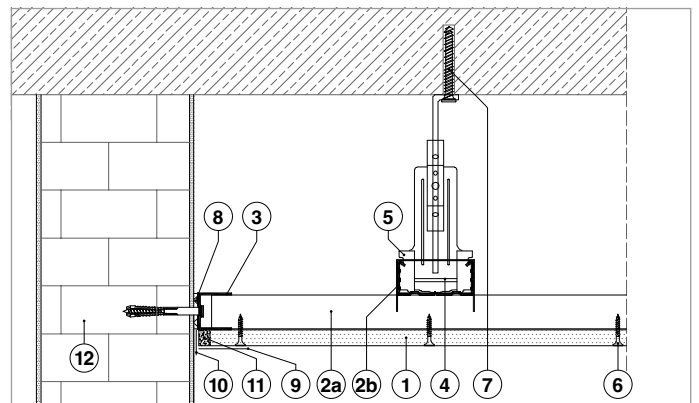
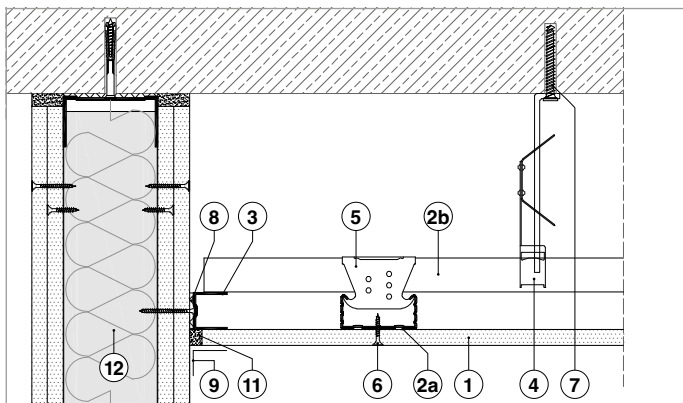
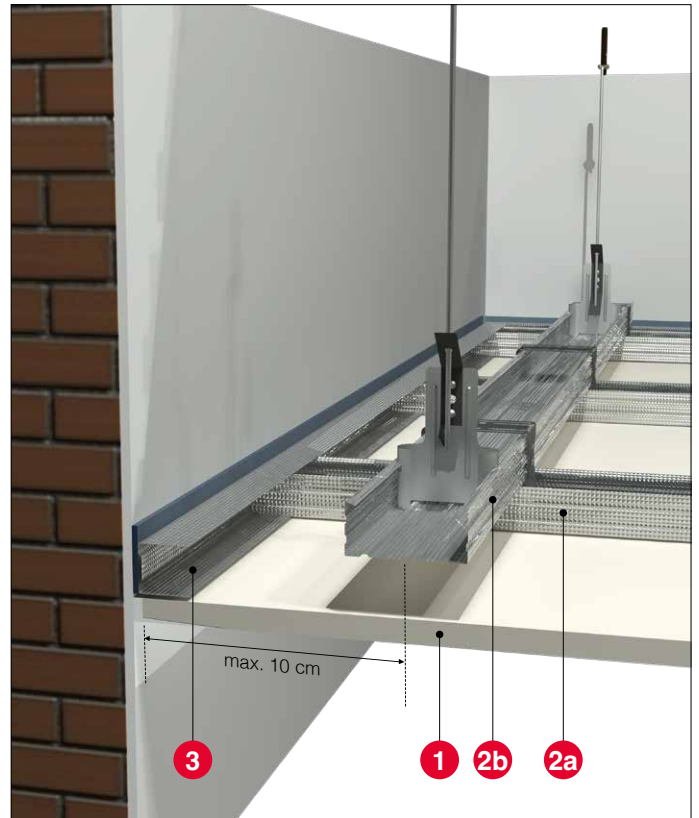


Fig. 1. Connection of suspended ceiling with partition wall – perpendicular view to the load-bearing profiles.

Fig. 2. Connection of suspended ceiling with partition wall – parallel view to the load-bearing profiles.

### Construction elements:

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>1. NORGIPS plasterboard</li> <li>2. NORGIPS CD60 profile             <ul style="list-style-type: none"> <li>a) load-bearing profile</li> <li>b) main profile</li> </ul> </li> <li>3. NORGIPS UD30 profile</li> <li>4. NORGIPS rotary hanger</li> <li>5. NORGIPS cross coupler</li> </ul> | <ul style="list-style-type: none"> <li>6. NORGIPS 3,5x25 mm tapping screw</li> <li>7. Steel dowel</li> <li>8. Foam sealing tape</li> <li>9. Joint tape</li> <li>10. Sliding tape</li> <li>11. NORGIPS gypsum joint filler</li> <li>12. Partition wall</li> </ul> |
|---|--|

# CEILING LINING CONNECTIONS

## connections with partition walls

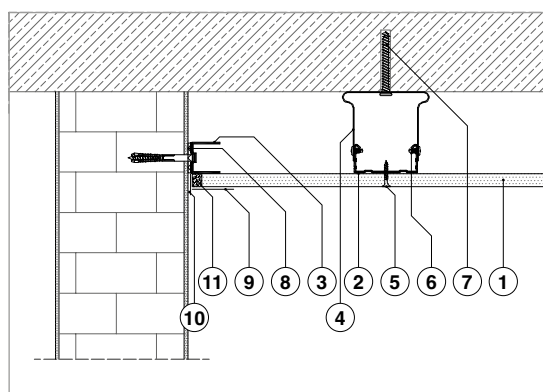
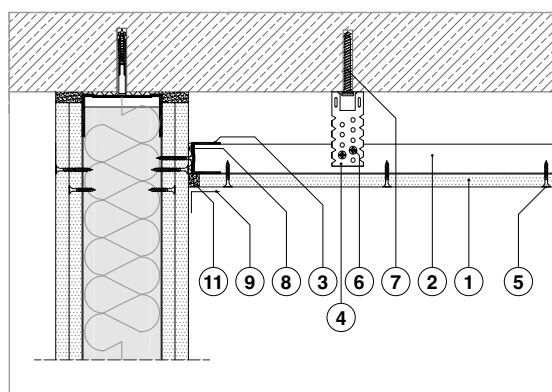
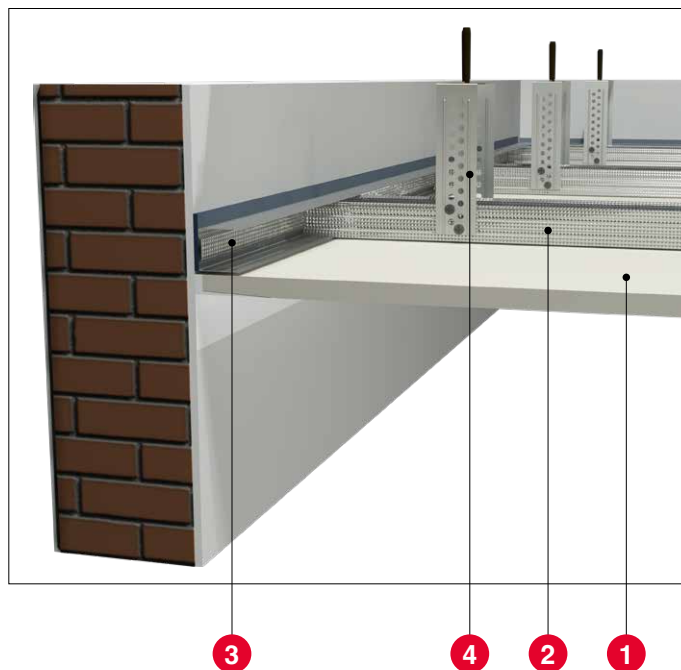


Fig. 3. Connection of ceiling linings with partition wall – parallel view to CD60 profiles.

Fig. 4. Connection of ceiling linings with partition wall – perpendicular view to CD60 profiles.

### Construction elements:

1. NORGIPS plasterboard
2. NORGIPS CD60 profile
3. NORGIPS UD30 profile
4. NORGIPS ES/ES Plus hanger (max. ES 125)
5. NORGIPS 3.5 x 25 mm tapping screw
6. NORGIPS 3,5 x 9,5 mm tapping screw
7. Steel dowel
8. Foam sealing tape
9. Joint tape
10. Sliding tape
11. NORGIPS gypsum joint filler



# SUSPENDED CEILING CONNECTIONS

*making connections with a massive wall*



Fig. 5. Sliding joint in a suspended ceiling



Fig. 6. Expansion joint of a suspended ceiling

## Construction elements:

1. NORGIPS plasterboard
2. NORGIPS gypsum joint filler
3. Joint tape
4. Sliding tape

During the settlement and operation of the building structure, movements and stresses of materials are often generated. The result of this process is the formation of cracks in the expansion joint at the junction of the suspended ceiling and the partition wall.

