



# CEWOOD ACOUSTIC PANEL INSTALLATION



## TABLE OF CONTENTS

CEWOOD acoustic panels .....	3
1. Technical specifications .....	4
2. Sound absorption .....	6
3. Profiles of panel edges .....	7
4. Acoustic panel ceiling .....	8
4.1. Fastening on wood laths .....	9
4.2. Fastening on CD metal sections .....	16
4.3. Suspended ceiling with visible T-sections .....	25
5. Wall mounting with CEWOOD panels .....	32
5.1. Wood lathing construction .....	33
5.2. Double wood lathing construction .....	35
5.3. Panel fastening on metal profile construction .....	36
5.4. Mounting of CEWOOD design tiles .....	40
Panel fastening, storage and care .....	41

## CEWOOD ACOUSTIC PANELS

CEWOOD acoustic panels are a durable and nature friendly material made of top quality wood wool and cement. CEWOOD panels are made of wood wool, using grey or white cement as the binder.

By combining fire resistance with good acoustic and heat insulation properties, the product offers the widest variety of design solutions.

Acoustic panels are widely used in public and residential building interior design, it is eco-friendly and harmless for health. The panels are very suitable for suspended ceiling constructions and wall finishing. Owing to its natural composition and outstanding properties, they are widely used in premises with increased acoustic load, where sound insulation and noise absorption are of essence. The panels do not change their properties in premises with an increased level of humidity, they absorb excess humidity and ensure pleasant microclimate, typical in premises with wood decoration.

Panels with thickness of 15, 25 and 35 mm made of 1.5 and 1 mm thick wood wool are used for ceiling decoration. The quality of all CEWOOD materials corresponds to LVS EN 13168 requirements.



## 1. TECHNICAL SPECIFICATIONS



### CEWOOD acoustic panels – 1.0 mm wood wool

Thickness	mm	15	25	35	50
Size (standard panel)	mm	2400x600; 1200x600; 600x600			
Size (for suspended ceilings)	mm	1195x595; 595x595			
Dimensional tolerance (EN 13168)		L4; W2; T2; S2; P2			
Weight	kg/m <sup>2</sup>	8.6	11.5	14.5	19.5
Density	kg/m <sup>3</sup>	570	460	410	390

Thermal resistance (Ro)	m <sup>2</sup> ·K/W	0.20	0.35	0.50	0.75
Thermal conductivity (λD)	W/m·K	0.066			
Specific heat (c)	J/(kg·K)	2100			
Bend (EN 12089)	kPa	≥ 1700	≥ 1300	≥ 1000	≥ 700
Compression (EN 826)	kPa	≥ 300	≥ 300	≥ 200	≥ 200
Chloride content (EN 13168)	%	≤ 0,06 class Cl3			
Reaction to fire (EN 13501-1:2007)		B-s1, d0			

### CEWOOD acoustic panels – 1.5 mm wood wool

Thickness	mm	15	25	35	50
Size (standard panel)	mm	2400x600; 1200x600; 600x600			
Size (for suspended ceilings)	mm	1195x595; 595x595			
Dimensional tolerance (EN 13168)		L4; W2; T2; S2; P2			
Weight	kg/m <sup>2</sup>	8.0	10.5	13.5	18.5
Density	kg/m <sup>3</sup>	530	420	380	370

Thermal resistance (Ro)	m <sup>2</sup> ·K/W	0.20	0.35	0.50	0.75
Thermal conductivity (λD)	W/m·K	0,066			
Specific heat (c)	J/(kg·K)	2100			
Bend (EN 12089)	kPa	≥ 1700	≥ 1300	≥ 1000	≥ 700
Compression (EN 826)	kPa	≥ 300	≥ 300	≥ 200	≥ 200
Chloride content (EN 13168)	%	≤ 0,06 class Cl3			
Reaction to fire (EN 13501-1:2007)		B-s1, d0			



### CEWOOD acoustic panels – 3.0 mm wood wool (made upon request)

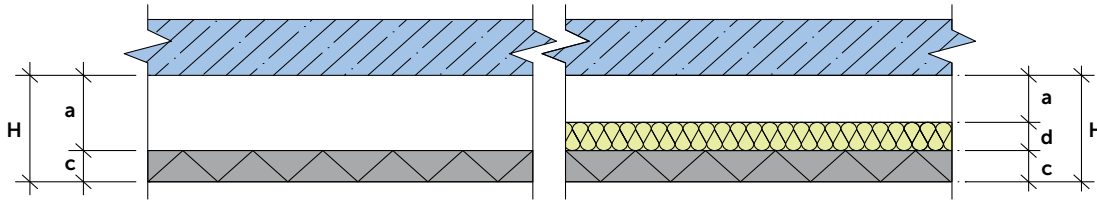
Thickness	mm	25	35	50
Size (standard panel)	mm	2400x600; 1200x600; 600x600		
Size (for suspended ceilings)	mm	1195x595; 595x595		
Dimensional tolerance (EN 13168)		L4; W2; T2; S2; P2		
Weight	kg/m <sup>2</sup>	11.5	14.5	19.5
Density	kg/m <sup>3</sup>	460	410	390

Thermal resistance (Ro)	m <sup>2</sup> ·K/W	0.35	0.50	0.75
Thermal conductivity (λD)	W/m·K	0,066		
Specific heat (c)	J/(kg·K)	2100		
Bend (EN 12089)	kPa	≥ 1300	≥ 1000	≥ 700
Compression (EN 826)	kPa	≥ 300	≥ 200	≥ 200
Chloride content (EN 13168)	%	≤ 0,06 class Cl3		
Reaction to fire (EN 13501-1:2007)		B-s1, d0		



## 2. SOUND ABSORPTION

Practical sound absorption coefficient  $\alpha_p$  in octave band according to standart EN ISO 354, Extended sound absorption coefficient  $\alpha_w$  and sound absorption class according to standart LVS EN ISO 11654:1997



H – height; a – air gap; d – mineral wool; c – CEWOOD panel.

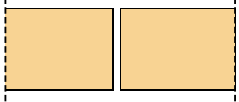
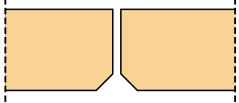
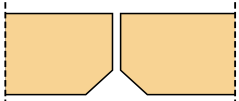
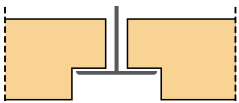
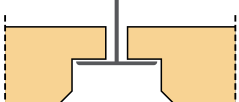
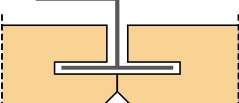

H mm	a mm	d mm	c mm	120 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	Absorpt. coeff. $\alpha_w$	Absorption class
85	60	0	25	0.10	0.30	0.55	0.60	0.50	0.60	<b>0.55</b>	<b>D</b>
225	200	0	25	0.25	0.50	0.55	0.50	0.60	0.65	<b>0.55</b>	<b>D</b>
250	200	0	50	0.40	0.60	0.55	0.65	0.70	0.70	<b>0.65</b>	<b>C</b>
85	10	50*	25	0.40	0,79	0,78	0.76	0.73	0.70	<b>0.80</b>	<b>B</b>
225	100	100*	25	0.79	0.72	0.73	0.81	0.78	0.72	<b>0.80</b>	<b>B</b>
225	150	50*	25	0.52	0.81	0.74	0.87	0.77	0.73	<b>0.80</b>	<b>B</b>
55	0	30**	25	0.25	0.55	1.00	0.95	0.85	0.85	<b>0.85</b>	<b>B</b>
75	0	50**	25	0.35	0.70	1.00	0.95	0.85	0.95	<b>0.90</b>	<b>A</b>
75	50	0	25	0.10	0.25	0.55	0.65	0.55	0.65	<b>0.50</b>	<b>D</b>
65	0	50**	15	0.30	0.65	1.00	0.85	0.75	0.80	<b>0.85</b>	<b>B</b>
65	50	0	15	0.10	0.20	0.50	0.65	0.55	0.65	<b>0.50</b>	<b>D</b>

\* Mineral wool, 30 kG/m<sup>3</sup>; \*\* Mineral wool, 90 kG/m<sup>3</sup>.

An exceptionally effective type of application is sound-absorbing structures in large-sized premises, to reduce the sound reverberation time in the room and to improve working conditions. CEWOOD panels can be used to make panel-type screens with marked sound-absorbing qualities to reduce the capacity of noise emitted by equipment in the high tone frequency range. An even more effective acoustic solution is creating three-dimensional finishing elements, such as pyramids which produce much higher absorption coefficient values, owing to sound diffraction around edges.

Panels with 3 mm wide wood wool and higher density ensure better sound absorption in lower frequencies. Whereas the 1 mm and 1.5 mm wood wool panels have better absorption properties in the higher frequency range. The optimum sound absorption solution can be achieved by combining CEWOOD panels with a layer of mineral wool insulation.

### 3. PROFILES OF PANEL EDGES

Code	Profile	Panel thickness, mm			Frame structure		
		15	25	35	Wood laths	CD profiles	T profiles
PO		+	+	+	+	+	+
P5		+	+	+	+	+	
P11			+	+	+	+	
POG			+	+			+
P5G			+	+			+
P5H			+	+			+
P5S				+			+

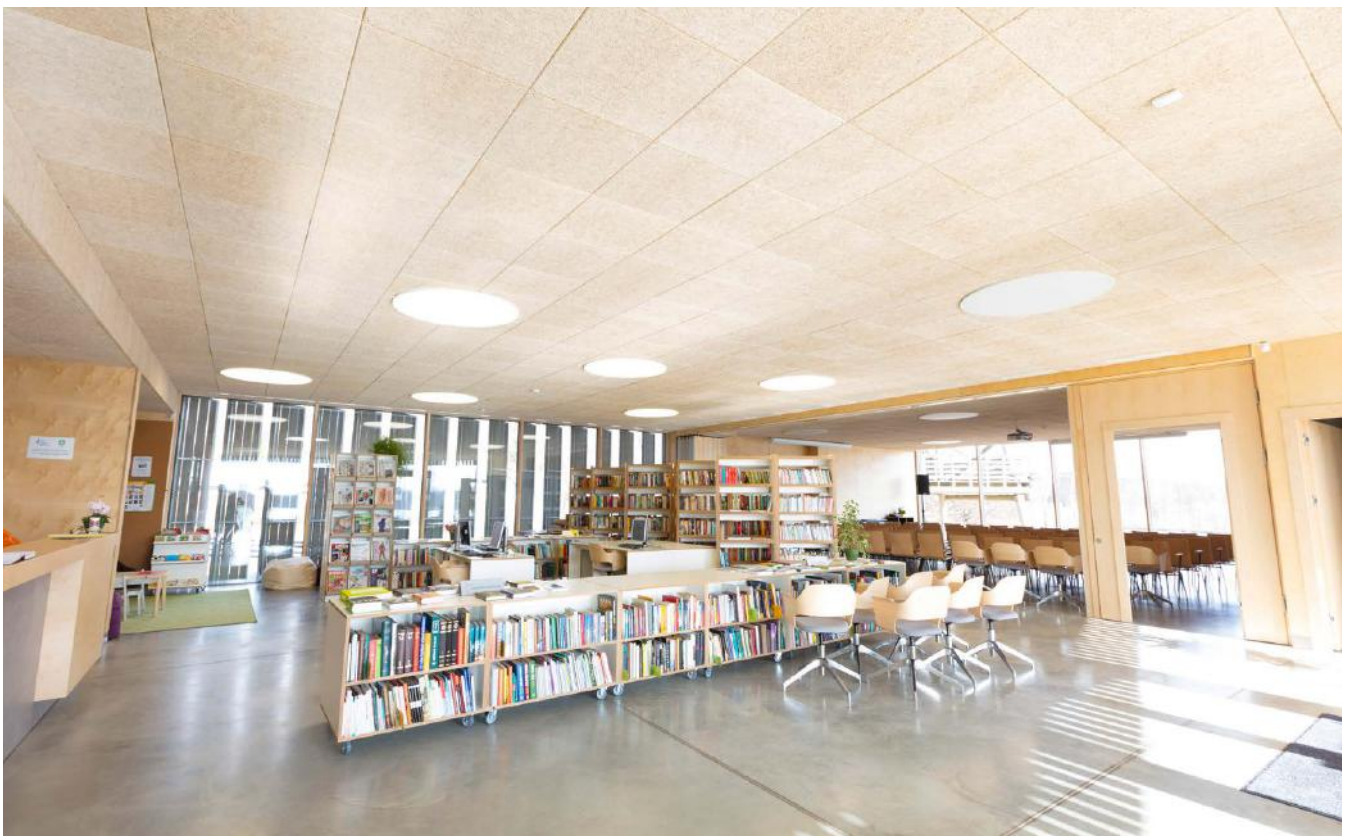
## 4. ACOUSTIC PANEL CEILING

The acoustic panels are a convenient and functional material offering numerous applications for ceiling and wall finishing. Various types of panel fastening are possible: T profiles, CD profiles, as well as lathing or fastening onto a wall with glue.

The use of acoustic panels in the decoration of ceilings and walls improves soundproofing of rooms, ensures noise absorption, thereby creating a comfortable working and living environment. Owing to the excellent acoustic, aesthetic and mechanical properties, the panels are particularly well-suited for public buildings – offices, educational establishments, as well as premises with elevated humidity – spas, fitness gyms, swimming pools, production and residential premises. They are widely used for finishing in professional sound processing studios, cinemas, concert halls and recreation centres, where limiting sound distribution and permeability is particularly important.

*Knauf* galvanized steel tin profiles and accessories of fastening joints are used to fasten CEWOOD panels onto frame structures. The frame structure for fastening of CEWOOD panels is equivalent to the structure that *Knauf* offers for the fastening of its own products – plasterboards – as provided for in *Knauf* guidelines D11, D111, D112.

The ceiling structure is formed of a wooden lath or steel tin profile frame, T-type load-bearing elements, which are fastened with special suspension elements to the load-bearing structures. The type of suspension elements depends on the load-bearing ceiling structure, as well as on the mineral wool used for increasing sound absorption.



