Seamless acoustic ceiling
Installation guideline OWAplan

OWAconsult collection

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1. Assembly tools required

1. Board lift
2. Sharp knife
3. Cordless screwdriver
4. Mixing paddle
5. Trowel
6. Wide spatula
7. Pencil
8. Scale
9. Airless pump
10. Nozzle 635
11. Sanding giraffe
12. Hand grinder
13. Humidity and temperature meter

Link to the image database:
https://www.media.owa.de/

2. General information

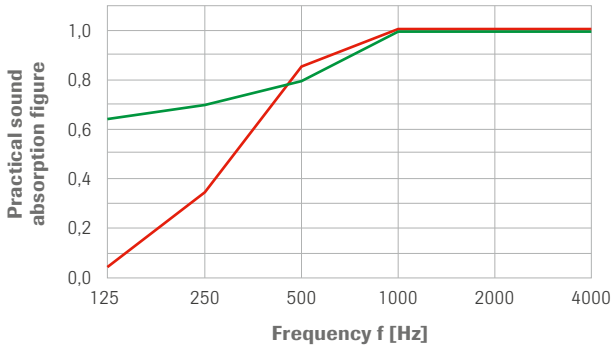
A seamless acoustic ceiling is a high-quality system that must meet both acoustic and aesthetic requirements at a high level. To meet these requirements, strict specifications must be observed during installation and coating. The quality of the ceilings depends largely on how the individual components are installed, as well as on the necessary preparatory measures and the conditions on the construction site. The work should be carried out under climatic conditions that correspond to those of the subsequent operating environment. This applies in particular to the preparation and execution of the ceiling connections and the coating, but also to the time afterwards. The better the indoor conditions before, during and after installation match the future conditions, the less likely it is that deformations or stresses will occur in the ceilings, thereby reducing the risk of undesirable consequential damage such as cracks, colour differences or loss of acoustic properties.

OWAplan is a special high-quality ceiling system whose appearance is largely determined by the installation of the grid and plaster system. Installing and covering this ceiling system requires appropriate experience and knowledge in seamless plastercovered ceilings.

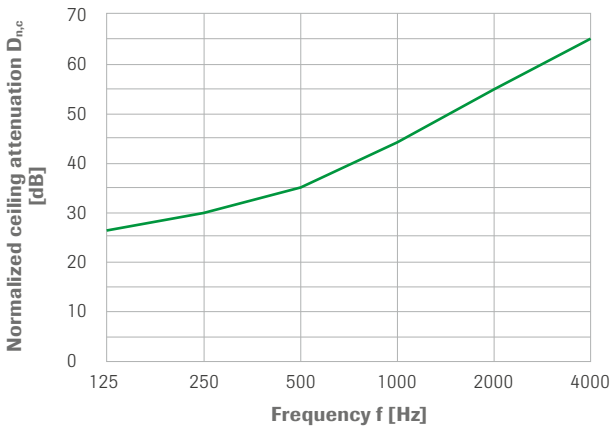
OWA therefore offers a **training course on how to install an OWAplan ceiling**. The training course covers the entire process, from assembling the grid, fitting the mineral boards, taping and jointing, to the various plaster systems. If the installation of the grid and the mineral boards is not to be carried out by a certified coating company, detailed and extensive step by step instructions must be provided in advance by the responsible technical advisor or OWAplan technician. Since this is a certified building product training can only be provided if all system components being used are ASTM C635, C645 and C557 certificed.

Reaction to fire:
OWAplan panels with very fine texture finish are tested to ASTM E84 surface burning characteristics with the following result:
(ASTM E84) | class A
Flame Spread Index: 5
Smoke Developed Index: 0

Acoustic performance
Seamless acoustic ceiling OWAplan incl. plaster coating



A-mounting: NRC = 0,80
E400-mounting: NRC = 0,90



CAC = 41 dB

Fixings
Ceilings and roofs:
Connection and fastening elements upper suspension: In order to be able to create a force-fit connection between the ceiling soffit or roof structure and the OWAconstruct suspension system, only approved fixings may be used. When anchoring in solid substrates, the relevant technical approval of the respective anchor must always be observed.

Steel and solid concrete soffits:
The false ceiling hangers must be installed to the concrete soffit using building code-approved fixings. The fixing manufacturer's instructions must be adhered to. The respective valid approvals or the building code test certificates of the fixing elements (possibly pull-out tests) must be considered.

Roof decking with trapezoidal sheet metal:
Trapezoidal sheet metal roof decking usually has large spans. Due to wind pressure or suction effects, the roof could vibrate via the ceiling suspension, which will cause cracking in a monolithic sub-ceiling. Therefore, we do not recommend direct suspension of a sub-ceiling to trapezoidal sheet metal. A solution could be an independent auxiliary structure fixed to the metal roof.

Handling, transport and storage of the mineral boards
Panels may only be transported horizontally by two people. The panels must always be placed face up. On each panel has a cardboard interlayer for protection. Acoustic elements and accessories must be protected from moisture and stored in a frost-free place in the building. To protect the panels, it is recommended to store them in their packaging until installation.

Improper storage and/or the absorption of moisture can lead to deformation of the elements, which could adversely affect the final result. The materials must be given the opportunity to acclimatize before processing.

Safety
Ensure good ventilation at the workplace during installation and avoid inhaling dust.
Avoid contact with your eyes and skin. For more information, refer to the safety data sheet.

Warranty
If the recommended installation instructions valid at the time of assembly are not followed, the warranty for the OWA system components will be voided.

3. Installation requirements

3.1 Requirements prior to installation of the OWAplan ceiling

– The installation area must be weatherproof, watertight and clean (no outdoor use).
– During installation of the ceiling system, the relative humidity must be between 40 % and 70 % and the temperature should be 50 - 86 °F, preferably 64 °F.
– Temperature and humidity should be kept as constant as possible. Significant and/or rapid fluctuations can lead to undesirable changes in shape, which can result in cracks.
– Sufficient ventilation must be provided during and after completion of the ceilings to promote drying. Do not blow warm or hot air directly onto the ceilings!
– System-compliant construction components in accordance with ASTM C635, C645 and C557 must be used.
– All layout plans including the required fittings must be available prior to commencing work.
– All wall connections are to be executed in a flexible joint design.
– Existing building expansion joints are to be incorporated into the OWAplan ceiling.
– All fittings that may be required must be provided prior to installing the OWAplan boards. This requires coordination with drywall workers, electricians and other participating tradespersons.
– Taping and jointing and plaster coating must to be completed by a certified contractor only. The certificate needs to be verified during the tender phase (refer to section 2).
– Higher quality standards regarding surface properties, e.g. using a suspended ceiling in poor daylight or artificial light conditions, must be agreed in advance.
– Artificial lighting directed at the ceiling surface from below or from the side (e.g. spotlights, indirect lighting) is to be avoided. If this is not possible, the ceiling is to be sanded, filled and coated under the lighting conditions prevailing in subsequent use. Such extra quality standards for the surface are to be agreed in advance.