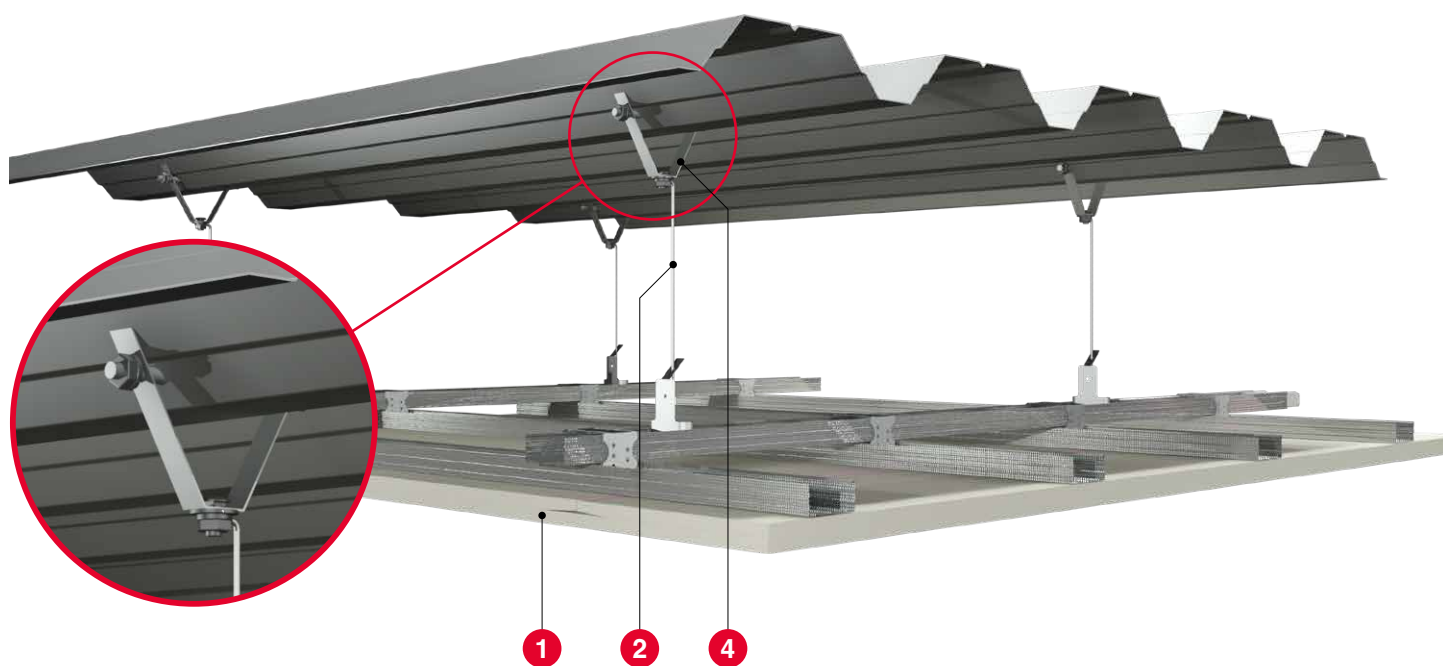
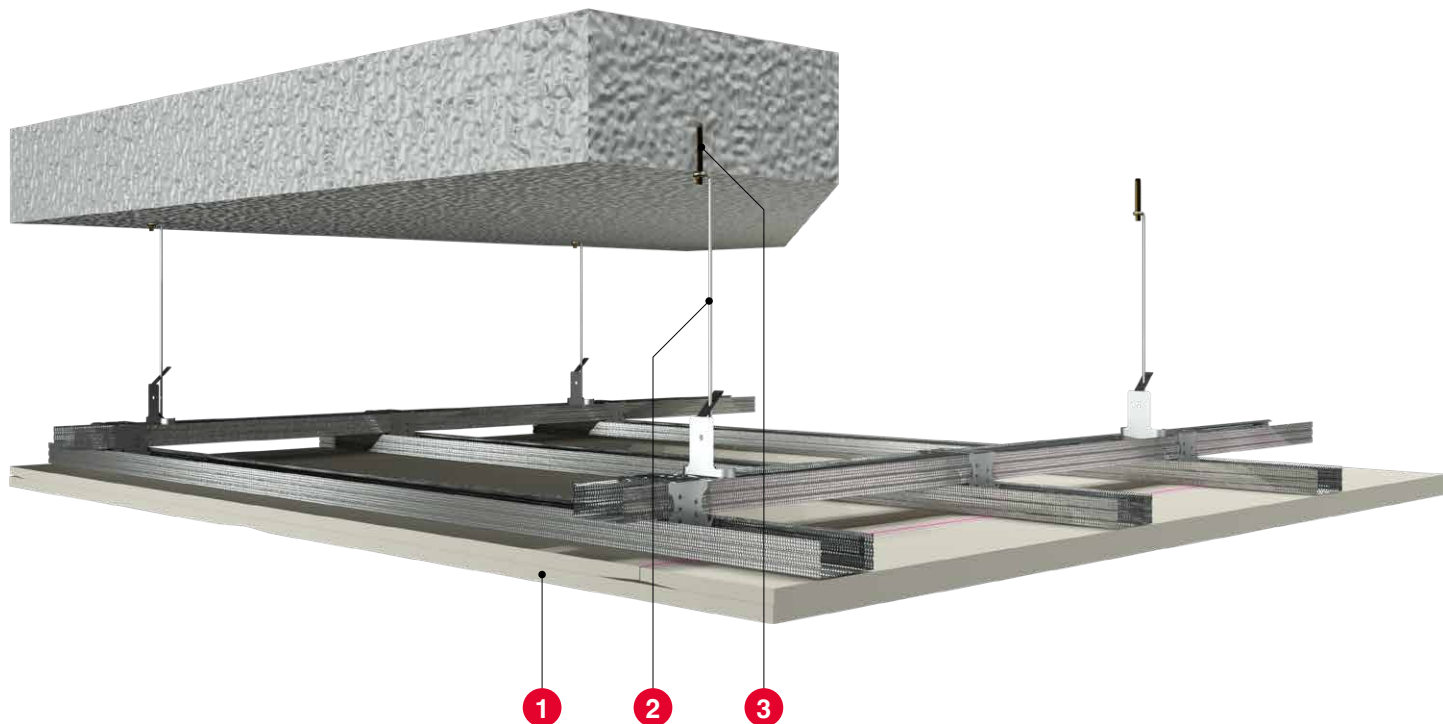
To ensure the appropriate visual effect, when connecting ceilings to walls, it is recommended to perform the so called expansion or sliding joint. These connections enable gentle movement of the ceiling without the risk of uncontrolled cracking of the board connections.

In the case of a sliding connection, before installing the plasterboards, stick the sliding tape to the wall (just under UD30 profiles). After filling, cut off the excess sliding tape with a knife and peel it off the wall.

# SUSPENDED CEILING CONNECTIONS

*connections with building structures*

---

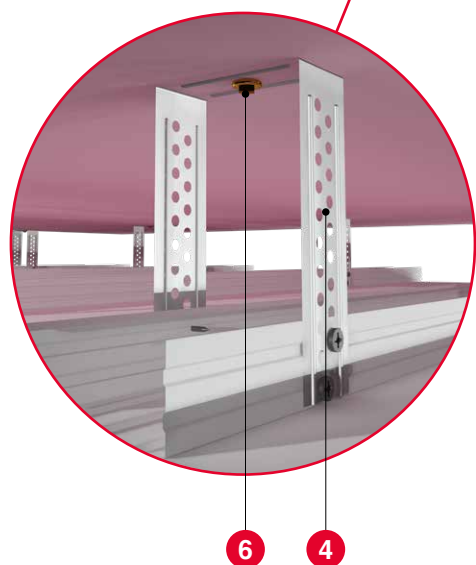
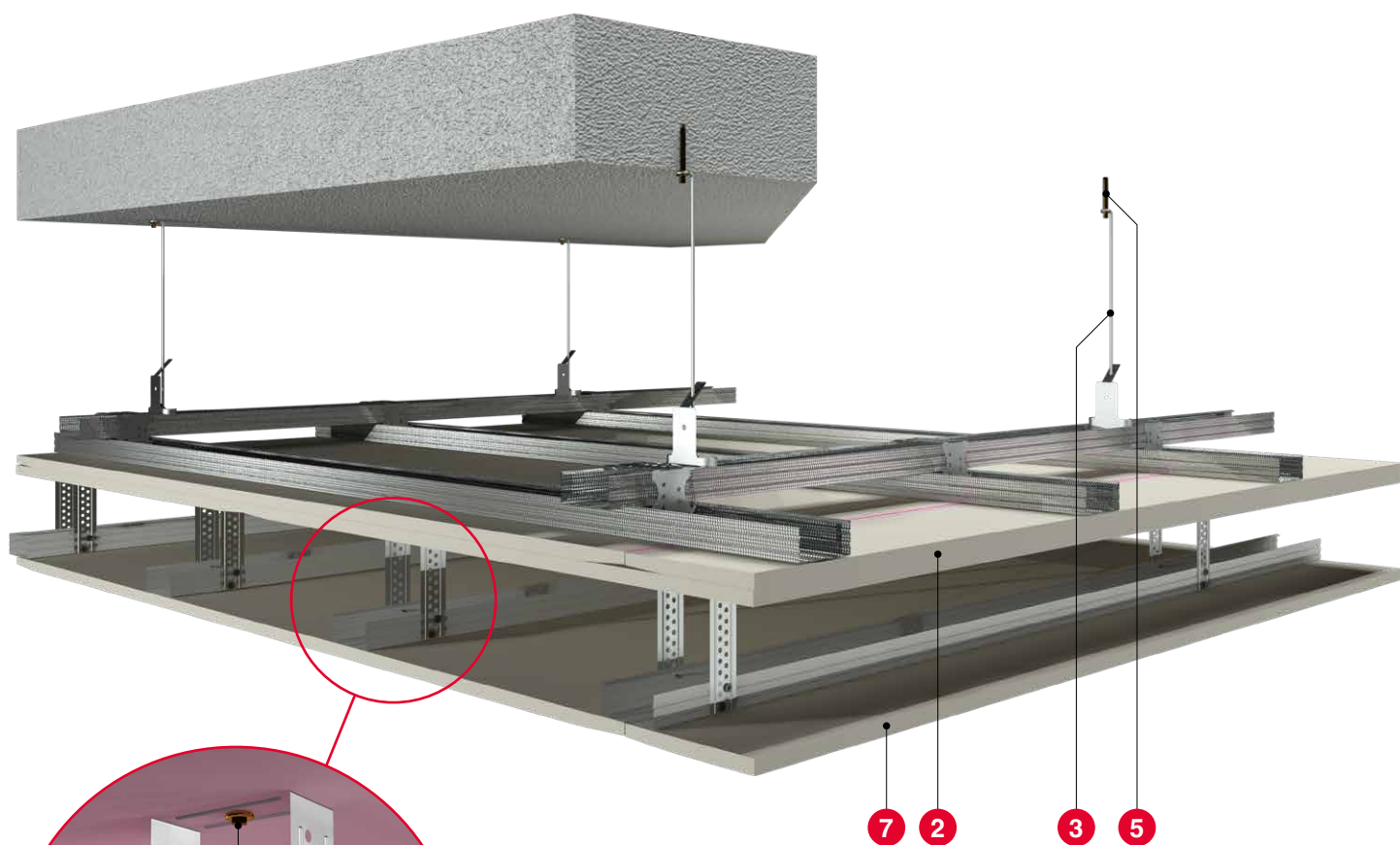


## Construction elements:

1. NORGIPS suspended ceiling
2. NORGIPS hanger
3. Steel dowel min.  $\varnothing 6 \times 40$  mm
4. Hanger to trapezoidal metal ceiling

# CEILING LINING CONNECTIONS

connections with building structures



## Construction elements:

1. NORGIPS ceiling lining
2. NORGIPS suspended ceiling
3. NORGIPS hanger
4. NORGIPS ES ES Plus hanger
5. Steel dowel min.  $\varnothing 6 \times 40$  mm
6. Mechanical connector  
(fixed to CD60 load-bearing profiles of the upper ceiling)
7. Additional lining (max. load  $10 \text{ kg/m}^2$  – depending on the solution)

# CEILING CONNECTIONS

installation of a partition wall to an existing suspended ceiling or ceiling lining

