Seamless OWAplan ceiling tile “OWAplan K” processing guidelines

OWAconsult® collection

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1. General information on processing

OWAplan S 7 is a special high-quality ceiling system whose appearance is largely determined by the processing of the grid and the plaster system. Installing and covering this ceiling system without the necessary experience and knowledge in the processing of seamless plaster-covered ceilings is not recommended.

OWA therefore offers installation instructions for this suspended ceiling system on the project site.
Please contact OWA in due time to coordinate an on site appointment. All materials must be at location before the start of the on site training. In preperation for the appointment, construction plans have to be made available to the OWA experts. Please contact OWA in due time to coordinate an on site appointment For more information please contact OWAconsult® at tel. +49 93 73 . 2 01-131 or -451. Since this is a certified building product, instructions may only be provided, if all components of the system are OWA products. Installation trainings on site will be charged with 40,00 €/hour. Travel expenses and expenses for overnight accomodation will be charged according to expenditure.

Classification of fire behaviour of OWAplan S 7 as a building product
„OWAplan S 7 seamless acoustic plaster ceiling“ has been granted A2-s1,d0 - non-combustible classification in accordance with DIN EN 13501-1. As a ceiling-KIT is also carries the CE label. Thus, specifications of test report no. 900 9196 000-08e have to be followed and system components need to be used accordingly. If non-tested system components are used, the system characteristics of the building product OWAplan S 7 can not be guaranteed.

Labelling in accordance with the Construction Products Regulation (EU-BauPV)
S 7 OWAplan has been tested and labeled in accordance with the Construction Products Regulation no. 305/2011. The associated required issuance of a Declaration of Performance (DoP) is thus ensured for the grid, the mineral tile and the plaster system. In addition to the CE label, the DoP number and the identification code of each product type are now shown on the packaging.

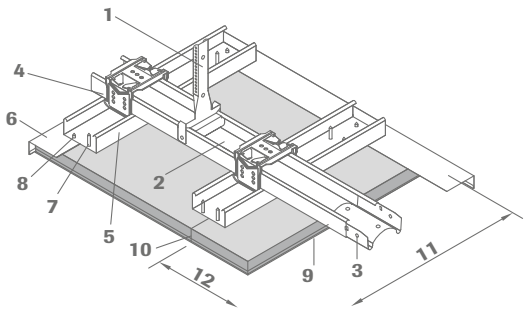
“OWAplan K” plaster system
Manufacturer:
Kraft Akustiksysteme
Sonnenhof 4
35440 Linden, Germany
tel: +49 64 03 . 94 06 08
kraft-as@t-online.de

Order quantities for “OWAplan K” plaster system according to individual components

Glass fibre fleece	200 g/m² (wet)
Kraft acoustic fleece	115 g/m²
Kraft Allegro M + S acoustic plaster	1000 g/m² (wet), 800 g (dry)

Further information about the plaster system and its processing can be requested directly from the manufacturer, Kraft Akustiksysteme. Certified coating companies are listed at the end of these processing guidelines.

2. Conditions for processing



1 Nonius hanger lower part no. 2001
2 CD support no. 2003
3 Profile connector no. 2005
4 Cross connector no. 2004
5 CD tile grid no. 2003
6 Angle no. 51/22
7 Drywall screw no. 2007
8 Metal screw no. 2008
9 Plaster system
10 Adhesive joint
11 Tile width
12 Tile length

2.1 The following specifications must be met before installing the OWAplan ceiling:

- The installation space must be dry.
- The temperature must not fall below 15 °C during installation.
- The relative humidity must not exceed 70%.
- System-compatible original building parts must be used.
- All layout plans including built-ins must be made available.
- All wall connections must be executed in flexible joint design.
- Existing buildung expansion joints are to be carried over into the OWAplan ceiling.
- All fixtures that may be required must be installed before installing the OWAplan tiles. Coordination between the drywall and electrical trades, as well as other participating trades, is essential.
- Plaster coating is to be carried out exclusively by certified coating companies. The certificate needs to be verified during the tender phase (refer to section 1. „General information on porcessing“).
- Higher quality requirements regarding the surface properties, which could be caused by circumstances such as using a suspended ceiling in poor daylight or artificial light conditions, must be agreed upon in advance.
- Artificial lighting directed at the ceiling surface from below or from the side (e.g. spotlights, indirect lighting) should be avoided. If this is not possible, the ceiling is to be sanded and coated under the lighting conditions that will exist when in use. This increased demand towards the quality of the surface is to be agreed upon in advance.

To meet fire protection requirements, the maximum grid spacing of the main tees and the Nonius hangers as well as the minimum suspension depht – all specified in the test certificate – are to be complied with.

2.2 The following requirements must be met while installing the OWAplan ceiling:

- All tile joints need to be sanded thoroughly.
- The installed ceiling system (grid and OWAplan tiles) has to be approved before coating by the coating company. Touch-ups requested by the coating company need to be carried out.
- All drying times for the plaster system must be adhered to.
- All built-ins must additionally be suspended from the structural ceiling.
- It is recommendable to keep records of humidity and room temperature as well as outdoor temperature daily.

3. Grid, OWAplan tiles and plaster system

3.1 Grid

Only the OWAconstruct® profile parts listed below may be used. The mentioned grid spacing needs to be adhered to. Deviations can adversely affect or change the subsequent appearance of the OWAplan ceiling.

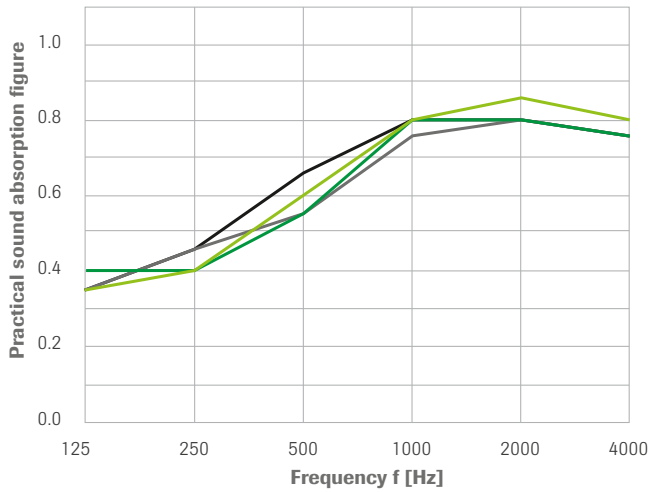
- Nonius hanger no. 2001 – max. centers = 1000 mm + 2 pcs safety pins no. 76 per nonius hanger
- CD profile no. 2003 (supporting grid), 60 x 27 x 0.6 mm – max. centers = 1000 mm
- CD profile no. 2003 (tile grid), 60 x 27 x 0.6 mm – max. centers = 400 mm
- Cross connector no. 2004
- Profile connector no. 2005
- Drywall screw no. 2007 – max. centers = 150 mm
- Wall-profile no. 51/22 executed in flexible joint design (attached to grid)
- Metal screw no. 2008 for wall-profile no. 51/22 – max. centers = 400 mm
  In the joint area of the OWAplan tiles, the angle profile must also be fastened using 2 metal screws.
- Nonius hanger, lower part, for beveled assembling no. 2012 – max. centers = 1000 mm
- Nonius hanger, upper part, for beveled assembling no. 2013
- Safety pins no. 76 = 2 pcs. per nonius hanger