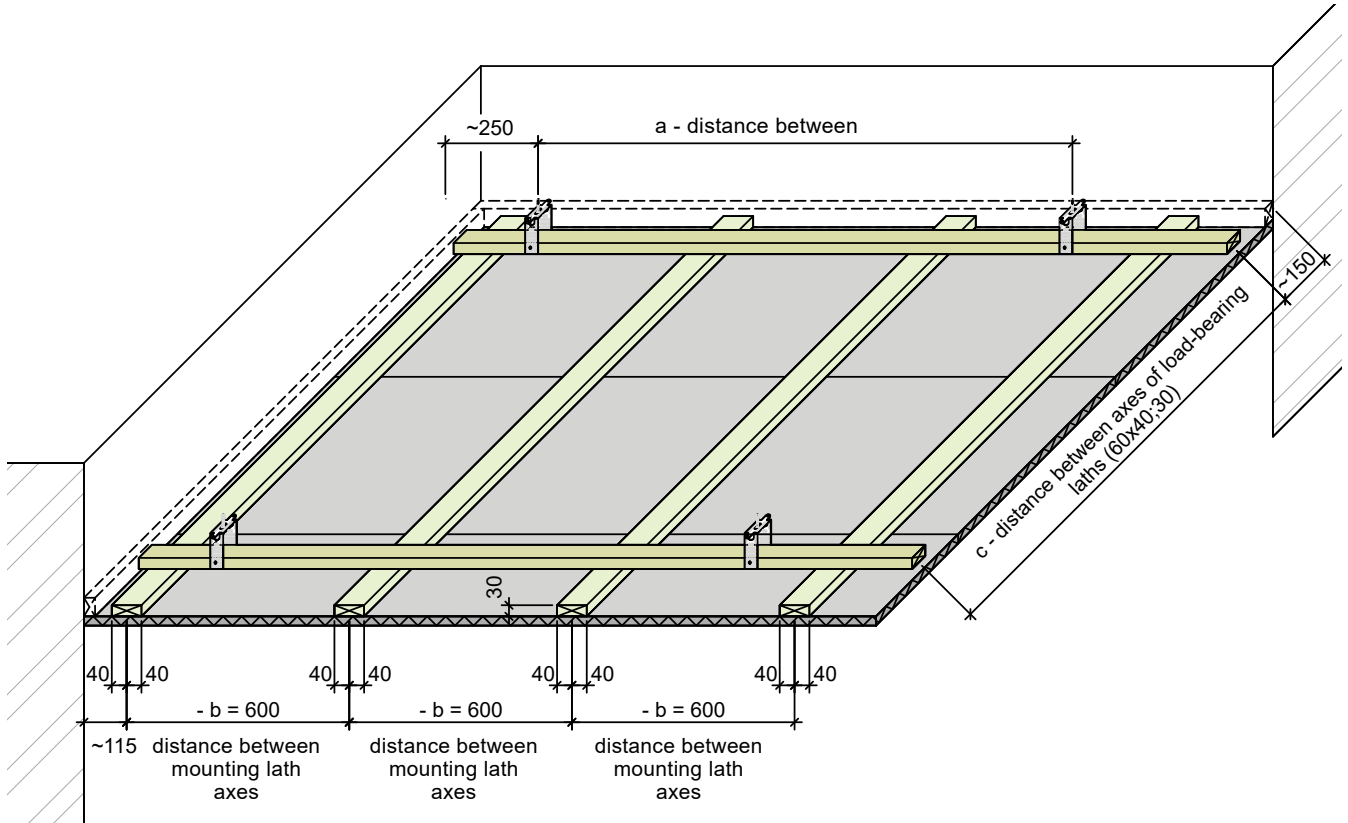


## 4.1. FASTENING ON WOOD LATHS

The frame for fastening of CEWOOD panels is formed of:

- load-bearing laths, which with suspension elements are fastened onto the building's load-bearing structures;
- mounting laths fastened onto load-bearing laths, onto which CEWOOD acoustic panels are attached.

**Fig. 4.1.1**



**Tab. 4.1.1 Mounting distances of frame lathing**

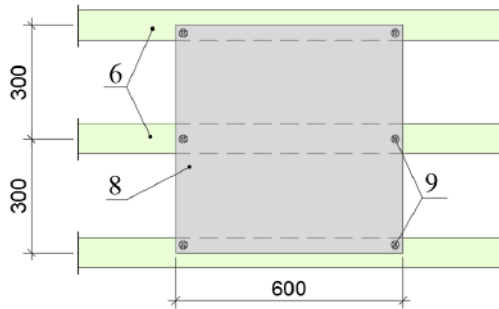
Load-bearing lath, cross section 60/40 or 60/30	Mounting lath, cross section 80/30	a - suspension distances/fastenings Load class kN/m <sup>2</sup>		
		up to 0.15	up to 0.30	up to 0.50
distance between axes – c – mm	distance between axes – b – mm			
600	600	1150	900	750
900	600	1000	800	
1000	600	950		
1200	600	900		

Must use suspensions with load resistance of 0.40 kN

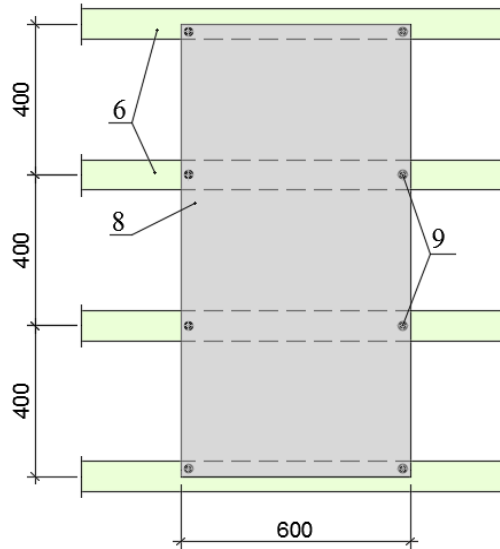
Assume load-bearing lath cross section of 60x40 mm or 60x30 mm depending on calculated loads and the used type of fastenings.

## Standart screw pattern for CEWOOD acoustic panels

Fig. 4.1.2 Fastening of 15 mm CEWOOD acoustic panels with screws on wood laths 80x30 (h)

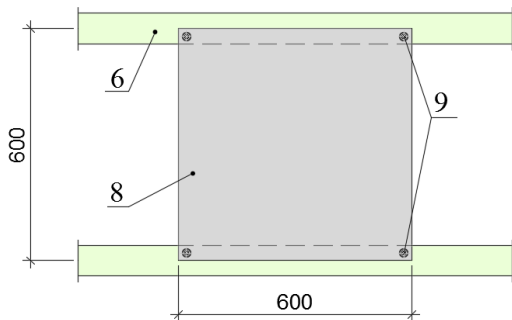


Panel 600x600 fixation with 6 screws.

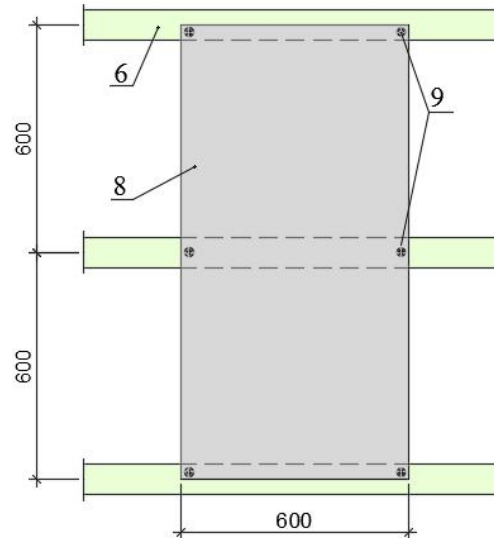


Panel 600x1200 fixation with 8 screws.

Fig. 4.1.3 Fastening of 25 mm and 35 mm CEWOOD acoustic panels with screws on wood laths 80x30 (h)



Panel 600x600 fixation with 4 screws.

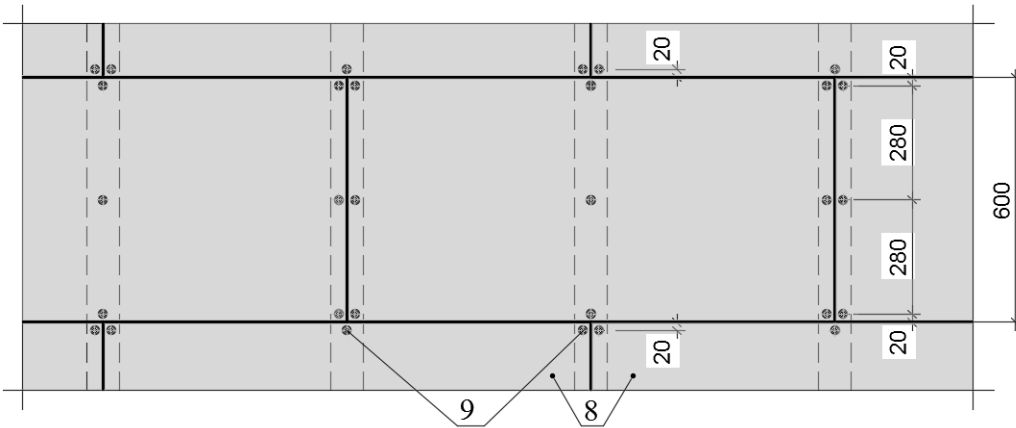


Panel 600x1200 fixation with 6 screws.

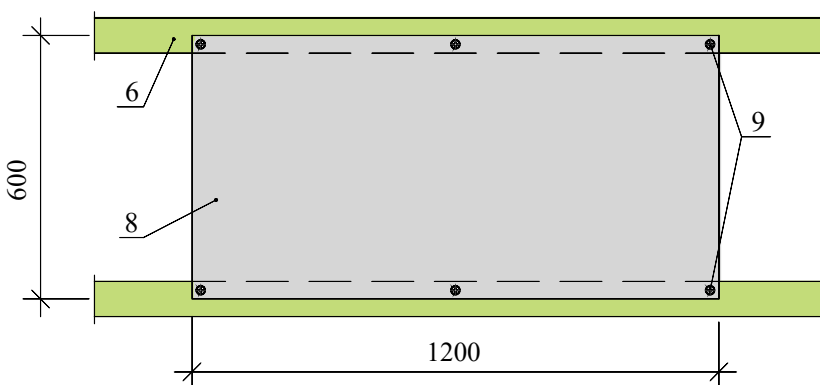
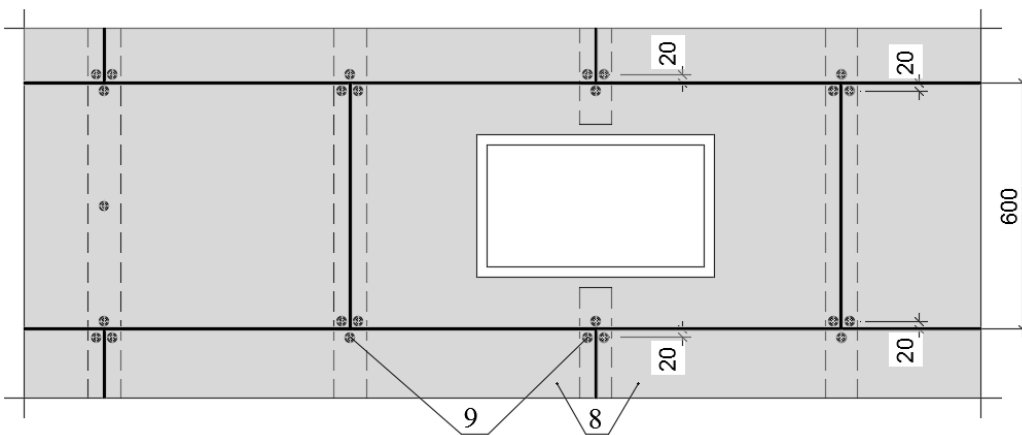
Tab. 4.1.2 Sizes of panel fastening screws

Sizes of screws depending on panel thickness			
Panel thickness	15 mm	25 mm	35 mm
Screw sizes according to EIRONORM M5027 (mm)	4.5/35	4.5/50	4.5/60

**Fig. 4.1.4. Fastening of impact-resistant CEWOOD acoustic panel ceilings with screws, maximum step 315 mm (e.g., in fitness halls).**

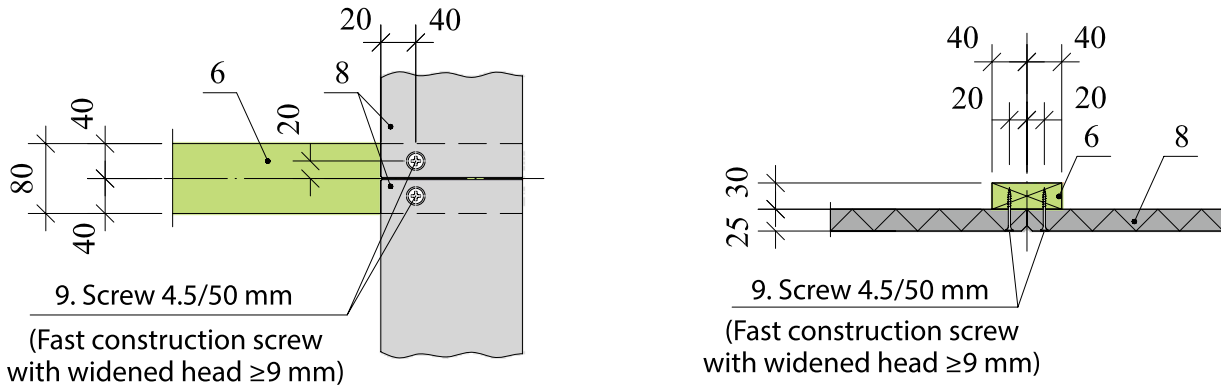


**Fig. 4.1.5 CEWOOD acoustic panel ceiling – installation of maintenance openings**

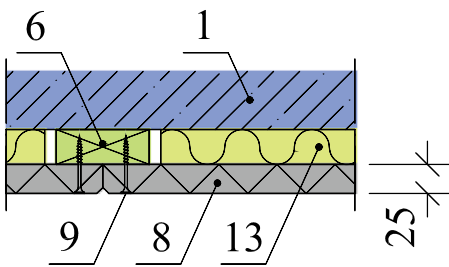


Panel 600x1200 fastening with 6 screws longitudinally on laths

**Fig. 4.1.6** Fastening of CEWOOD panels onto a mounting lath 80x30 (h) mm



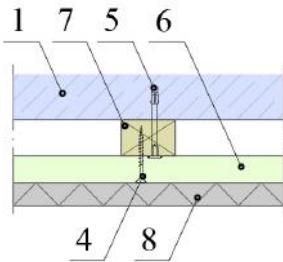
**Fig. 4.1.7** Fastening of a mounting lath onto a load-bearing lath



Mounting laths 80x30 (h) mm are fastened directly onto the load-bearing structure with 4.5x60 mm screws – 2 pcs. at the connection point.

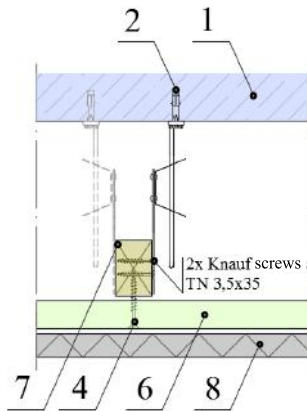
**Fig. 4.1.8 Fastening of load-bearing laths 60x40 or 60x30mm onto the load-bearing slab structure.**

**Direct fixation**



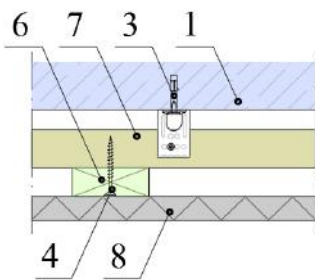
Connection of longitudinal edges.