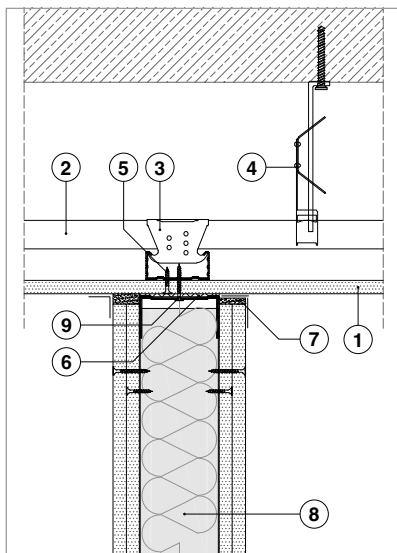
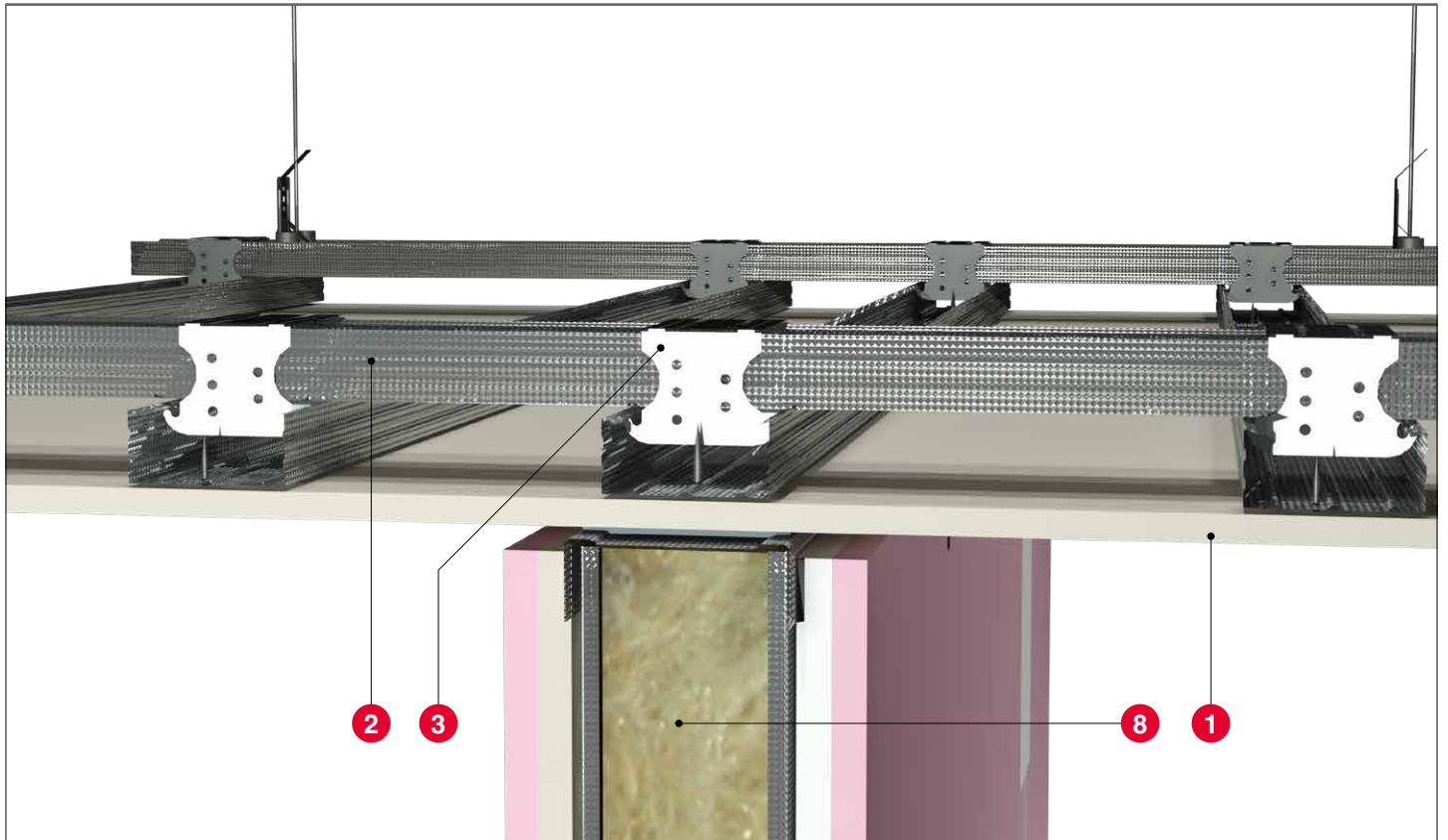


Fig. 7. Fixing the NORGIPS partition wall parallel to CD60 load bearing profiles in the ceiling.

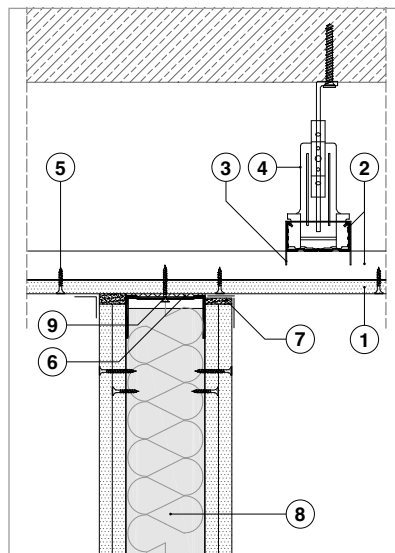


Fig. 8. Fixing the NORGIPS partition wall perpendicular to CD60 load bearing profiles in the ceiling.

## Construction elements:

1. NORGIPS plasterboard
2. NORGIPS CD60 profile
3. NORGIPS cross coupler
4. NORGIPS hanger
5. NORGIPS 3,5x25 mm tapping screw
6. Foam sealing tape
7. NORGIPS gypsum joint filler
8. NORGIPS partition wall
9. Steel fastener, spaced every 400 mm and fixed to load bearing CD60 profiles in a ceiling

# CEILING CONNECTIONS

## *installation of a partition wall to an existing suspended ceiling or ceiling lining*

In order to improve the acoustic insulation of the partition, when attaching a partition wall to a suspended ceiling, it is recommended to make **an insulating barrier of mineral wool**.

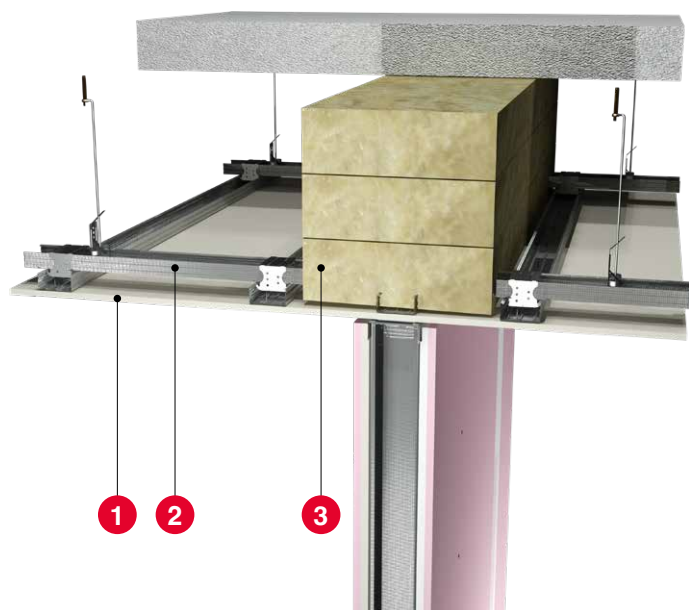


Fig. 9. A partition wall attached to the suspended ceiling with an additional insulating barrier between the rooms

In some cases, e.g. at a greater distance from side walls or other structures that can provide horizontal support and stiffness to the mounted partition wall, it is recommended to add **additional reinforcement with metal rods**.



Fig. 10. Partition wall attached to the suspended ceiling with additional stiffening

### Construction elements:

1. NORGIPS suspended ceiling
2. NORGIPS CD60 profile
3. Mineral wool
4. Mechanical reinforcement (eg. metal rods, steel flat bars)

# CEILING CONNECTIONS

## expansion joints

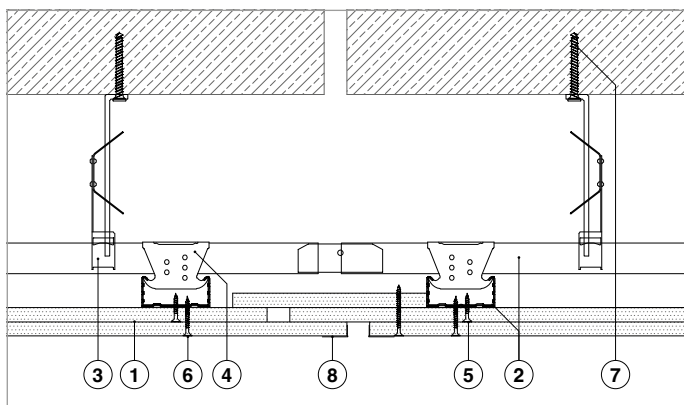
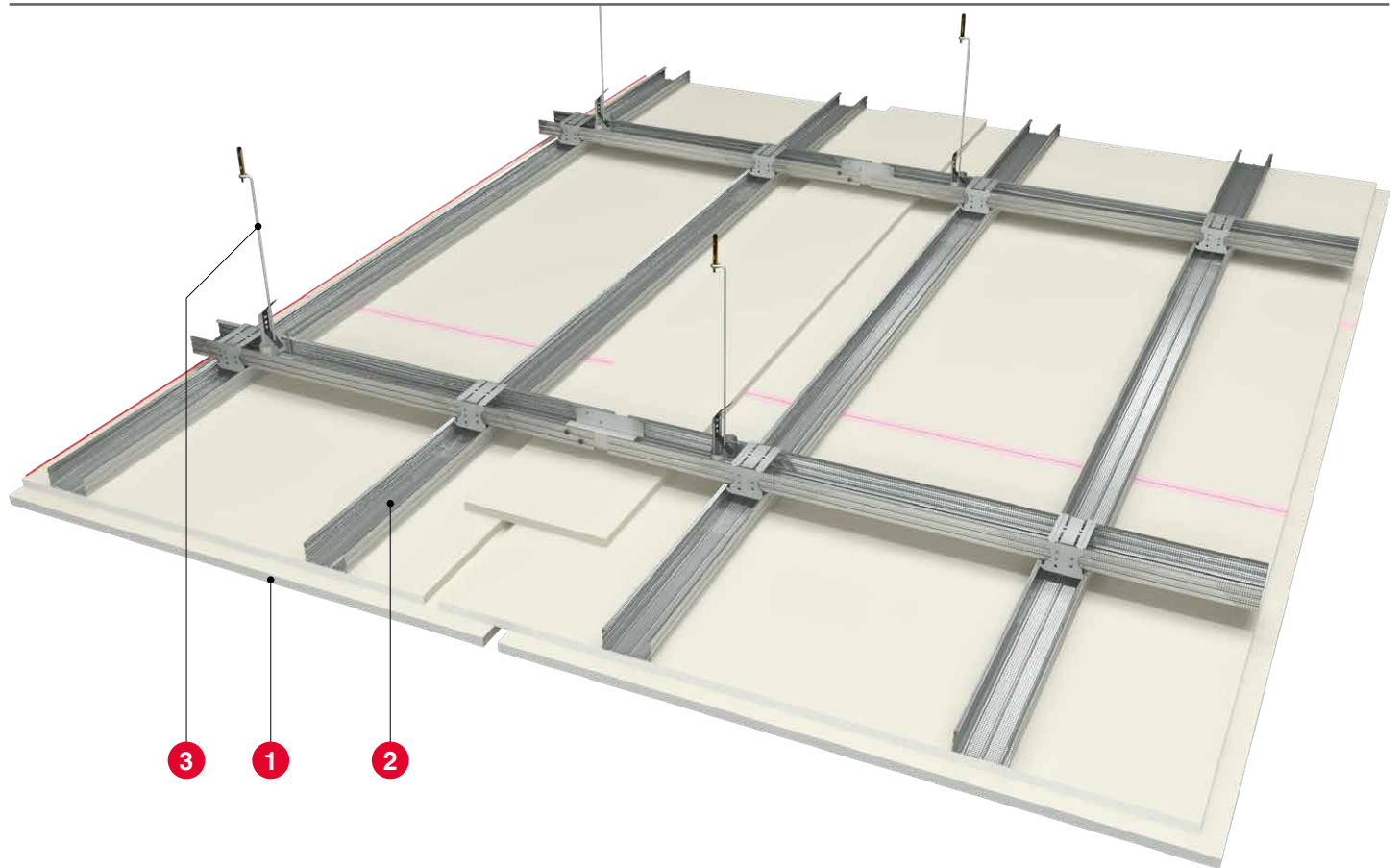