3.2 OWAplan tiles

The OWAplan tiles are mineral tiles and are available in two sizes. They have grey primer on the front side. The tiles are fastened to the CD profile construction with drywall screws and glued to each other all around on the edges of the tiles with tile glue no. 2014. This serves to create a homogenous, airtight ceiling level (see section 4.4, page 9). There are two variations of OWAplan tiles: sound-absorbing (standard design) and sound-reflecting (custom design for specific, acoustic requirements).

3.2.1 OWAplan tiles, sound-absorbing

OWAplan boards, stamped and needled, 1200 x 800 x 20 mm or 2400 x 1200 x 20 mm, edge 3pOWA, reaction to fire: A2-s1,d0 according to EN 13501-1.



Freq. [Hz]	Suspension depth E50 α_p	Suspension depth E100 α_p	Suspension depth E200 α_p	Suspension depth E400 α_p
125	0.35	0.35	0.40	0.35
250	0.45	0.45	0.40	0.40
500	0.65	0.55	0.55	0.60
1000	0.80	0.75	0.80	0.80
2000	0.80	0.80	0.80	0.85
4000	0.75	0.75	0.75	0.80
NRC	**0.65**	**0.65**	**0.65**	**0.65**
α_w	**0.70**	**0.65**	**0.60**	**0.65**
SRA	**0.75**	**0.70**	**0.70**	**0.75**

3.2.2 OWAplan boards, sound-reflecting

OWAplan boards, plain, 1200 x 800 x 20 mm or 2400 x 1200 x 20 mm, edge 3pOWA, reaction to fire: A2-s1,d0 according to EN 13501-1.

This tile design makes it possible to implement individual acoustic requirements. To do this, this tile type is installed in combination with the absorbing standard tile type (embossed, needle-punched). The number and placement of the respective tile types determines the acoustic concept in accordance with the respective installation plan, which is prepared by OWAconsult®. The processing and covering is then carried out analogous to the standard tiles in accordance with this installation guide. After the covering, there is no visible difference between the tiles.

3.3 Plaster Systems

3.3.1 Allegro M plaster system

Glass cloth adhesive no. 2011
Acoustic fleece G3/A2 no. 2010, white
Mineral plaster (dry) Allegro M no. 2009, white
Colours according to RAL on request.

3.3.2 Allegro S plaster system

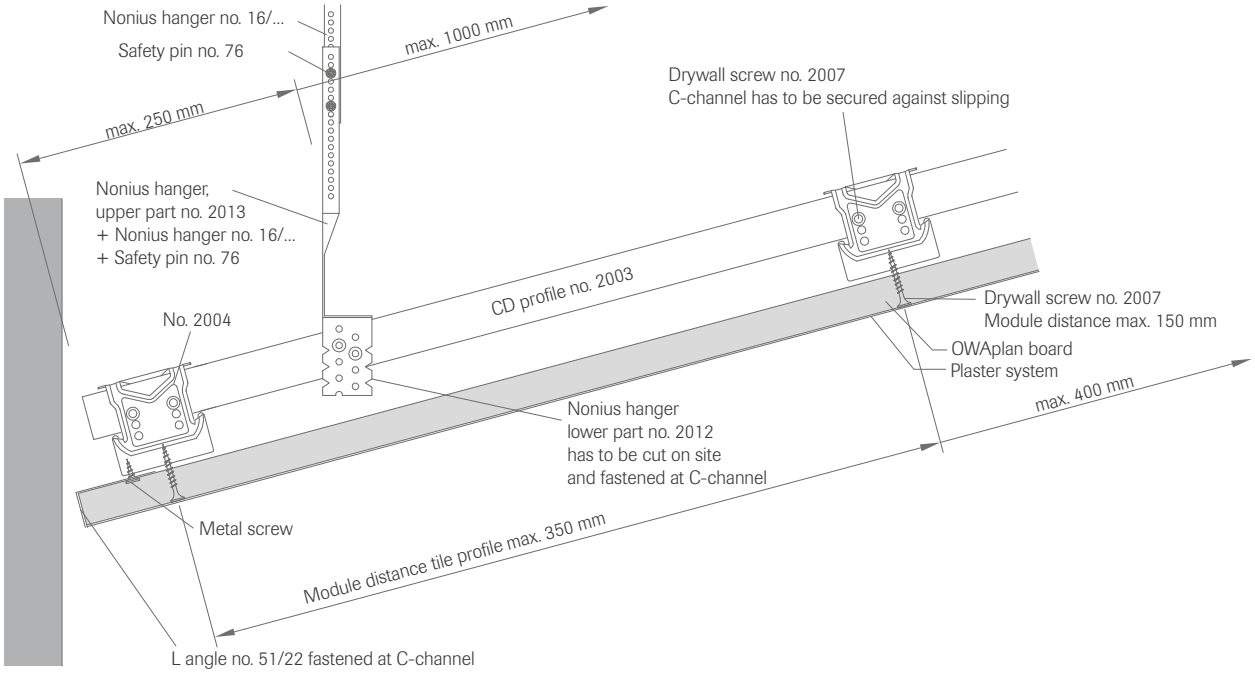
Glass cloth adhesive no. 2011
Acoustic fleece G3/A2 no. 2010, white
Silicate plaster (wet) Allegro S no. 2009/1, white
Colours according to RAL on request.