**With quick suspension**



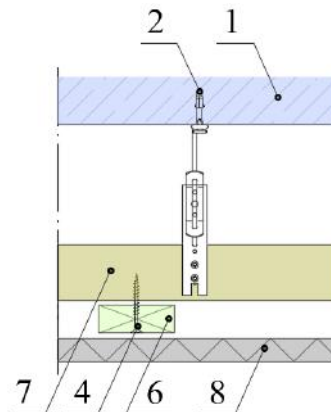
Connection of longitudinal edges, by changing the fastening side (alternating fastening).

**U-type clamp**

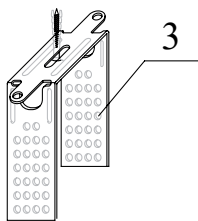


Connection of end edges, U-type clamp 0.40 kN.

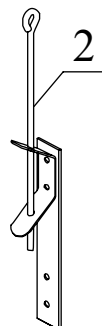
**With quick suspension**



Connection of end edges, load-bearing lath 40x60 mm.



No. 3. U-type clamp with load resistance of 0.40 kN.

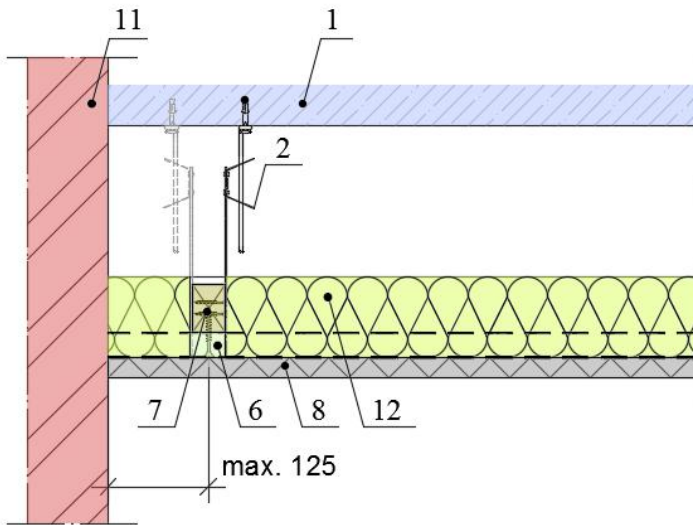


No. 2. Quick suspension for wooden frame structure 0.25 kN (estimated load-carrying capacity  $0.25 \times 0.6 = 0.15$  kN).

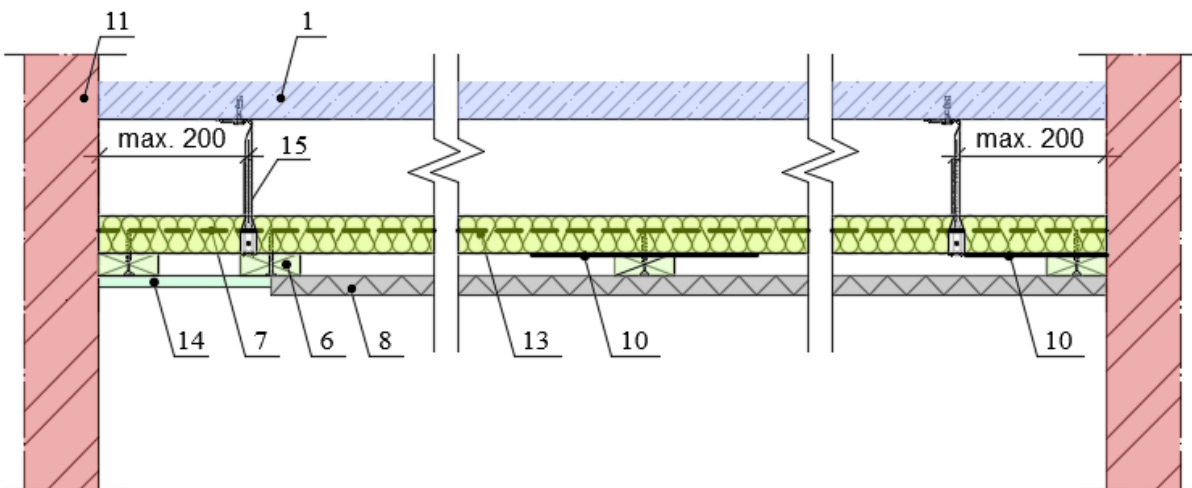
- Maximum step of quick suspension 600 mm.
- Maximum distance from the wall for quick suspension - 190 mm.



**Fig. 4.1.9 Acoustic panel ceiling (fastening with quick suspension).**



**Fig. 4.1.10 Acoustic panel ceiling (fastening with Nonius suspension 0.40 kN, maximum mounting step 900 mm).**



**Explanation of numbering:**

1. Load-bearing slab structure.
2. Quick suspension 0.15 kN.
3. U-type clamp 0.40 kN.
4. Knauf screw 4.5x60.
5. Conical anchor M6, for the load-bearing slab structure.
6. Mounting lath 80x30 (h) mm.
7. Load-bearing lath of 60x30 mm or 60x40 mm depending on calculated loads and the used type of fastening.
8. CEWOOD decorative and acoustic panels.
9. Quick construct screw 4.5x50 mm with wider head Ø12 mm.
10. Metal sheet 300/30/0.8, step 400 mm.
11. Existing wall structure.
12. Mineral wool 30 kg/m<sup>3</sup>, thickness ≥ 80 mm.
13. Mineral wool 90 kg/m<sup>3</sup>, thickness 50 mm.
14. Plasterboard Knauf GFK-A2, thickness 15 mm.
15. Nonius suspension 0.40 kN.

## 4.2. FASTENING ON CD METAL SECTIONS

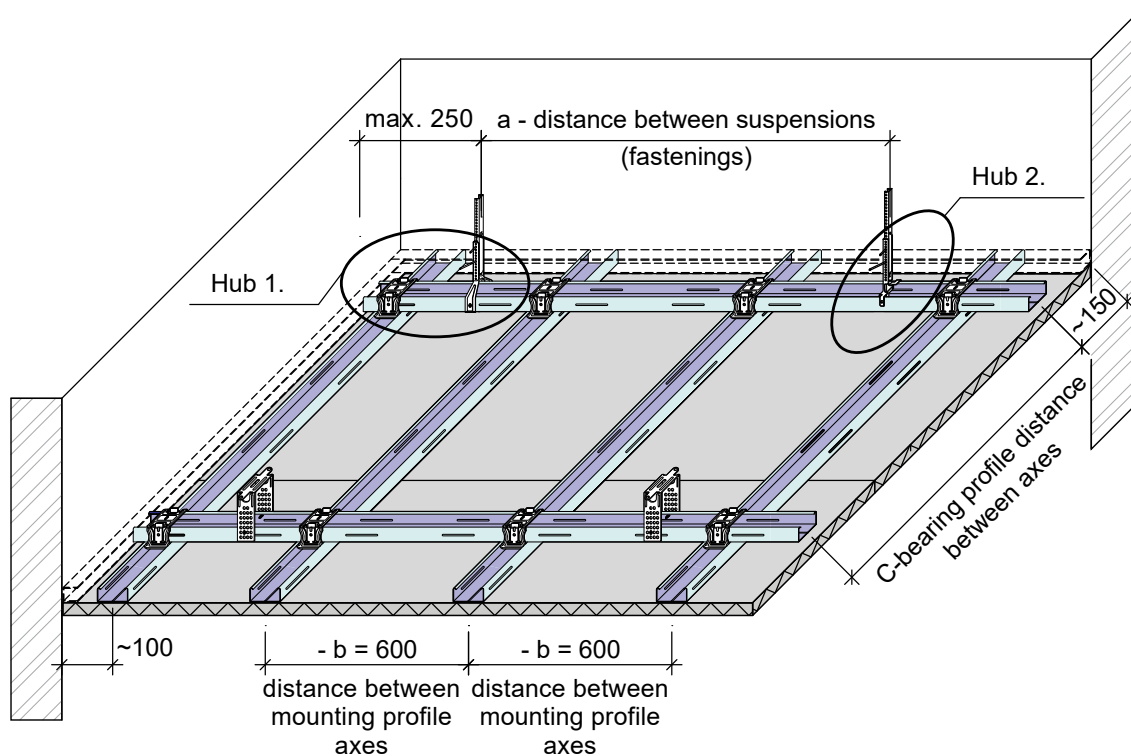
The frame is made of perpendicularly arranged *Knauf* CD type profiles 60/27/0.6.

CD profile placement, fastening onto load-bearing structures and connection as per *Knauf* guidelines D11 and D112.

CD-type load-bearing and mounting profiles are connected using a *Knauf* cross-connection panel.

CD profile frame is fixed onto load-bearing structures with a U-type suspension, wire or so-called quick suspension, as well as a Nonius type clamp. Placement of suspension elements and carrying capacities are stated in Tab. 4.2.1

Fig. 4.2.1

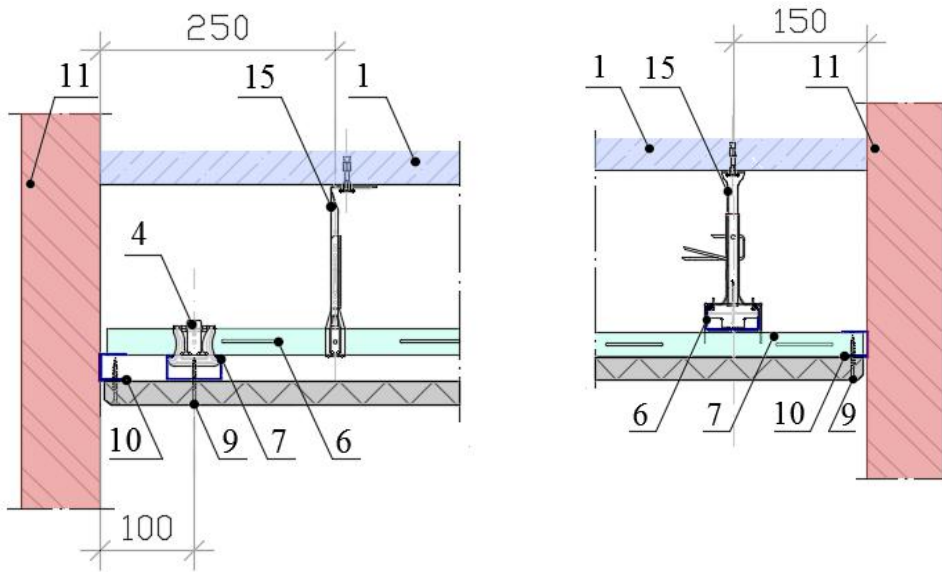


Profile mounting step 600 mm.

Tab. 4.2.1 Mounting distances of frame profiles

Load-bearing profile CD	Mounting profile CD 60/27/0.6 mm	a - suspension distances/fastenings			Only ceiling under ceiling
		Load class kN/m <sup>2</sup>			
distance between axes - C - mm	distance between axes - b - mm	up to 0.15	liđz 0,30	up to 0.30	up to 0.65
600	600	1150	900	750	700
900	600	1000	800		
1000	600	950	750		
1200	600	900			

Must use suspensions with load-carrying capacity of 0.40 kN

**Fig. 4.2.2 Suspended with Nonius suspension 0.40 kN**


Joint between end edges, connection to the wall.

Joint between longitudinal edges.

Unit 1; 2 (see Fig. 4.2.1)

Suspension carrying capacity:

- quick suspension with anchor fixation - 0.15 kN
- Nonius suspension - 0.40 kN
- Nonius clip - 0.40 kN
- combined suspension:
  - with wire - 0.15 kN
  - with top part of Nonius suspension - 0.40 kN

## Schemes of CEWOOD acoustic panel screw fastenings

**Tab. 4.2.2** Sizes of quick construction screws depending on panel thickness.

Dimensions mm		Panel thickness mm
Length	Diameter Ø	
35	4,5	15
50	4,5	25
50	4,5	35
60	4,5	35

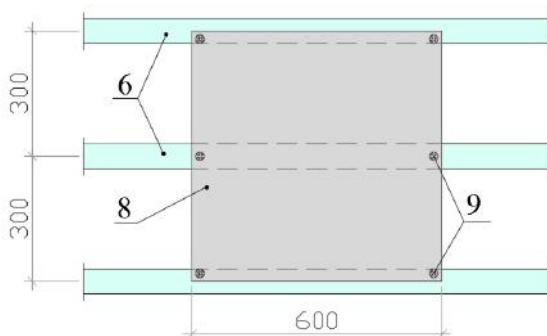
\*the table was elaborated for a ceiling structure, using Knauf steel CD profiles 27/60/0.6 mm

**Tab. 4.2.3** Quick construction screw consumption

Panel format (dimensions)	Screw consumption, pcs./m <sup>2</sup>	
	600/600 mm	600/1200 mm
Standard screw connection scheme. Panel thickness 25 and 35 mm.	12	9
Standard screw connection scheme. Panel thickness 15 mm.	23	14

To mount CEWOOD acoustic panels in premises with elevated humidity (e.g., swimming pools) and outdoors, galvanised or painted quick construction screws with a conical head of  $\text{Ø} \geq 9$  mm must be used.

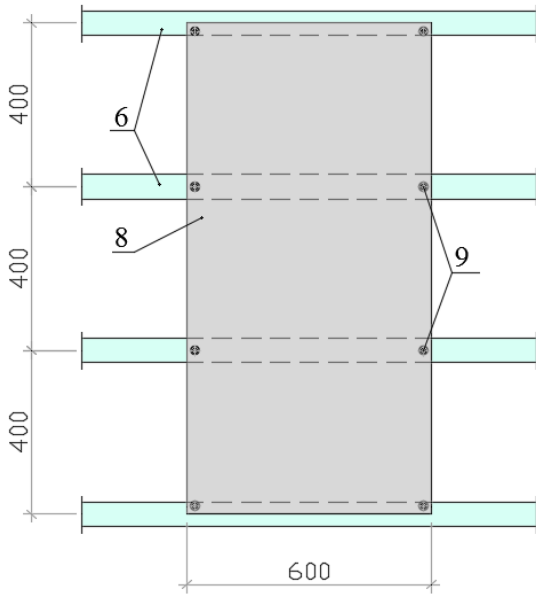
**Fig. 4.2.3** Fastening of 15 mm thick CEWOOD acoustic panels with screws onto CD mounting profile 60/27/0.6 mm.