Fig. 11. Suspended ceiling expansion joint – variant 1

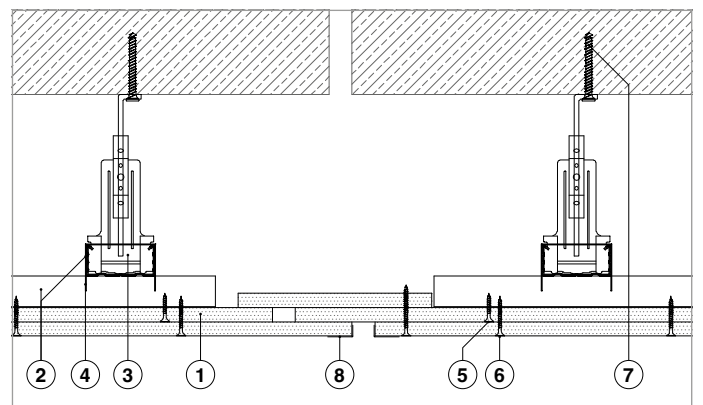


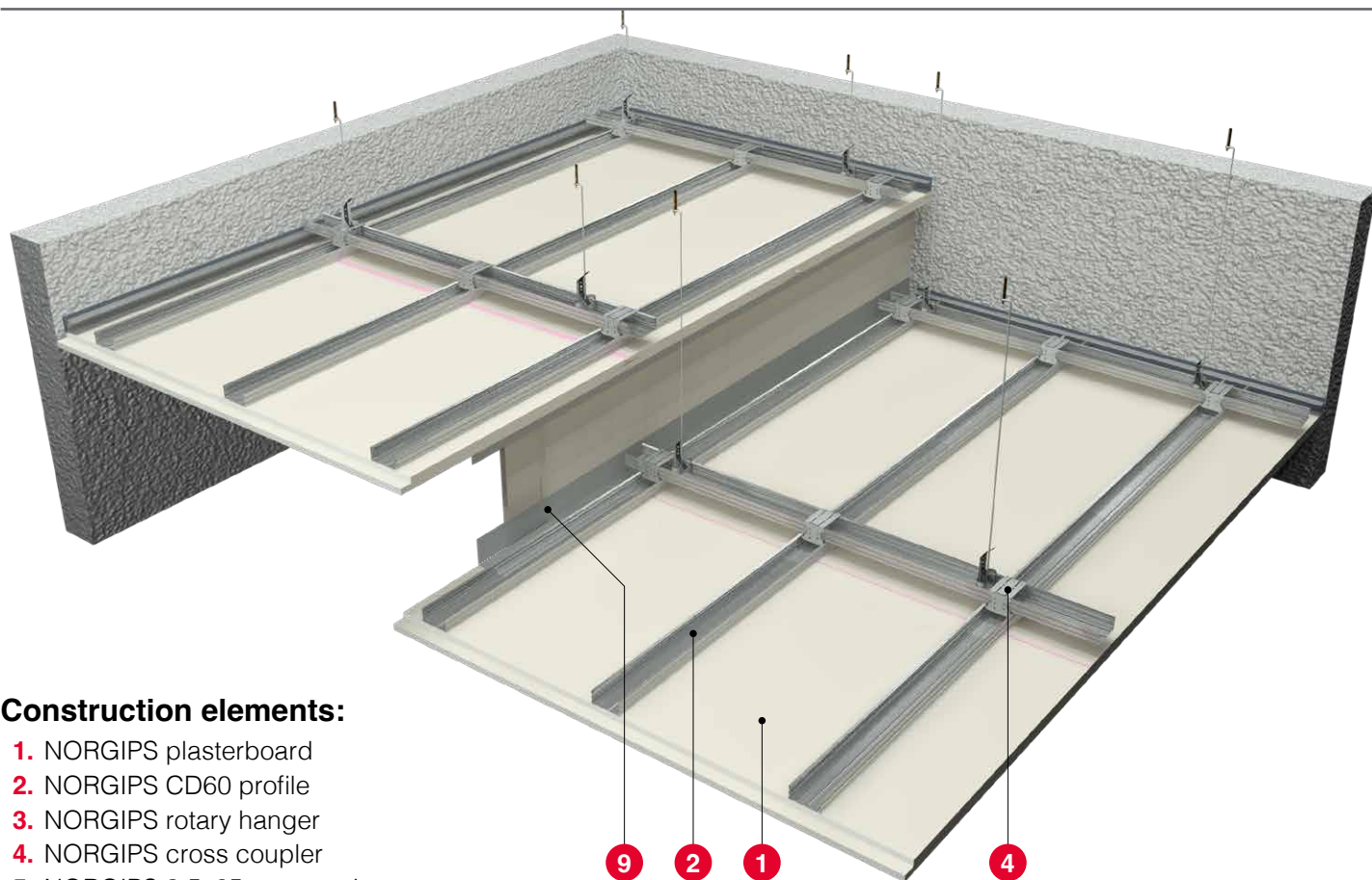
Fig. 12. Suspended ceiling expansion joint – variant 2

### Construction elements:

1. NORGIIPS plasterboard
2. NORGIIPS CD60 profile
3. NORGIIPS rotary hanger
4. NORGIIPS cross coupler
5. NORGIIPS 3,5x25 mm tapping screw
6. NORGIIPS 3,5x35 mm tapping screw
7. Steel dowel
8. Aluminium corner

# CEILING CONNECTIONS

*changing the ceiling levels*



## Construction elements:

1. NORGIPS plasterboard
2. NORGIPS CD60 profile
3. NORGIPS rotary hanger
4. NORGIPS cross coupler
5. NORGIPS 3,5x25 mm tapping screw
6. NORGIPS 3,5x35 mm tapping screw
7. Steel dowel
8. Aluminium corner
9. NORGIPS FLEX or UD30 profile

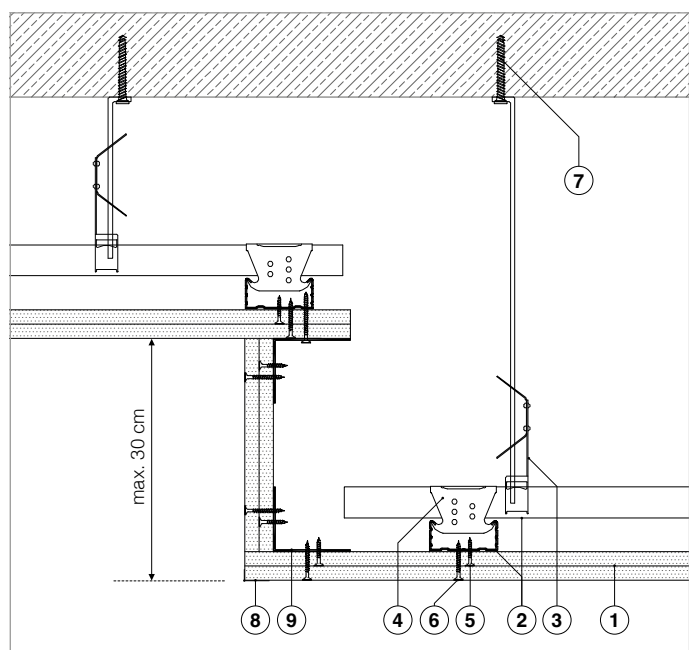


Fig. 13. Changing the level of the suspended ceiling, by a maximum of 30 cm.

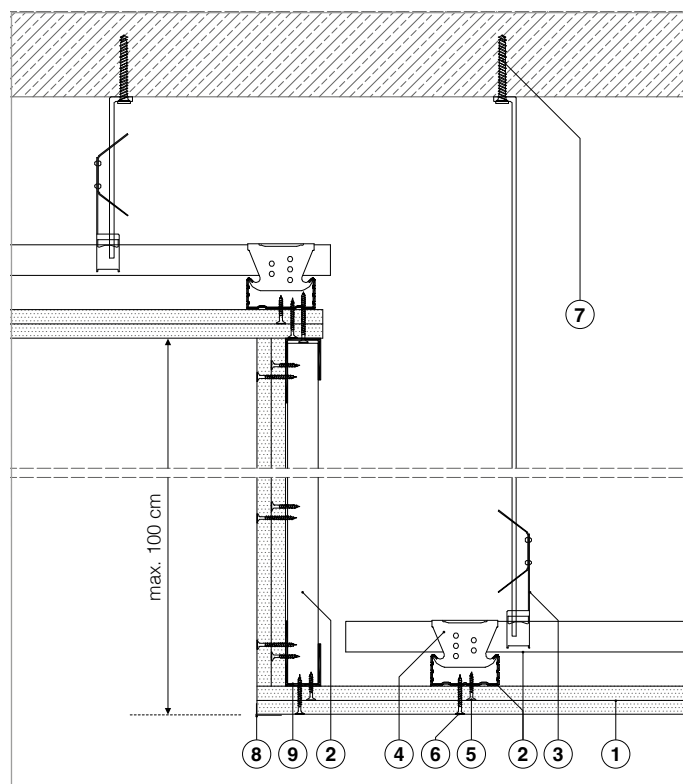
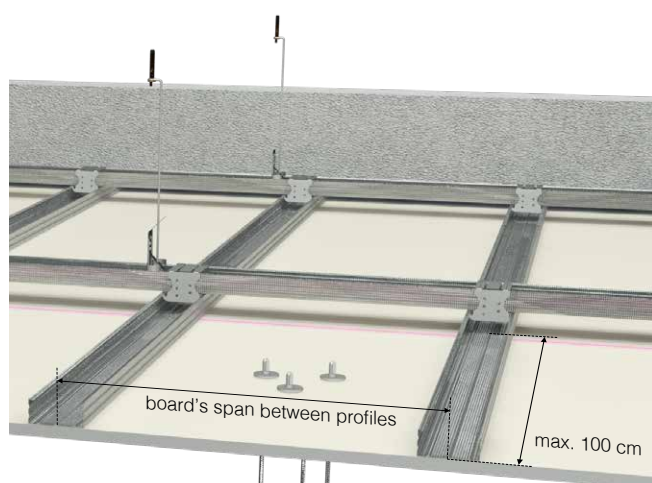


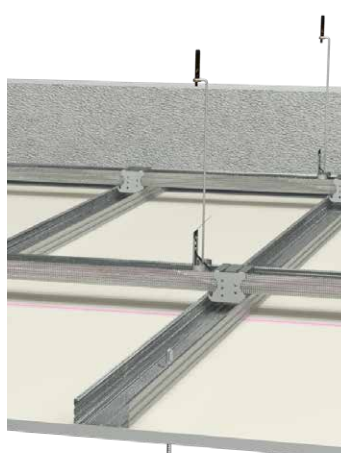
Fig. 14. Changing the level of the suspended ceiling, by a maximum of 100 cm.