3.2 Requirements during installation of the OWAplan ceiling

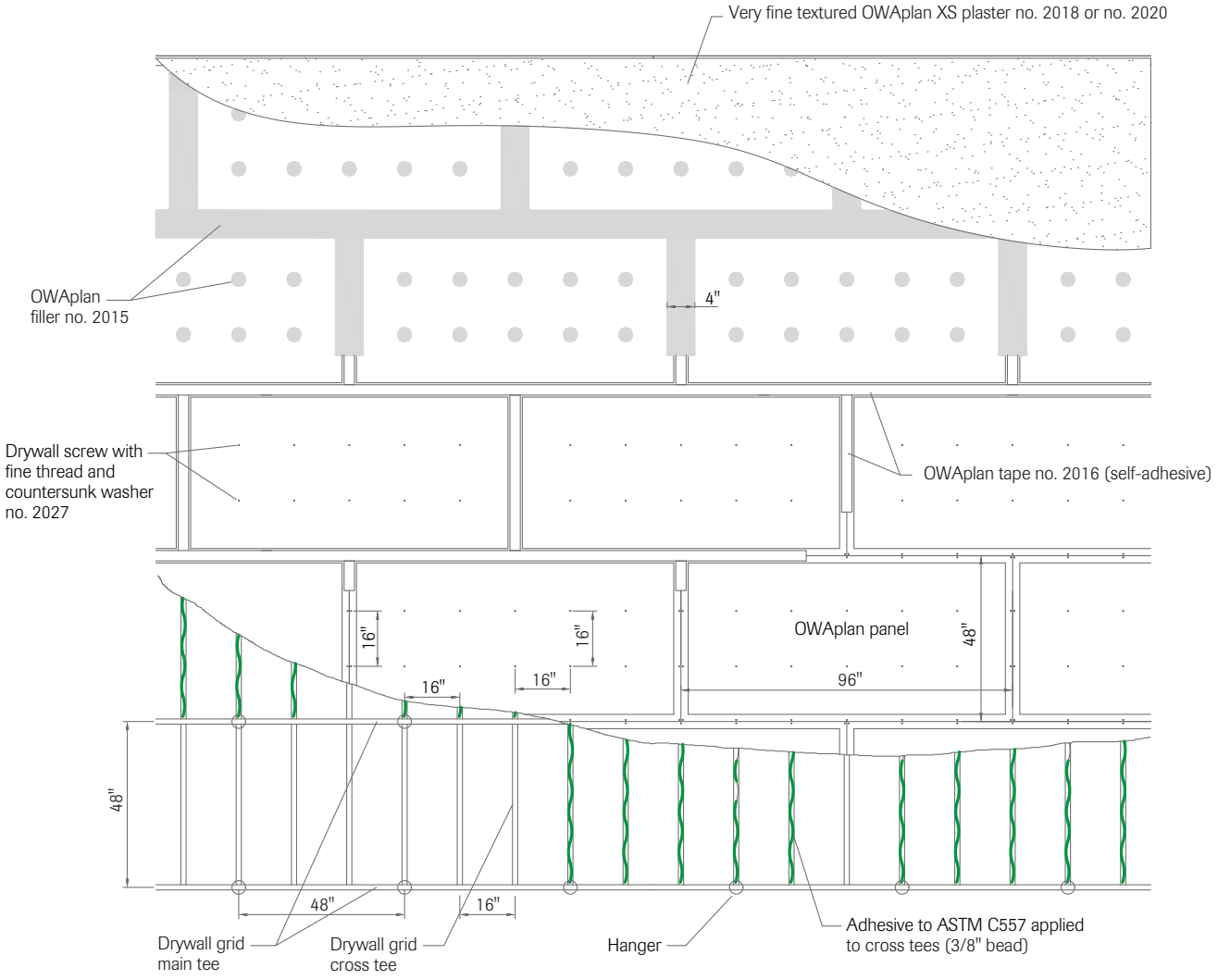
– The installed ceiling system (substructure and OWAplan tiles) must be approved by the coating company prior to applying the plaster. Any re-working requested by the coating company must be carried out.
– Observe all specified drying times for the plaster system.
– Additionally suspend all fixtures from the raw ceiling.
– Daily record of room and outdoor temperature, as well as relative humidity during installation.
– If installation work is hindered by external influences for which the contractor is not responsible, or if installation conditions, drying times etc. specified in these installation instructions are deviated from, concerns must be made in writing to the client.

3.3 Final inspection of the OWAplan ceiling

When assessing the work carried out, the fact that the installation of the ceilings involves manual work must be taken into account. The final assessment of the evenness and surface condition may only be carried out in diffuse light and not in direct artificial light, e.g. from construction lamps. The visual inspection is carried out at a distance of 40” from the surface. It is not possible to completely prevent joints from being visible; slight differences (even within the tolerance limits) may become visible in grazing light. Unusual lighting situations in the building must be discussed with the contractor in advance.

Tolerances for evenness between two measuring points:
Distance 16”: < 1/25”; distance 40”: < 2/25” (OWAplan is finished to a Level 4 drywall finish equivalent)

4. Drywall grid, OWAplan panel and plaster systems



4.1 Drywall grid (by others)

Only drywall grid components acc. to ASTM C635 & C645 or equivalent must be used. The specified grid spacings are to be observed, deviations can negatively influence or change the subsequent appearance of the OWAplan ceiling.

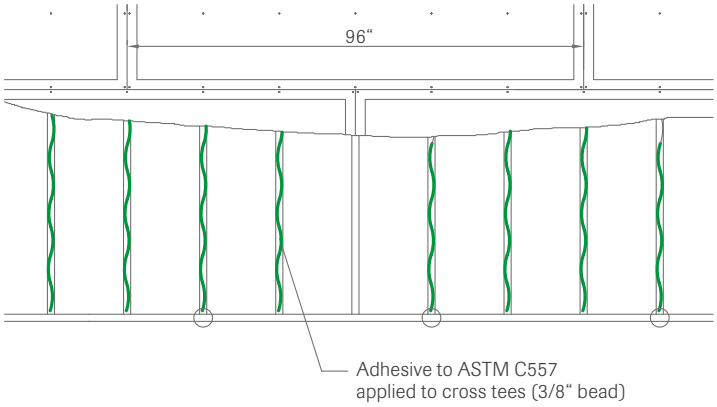
4.2 Adhesive

The adhesive must comply with the performance requirements of ASTM C557 and be specifically recommended by the manufacturer for bonding to galvanized steel. The use of foaming adhesives is not permitted.