3.4 System-components and accessories suitable for OWAplan

- Comfort access flap no. 8031/4, dimensions of 340 x 340 mm
- Comfort access flap no. 8031/5, dimensions of 540 x 540 mm
- Nonius hanger no. 17/81 + extension no. 16/... for Comfort access flap, 2 pcs/4 pcs per access flap (refer to section 4.6).
- Mounting frame no. 8069/6, consisting of 2 parts, for the installation of downlight: the frame is placed on the CD profiles of the tile grid and can be moved or positioned during assembly (refert to section 4.7).
- Folding tiles for ceiling canopies and lateral formwork for the slab, 1200 x 400 x 20 mm (refer to section 4.8)

3.5 Beveled assembling of OWAplan

Longitudial section:

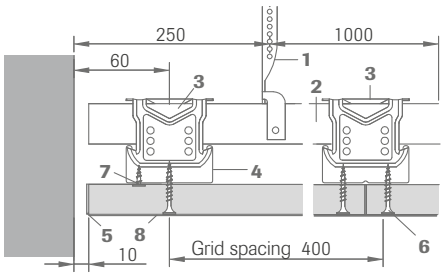


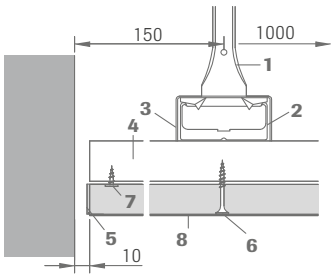
4. Installation instructions

4.1 Installation of the 1st layer (support grid)

Installation with CD profiles (no. 2003) and Nonius hangers (no. 2001, no. 16/..., no. 76) with a max. grid spacing for the CD profiles of 1000 mm centers. The first and last CD profiles are to be installed with a grid spacing of max. 150 mm from the wall. The entire construction must be level. The max. distance of the Nonius hanger to the wall is 250 mm. The Nonius hangers need to be installed at max. 1000 mm centers. The CD profiles are connected using profile connectors (no. 2005).

(To meet fire protection requirements, the max. grid spacing of the CD profiles and hangers, as well as the minimum suspension depth and the use of glue must be carried out in accordance with a valid test certificate – please refer to section 5.0 of these processing guidelines.)

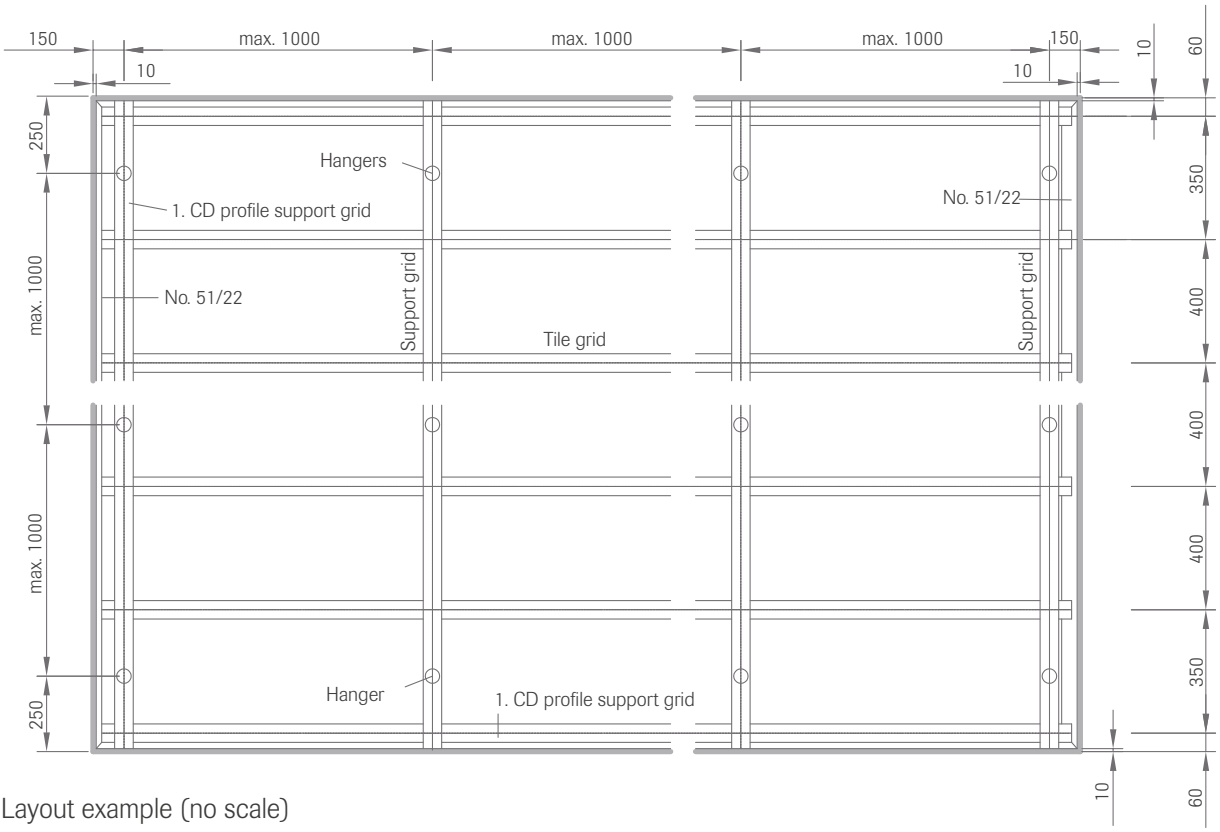




1 Nonius hanger lower part
2 CD supporting grid
3 Cross connector
4 CD tile grid
5 Wall-profile no. 51/22
6 Drywall screw
7 Metal screw
8 Plaster system

4.2 Installation of the 2nd layer (tile grid)

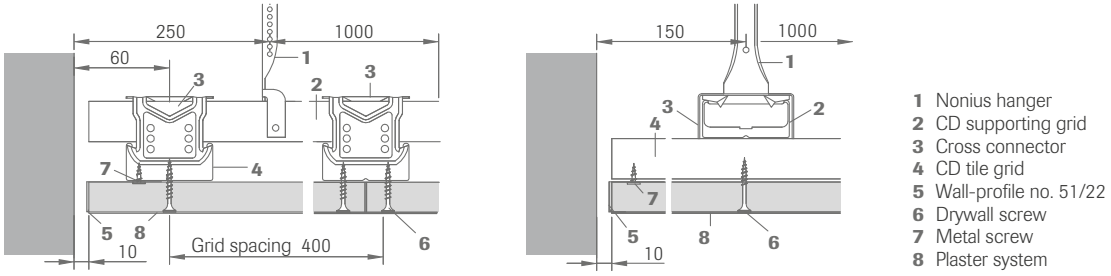
Installation with CD profiles (no. 2003) at a max. grid spacing of 400 mm. The first and last CD profiles are to be installed with a spacing of max. 60 mm from the wall; attachment to supporting grid with cross connector (no. 2004). The cross connector must first be hooked under on one side of the CD profile so that both lugs engage in the curved edge of the CD profile. Then the connector is to be clicked into the opposite bent edge of the CD profile. The CD profiles are connected among one another using using profile connectors (no. 2005).