# CEILING CONNECTIONS

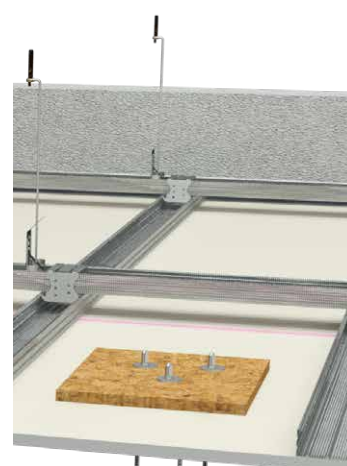
## ceiling loads and equipment installation



**Up to 6 kg**



**Up to 10 kg**



Due to the limited ability of plasterboards to bear loads, it is allowed to attach devices whose weight does not exceed 6 kg directly to the board (in the area of one span of the board between the load bearing CD60 profiles and within 100 cm of length).

The approval does not apply to fire resistance class ceilings.



**Over 10 kg**



In the case of devices weighing more than 10 kg, they should be mounted directly to the ceiling of the building or an independent structure.



# CEILING CONNECTIONS

*full installation of decorative elements and lamps*

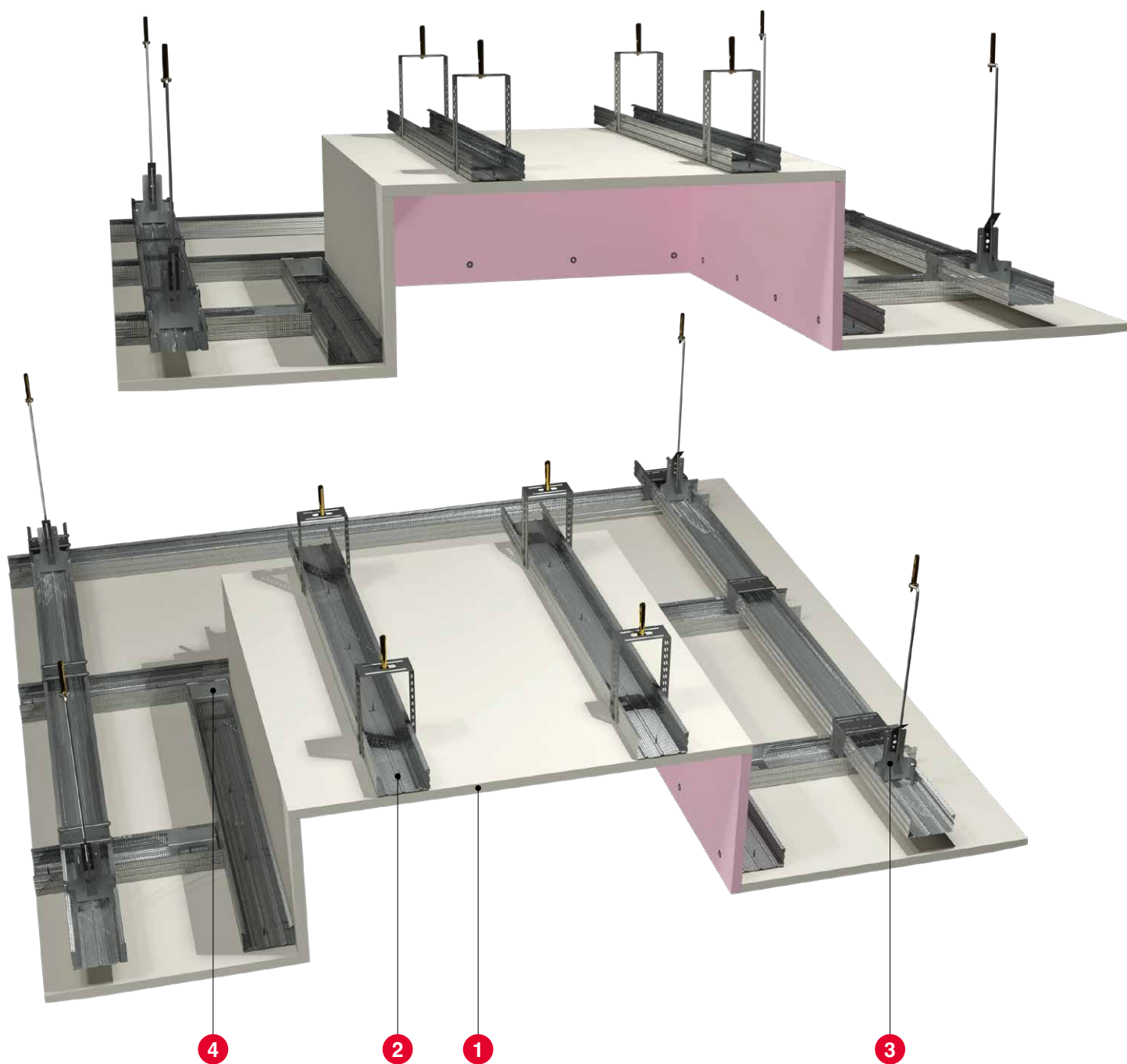


Fig. 15. Installation of additional elements, i.e. lamps, decorative elements when it is essential to maintain the continuity of the lining.

## Construction elements:

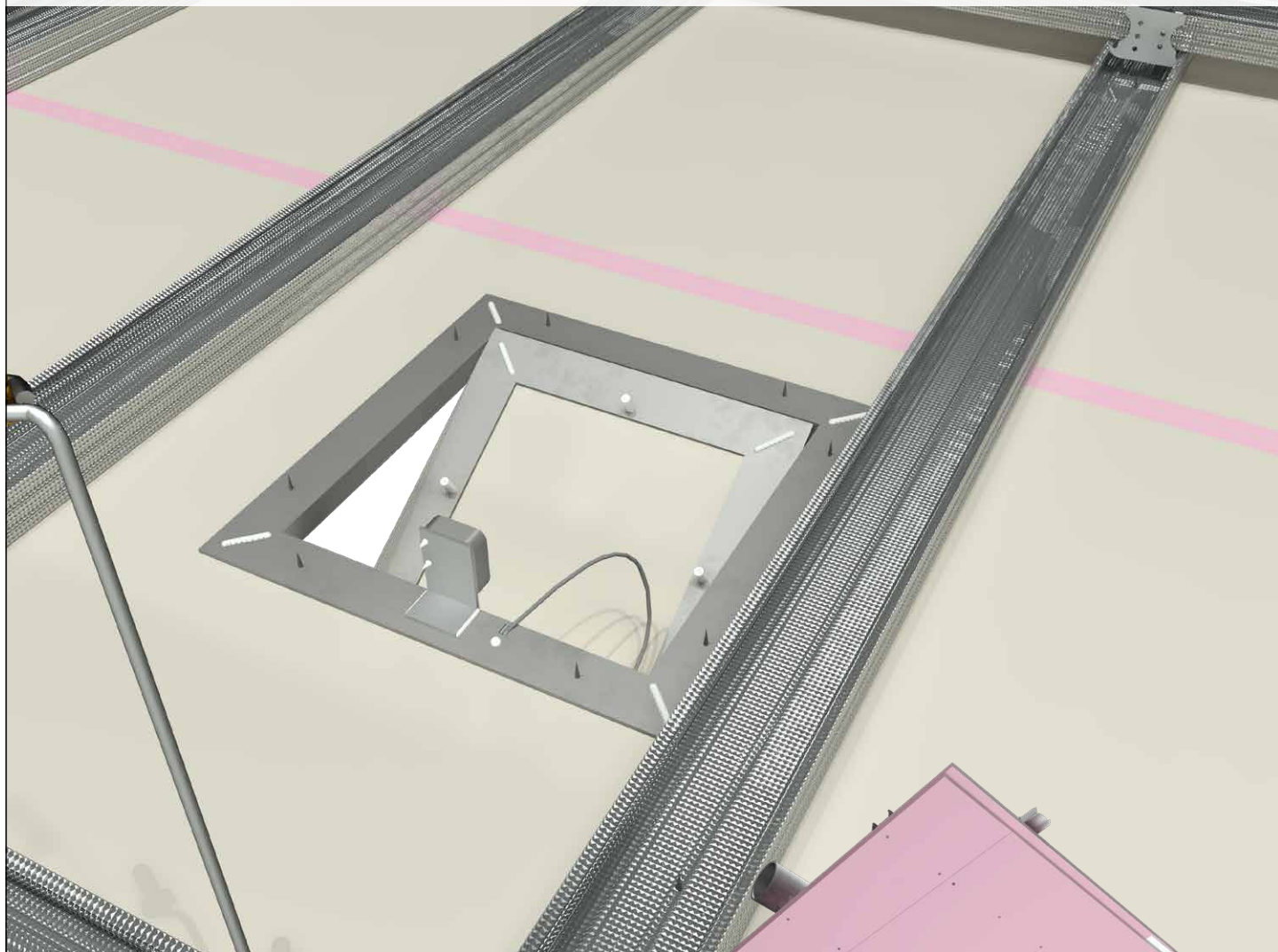
1. NORGIPS plasterboard
2. NORGIPS CD60 profile
3. NORGIPS hanger
4. NORGIPS one sided transverse coupler

In case of construction higher than 15 cm, use additional fastening of the boards in the corners, e.g. to the NORGIPS Flex profile.

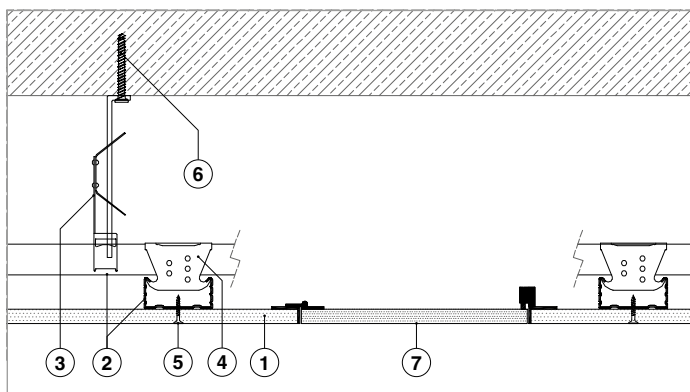
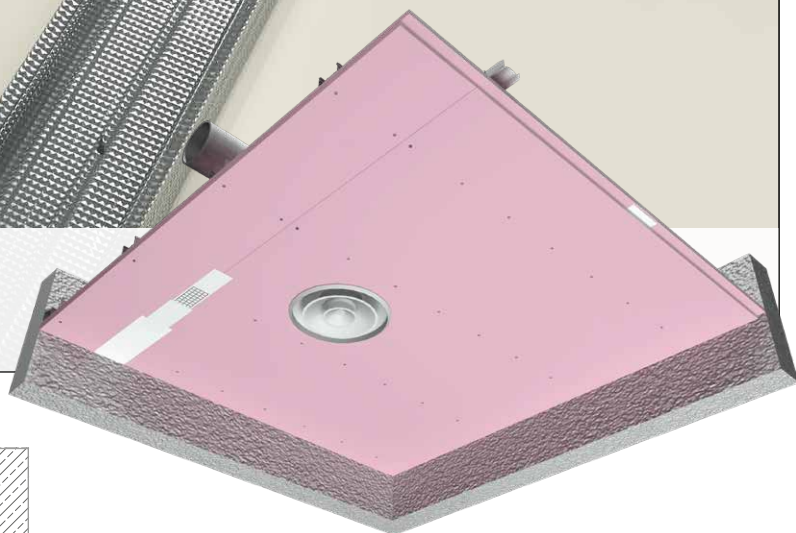
# CEILING CONNECTIONS

## ceiling loads and equipment installation

In the construction of ceilings and ceiling linings, subject to fire resistance class ceilings, it is allowed to perform ceiling inspection flaps and attach light installation elements, i.e. diffusers.