Recommended adhesives or equivalent: Titebond® 5262 Heavy-Duty Construction Adhesive

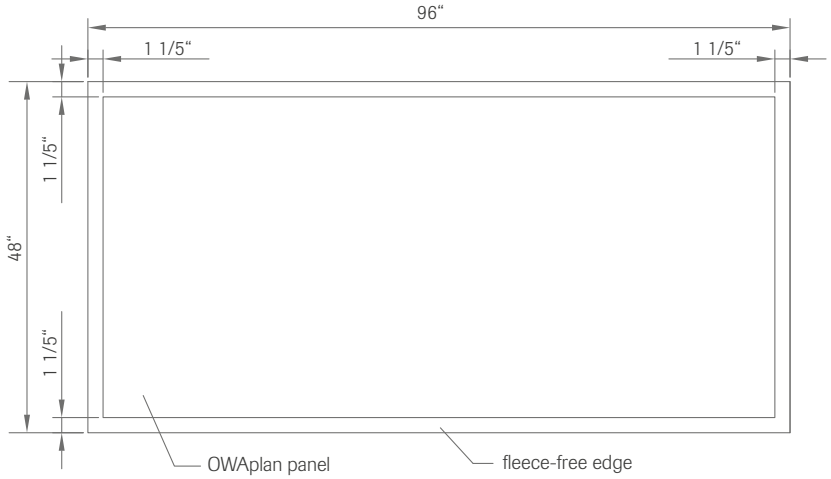
Construction adhesive is applied to all interior cross tees where panels do not meet. The adhesive is applied as a continuous 3/8” bead in the centre of the cross tee.

The main tees do not get any adhesive, make sure that no adhesive is pressed onto the main tees.



4.3 OWAplan panel

OWAplan panels are mineral fiber tiles with a glass fiber fleece laminated on the front side and a fleece-free edge. The panels are fastened to the drywall grid construction using adhesive, drywall screws (fine thread) and a countersunk washer. The panel joints must be butt-jointed and sealed. A self-adhesive joint tape (OWAplan tape) is glued to the fleece-free edge before filling. The filling of the panel butt joints serves to create a homogeneous, airtight ceiling level.



4.4 Plaster systems

4.4.1 OWAplan XS plaster system, white, ready to mix powder (no. 2018)

OWAplan tape, self-adhesive joint tape
OWAplan filler, reinforcing filler, ready to mix powder
OWAplan XS, acoustic plaster, white, ready to mix powder, 1/125” grain thickness

4.4.2 OWAplan XS plaster system, white, ready to use (no. 2020)

OWAplan tape, self-adhesive joint tape
OWAplan filler, reinforcing filler, ready to mix powder
OWAplan XS, acoustic plaster, white, ready to use, 1/125” grain thickness

5. Installation

The following requirements outline the minimum standards for installation and may be subject to additional regulations imposed by the local authority having jurisdiction.

– All installations must comply with ASTM C754 and C1858 standards.
– Any references to testing the properties of grid components pertain to ASTM E3090.
– All grid components must conform to the specifications of ASTM C635 & C645.

5.1 Drywall grid (by others)

The drywall grid system for OWAplan is installed with main runners spaced 48” and cross tees at 16”. Before installation, the grid must be cleaned to remove any dirt, grease, or oil.

1. Install drywall grid wall angle around the perimeter.

2. Suspend the main tees at 48” intervals using hanger wires spaced 48” apart and positioned within 24” of the perimeter. Trim the ends of the main tees at a center rout hole to allow for tee installation 16” from the wall.

3. Install the 48” cross tees with spacing of 16”.

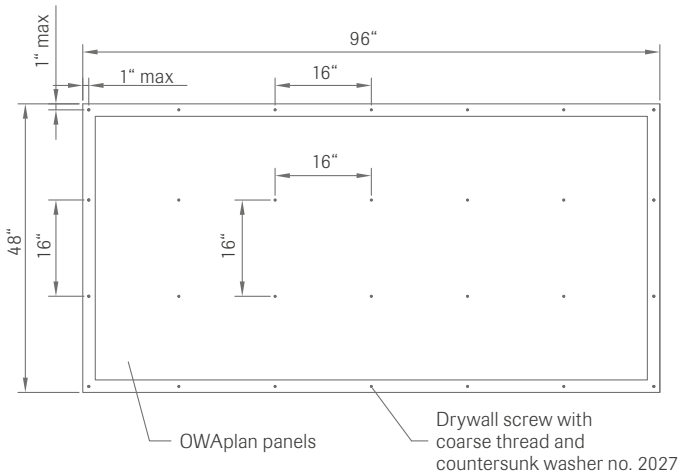
4. Align the grid so that it deviates a maximum of 1/4” over a distance of 10’.

5. Align the grid with an accuracy of 1/8‘ over a module of 48’ × 32’. Attach the grid to the wall angle using frame screws.

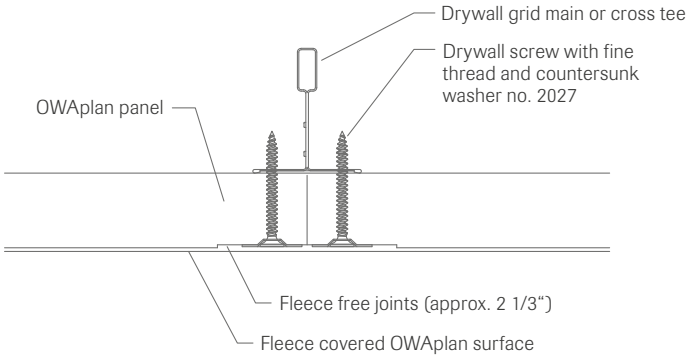
6. Install the lights and any other fixtures, supporting all fixtures with the grid or independent suspension. Adjust the fixture height to account for the 1” panel thickness. For access panels and similar large openings, frame the entire perimeter of the fixture with the grid and secure the additional grid members using self-tapping screws. Ensure the spacing between grid members does not exceed 16” on center.