Layout example (no scale)

4.3 Installation of the wall-profile (no. 51/22)

Installation of the angle profile no. 51/22 as a circumferential moving wall abutment to the CD profiles of the tile grid. The wall-profile no. 51/22 is attached to the CD profiles with metal screws (no. 2008). Angle section spacing ≥ 10 mm from the wall.



1 Nonius hanger
2 CD supporting grid
3 Cross connector
4 CD tile grid
5 Wall-profile no. 51/22
6 Drywall screw
7 Metal screw
8 Plaster system

When fire protection requirements need to be met, shadow gaps are not permitted. Please consult section 5 of this porcessing guide.

4.4 Installation of the OWAplan tiles

Installation with drywall screws (no. 2007) at a max. centers of 150 mm and glue (no. 2014). Installation is carried out using staggered butt joints that are transverse or parallel to the CD profiles of the tile grid. All tile edges are to be glued full faced to each other. To do so, the glue is applied continuously on a long and a short tile edge before mounting the OWAplan tile: the tile to be installed is then pressed tightly to the tiles that have already been installed. It is important that all all butt joints are glued tight. Open joints are not permitted. Glue that leaks out on the joints can be sandpapered. If there are still open joints resulting from the installation, which are wider than 3 mm, they must be filled with tile glue no. 2014 and then sandpapered. Penetrations or openings that have to be closed afterwards must be closed with the respective OWAplan tile parts and tile glue no. 2014. They are always screwed to the CD profiles starting with the centre of the tile and then to the outside.

Note: Always install the longitudinal edges of the tiles in the direction of the incident daylight (main light direction).

4.5 Sanding and smoothing the tile joints

All joints gaps are to be sanded generously (width = 20 cm), thoroughly and levelly (use 100 grit sanding paper). Ensure that there is an even transition between the sanded and the unsanded tile surface (no scratches or offsets). Repainting the tile surface in the tile colour is not required. The sanding dust must be swept or vacuumed off before coating.

The tile glue (refer to section 4.4) must be completely dry before the fleece glue of the plaster system can be sprayed on (drying time = at least 12 hours).

4.6 Comfort access flap no. 8031/4 and no. 8031/5

When laying out the seamless OWAplan ceiling, access flaps usually need to be installed.

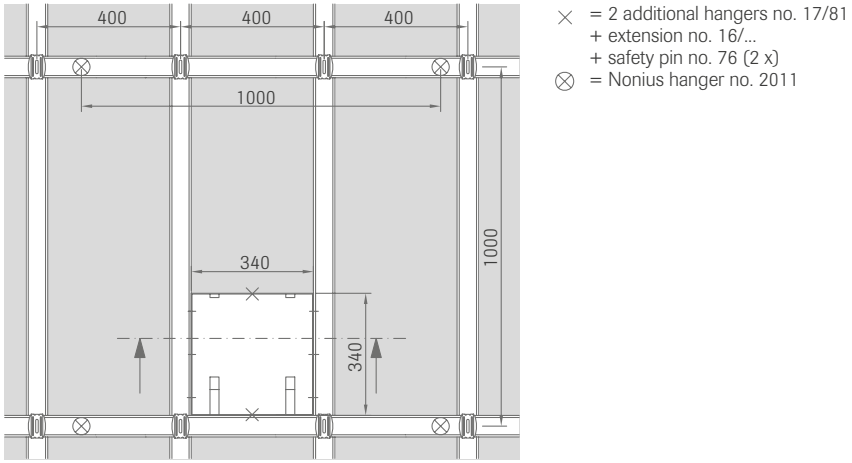
No. 8031/4 (340 x 340 mm)
No. 8031/5 (540 x 540 mm)

Required nonius hanger see 3.4

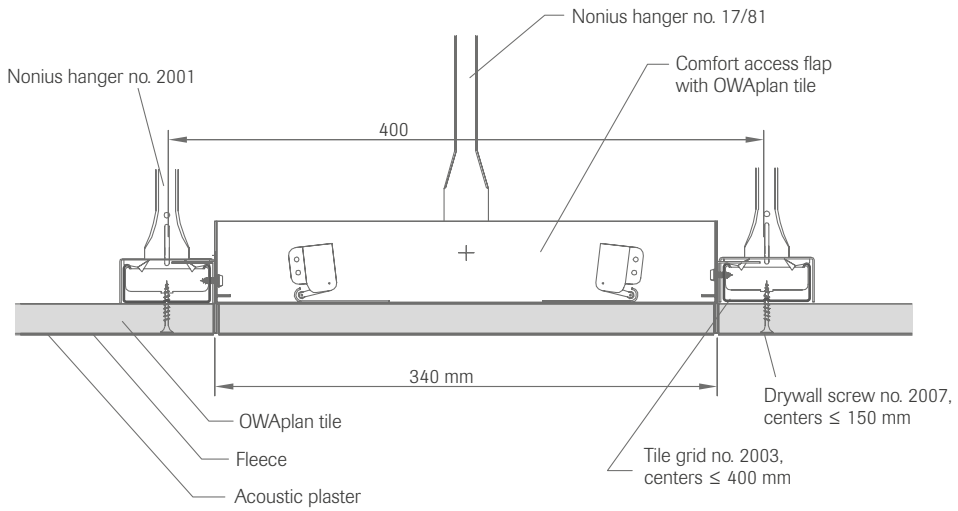
The following aspects must be considered:

- The exact location of the access flaps must be alligned to the grid of the suspended ceiling.
- Depending on size and weight of the access flap, additional Nonius hangers might have to be placed (see top view of access flap 340 x 340 mm as shown below).
- The size of the ceiling opening must match the exterior dimension of the access flap that is to be installed.
- Access flap needs to be assembled before OWAplan boards
- When using access flap no. 8031/5, the CD profile in the region of the access flap needs to be separated accordingly. In addition, two CD profiles (length = 1000 mm) are to be installed and suspended from the structural ceiling (see top view of access flap 540 x 540 mm as shown below).