However, it should be remembered that sanitary installations, e.g. ventilation ducts, should not burden the suspended ceiling structure.



### Construction elements:

1. NORGIPS plasterboard
2. NORGIPS CD60 profile
3. NORGIPS rotary hanger
4. NORGIPS cross coupler
5. NORGIPS 3,5x25 mm tapping screw
6. Steel dowel
7. Inspection flap

Fig. 16. Fixing the inspection flap in a suspended ceiling

# CEILING CONNECTIONS

using ready made NORGIPS coverings  
when finishing rooms

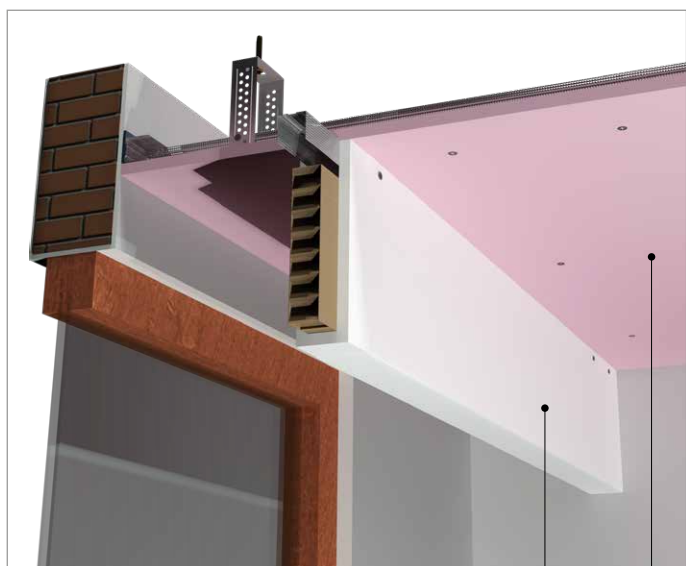


Fig. 17. Installation of a curtain rod cover for NORGIPS ceiling lining

2 1

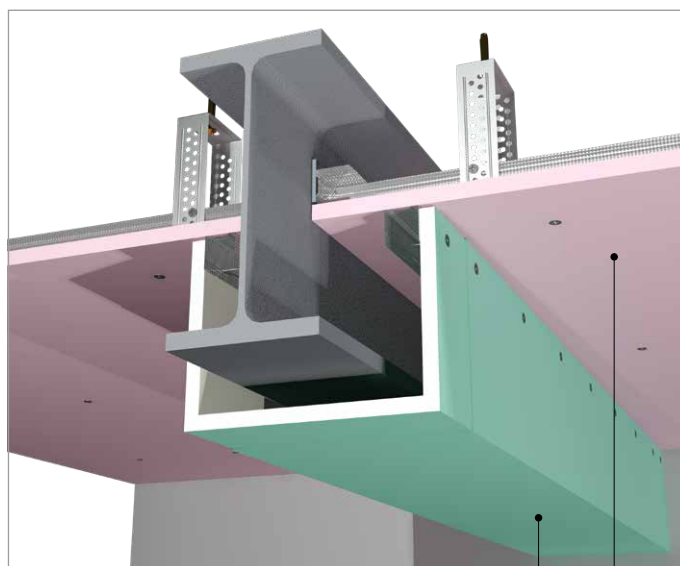


Fig. 18. Ceiling casing installation

3 1

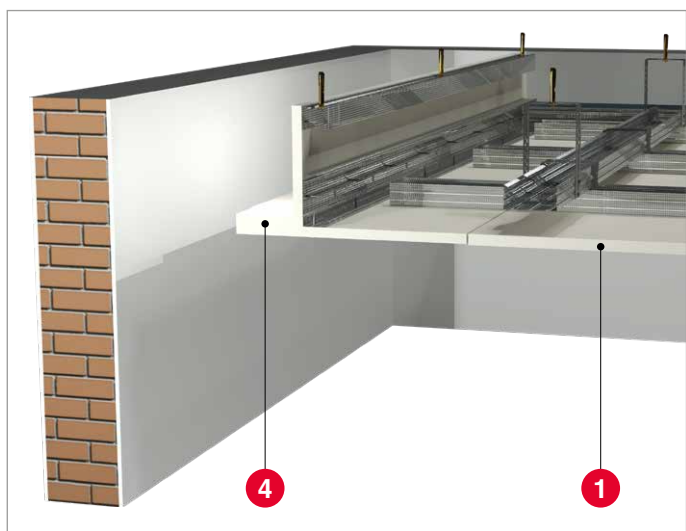


Fig. 19. Installation of LED lighting on the ceiling – version 1

4 1

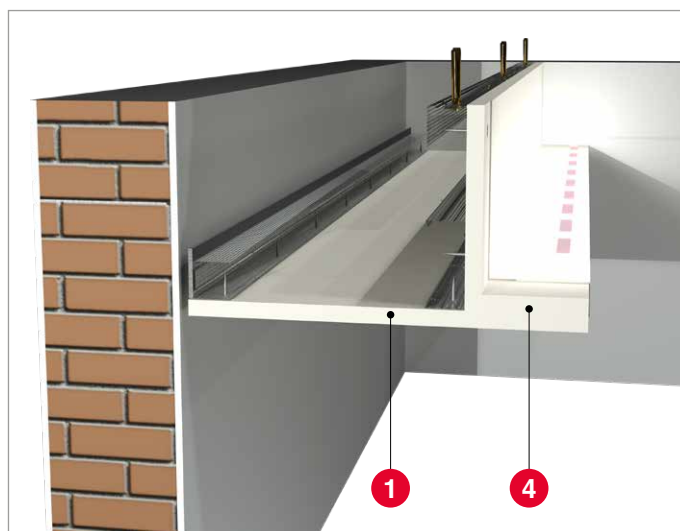


Fig. 20. Installation of LED lighting on the ceiling – version 2

1 4

## Construction elements:

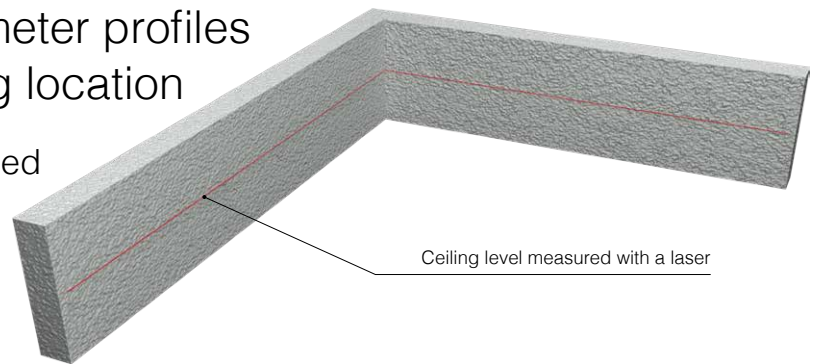
1. NORGIPS suspended ceiling or ceiling lining
2. Curtain rod Smart Cover 120 NORGIPS
3. NORGIPS casing
4. NORGIPS LED shelf

# SUSPENDED CEILING CONSTRUCTION PROCEDURE

## assembly stages

### STAGE I – preparation of perimeter profiles and determination of the ceiling location

1. Determine the position of the suspended ceiling in the room using, for example, a laser, marking the lines of the peripheral profiles on the walls adjacent to the ceiling construction.



2. Apply acoustic sealing tape to the UD30 perimeter profiles that will be in contact with the partition walls this will increase the acoustic insulation of the ceiling.

### STAGE II – installation of peripheral profiles

Using mechanical connectors (pins or dowels), we attach the UD30 peripheral profiles to the walls.

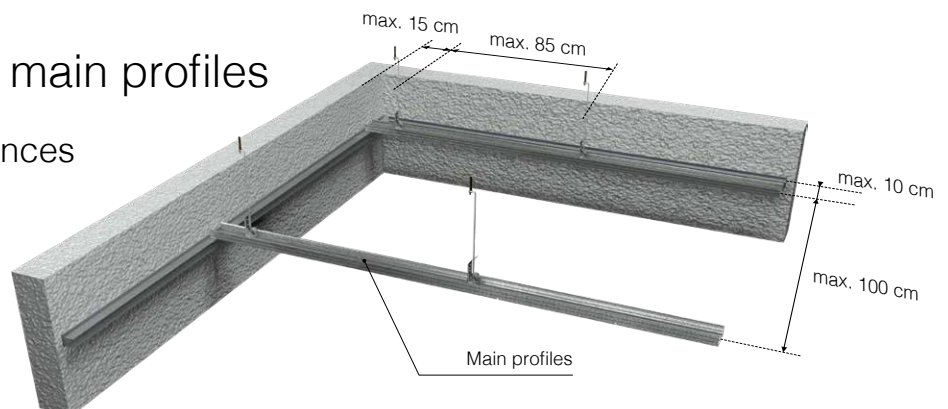


### STAGE III – installation of main profiles

1. Maintaining the minimum distances specified in the system cards, we arrange and install NORGIPS hangers using metal dowels.

2. Fasten or screw (in the case of ES hangers) CD60 main profiles to the hangers.

3. Please remember that the total length of the main profiles should be approximately 2 cm shorter than the length of the entire room, so that at each edge the main profile rests on the perimeter profile at a distance of approx 1 cm from the wall. The assembly clearance allows the structure to move when the building settles and minimize cracks on the surface of the plasterboards.



# SUSPENDED CEILING CONSTRUCTION PROCEDURE

## assembly stages


### STAGE IV – installation of load bearing profiles

1. Attach the lower layer of CD60 load-bearing profiles to the main profiles using cross connectors, arranging them in accordance with the provisions in the system cards.
2. Please remember that the total length of the supporting profiles should be approx 2 cm shorter than the length of the entire room, so that from each edge the supporting profile is inserted into the perimeter profile to a distance of approx 1 cm from the wall. The assembly clearance allows the structure to move when the building settles and minimize cracks on the plasterboard surface.
3. At this stage, the ceiling structure must be leveled.