5.2 OWAplan panel - screws, washer and adhesive

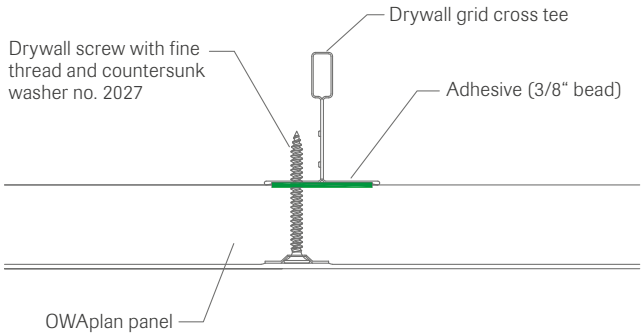
Screw layout



Screws around the perimeter



Screws and adhesive on interior cross tees



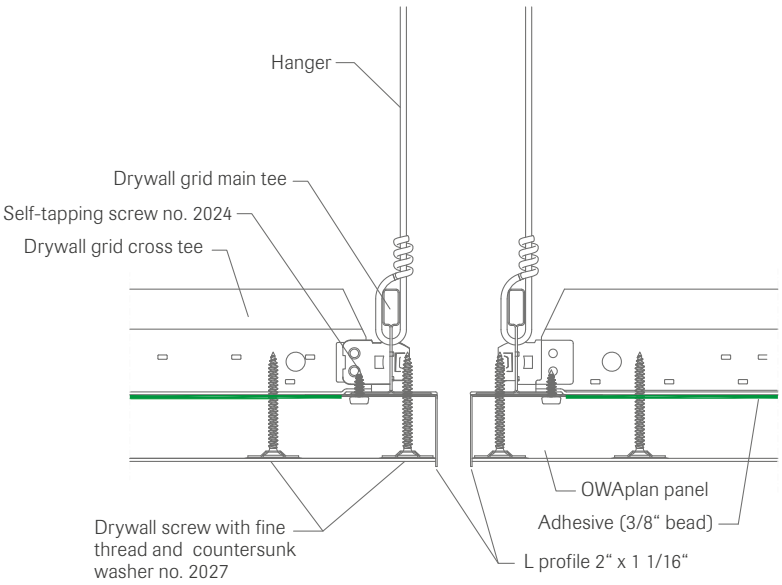
The panels must be installed using a panel lift. Important during installation: Pressure points caused by the panel lift must be avoided. Apply the adhesive to the grid, one panel at a time. Place a 3/8” bead along the center of all interior cross tees that will make contact with the panel. Use approx. 2/5 of a 28-oz. cartridge for each full panel and install the panel within a few minutes, before the adhesive begins to form a skin. Position the panel so that the long side is parallel to the main tees, and align the edges with the center lines of the main and cross tees. Once in place, press the panel firmly against the grid to ensure a strong bond with the adhesive. Screw them down with a force fit to create a firm connection with the substructure. The self-tapping drywall screw, fine thread #6 x 1-3/8“ and washer no. 2027 must be countersunk at a maximum center distance of 16” (fleece should not crack). The screws are always screwed to the drywall grid profiles from the center of the board outwards.

Drywall screw and countersunk washer

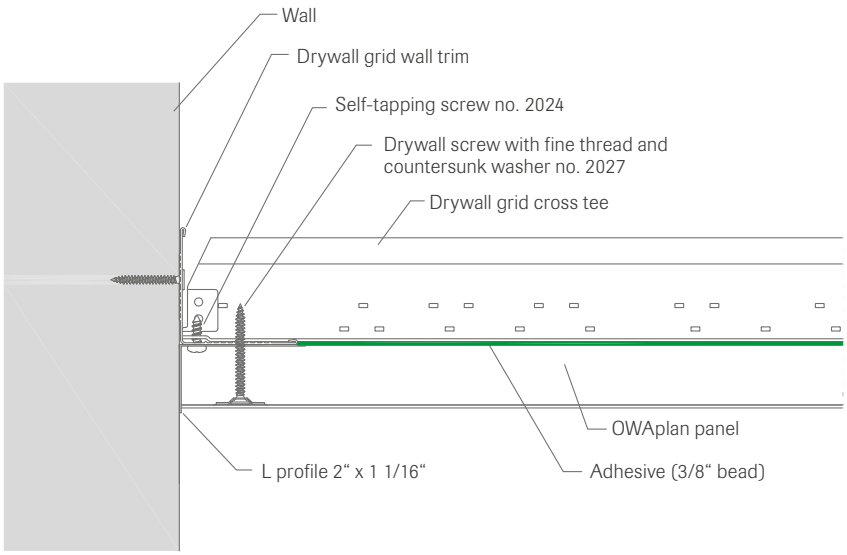
The boards should be staggered with an offset of at least 32”. The longitudinal edges of the boards should always be installed in the direction of daylight incidence (main direction).

Required auxiliary lines with pencil or similar on the fleece is not allowed. These can no longer be removed after completion and will later show on the plaster surface. The use of a laser is recommended.

5.3 Expansion gaps

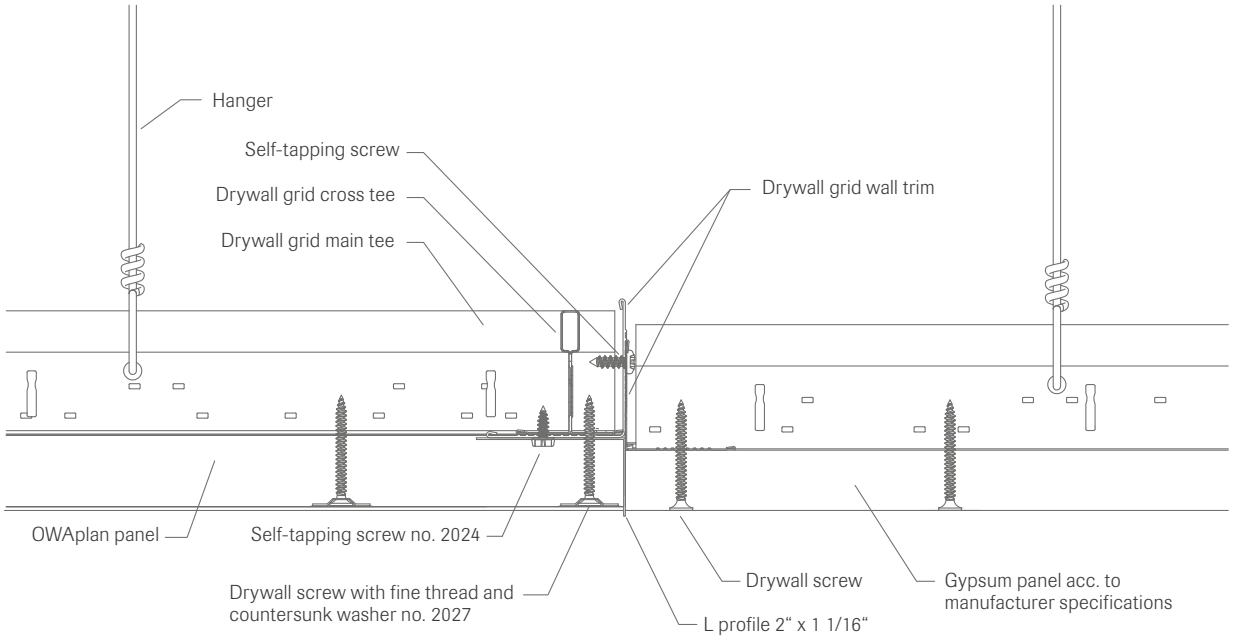


5.4 Wall connection



OWAplan panels can be finished directly to the wall by using L profile 2” x 1-1/16”