Panel 600x600 fastening with 6 screws.

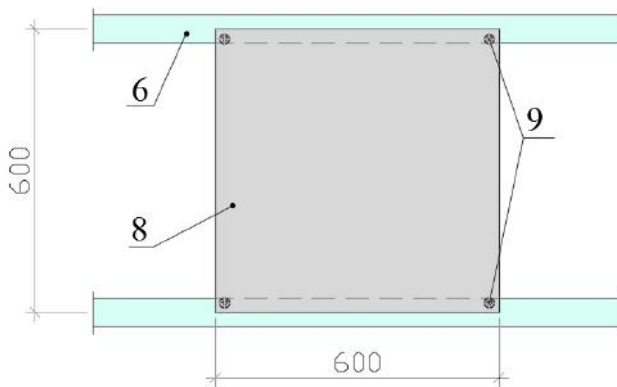


**Fig. 4.2.4 Fastening of 15 mm thick CEWOOD acoustic panels with screws onto CD mounting profile 60/27/0.6 mm.**



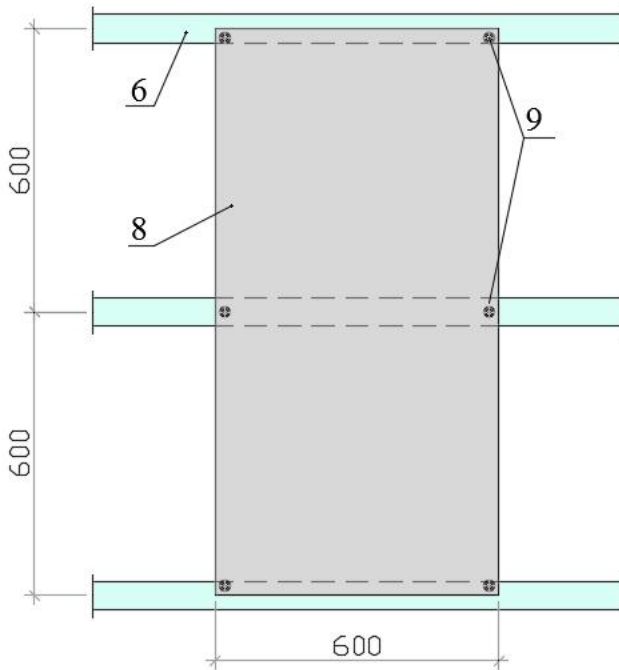
Panel 600x1200 fastening with 8 screws.

**Fig. 4.2.5 Fastening of 25 mm and 35 mm thick CEWOOD acoustic panels with screws onto CD mounting profile 60/27/0.6 mm.**



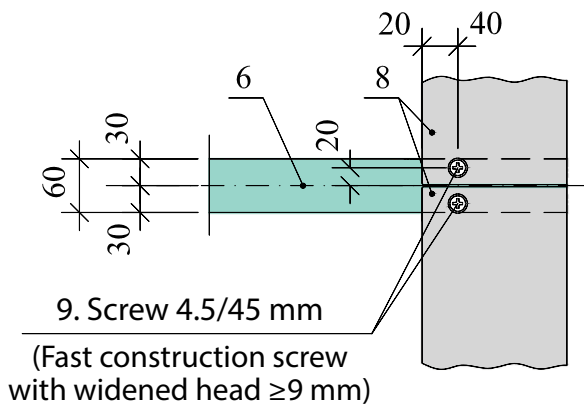
Panel 600x600 fastening with 4 screws.

**Fig. 4.2.6** Fastening of 25 mm and 35 mm thick CEWOOD acoustic panels with screws onto CD mounting profile 60/27/0.6 mm.



Panel 600x1200 fastening with 6 screws.

**Fig. 4.2.7** Placement of screws at the connection point between panel edges.

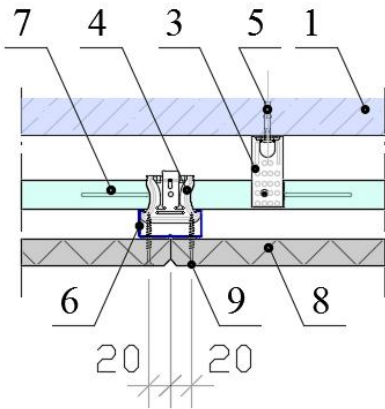
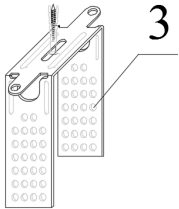


The connection seam is always formed under the CD mounting profile.

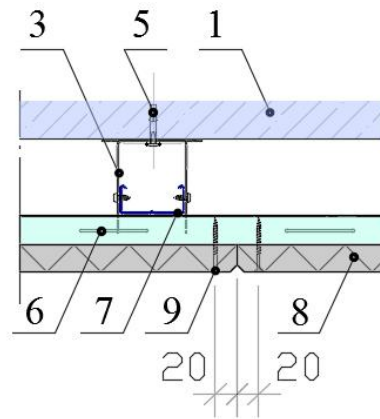
**Fastening of CD mounting profiles onto a load-bearing slab structure**

A CD mounting profile 60/27/0.6 mm is attached onto a CD load-bearing profile 60/27/0.6 mm using a 60x27 cross-connector of CD profile. A CD profile frame is fixed onto a load-bearing slab structure using a quick suspension, U type clamp or Nonius type fastening.

**Fig. 4.2.8 Fastening / U-type clamp with load resistance of 0.40 kN**



Joint between longitudinal edges

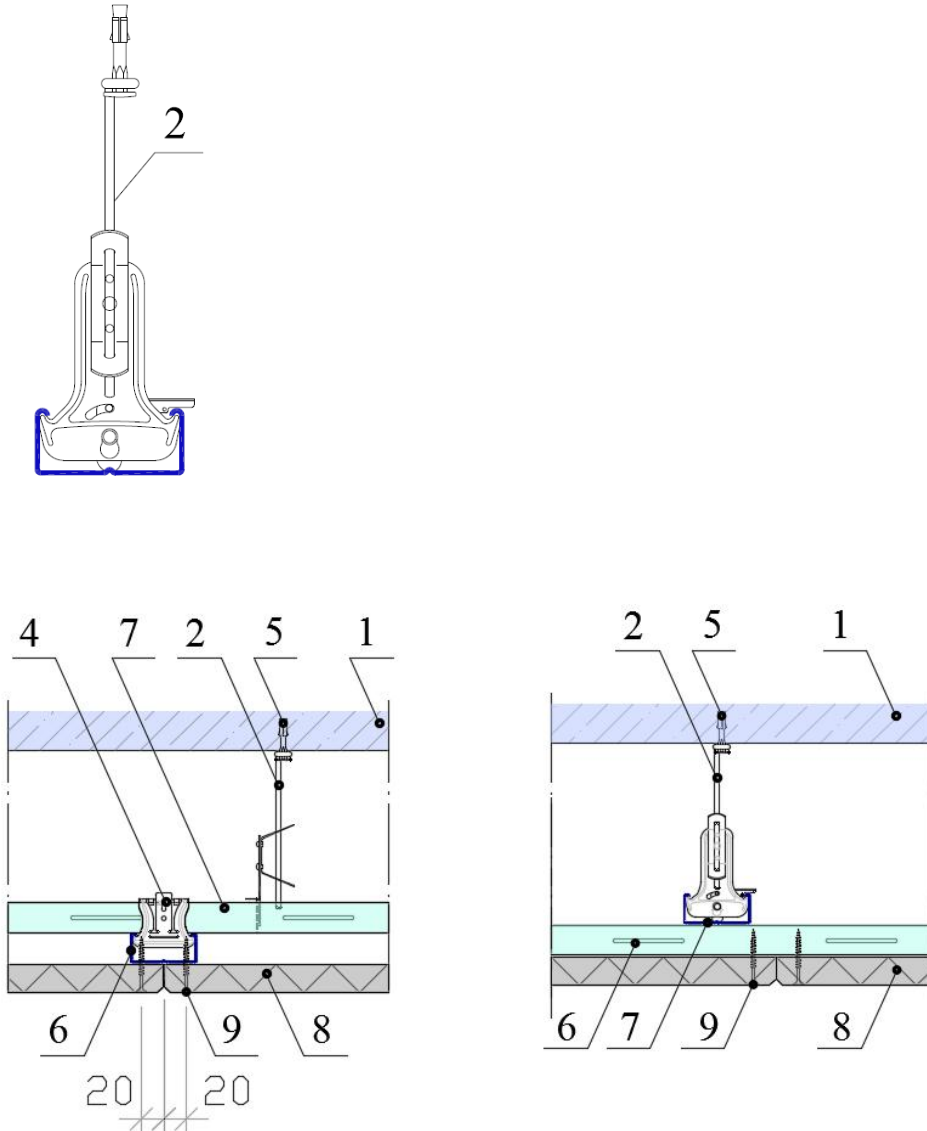


Joint between end edges

**Fig. 4.2.9 Fastening with a quick suspension, carrying capacity 0.15 kN.**

Maximum step of quick suspension 600 mm.

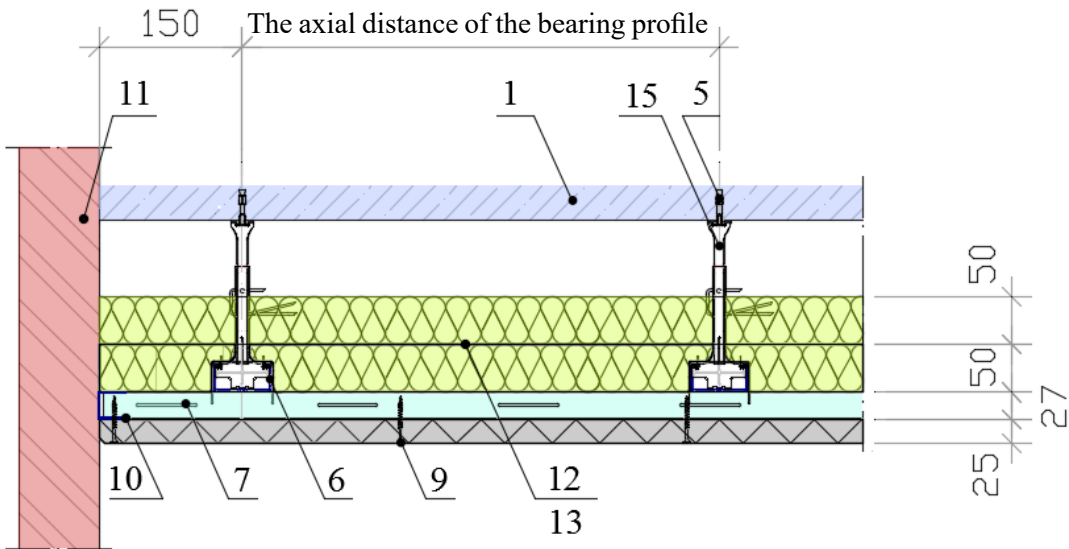
Maximum distance from the wall for quick suspension 190 mm.



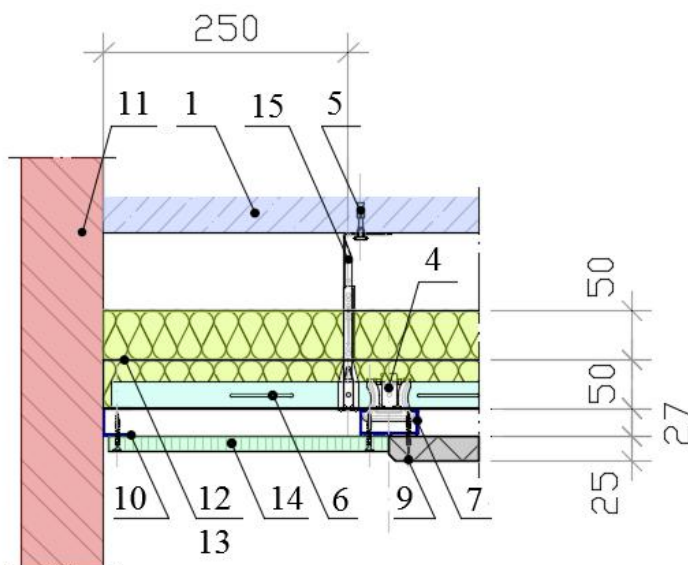
**CEWOOD acoustic panel ceiling with a mineral wool layer.  
Fastening with a Nonius suspension.**

Suspension placement step as per 4.2.1.

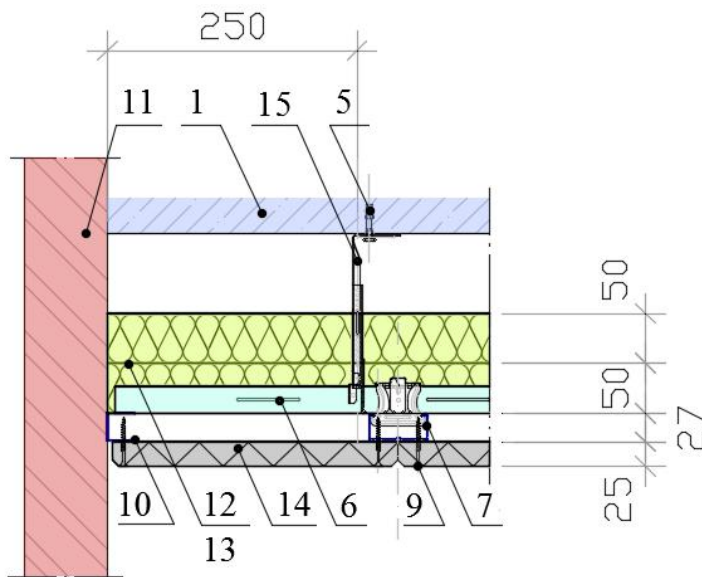
**Fig. 4.2.10 Joint with the wall without a shadow gap.**



**Fig. 4.2.11 Ceiling and wall joint with a plasterboard frame with or without a shadow gap.**





**Figure 4.2.12 Ceiling and wall joint with a shadow gap.**


### Explanation of numbering

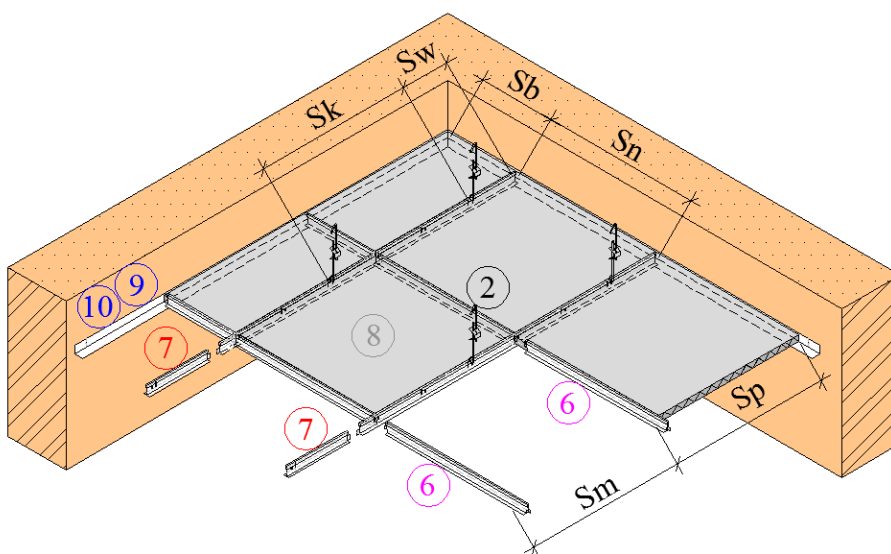
1. Load-bearing slab structure.
2. Quick suspension with anchor fixation - 0.15 kN
3. U-type clamp 0.40 kN.
4. Cross-connector for CD profile 60x27x0.6 mm (before mounting fold down by 90°). Alternative: 2x anchor angles for CD profile 60x27x0.6 mm (fold down before mounting).
5. Conical anchor M6.
6. Mounting CD profile 60x27x0.6 mm.
7. Load-bearing CD profile 60x27x0.6 mm.
8. CEWOOD decorative and acoustic panels.
9. Galvanised or painted quick construction screws with a wider head  $\geq \text{Ø}9$  mm.
10. Wall-mounted profile UD 28x27. Used as a mounting aid (see Knauf recommendations).
11. Existing wall structure.
- 12, 13. Mineral wool 90 kg/m<sup>3</sup>, thickness 50 mm.  
(The surface layer is arranged perpendicular to the previous layer; panel seams must overlap).
14. Plasterboard frame Knauf GFK-A2, thickness 15 mm.
15. Nonius suspension 0.40 kN.