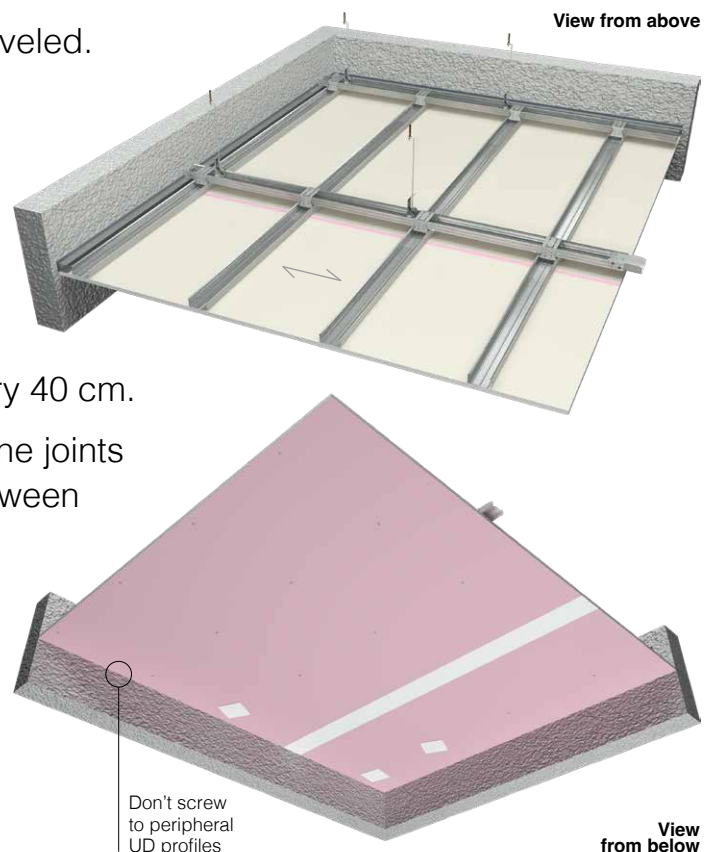
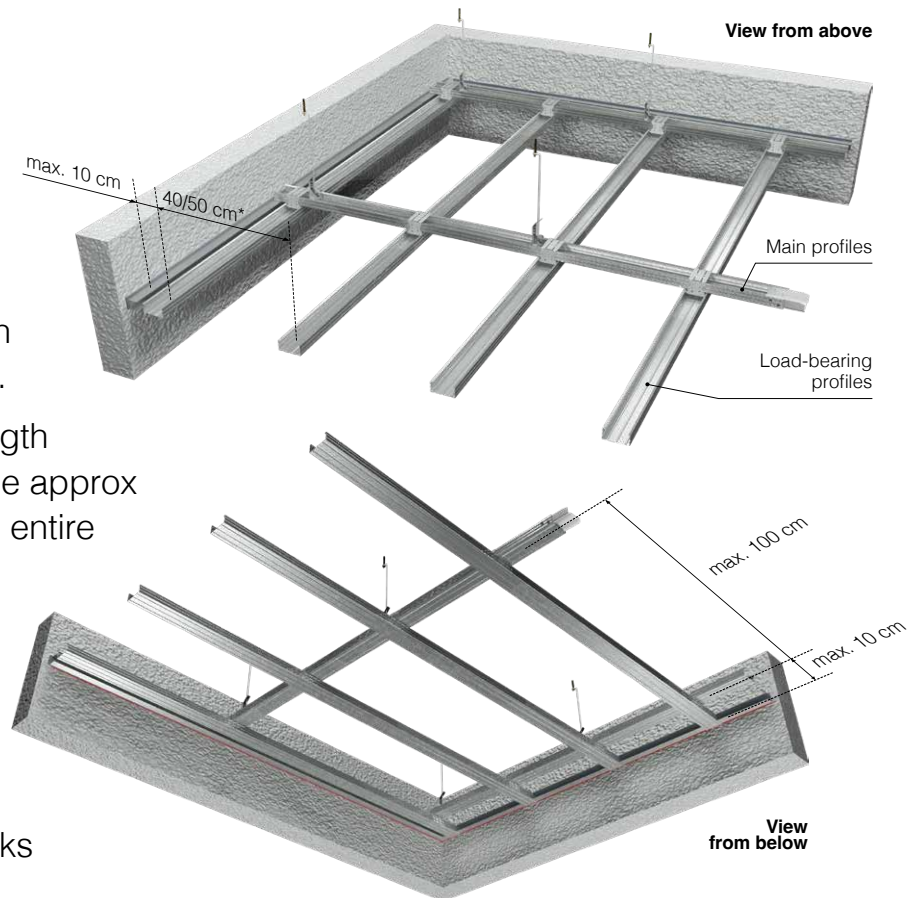
\* depending on the selected solution

### STAGE V – installation of the first layer of plasterboards

1. Start installing the first layer of plasterboards using 3.5x25 mm metal screws, spaced every 40 cm.
2. When attaching the boards, remember that the joints should not cross and the minimum offset between the horizontal edges of the boards is 40 cm.
3. Perform structural jointing of board joints and screw places\*\*. No reinforcing tape is used at this stage.

 – recommended orientation of the boards relative to the load-bearing profiles

\*\* required only for solutions with fire and acoustic demands

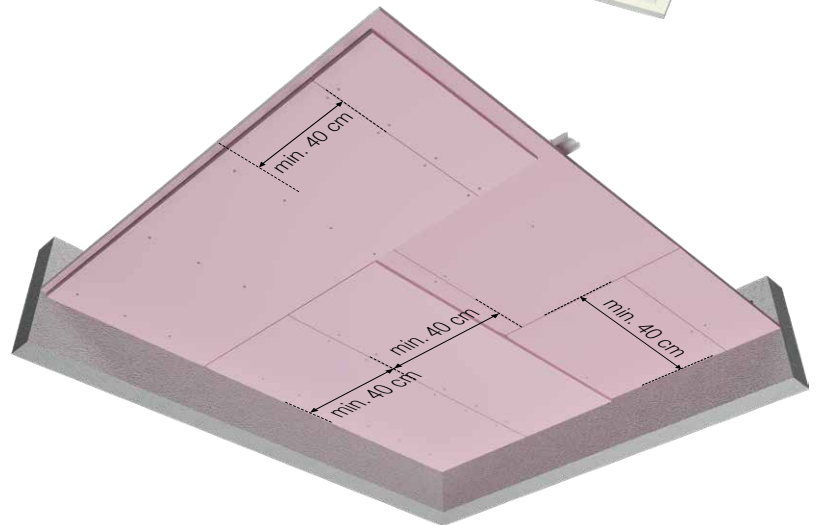


# SUSPENDED CEILING CONSTRUCTION PROCEDURE

## assembly stages

### STAGE VI – installation of the final boarding layer

1. The second layer of boarding is installed using 3.5x35 mm metal screws, spaced every 17 cm.
2. When attaching the boards, remember that the joints should not cross and the minimum offset between the horizontal edges of the boards is 40 cm. The joints of the boards in this layer must also be made offset from the previous boarding layer by at least 40 cm.
3. Fill the joints and screws with a finishing joint filler.

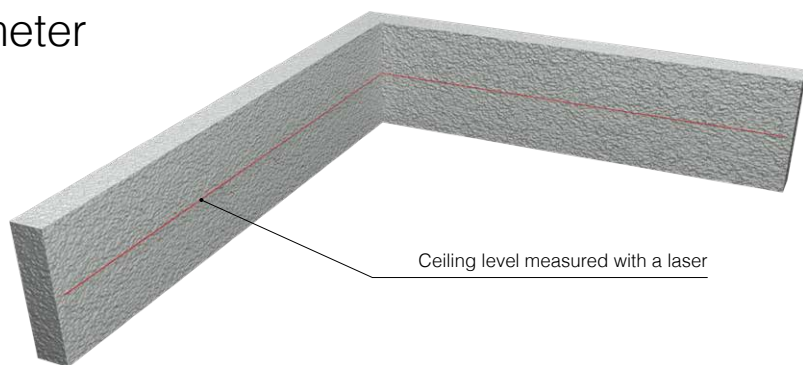


# SELF SUPPORTING CEILING CONSTRUCTION PROCEDURE

## assembly stages

**STAGE I** – preparation of perimeter profiles and determination of the ceiling location

1. Determine the position of the suspended ceiling in the room using, for example, a laser, marking the lines of the peripheral profiles on the walls adjacent to the ceiling construction.
2. Seal UW profiles with acoustic sealing tape. UW peripheral profiles that will be in contact with partition walls this will increase the acoustic insulation of the ceiling.



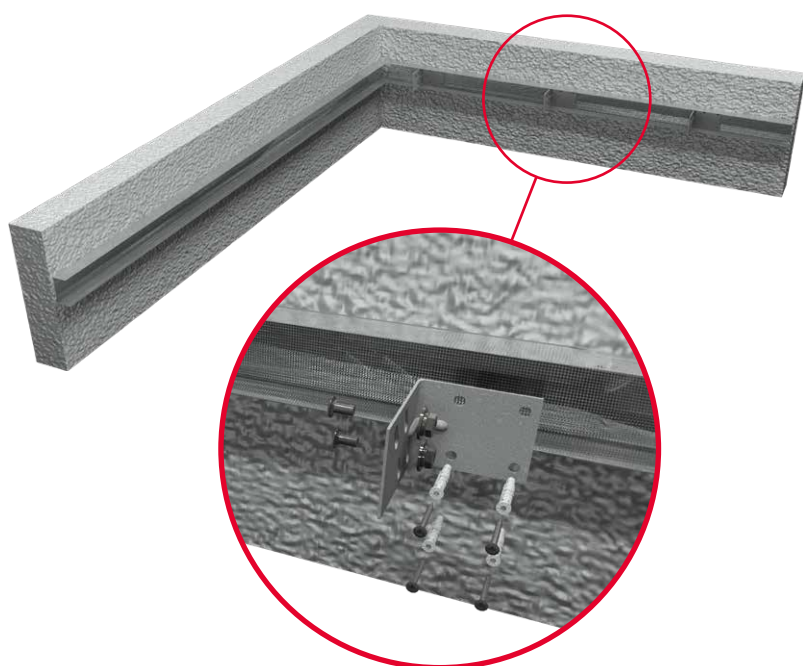
**STAGE II** – installation of peripheral profiles

Using mechanical connectors (pins or dowels), attach UW peripheral profiles to the walls.



**STAGE III** – installation of angle brackets for UA profiles

1. Maintaining the minimum distances specified in the system cards, place NORGIPS angle brackets for UA profiles in the peripheral profiles.
2. After making the holes, we attach the angle brackets using pins or steel dowels.