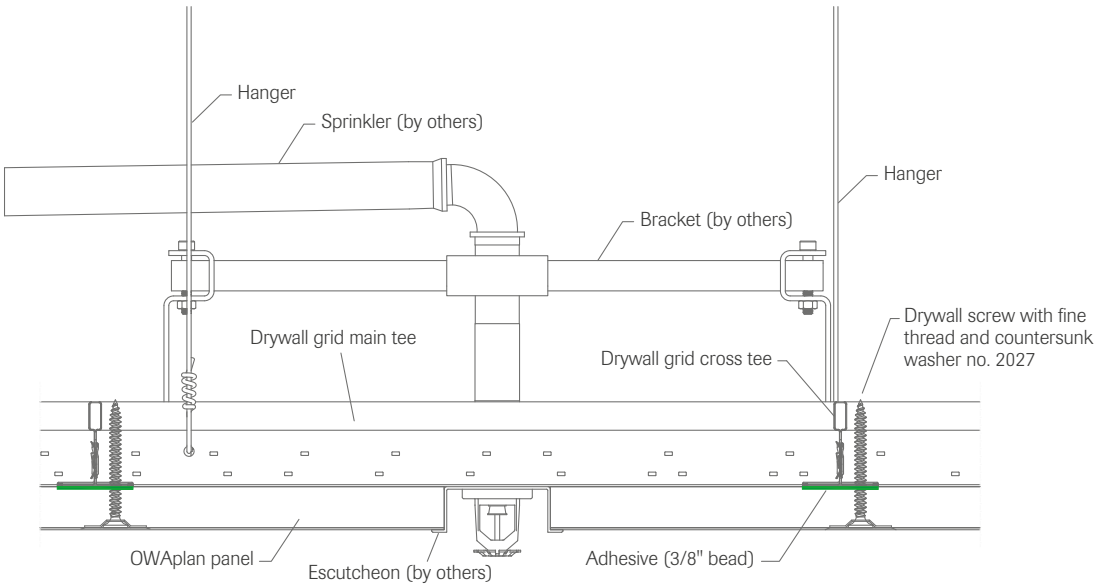
5.5 OWAplan and gypsum panel



5.6 Details sprinkler, lights and ventilation diffuser

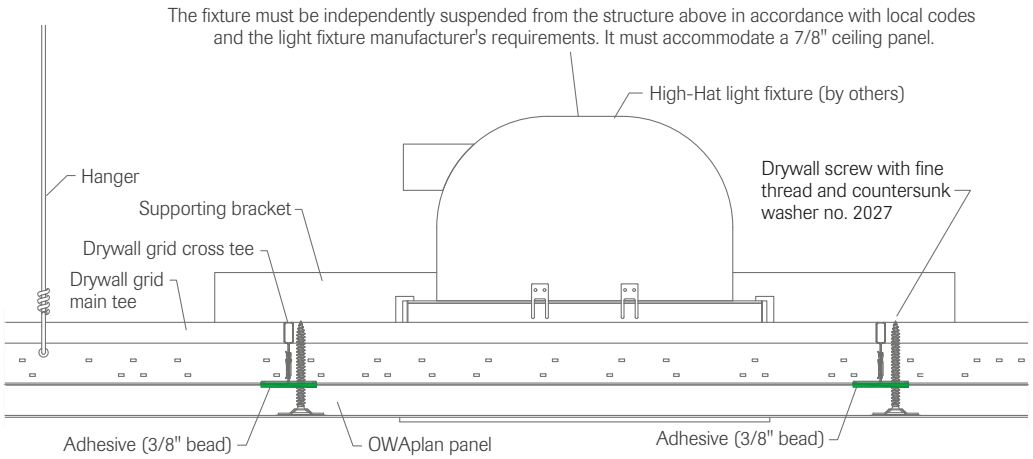
OWAplan panels have a thickness of 1”. Therefore, the installation height of fixtures that interact with these panels, such as sprinkler heads and light fixture trims, must be adjustable to accommodate this 1” thickness. The independent support of mechanical, electrical, and plumbing devices must follow the manufacturer’s instructions. OWAplan panels are not designed to bear the load of lights, diffusers, speakers, or similar equipment. Ensure that detailed integration plans are in place before installing the panels.

Sprinkler:

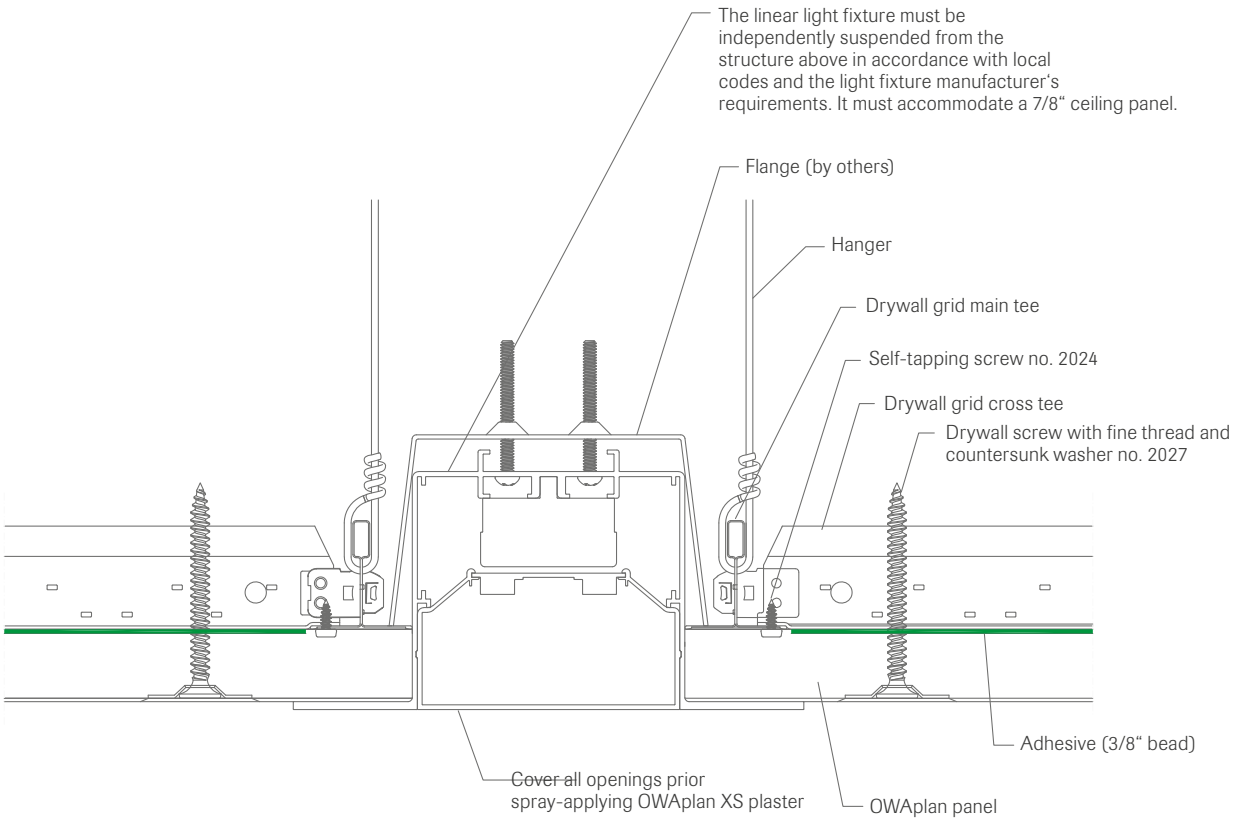


For questions about sprinklers, refer to the NFPA 13 sprinkler code. Designers and installers should seek guidance from a fire protection engineer, NFPA 13, and local regulations when dealing with automatic fire detection and suppression systems.