### 4.3. SUSPENDED CEILINGS WITH VISIBLE T-SECTIONS

T-profile suspended ceiling frames are offered by a number of manufacturers. The ceiling frame consists of 4 key elements:

- 7 – Load-bearing profile lath;
- 6 – Profile cross-lath;
- 9; 10 – Perimeter profile;
- 2 – Suspension (hook).

**Fig. 4.3.1**



For suspended ceilings the panels are made of special size – width  $595 \pm 1$  mm, length 1195,  $595 \pm 1$  mm. Other technical parameters of panels are stated in pp.4-5, CEWOOD panel edge profiles, see p.7.

The manufacturer declares the carrying capacity of the frame profile according to the standard EN 13964. The T 24 profile step is defined depending on the structural load provided the permissible flexure of  $1/500 l$ . The step of the load-bearing profile laths of CEWOOD panel ceilings – 1200 or 600 mm, distance between mounting laths (axes) – 600 mm. Suspension distances are provided in Table 4.3.1.

The procedure and methods of assembling the ceiling frame are determined by the manufacturer of structures. This informative material shows some examples of mounting solutions to create safe CEWOOD panel fastening structures.

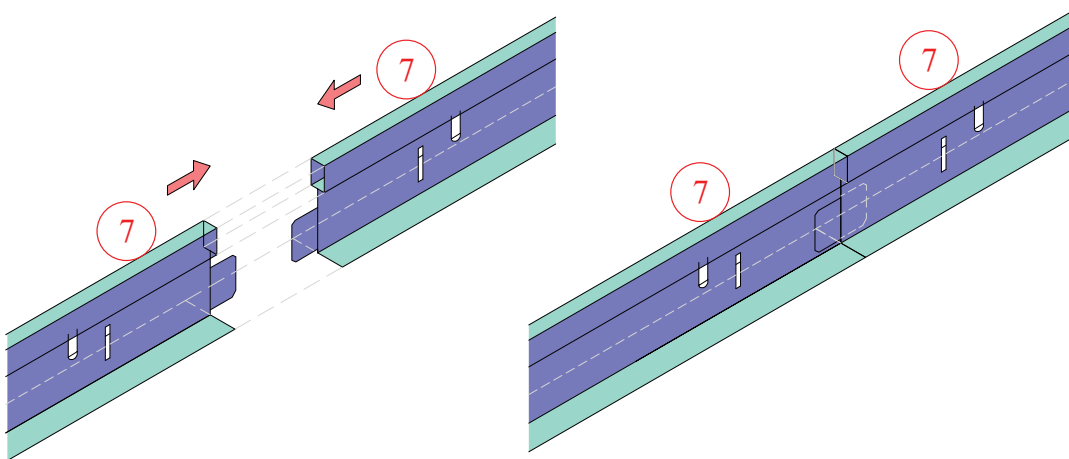
**Tab. 4.3.1 Distances of suspension (carrying capacity 0.15 kN) mounting.**

Load kN/m <sup>2</sup>	0.12	0,15	0.20	0.25
Step between load-bearing profile laths Sn, mm	1200	600	600	600
Step between suspensions Sk, mm	≤ 1000	≤1100	≤1000	≤1000
Step between suspension and wall Sw, mm	≤ 250	≤250	≤200	≤200
Step between cross profile laths Sm, mm	600	600	600	600
The size of Sb and Sp start and end panels and the step for profile laths are changed depending on the room size. Max. distance of a profile lath from wall 600 mm.				

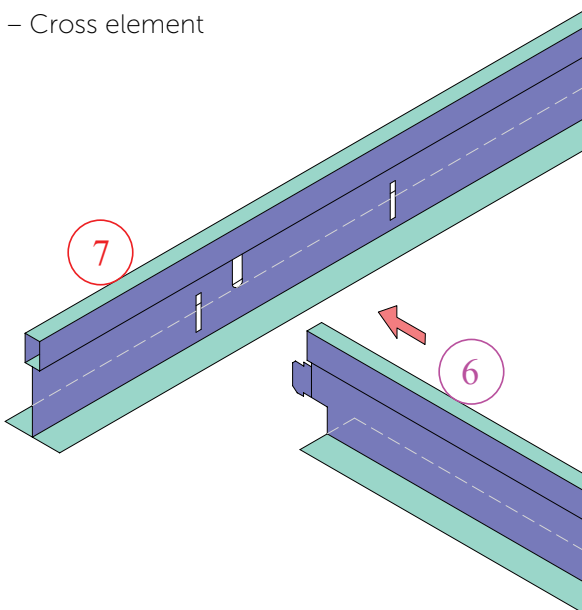
Note. With higher loads, the step between the suspensions must be accordingly reduced.

**Fig. 4.3.2 Frame elements**

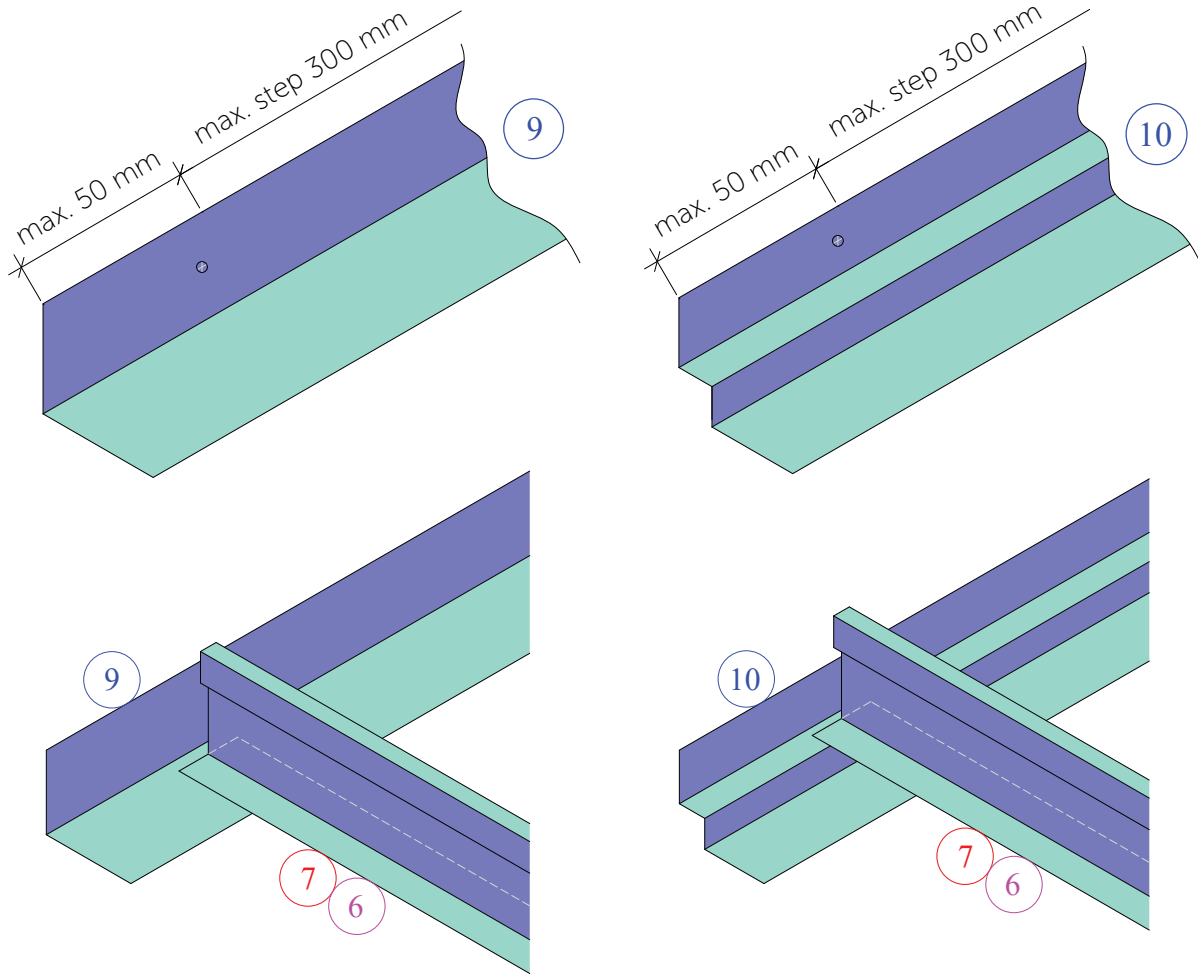
7 – Load-bearing profile lath and connection of its elements



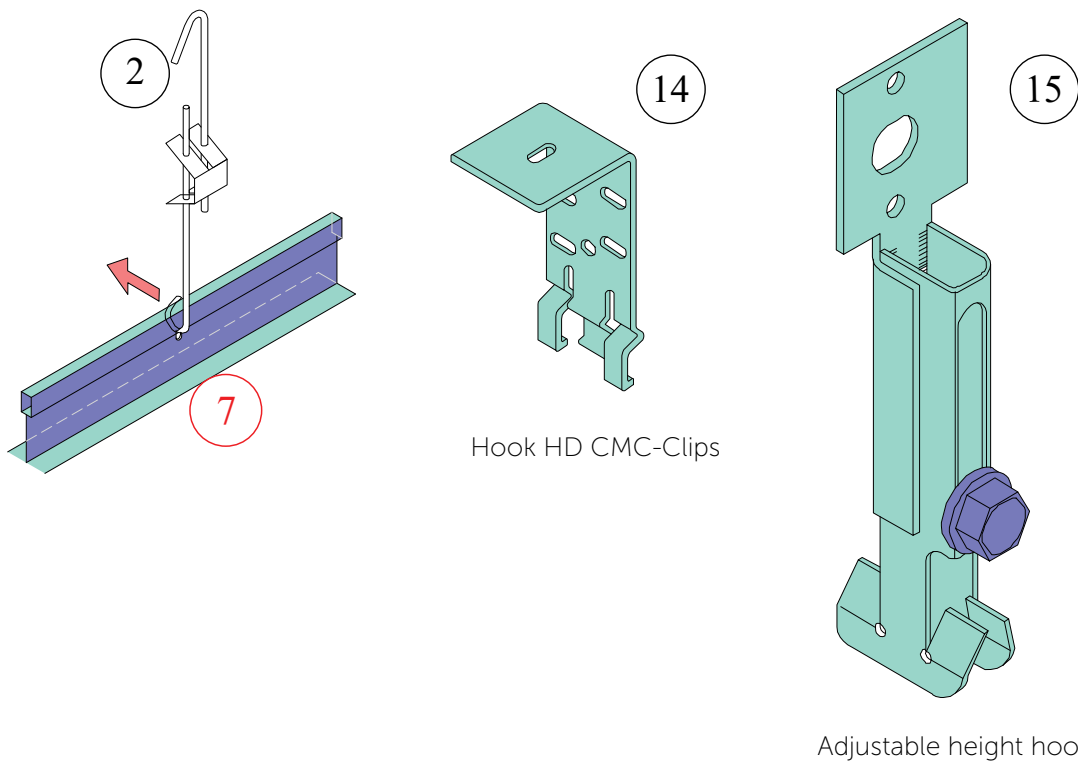
6 – Cross element



9, 0 – Perimeter profiles, mounting

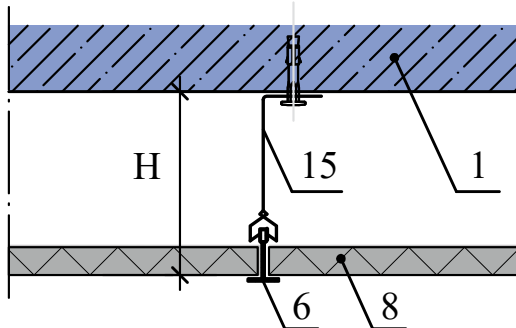


2, 14, 15 – Fastening hooks

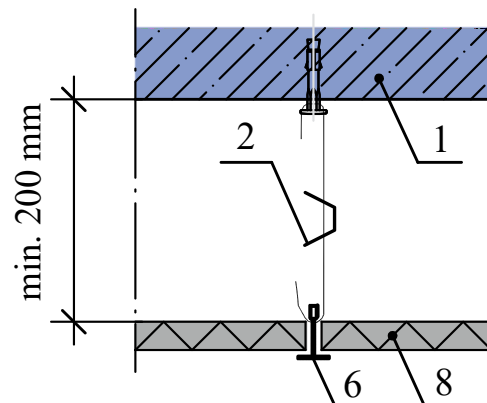


**Fig. 4.3.3 Suspension height H**

Mounting height - adjustable height hooks



Mounting height – quick suspension


**Tab. 4.3.2 Parameters of suspension types**

Type of suspension	CEWOOD panel thickness mm	Suspension height H (see Tab. Fig. 2.)	Suspension carrying kN
Quick (wire) suspension	15	180	0.15
	25	200	
	35	220	
Nonius type suspension ( <i>Knauf</i> )	15, 25, 35	200	0.15
Non-variable height hooks ( <i>Knauf</i> )	15, 25, 35	50, 80, 100	0.45
Variable height hooks	15, 25, 35	82 ÷ 113	0.15