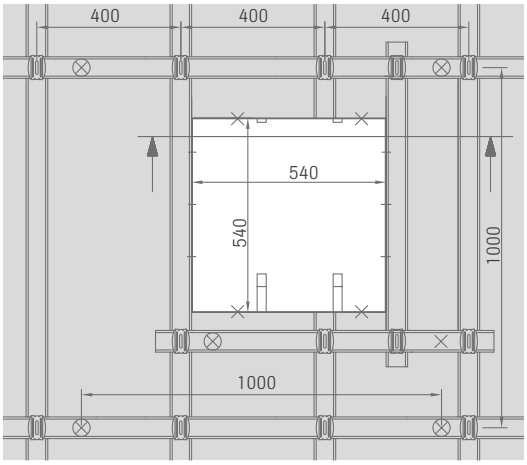
Top view of access flap 340 x 340 mm:



Cross-section view of access flap no. 8031/4:



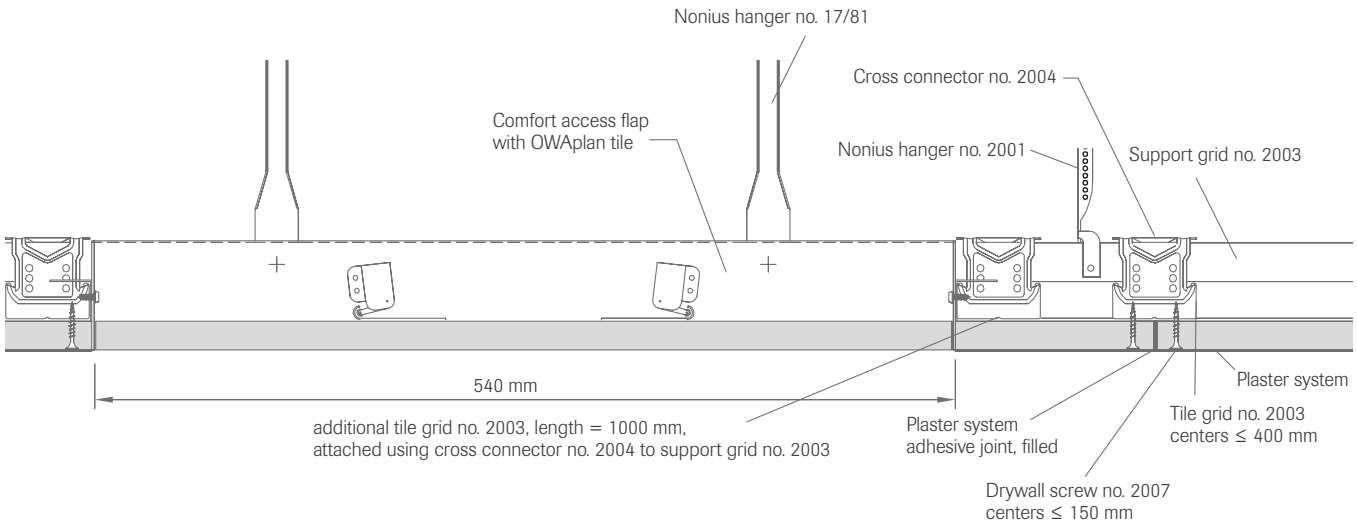
Top view of access flap 540 x 540 mm:



additional support grid no. 2003,
length = 1000 mm, attached using cross
connector no. 2004 to tile grid no. 2003

× = 4 additional hangers no. 17/81
+ extension no. 16/...
+ safety pin no. 76 (2 x)
⊗ = Nonius hanger no. 2001

Cross-section view of access flap no. 8031/5:



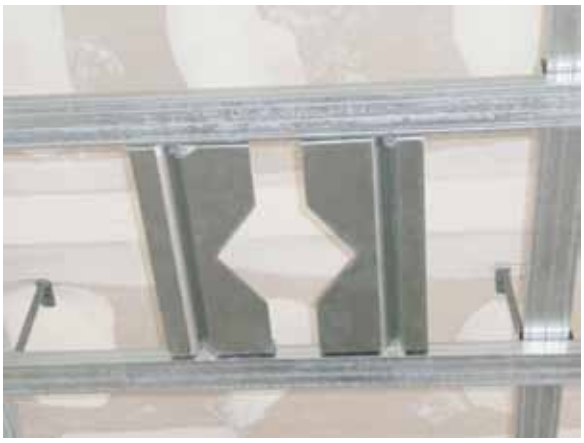
The access flap is inserted into the opening facing correctly. It is then alligned and fixed in place onto the CD profiles with six screws. Fine adjustment is possible in the area of the hinge fasteners and the locking mechanism by unscrewing the Phillips screws and using vertical sliding along the slot hole. The access flap comes preassembledwith the inner OWAplan tile. it is then coated together with the plaster system according to the manufacturer's instructions. After coating, the flap must be opened, cleaned, and made accessible.

The flap is **opened** by pushing up the opening part on one side and immediately lowering it.

The access flap is **closed** by pressing it lightly. An audible click triggers the closing mechanism.

We particularly recommend opening and closing the flap only with clean installation gloves.

4.7 Mounting frame no. 8069/6



When installing downlights, mounting frame no. 8069/6 should be used. Two pieces of the mounting frame are necessary for each downlight. The frames must be placed with the edges on the CD profiles. The distance between the frames depends on the diameter of the chosen downlight.

Ensure that the clamping device of the downlight later rests on the frame and that the mounting frame does not project beyond the edge of the hole. The opening for the downlight can be created with circle cutter no. 99/16. The size is to be adapted to the diameter of the downlight. Attach the downlight mounting frame to the tile before intalling the tile!

Downlights with a weight of more than 250 g per piece must additionally be suspended from the structural ceiling. Electrical wiring must be carried out before closing the ceiling. The cables are to be kept to a sufficient length. The functionality of the lamp should be checked prior to installation, as subsequent changes are no longer possible.

If fire protection requirements need to be met, all components are to be equipped with fire boxes - please refer to section 5.0 of these processing guidlines.

4.8 OWAplan folding tiles

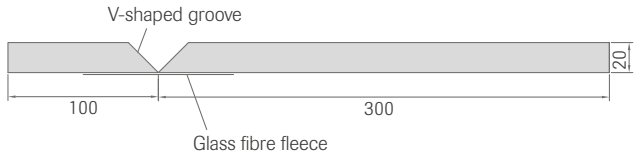
OWAplan folding tiles

Length	Width	Height	Thickness
1200 mm	300 mm	100 mm	20 mm

Other dimensions are available on request.

The folding tiles are used for creating ceiling canopies or open ceiling edge terminations. Using the OWAplan folding tile, with its V-shaped groove and attached glass fibre fleece, vertical termination of the OWAplan ceiling can be quickly and easily realized. Installation of the folding tiles takes place in the course of installation of the OWAplan ceiling tiles on the CD profile grid. The folding tiles and the resulting vertical ceiling termination will later be coarted along with along with the OWAplan ceiling.