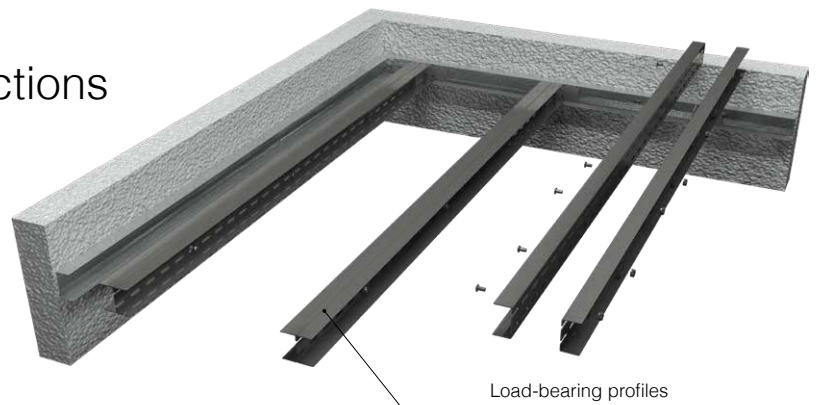


# SELF SUPPORTING CEILING CONSTRUCTION PROCEDURE

## assembly stages

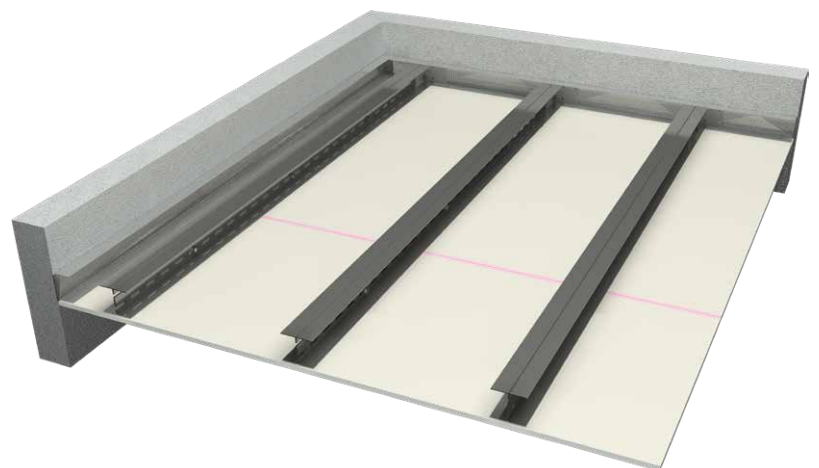
### STAGE IV – installation of UA supporting profiles to angle sections

1. Connect load bearing profiles together (applies to systems with a double structure).
2. Attach the UA supporting profiles to the angle brackets using connectors.
3. Please remember that the total length of the supporting profiles should be approximately 2 cm shorter than the length of the entire room, so that from each edge the supporting profile is inserted into the perimeter profile to a distance of approximately 1 cm from the wall. The assembly clearance allows the structure to move when the building settles and minimizes cracks in the structure.



### STAGE V – installation of plasterboards

1. We proceed to installing the boards, in accordance with the rules described earlier for the stages of mounting the suspended ceiling.
2. Perform joint filling to the appropriate level of Q1 - Q4.





# Technical information

## Norgips plasterboards used in partition ceiling solutions

Plasterboard name	Type (ISO EN520)	Thickness [mm]	Weight [kg/m <sup>2</sup> ]	Characteristic	Plasterboard code
Norgips S GKB	A	9,5	5,8	standard	GKB A
Norgips S GKB	A	12,5	7,1	standard	GKB A
Norgips Q GKB	A	12,5	8,5	standard	GKB A
Norgips S GKBI	H2	12,5	7,6	impregnated	GKBI H2
Norgips Q GKBI	H2	12,5	8,5	impregnated	GKBI H2
Norgips GKF	DF	12,5	10,1	fire-resistant	GKF DF
Norgips GKF	DF	15	14,0	fire-resistant	GKF DF
Norgips GKFI	DFH2	12,5	10,1	fire-resistant, impregnated	GKFI DFH2
Norgips GKFI	DFH2	15	14,0	fire-resistant, impregnated	GKFI DFH2
Norgips HARD	DIR	12,5	11,3	reinforced	DIR
Norgips Acoustic	A	12,5	9,0	acoustic	ACO A
Norgips Acoustic Super	DFH2IRE	12,5	11,7	acoustic, fire-resistant, impregnated	DFH2IR

## Profiles used in the framework of the solution

CD and UD steel profiles made out of cold bent galvanized steel (the nominal thickness of the steel used: 0,55 mm or 0,6 mm).

	NORGIPS Profile	NORGIPS SUPER Profile
Tensile strength [N/mm <sup>2</sup> ]	285	285
Reaction to fire performance	A1	A1
Sheet metal type	DX51D	DX51D
Sheet metal gauge [mm]	0,55 / 0,6	0,6
Zinc coating	Z140	Z275
Atmospheric corrosivity category	C1, C2	C3

## Fixing plasterboard to the framework

When fixing plasterboard to the construction make sure that used screws are longer than the board thickness or the total thickness of boards used in multi-layer linings by at least 10 mm.

Check the screw selection for fixing plasterboards below:

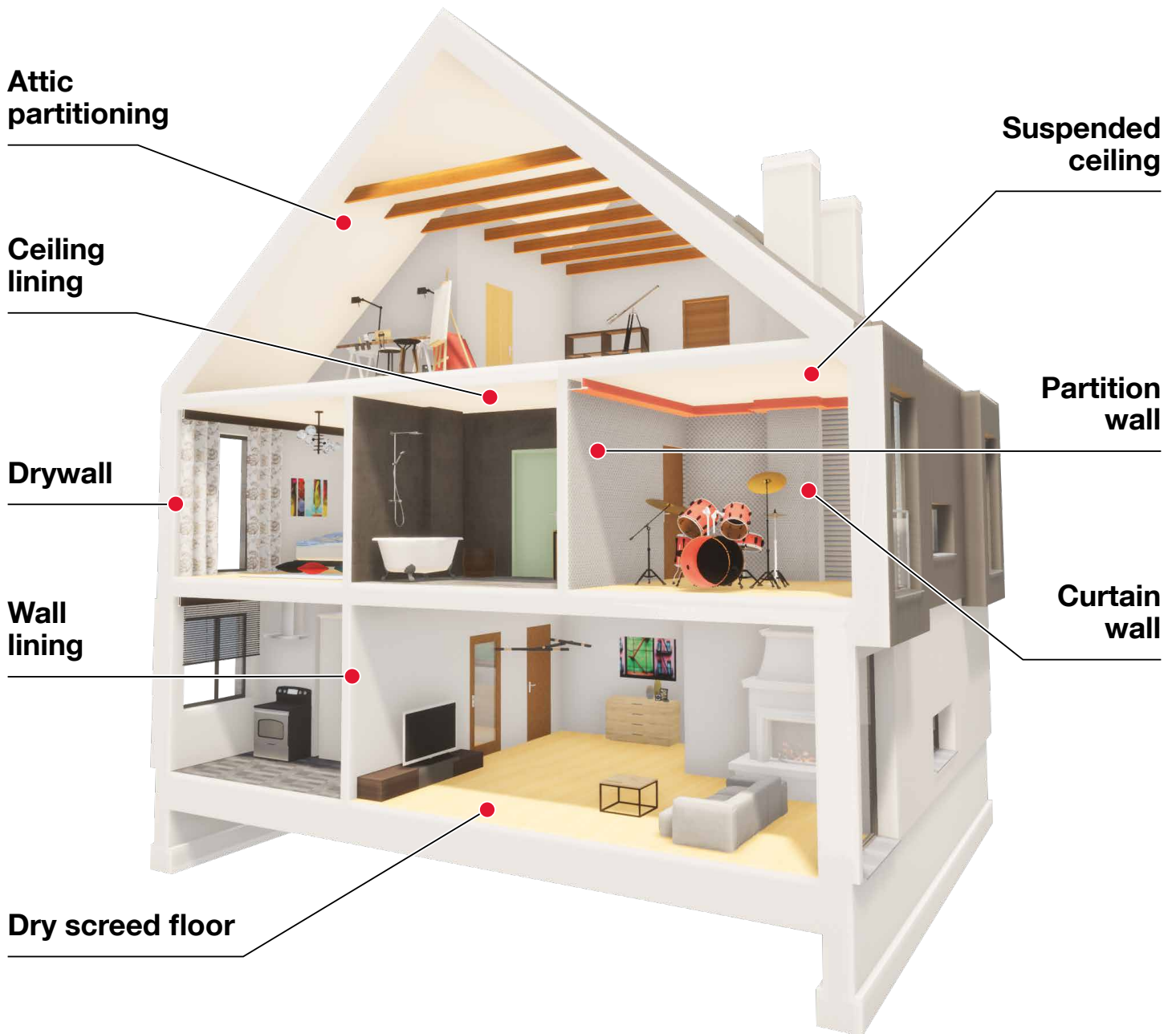
Plasterboard lining thickness [mm]	Screw type
1x9,5 / 1x12,5	3,5x25 mm
1x15	3,5x25 mm
2x12,5	3,5x25 mm + 3,5x35 mm
2x15	3,5x25 mm + 3,5x45 mm
3x12,5	3,5x25 mm + 3,5x35 mm + 3,5x55 mm
3x15	3,5x25 mm + 3,5x45 mm + 3,5x55 mm
2x12,5 + 1x15	3,5x25 mm + 3,5x45 mm + 3,5x55 mm
2x15 + 2x12,5	3,5x25 mm + 3,5x45 mm + 3,5x55 mm + 4,2x70 mm





# **NORGIPS solutions**

---



**NORGIPS** solutions use proven materials to guarantee safety and comfort of use

---

Learn more about the solutions and check the full range of NORGIPS drywall materials on

**[www.norgips.pl](http://www.norgips.pl)**

# NORGIPS®

**1 ESTONIA**  
**Tanel Kuusik**  
Country Manager  
+372 562 043 35  
tanel.kuusik@norgips.com

**2 LATVIA**  
**Artis Meikšāns**  
Country Manager  
+371 67 47 06 14  
artis.meiksans@norgips.com

**3 LITHUANIA**  
**Aurelijus Motiejūnas**  
Country Manager  
+370 69 810 088  
aurelijus.Motiejunas@norgips.com

**4 CZECH REPUBLIC**  
**Pavel Holeš**  
Country Manager  
+420 732 213 409  
pavel.holes@norgips.com

**5 SLOVAKIA**  
**Aida Halák**  
Sales Representative  
+421 948 768 045  
aida.halak@norgips.com

**6 HUNGARY**  
**Tamás Horváth**  
Country Manager Hungary  
+36 20 917 2520  
tamas.horvath@norgips.com

**7 CROATIA**  
**Denis Halas**  
Sales Representative  
+48 695 230 568  
denis.halas@norgips.com

**8 BOSNIA AND HERZEGOVINA**  
**Maria Mitova**  
Country Manager  
+359 (0) 885 713 267  
maria.mitova@norgips.com

**9 ROMANIA**  
**Nicolae Alexandrescu**  
Country Manager  
+40 726 502 134  
nicolae.alexandrescu@norgips.com

**Alexandru Pitac**  
Technical Advisor  
+40 756 125 288  
alexandru.pitac@norgips.com

**10/11 BULGARIA and SERBIA**  
**Maria Mitova**  
Country Manager  
+359 (0) 885 713 267  
maria.mitova@norgips.com

**Jānis Muižnieks**  
Sales Coordinator  
+371 26 549 917  
janis.muiznieks@norgips.com

**Andrej Litovčenko**  
Sales Coordinator  
+370 620 718 60  
andrej.litovcenko@norgips.com

**Jaroslav Slanina**  
Sales Representative  
+420 774 731 232  
jaroslav.slantina@norgips.com

**Gábor Donka**  
Technical Advisor  
+36 30 543 5498  
gabor.donka@norgips.com

**Cristian Roman**  
Product Manager  
+40 746 119 932  
cristian.roman@norgips.com

**Nikolay Kolev**  
Sales Representative  
+359 (0) 885 929 680  
nikolay.kolev@norgips.com

**Dariusz Nasiłowski**  
**Export Director CEE Region**  
+48 22 36 96 330  
dariusz.nasilowski@norgips.com



## COMPANY HEADQUARTERS IN WARSAW

**Norgips Sp. z o.o.**  
ul. Raclawicka 93  
02-634 Warszawa  
+48 22 36 96 330  
norgipspolska@norgips.com

2024

[www.norgips.eu](http://www.norgips.eu)