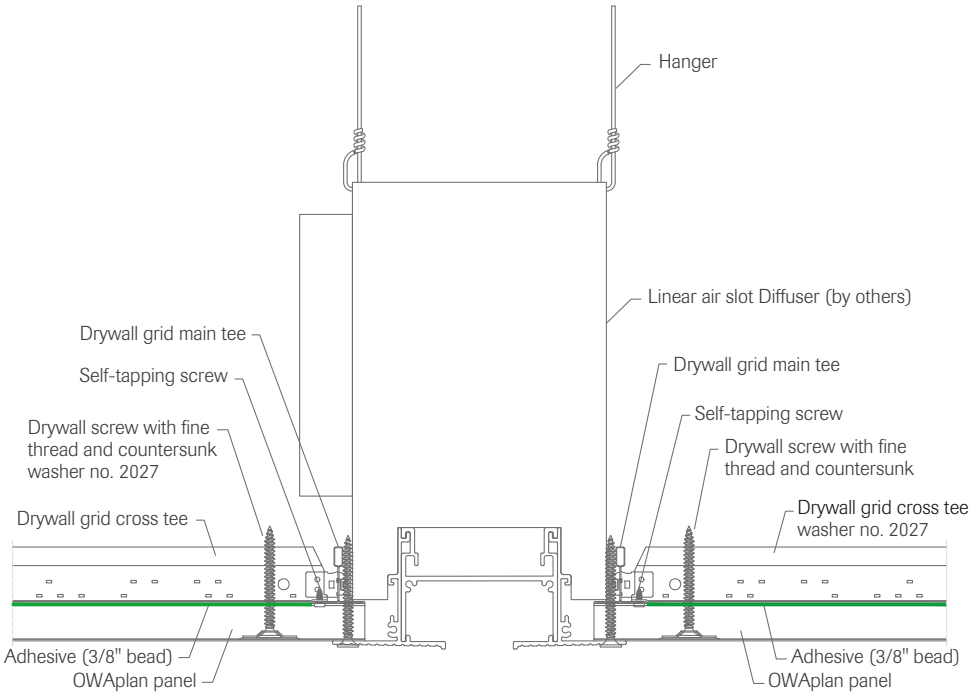
Lights:



Liniear lights:



Ventilation diffuser:



5.7 Open air plenum installation

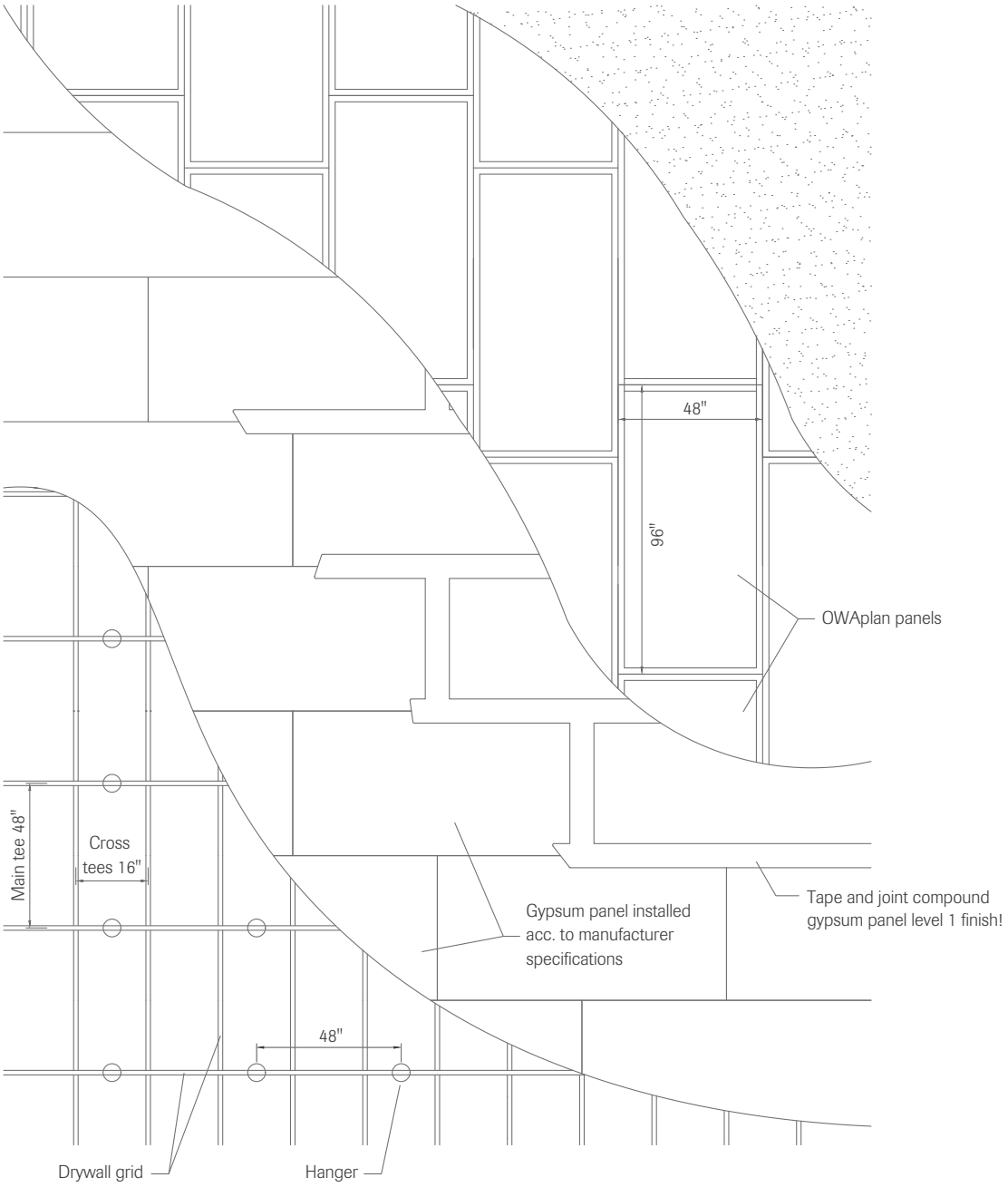
When installing OWAplan panels in a ceiling with an open-air plenum (i.e., without ducted returns), the installation process is adjusted to include a layer of drywall between the grid and the OWAplan panels. For this type of installation, follow these steps:

1. Grid installation: Position the main runners 48” on center, with cross tees spaced no more than 16” on center. Adjust the grid elevation to account for the combined thickness of the drywall and OWAplan panels (1-5/8” total). Ensure that all lighting and components can accommodate this thickness.