Fig. 4.3.4 Profile placement for mounting of panels 595x595 mm

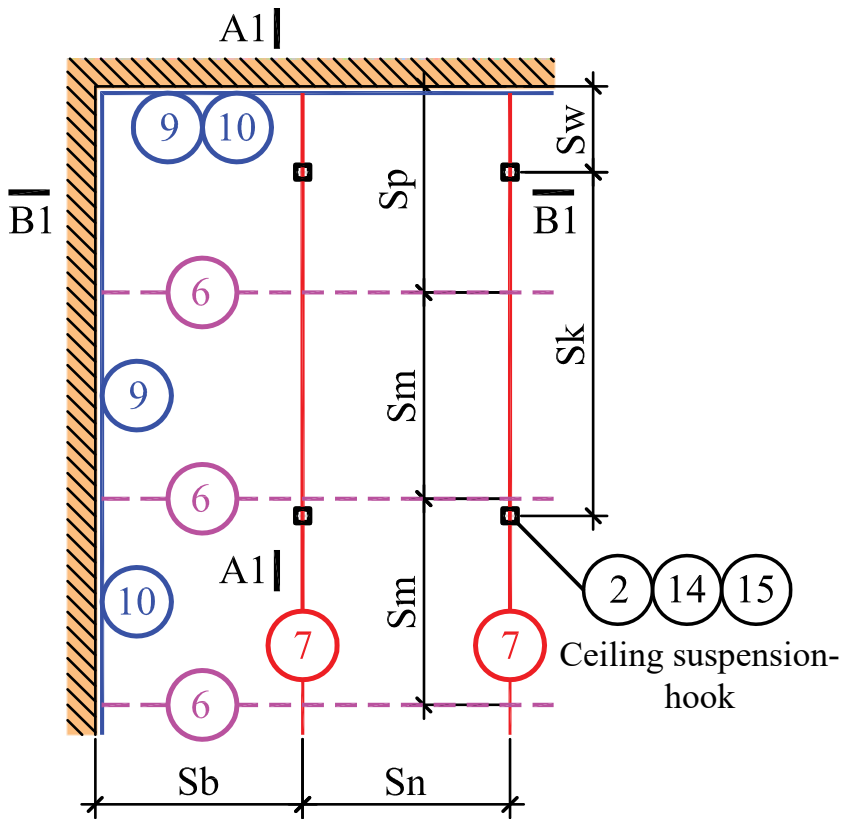
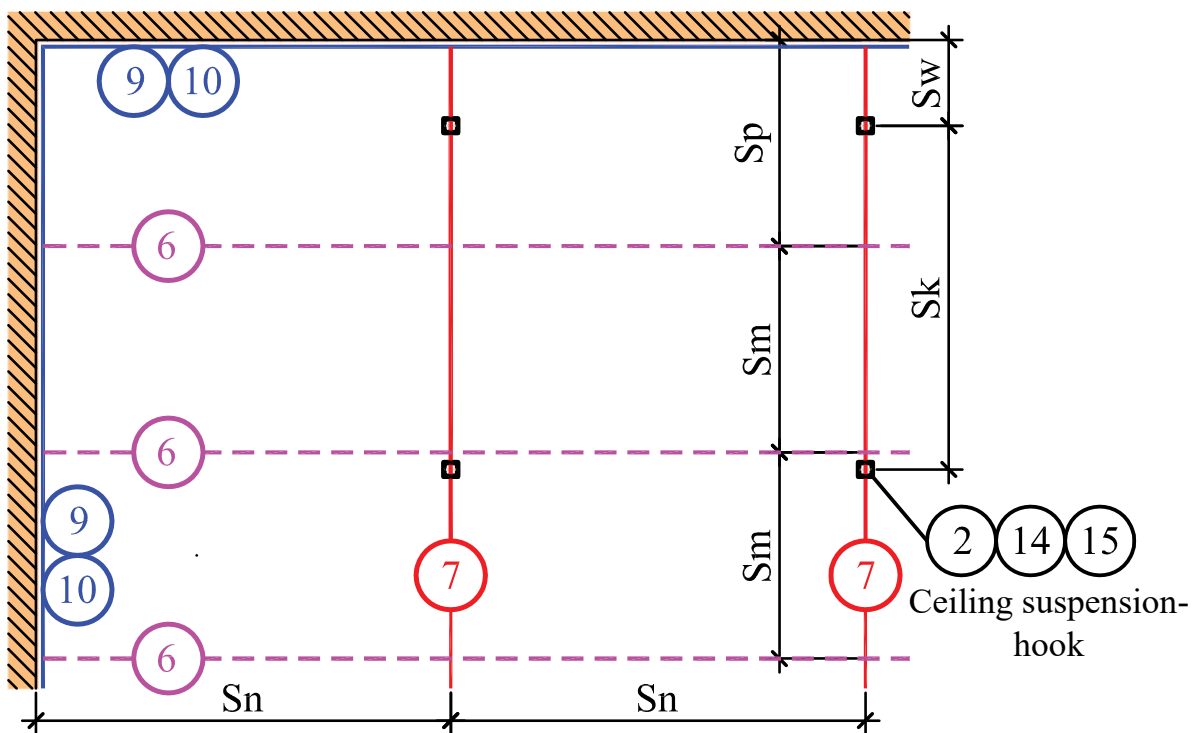
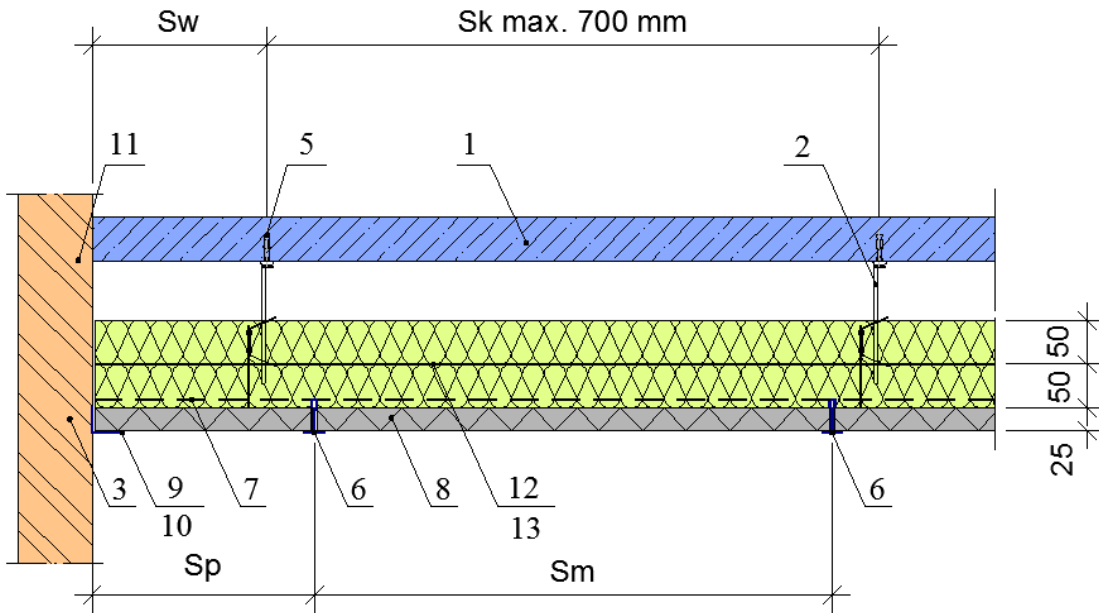


Fig. 4.3.5 Profile placement for mounting of panels 595x1195 mm

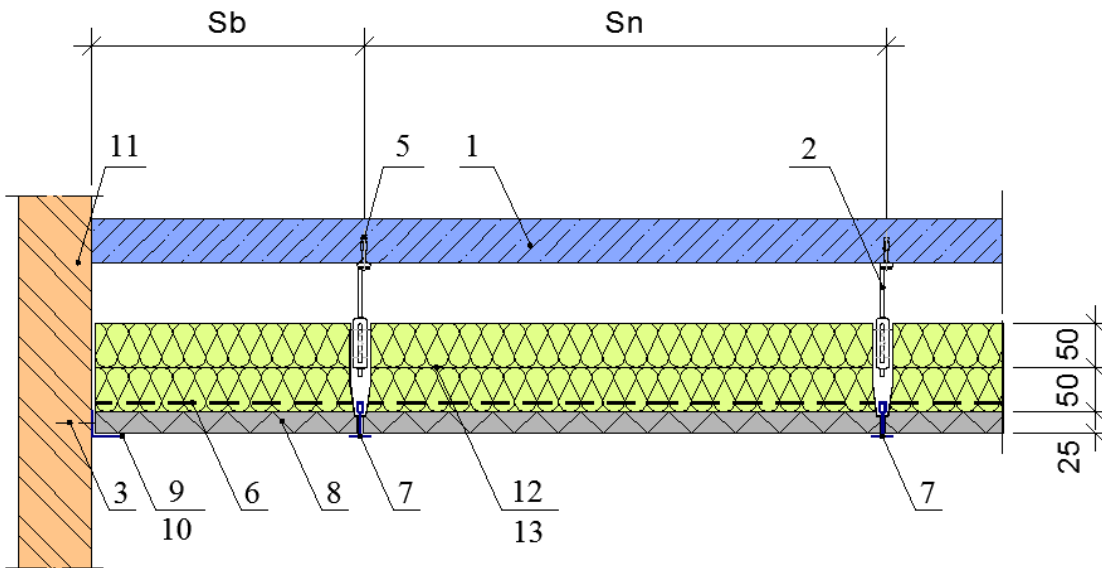


**Fig. 4.3.6 Ceiling with an extra mineral wool layer for sound absorption**

Section A1-A1, lath profile placement for panels 595x595 mm.



Section B1-B1, lath profile placement for panels 595x595 mm.



**Explanation of numbering:**

1. Load-bearing slab structure.
2. Quick, wire or Nonius suspension.
3. Perimeter angle fastening, galvanised screw 6x50 with a metal screw plug.
4. Spacer - compensator.
5. Conical anchor M6.
6. Cross lath profile T-24/38.
7. Load-bearing lath, profile T-24/38.
8. CEWOOD decorative and acoustic panels.
9. Perimeter angle profile  $\geq 24 \times 24 \times 0.5$  mm.
10. Gradual perimeter angle profile  $\div 19/9/11/22$  mm.
11. Existing wall structure.
- 12; 13. Mineral wool  $90 \text{ kg/m}^3$ , thickness 50 mm.  
(The surface layer is arranged perpendicular to the previous layer; panel seams must overlap)
14. Hook HD, type 21.1.
15. Adjustable height hook, *HD Richter system*.



## 5. WALL MOUNTING WITH CEWOOD PANELS

25, 35 and 50 mm thick panels are used for wall mounting. CEWOOD panels are fastened onto a wooden lath or steel profile frame. There are several types of frame structures. The manufacturer of frame elements gives recommendations and defines the application. The type of frame structure and the fastening onto the existing wall depends on:

- strength of existing wall, material, deviations from vertical and horizontal planes,
- desirable CEWOOD panel design solution,
- required carrying capacity parameters, as well as load types.

The carrying capacity of structural loads must meet the requirements of LVS EN 13964.

Commonly used types of frames:

- 5.1 Wood lathing frame;
- 5.2 Wood lath double frame;
- 5.3 Metal profile frame;
- 5.4 The panel base of small sized (e.g., hexagonal) panels.

### Must take into account the following:

- The building project determines the fastening of the load-bearing frame into the wall. Normally used 4; 10. - angles L40x60x1.5 and fastening element 24 - screw plug  $\varnothing 10 \times 80$  mm. For example, in a solid brick and ceramsite concrete block wall, the angle is mounted with a step of  $L_m$ ;  $L_n = 0.8 \div 1.0$  m. The angle fastening distance from the floor base and ceiling  $\leq 250$  mm.
- The frame structure is intended for horizontal load  $\leq 0.5$  kN/m<sup>2</sup>.
- The load-bearing frame elements are usually attached to the wall load-bearing structure using 24. - screw plug  $\varnothing 10 \times 80$  mm. As regards the lathing fastening element 24. - the screw plug type is selected depending on the necessary fastening integration depth in the load-bearing wall structure, types of loads and requirements of the technological process of the integration of finishing material. The technology of integrating screw plugs is determined by the manufacturer depending on the properties of the material of the load-bearing structure.
- If the structure might be subject to impact load (e.g., load from a ball striking), separate load carrying capacity calculations must be done.
- If exterior walls must be additionally heat-insulated from the inside, by filling the frame with mineral wool, a vapour barrier must be set up under the CEWOOD panels.

### Explanation of sizing:

$V_m$  – the mounting lath step along the vertical line (variable).

$V_n$  – the mounting lath step along the vertical line (constant).

$H_m$  – the load-bearing lath step along the horizontal line (variable).

$H_n$  – the load-bearing lath step along the horizontal line (constant).

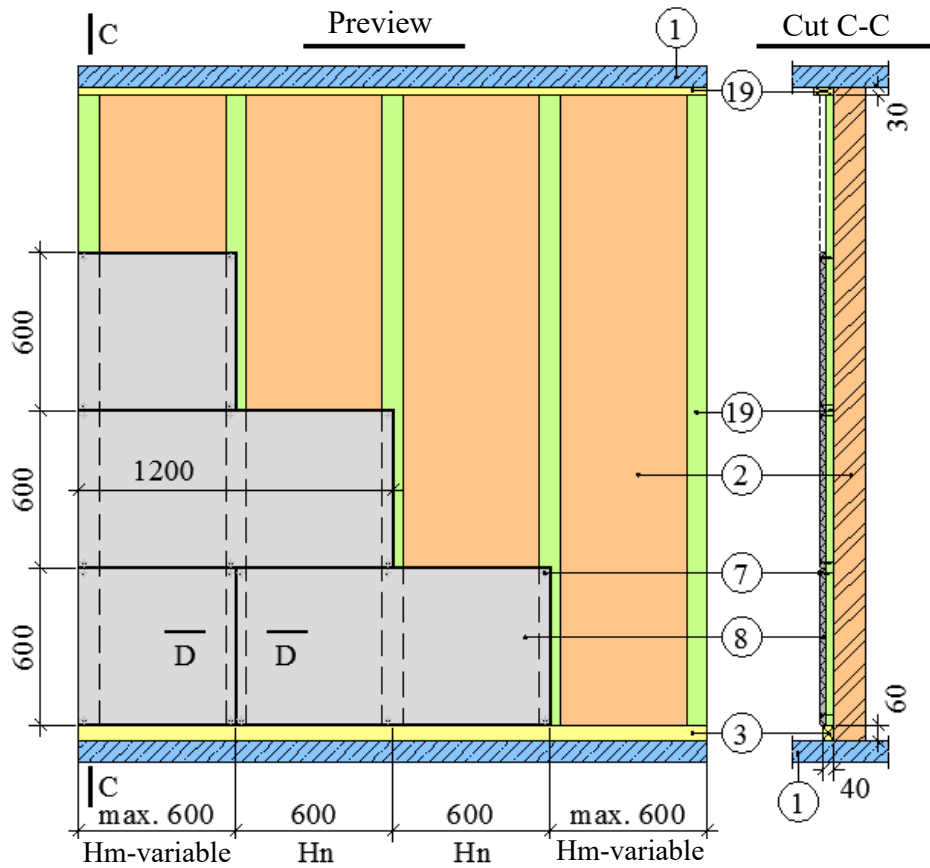
$L_m$  – the step of the lathing fastening element along the vertical line (variable).