Cross-section view on an OWAplan folding tile:



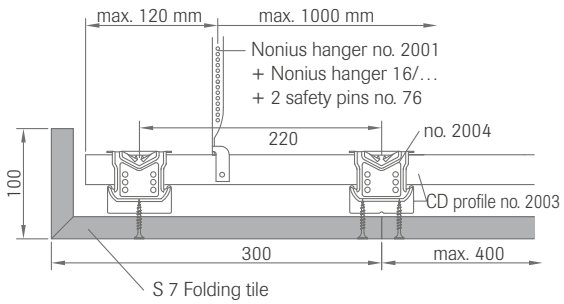
Installing folding tiles

OWAplan folding tiles are delivered lying flat on a pallet. Place the tiles on a clean and dry surface with the V-shaped groove on top. Apply OWA glue no. 99/24 over the entire length of the V-shaped groove. Fold over the short side of the tile (100 mm) and press firmly. Folding tiles has to be prepared one day before assembling.

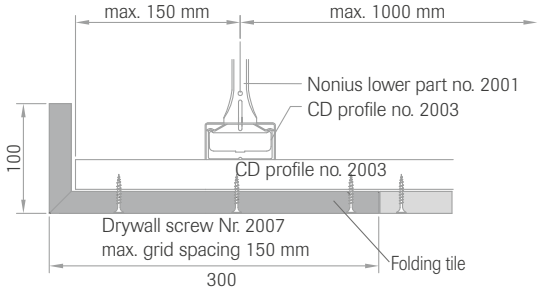
In the corners of the ceiling canopy, tiles are to be cut to mitres before gluing. A possible arrangement of the folding tiles is shown in the top view sample below. Folding tiles unsuitable for bended edging.

OWA glue no. 99/24

Section:



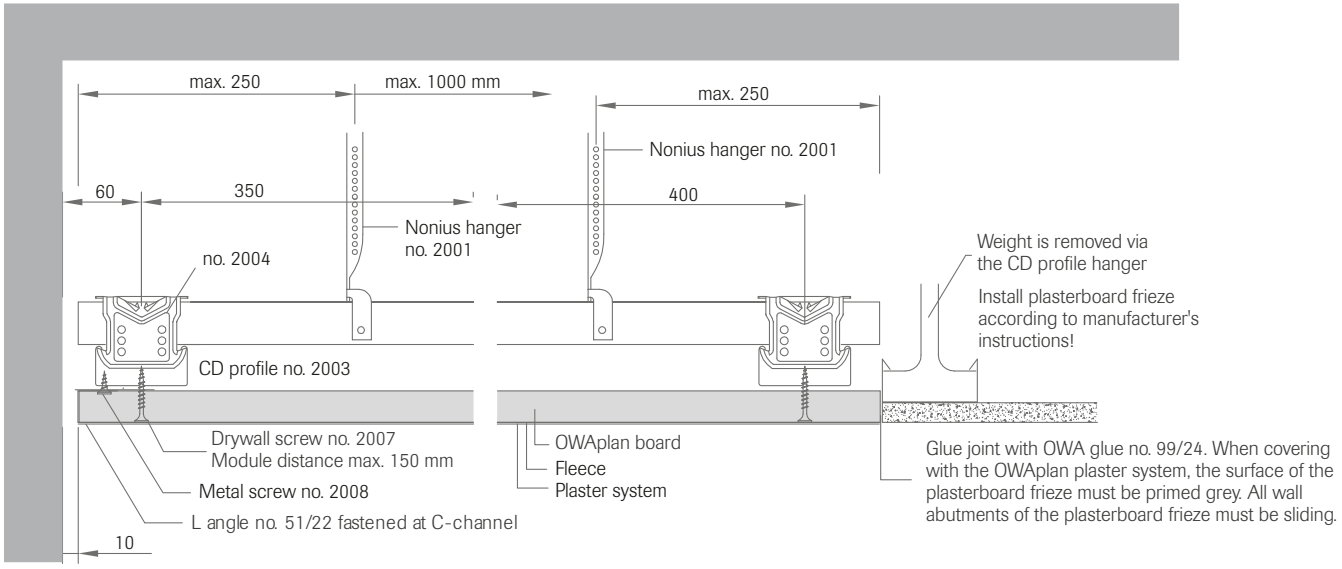
Cross-section:



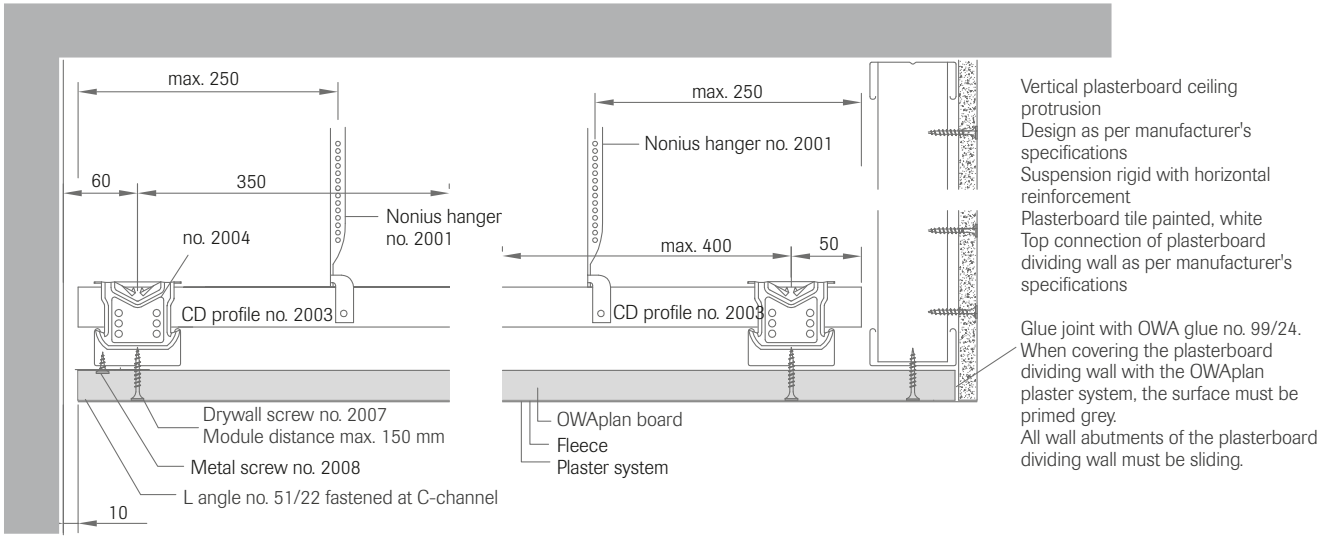
Top view sample including OWAplan folding tiles:

4.9 Connection to friezes, seperations and folding tiles made of gypsum

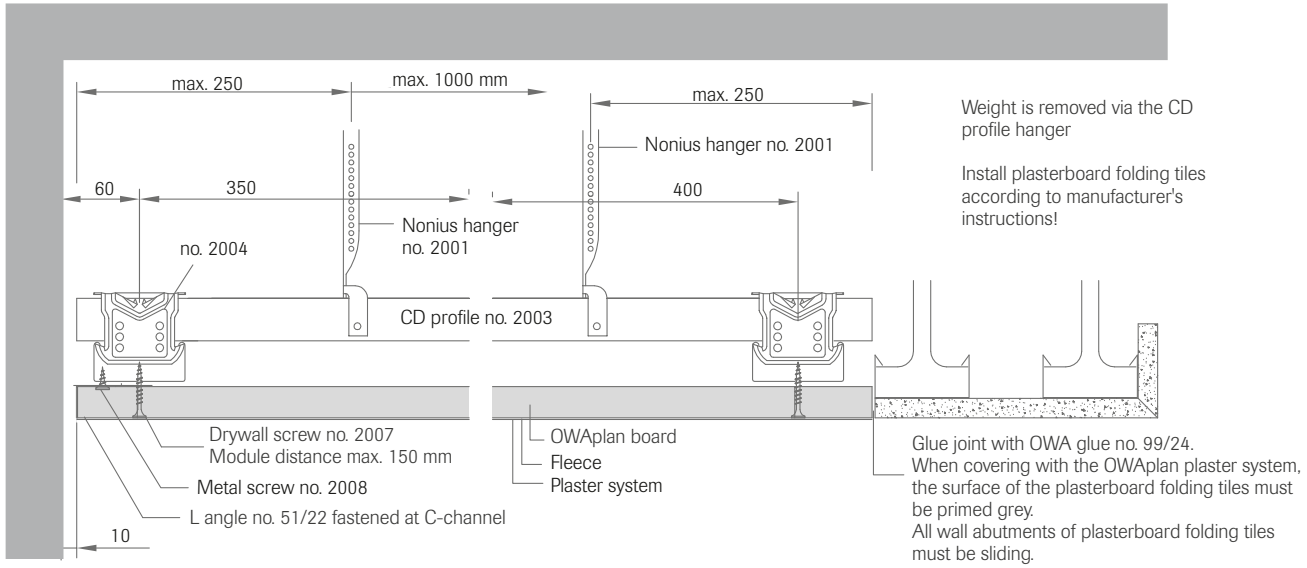
Gypsum board friezes:



Gypsum board seperation:



Gypsum board folding tiles:

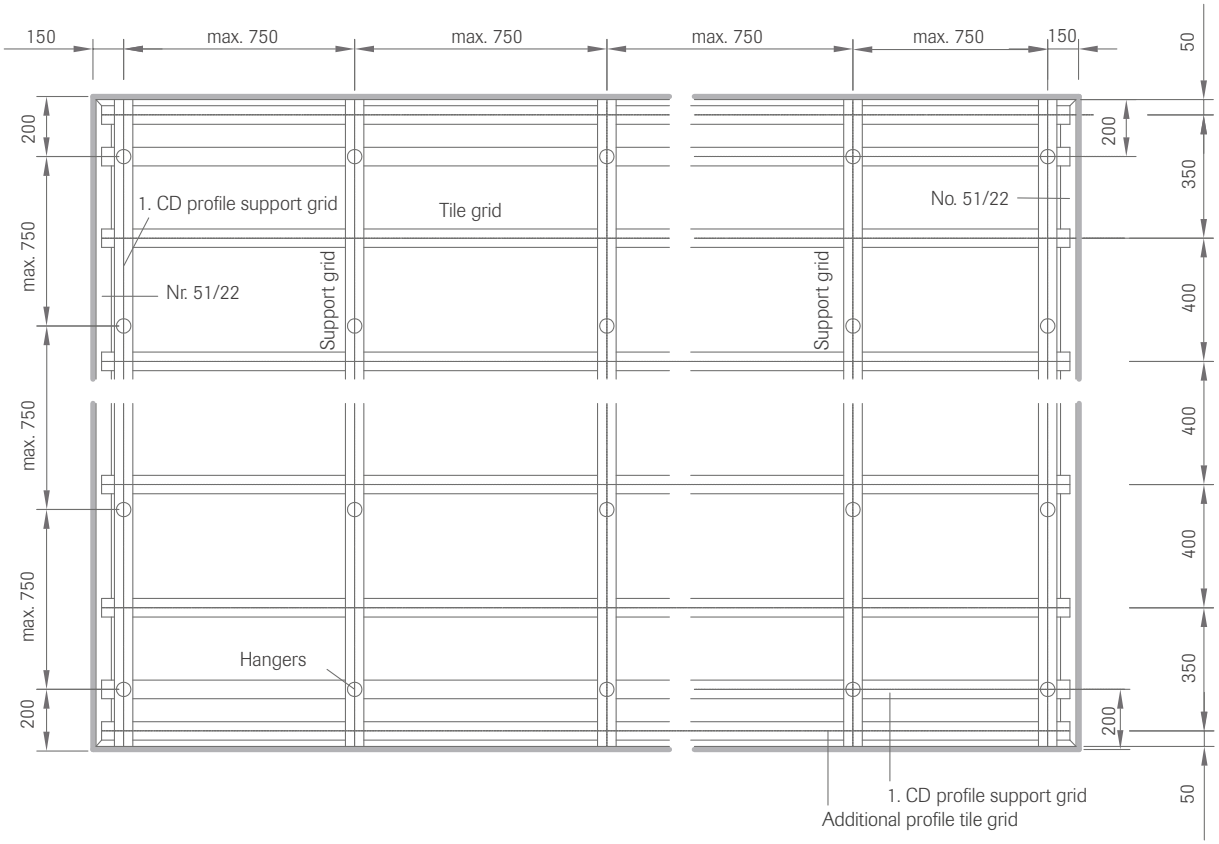


5. Execution as fire protection ceiling REI 120 / F 120 under a structural ceiling of type II/III

Only the OWAconstruct® profile parts listed below may be used. The specifications and grid spacing of the test certificate are to be followed..