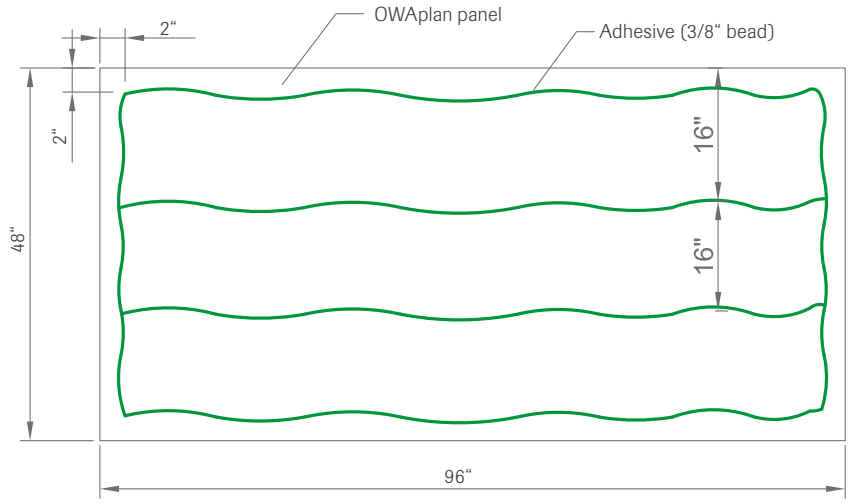
2. Drywall installation: Secure 5/8” drywall to the grid in a bond pattern, aligning the long edges parallel to the main runners. Fasten the drywall acc. to manufacturer specifications.

3. Joint treatment: Apply tape and a single coat of joint compound over the seams to prevent air leakage.

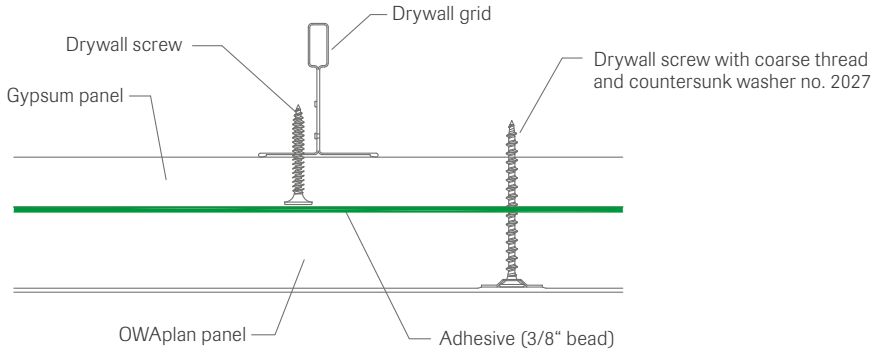
4. OWAplan panel installation: Once the joint compound has dried, mount the OWAplan panels onto the drywall. Arrange the panels perpendicular to the drywall and stagger the joints so they do not align with the drywall seams.



Apply a 3/8” bead of construction adhesive to the back of each OWAplan panel like following:



Position the OWAplan panel against the drywall and press firmly along the perimeter and adhesive lines to evenly spread the adhesive and ensure a flush fit. Secure the panel to the drywall using drywall screws with coarse thread #6 x 2“ and countersunk washer.



6. Material requirements and system components

6.1 Material requirements for substructure

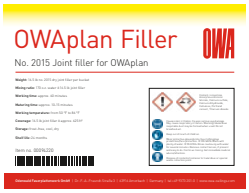
Item no.	Description	
by others	Drywall grid acc. to ASTM C 635 & ASTM C636	
	Adhesive acc. to ASTM C 557	approx. 2/5 of a 28-oz. cartridge per panel
	Self-tapping drywall screw, fine thread #6 x 1 3/8“	0,93 pcs/ft²
	L-profile 2“ x 1 1/16“ Galvanized Steel	dependent on project
00093939	Countersunk washer no. 2027	0,93 pcs/ft²
00085458	Self-tapping screw no. 2024 for L-profile	0.8 pcs/ft

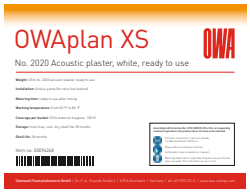
*[1] The number of drywall screws and washers is an average value. The number of screws varies depending on the section of the ceiling concerned.

6.2 Panel

	OWAplan
Item no.	00094224
Width	48”
Length	96”
Thickness	1”
Weight per panel	29,44 lb
Weight per sqft	0.92 lb
ft² per panel	32 ft²
Quantity per sales unit	39
Material type	wet-formed mineral fiber
NRC-value	0.95
Building material class	class A acc. to ASTM E84
Panel surface	fleece laminated. white
Storage	dry
Site condition	> 50 °F
Relative humidity	max. 95 %

6.3 Plaster system





Description	OWAplan filler no. 2015	OWAplan XS plaster no. 2018	OWAplan XS plaster no. 2020
Item no.	00094220	00094221	00094248
Material type	dry goods	dry goods	wet goods
Color	white	white (similar to RAL 9016)	white (similar to RAL 9016)
Weight per sales unit	16.5 lb	16.5 lb	33 lb
Sales unit	bucket with bag	bucket with bag	bucket
Shelf life	24 months	24 months	18 months
Storage	frost-free, cool	frost-free, cool	frost-free, cool
Processing with airless pump	not possible	yes	yes
Material requirement with airless pump*1	not possible	approx. 0.14 lb powder/ft^2	approx. 0.31 lb/ft^2
Coverage per bucket*1 approx.	625 ft^2	115 ft^2	105 ft^2
Mixing ratio	170 o.z. water for 16.5 lb powder	170 o.z. water for 16.5 lb powder	ready to use
Working time	approx. 60 minutes	approx. 120 minutes	–
Maturing time	approx. 15 min	approx. 15 minutes	mixing
Processing conditions*2	+50 °F up to +86 °F, 40 - 70 % RH	+50 °F up to +86 °F, 40 - 70 % RH	+50 °F up to +86 °F, 40 - 70 % RH
Drying time*3	1. layer: 4 hours 2. layer: 12 hours	1. layer: 12 hours 2. or 3. layer: 4 hours	1. layer: 12 hours 2. or 3. layer: 4 hours
Maximum filler width	max. 4”	–	–
Spray distance to ceiling	–	28”	28”
OWAplan tape, no. 2016, 98 yd per roll (item no. 00084276)	approx. 4.8 inch/ft^2	–	–
Installation	by hand	Graco Mark V XT	Graco Mark V XT

*1 Material consumption including overspray must be maintained in order to fulfill the acoustic values
*2 Temperature and humidity should be kept as constant as possible. Significant and/or rapid fluctuations can lead to undesirablechanges in shape, which can result in cracks.
*3 Depending on the room climate, drying times must be checked

7. Application instructions

7.1 Construction site conditions

– During the coating of the ceiling system, the relative humidity must be between 40 % and 70 % and the temperature should be 50 - 86 °F, preferably 64 °F.
– Temperature and humidity should be kept as constant as possible. Significant and/or rapid fluctuations can lead to undesirable changes in shape, which can result in cracks.
– Room temperature increases should be gradual with a maximum 3 K in 24 hours.
– Sufficient ventilation must be ensured during and after completion of the ceilings to promote drying. Do not blow warm or hot air directly onto the ceilings!
– The better the indoor conditions before, during and after installation match the future conditions, the lower the risk of deformations, cracks or color deviations.