$L_n$  – the step of the lathing fastening element along the vertical line (variable).

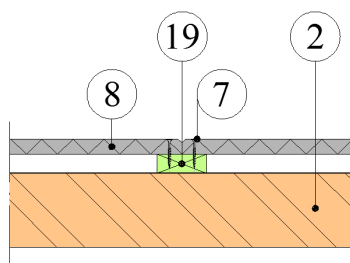
### 5.1. WOOD LATHING CONSTRUCTION

The frame structure is constructed of horizontally or vertically arranged planks sized 80x30 mm. This structure can be used if it is not necessary to level out the vertical or horizontal planes of a wall or to set up substantial extra sound and heat insulation.

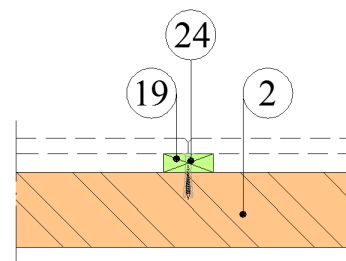
**Fig. 5.1.1 Vertical wood lathing fastening on to a load-bearing wall structure.**



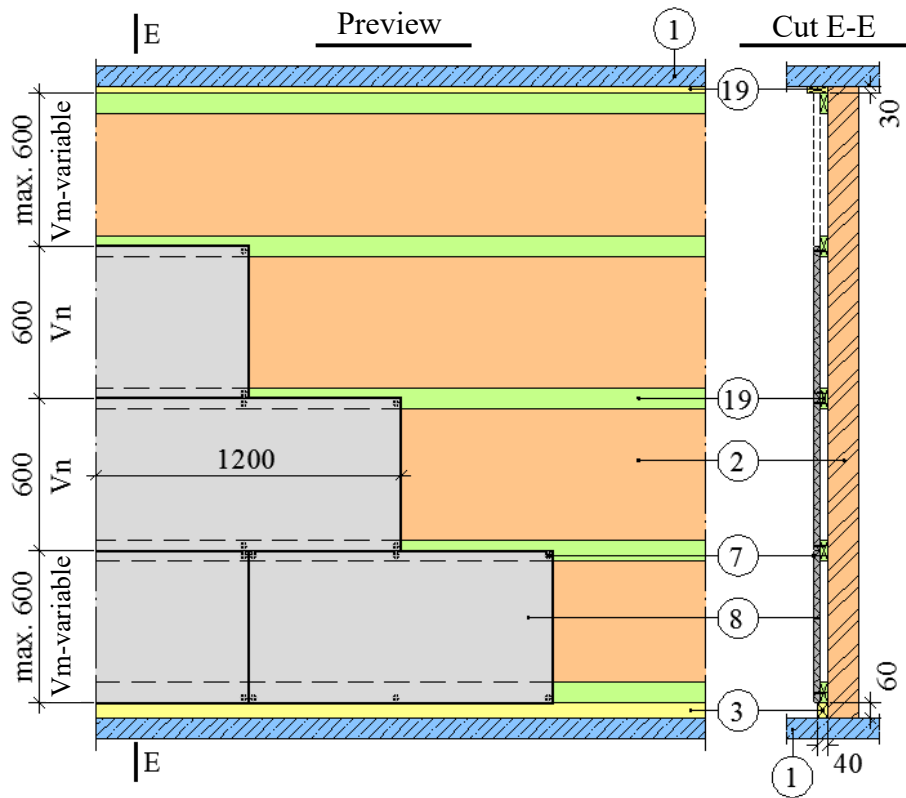
**Section D-D**



**Wood lathing fastening on to a load-bearing wall structure**



**Fig. 5.1.2 Simple vertical and horizontal lathing.**



Horizontal wood lathing fastening on to a load-bearing wall structure.

**Tab. 5.1**

CEWOOD panel thickness	25	35	50
Step between load-bearing laths (variable) Hm mm	≤ 600	≤ 600	≤ 600
Step between load-bearing laths (fixed) Hn mm	600	600	600
Step between mounting laths (variable) Vm mm	≤ 600	≤ 600	≤ 600
Step between mounting laths (fixed) Vn mm	600	600	600

Note. With higher loads, the step between the lathing fastening elements must be accordingly reduced.

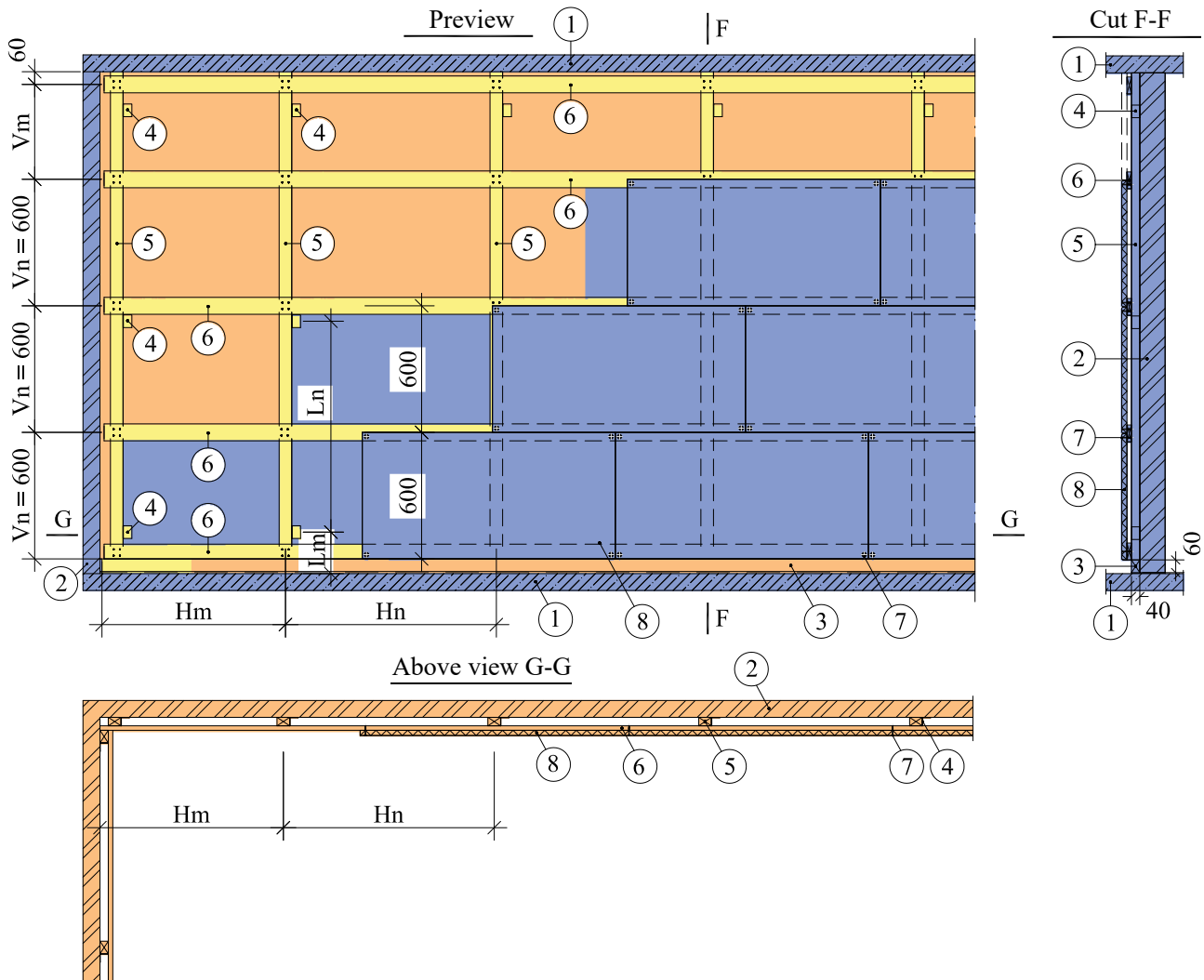
**Explanation of numbering:**

- 1. Load-bearing slab or foundation structure.
- 2. Wall structure.
- 3. Crown lathing 40x60 (h)
- 7. Wood screw with immersible head 4.5x45 mm.
- 8. CEWOOD decorative and acoustic panels.
- 19. Wood lath 30x80 (h) (max. 50x100).
- 24. Lathing fastening angle, step 0.8–1.0 m.

## 5.2. DOUBLE WOOD LATHING CONSTRUCTION

The double frame can be chosen if it is necessary to straighten the wall plane deviations or to create additional sound or heat insulation.

**Fig. 5.2.1 Double wood lathing frame. Interior wall finishing with CEWOOD acoustic-finishing panels.**



**Tab. 5.2**

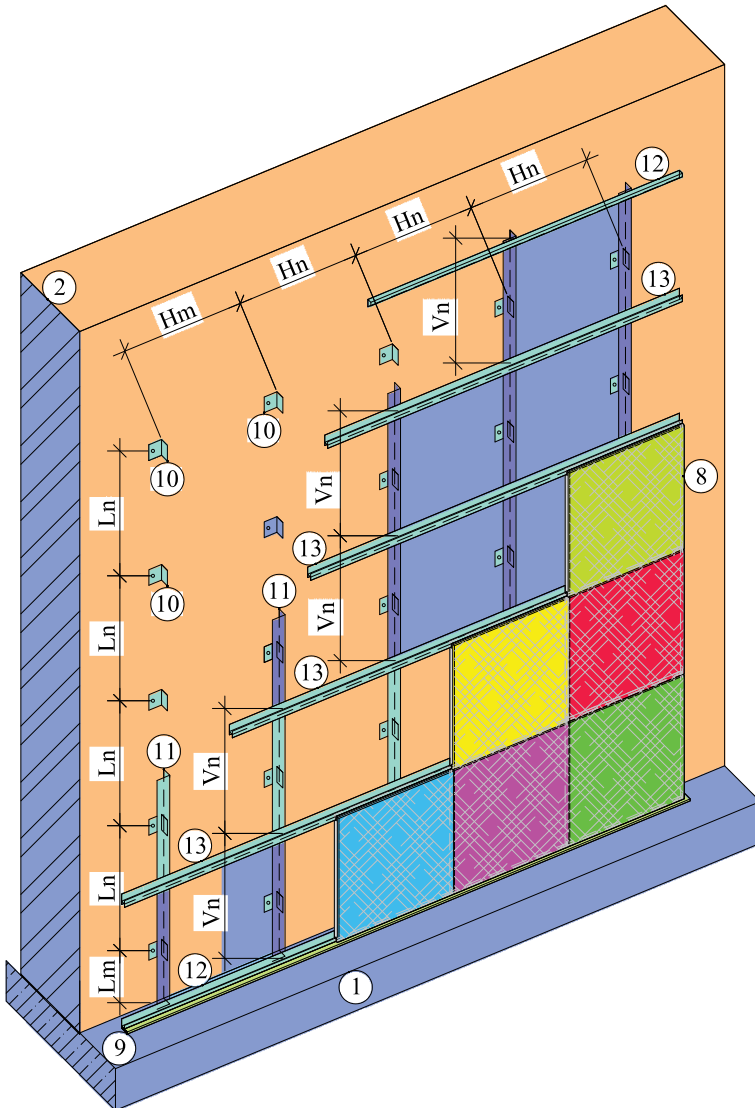
CEWOOD panel thickness	25	35	50
Step between load-bearing laths $H_m$ mm	$\leq 1000$	$\leq 800$	$\leq 600$
Step between load-bearing laths $H_n$ mm	$\leq 1000$	$\leq 800$	$\leq 600$
Step between mounting laths $V_m$ mm	$\leq 600$	$\leq 600$	$\leq 600$
Step between mounting laths (fixed) $V_n$ mm	600	600	600
Step between fastening elements $L_m$ mm	$\leq 250$	$\leq 250$	$\leq 250$
Step between fastening elements $L_n$ mm	$\leq 1200$	$\leq 1000$	$\leq 800$

Note. The building project must take into account the carrying capacity of the specific wall and the used screw plugs, accordingly specifying the sizes provided in the table.

### 5.3. PANEL FASTENING ON METAL PROFILE CONSTRUCTION

CEWOOD panels are fastened on to a metal profile frame using a special, horizontally arranged profile (pos. 12 and 13), which is fixed on to the load-bearing profile (pos. 11).