5.1 Grid and grid spacing for fire protection execution

- Minimum suspension depth ≥ 250 mm
- Nonius hanger no. 2001 – max. centers = 750 mm, maximum distance of first and last piece of grid to wall = 200 mm.
- CD profile no. 2003 (supporting grid), 60 x 27 x 0.6 mm – max. centers = 750 mm, maximum distance of first and last piece of grid to wall = 150 mm.
- CD profile no. 2003 (tile grid), 60 x 27 x 0.6 mm – max. centers = 400 mm, maximum distance of first and last piece of grid to wall = 200 mm.
- Cross connector no. 2004
- Profile connector no. 2005
- Drywall screw no. 2007 – max. centers = 150 mm
- Wall-profile no. 51/22 executed in flexible joint design (attached to grid) with insulating layer former
- Metal screw no. 2008 for wall-profile no. 51/22



Fire protection layout example (no scale)

5.2 Installation instructions for fire protection design

Installation of the fire protection version needs to be carried out in the same way as the general installation described in section 4.1 to 4.5 of these processing guidelines. However, the required grid spacing details for the execution as a fire protection ceiling as specified in section 5.1 are to be adhered to (see also fire protection layout sample). In addition, the following specification are to be complied with:

5.2.1 Suspension depth

Minimum suspension depht 250 mm

5.2.2 Wall connection

To meed fire protection requirements, open shadow gaps are not permitted. The tiles must be butt-jointed to the wall-profile no. 51/22 at the outer boundary. An intumescent strip (no. 4437) should be glued in between the angle profile and the outer boundary.

5.2.3 Components

The backs of all components – such as integrated light fixtures, downlights, access flaps, etc. – must be equipped with OWA fire boxes. Execution as per the test certificate.

5.2.4 Glue for OWAplan boards no 99/24

Any protruding joint glue must be cut out in a V shape using a knife after about 15 minutes (do not pull off the hardened glue!). **The drying period must be observed: the glue hardens and cannot be removed or sanded off afterwards. Using clue no. 2014 is not permitted for fire protection design.**

Material requirements per m² (approximations)

Tile sizes in mm, weight suspension system and OWAplan tile approx. 10 kg/m²

		Execution as standard ceiling		Execution as fire protection ceiling REI 120	
No.	**Description**	**1200 x 800**	**2400 x 1200**	**1200 x 800**	**2400 x 1200**
2001	Nonius hanger, upper part	1 pce	1 pce	1.33 pcs	1.33 pcs
16/…	Nonius hanger, lower part	1 pce	1 pce	1.33 pcs	1.33 pcs
76	Safety pin	2 pcs	2 pcs	2.66 pcs	2.66 pcs
2012	Nonius hanger, lower part, for beveled assembling	1 pce	1 pce	not allowed	not allowed
2013	Nonius hanger, upper part, for beveled assembling	1 pce	1 pce	not allowed	not allowed
2003	CD profile	3.5 m	3.5 m	3.83 m	3.83 m
2004	Cross connector	2.5 pcs	2.5 pcs	3.33 pcs	3.33 pcs
2005	Profile connector	0.9 pce	0.9 pce	1 pce	1 pce
2007	Drywall screw	24 pcs	24 pcs	24 pcs	24 pcs
2008	Metal screw	6 pcs/m	6 pcs/m	6 pcs/m	6 pcs/m
2014	Glue and filler (cartridge)	0.15 pce	0.09 pce	not allowed	not allowed
99/24	Glue (for fire protection ceiling and folding tiles)	not required	not required	0.3	0.18
51/22	Wall angle	dependent on project	dependent on project	dependent on project	dependent on project
51/22G-O	Wall angle curved in m	dependent on project	dependent on project	dependent on project	dependent on project
51/22G-O	Wall angle for columns up to diameter 1500 mm in pieces	dependent on project	dependent on project	dependent on project	dependent on project
8069/6	Mounting frame	dependent on project	dependent on project	dependent on project	dependent on project
8031/4	Inspection hatch 340 x 340 mm	dependent on project	dependent on project	dependent on project	dependent on project
8031/5	Inspection hatch 540 x 540 mm	dependent on project	dependent on project	dependent on project	dependent on project
4437	Insulation expansion strip	not required	not required	as no. 51/22	as no. 51/22

Material requirements for plaster system Allegro M and Allegro S

Plaster system Allegro M, white

No.	Description		
2011	Glue for acoustic fleece	1 bucket, 18 kg	70 - 90 m²
2010	Acoustic fleece G3/A2, width: 1000 mm, white	1 roll, 60 lfm	60 m²
2009	Mineral plaster Allegro M, white	1 bag, 25 kg	22 m²

Plaster system Allegro S, white

No.	Description		
2011	Glue for acoustic fleece	1 bucket, 18 kg	70 - 90 m²
2010	Acoustic fleece G3/A2, width: 1000 mm, white	1 roll, 60 lfm	60 m²
2009/1	Silicate plaster Allegro S, white	1 bucket, 25 kg	17 m²

Colours according to RAL or NCS on request.

6. Certification process for the OWAplan coater

Covering of the OWAplan ceiling must take place in accordance with the specifications of the plaster manufacturer to guarantee that the result is a perfect ceiling surface. The covering companies carrying out the work must have the required plastering equipment available, such as a compressor, a spray gun, etc., and complete training on the system-compliant covering of this ceiling at the company headquarters in Amorbach.

At the start, it must be clarified whether the plastering equipment and accessories available on site can be used or whether these need to be procured first. Depending on the country, they may be available locally or may need to be procured from Germany. This is to be clarified in each individual case.

In a second step, two to three employees from the covering company can carry out and familiarise themselves with the stages of the covering process under guidance in a two-day training course. The stages of spraying on glue, sticking the fleece and spraying on the plaster are practised particularly intensively. Once training has been successfully completed, the employees receive a certificate to state that they are authorised by OWA to realise the OWAplan ceiling system as a certified covering company. This certificate is only awarded to companies that have completed a training course in Amorbach.

If required, training can also be provided in the installation of the ceiling system, if the company wishes to carry out installation and covering.

Further information on the training process, training dates and the characteristics of the required plastering equipment can be obtained from OWAconsult. Contact: Mr Thomas Keller, phone: +49 93 73 . 2 01-451, e-mail: thomas.keller@owaconsult.de

For additional **information** regarding the **plaster system** and its processing, please contact Kraft Akustiksysteme, the manufacturer, directly:

“OWAplan K” plaster system
Allegro M, Allegro S

Manufacturer:
Kraft Akustiksysteme
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35440 Linden
tel +49 64 03 . 94 06 08
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Product Warranties

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