7.2 Filling and sanding joints

Apply OWAplan tape (no. 2016) to the board butt joints. Then apply the first layer of OWAplan filler (no. 2015) to the 2 2/5” fleece free joints. The screws and washer must also be filled. Drying time approx. 4 hours depending on room climate. Subsequently, apply a second layer of filler so the surface is flat. Maximum filler width 4”. (Attention: Excessive filled surfaces can reduce the absorption properties of the ceiling.)

Sand the ceiling surface after 12 hours drying time at the earliest (depending on the room climate). Existing, coarse unevennessin the ceiling surface with a sanding giraffe, fine unevenness can be sanded with a hand sander. We recommend a sanding giraffe with dust extraction and 150 or 180 grit sandpaper. The surface should be smooth (no raised or hollow patched areas) and free of tool marks and/or grooves.

7.3 Acoustic plaster OWAplan XS

7.3.1 Apply OWAplan XS plaster, white, ready to mix (no. 2018)

Mix OWAplan XS plaster (powdered material) in a bucket with clean, cold water using a mixing paddle. Stir the plaster again after 5 minutes and let it swell for 15 minutes.

Spray the first layer of OWAplan XS plaster and allow it to dry for at least 12 hours. Spray the second layer and let it dry (at least 4 hours – depending on room temperature and relative humidity). Then, apply the third layer.

The recommended spraying distance to the ceiling is approximately 28”. Smaller distances will result in a cloudy and coarser spray pattern. Larger distances will produce a finer spray pattern but also lead to higher material loss.

For more information on the pump, see section 7.4 Plastering machine - airless pump.

7.3.2 Apply OWAplan XS plaster, white, ready to use (no. 2020)

Spray the first layer of OWAplan XS plaster and allow it to dry for at least 12 hours. Spray the second layer and let it dry (at least 4 hours – depending on room temperature and relative humidity). Then, apply the third layer. The recommended spraying distance to the ceiling is approximately 28”. Smaller distances will result in a cloudy and coarser spray pattern. Larger distances will produce a finer spray pattern but also lead to higher material loss.

For more information on the pump, see section 7.4 Plastering machine - airless pump.

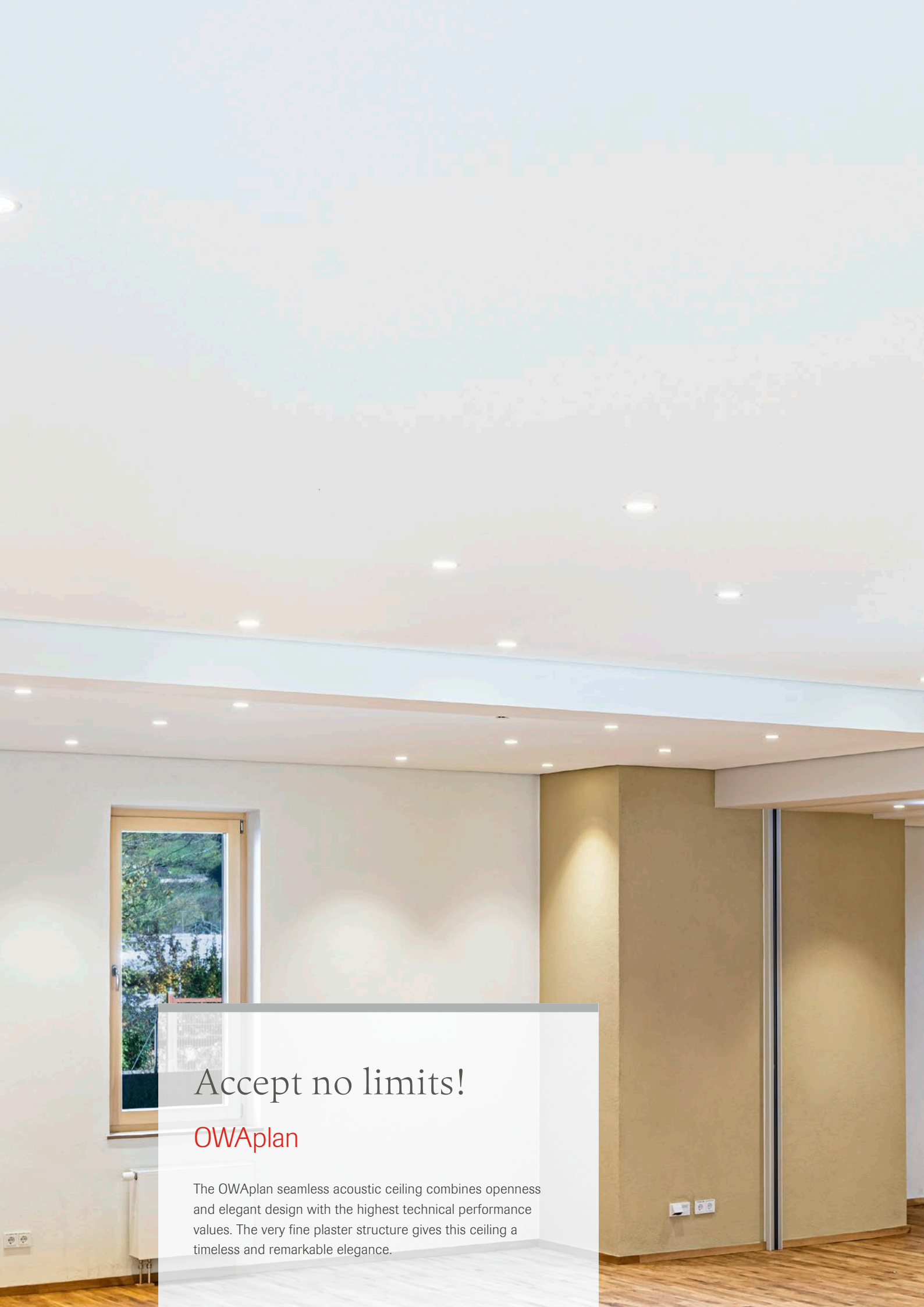
7.4 Plastering machine - airless pump

Before using the plastering machine, review all safety, operating, and maintenance information provided by the manufacturer. Clean and rinse the plastering machine with water before use.

The required plastering machine is an airless pump. It must be capable of building up a pressure of at least 2900 psi. In smaller rooms, the pressure should be reduced accordingly to ensure a homogeneous surface spray.

The recommended models are Graco Mark V XT with the Graco TexSpray Heavy Duty spray gun and the 635 nozzle.

Plaster material	Pressure (Airless pump)	Nozzle	Recomended airless pump	Recomended spray gun
OWAplan XS, ready to use OWAplan XS, ready to mix	≈2900 psi	635	Graco MARK V XT	Graco TexSpray HeavyDuty



Accept no limits!

OWAplan

The OWAplan seamless acoustic ceiling combines openness and elegant design with the highest technical performance values. The very fine plaster structure gives this ceiling a timeless and remarkable elegance.

Certified Management Systems

Product warranties

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