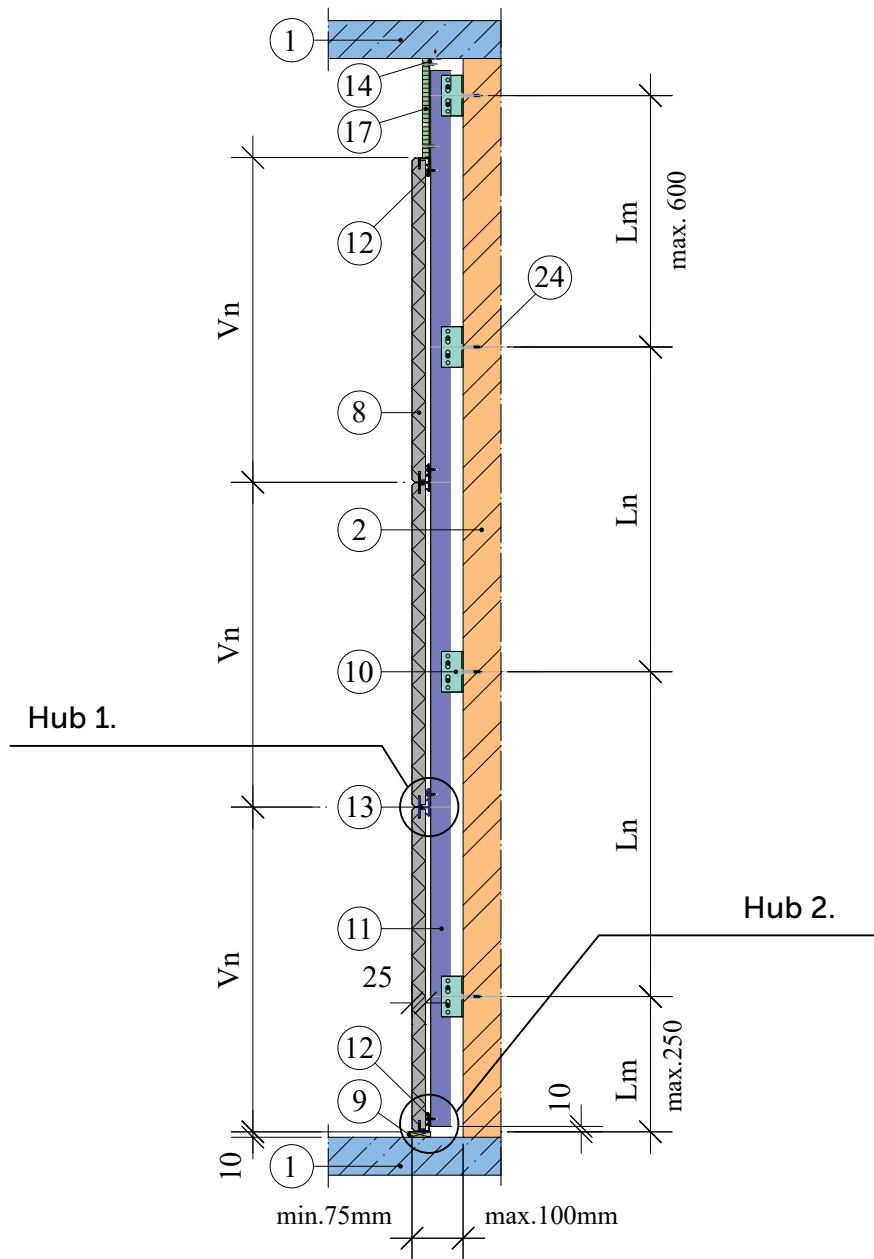
**Fig. 5.3.1 Assembly scheme of fastening profiles**



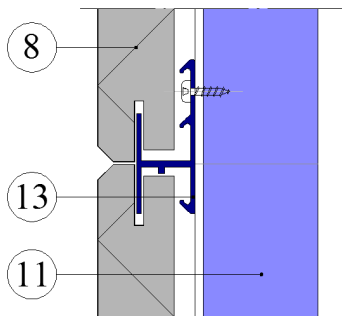
**Explanation of numbering:**

1. Load-bearing slab or foundation structure.
2. Wall structure.
3. Crown lathing 40x60 (h)
4. Load-bearing lath fixation angle L40x60x1.5.
5. Load-bearing lath 40x60. Step = 1000 mm.
6. Mounting lath 21x80 (h) mm. Step = 600 mm.
7. Wood screw with immersible head 4.5x45 mm.
8. CEWOOD decorative and acoustic panels.
19. Wood lath 30x80 (h) (max. 50x100).
24. Lathing fastening angle, step 0.8–1.0 m.

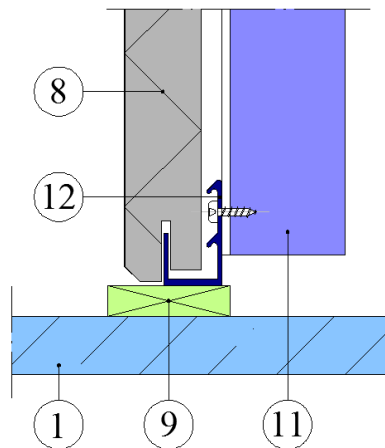
Fig. 5.3.2 Vertical lateral view of the wall



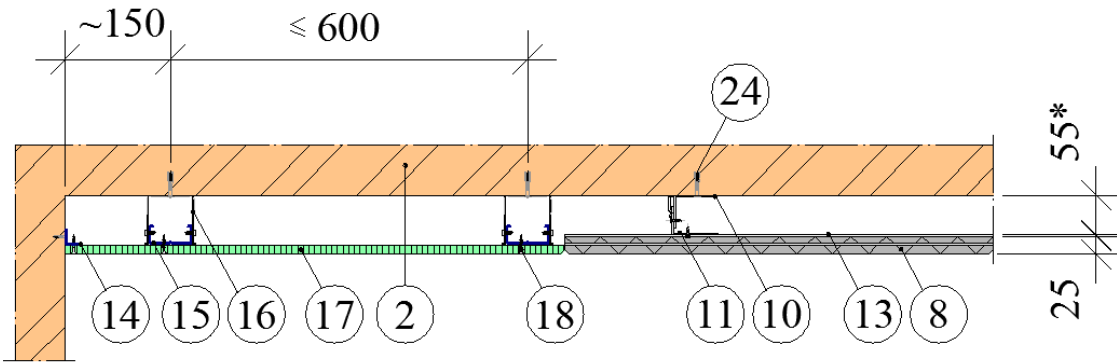
Hub 1.



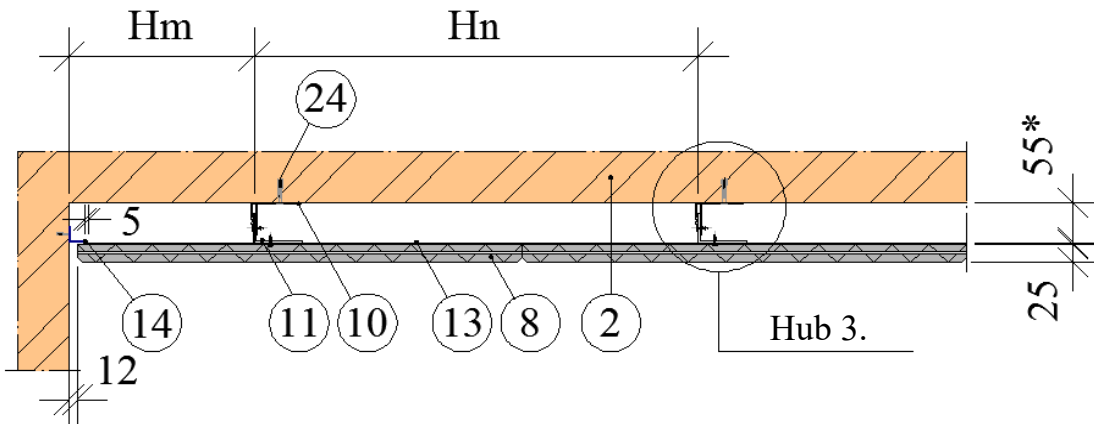
Hub 2.



**Fig. 5.3.3** Corner structure with a plasterboard frame or a shadow joint.



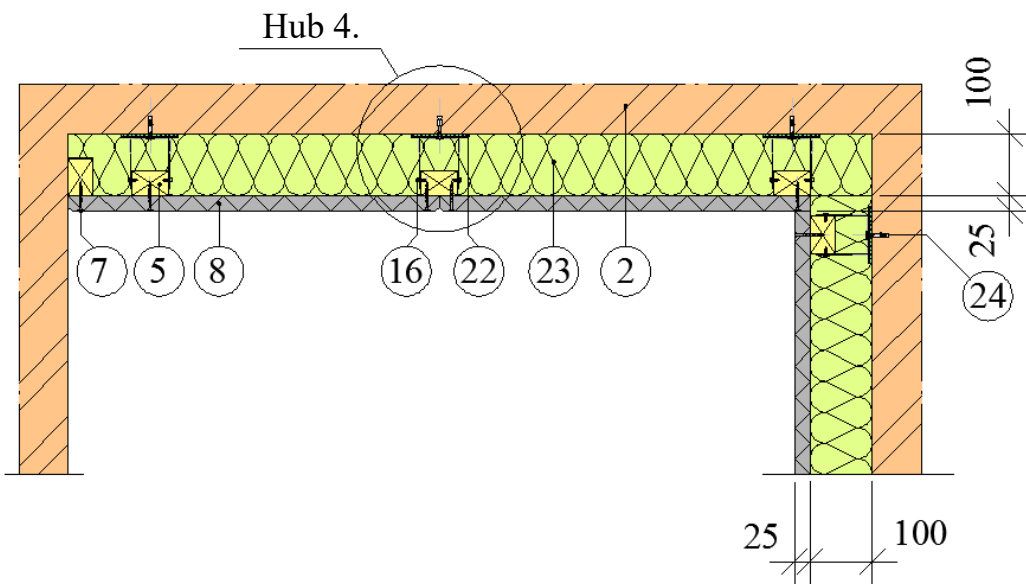
A horizontal superior view of the corner finishing solution with a plasterboard frame.



Corner with a shadow joint

Fastening with a moving support and impact noise insulating base (pos. 22, Fig. 5.3.4). The structure allows levelling out the existing wall and ensures impact noise insulation.

**Fig. 5.3.4** Fastening with a moving support. Recommended if impact noise insulation is required.



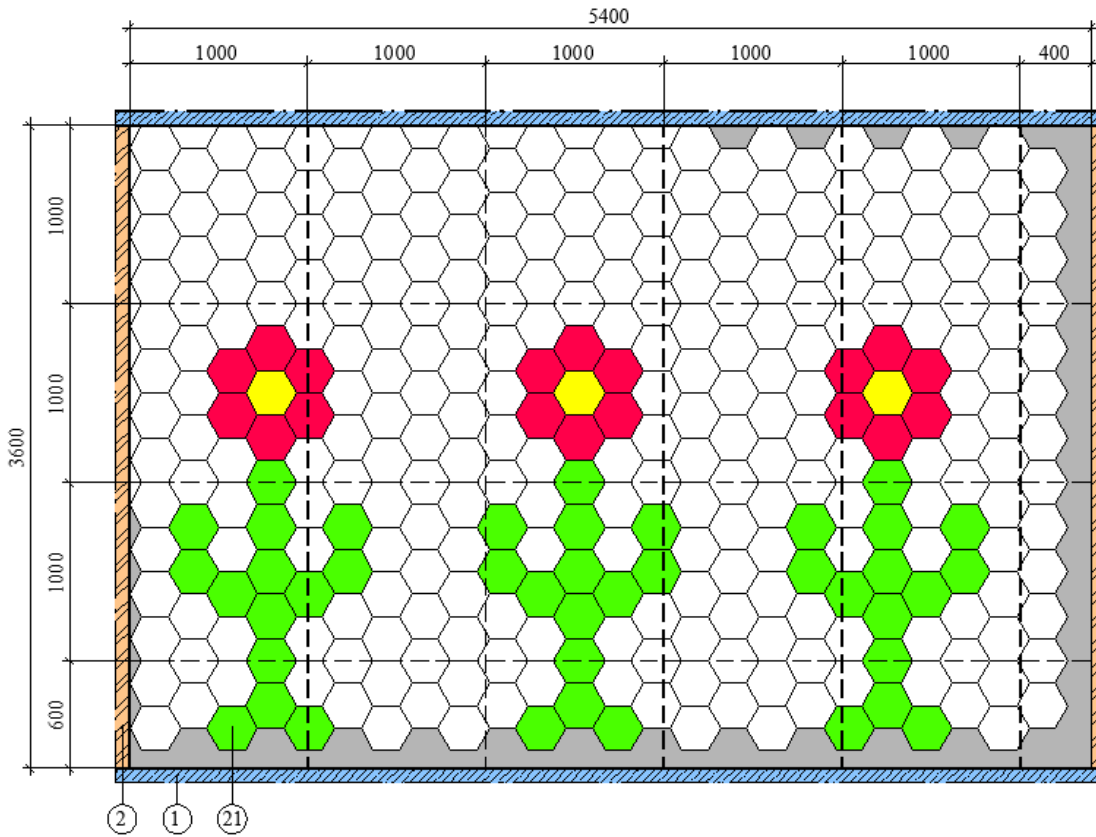




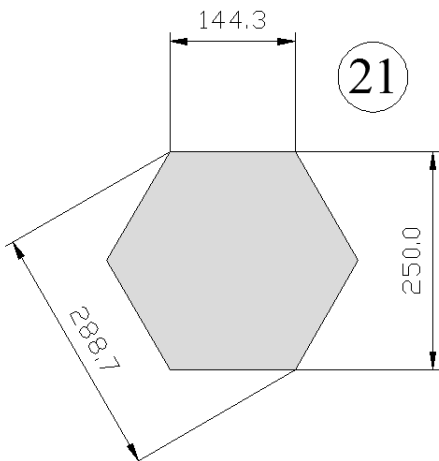
### 5.4. MOUNTING OF CEWOOD DESIGN TILES

CEWOOD design tiles allow creating an expressive wall finishing. The design tiles are attached with adhesive filler or mounting glue on to a base of plasterboard panels or other resistant bases. The type of glue is determined by the manufacturer of base panels. The frame of fastening of plasterboard panels is made of wood laths or *Knauf* tin steel profiles according to *Knauf* recommendations W11, W61.

**Fig. 5.4.1 Wall finishing with CEWOOD design tiles.**



**Fig. 5.4.2 Dimensions of hexagonal tiles**



The hexagonal tiles are fastened with glue compositions determined by the manufacturers of the base material, such as adhesive filler, tile glue, mounting glue etc.

## PANEL FASTENING, STORAGE AND CARE

- Suspended ceiling is set up in line with LVS NE 13964 "Suspended ceiling. Requirements, test methods".
- Before starting to assemble the ceiling load-bearing structures, it must be ascertained that the load-bearing structures (ceilings, walls) have sufficient carrying capacity.
- Wood laths and CD profiles are fastened on using suitable type and size screws.
- The load-bearing ceiling frame (laths, CD and T profiles) is set up as per elevation mark of the building project.
- Assembly profiles of wall connection units are first inserted in the wall-mounted UD profile (pos. 10), then connected on to the load-bearing structure.
- CEWOOD panel assembly must be started from the centre of the room outwards.
- CEWOOD panels are fastened using galvanised wood screws with head diameter of  $\varnothing \geq 9$  mm. Cone point grub screws must be used. The grub screw must be screwed in the CEWOOD panel to be level with the visible surface of the panel.
- When setting up ceilings in premises with increased corrosion-forming environment (swimming pools and other premises with higher humidity), screws with increased corrosion resistance must be used as per building project.
- The diaphragm and mineral wool to be set up above the CEWOOD panels as per building project are mounted simultaneously with the CEWOOD panels. The film diaphragm connection points must be glued together. The mineral wool are to be placed so that the connection points overlap.
- Damaged panels may not be used.

MATERIAL FOR COMFORT AND HEALTH

**[www.cewood.com](http://www.cewood.com)**

CEWOOD, SIA  
Galdusalas-1, Jaunlaicene,  
Aluksne county, LV-4336, Latvia  
Telephone +371 29163316  
E-mail: [info@cewood.com](mailto:info@cewood.com)