

Ball-impact Resistant Ceiling



Full Score
*for Acoustics and
Ball-impact Resistance*

Realising perfect gym hall ceilings with
the VoglFuge system

**with air purification
effect as a standard
feature**

Full Score for your Ceiling

In sports facilities and multi-purpose halls, ceiling systems not only require acoustic effectiveness, but also special stability. Particularly in highly frequented areas, acoustic ceilings serve as sound absorbers and offer a pleasant atmosphere both for sports and for cultural and music events.

Ideal conditions for using our VoglFuge system which allows ball-impact resistant acoustic design ceilings to be realised quickly, economically and with reliable results.

Benefits of the VoglFuge system:

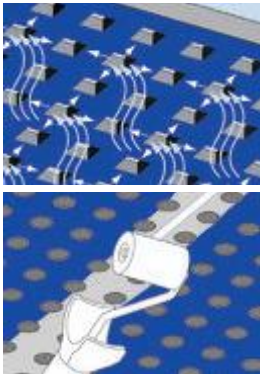
The unique joint technology offers ultimate safety in installation and result also for the ball-impact resistant ceiling structure:

- Different panel variations in 12.5 mm or 15.0 mm thickness
- Ball-impact resistance in compliance with DIN 18032-3 and DIN EN 13964 Appendix D
- Quick mounting of panels – "edge-to-edge"
- Maximum crack resistance
- Quickest possible joint finishing with our unique VoglFuge strip
- Significant time saving due to quick installation and drying times
- Always complete with the VoglFuge System Kit
- Including perforated panel screws SN 3.5 x 30 mm



VoglFuge System Kit includes the required material, tools and a detailed assembly instruction to ensure top quality of workmanship and result.

The right tools at the right time in exactly the right place.



Our acoustic design panels are perforated ceiling panels with high acoustic performance and air purification effect (adsorption).

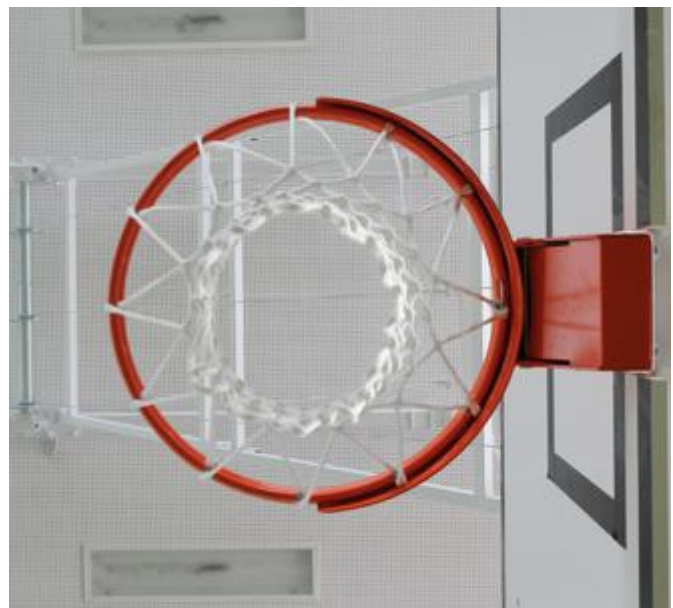
Other available options: Acoustic design panels with non-perforated edges, block perforation, applications, manufacture in accordance with customer designs and ceiling plans.

Based on standard: EN 14190 "Gypsum plasterboard products from reprocessing"
Fire rating: A2-s1, d0 (non-flammable) according to EN 13501-1
Long edge: SK (sharp-edged)
Short edge: SK (sharp-edged)

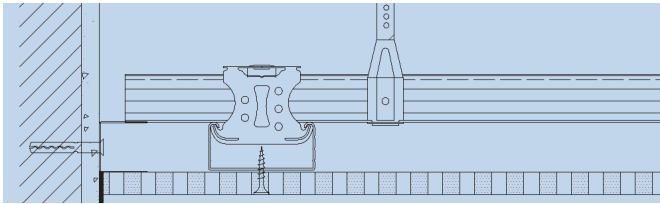


Illustration	Item number	Description	Details	m ² /pallet Pcs./pallet
	7061101110	Acoustic Design Panel VF 6/18R Acoustic fleece, black	1,188 x 1,998 x 12.5 mm	59.3 m ²
	7061101120	Acoustic Design Panel VF 6/18R Acoustic fleece, white	Perforated area: 8.7 % Mass: 9.1 kg/m ²	25 pieces
	7062101110	Acoustic Design Panel VF 6/18R Acoustic fleece, black	1,188 x 1,998 x 15.0 mm	59.3 m ²
	7062101120	Acoustic Design Panel VF 6/18R Acoustic fleece, white	Perforated area: 8.7 % Mass: 11.4 kg/m ²	25 pieces
	7061102110	Acoustic Design Panel VF 8/18R Acoustic fleece, black	1,188 x 1,998 x 12.5 mm	59.3 m ²
	7061102120	Acoustic Design Panel VF 8/18R Acoustic fleece, white	Perforated area: 15.5 % Mass: 8.5 kg/m ²	25 pieces
	7062102110	Acoustic Design Panel VF 8/18R Acoustic fleece, black	1,188 x 1,998 x 15.0 mm	59.3 m ²
	7062102120	Acoustic Design Panel VF 8/18R Acoustic fleece, white	Perforated area: 15.5 % Mass: 10.5 kg/m ²	25 pieces
	7061103110	Acoustic Design Panel VF 10/23R Acoustic fleece, black	1,196 x 2,001 x 12.5 mm	59.8 m ²
	7061103120	Acoustic Design Panel VF 10/23R Acoustic fleece, white	Perforated area: 14.8 % Mass: 8.5 kg/m ²	25 pieces
	7062103110	Acoustic Design Panel VF 10/23R Acoustic fleece, black	1,196 x 2,001 x 15.0 mm	59.8 m ²
	7062103120	Acoustic Design Panel VF 10/23R Acoustic fleece, white	Perforated area: 14.8 % Mass: 10.6 kg/m ²	25 pieces
	7061104110	Acoustic Design Panel VF 12/25R Acoustic fleece, black	1,196 x 2,001 x 12.5 mm	60.0 m ²
	7061104120	Acoustic Design Panel VF 12/25R Acoustic fleece, white	Perforated area: 18.1 % Mass: 8.2 kg/m ²	25 pieces
	7062104110	Acoustic Design Panel VF 12/25R Acoustic fleece, black	1,200 x 2,000 x 15.0 mm	60.0 m ²
	7062104120	Acoustic Design Panel VF 12/25R Acoustic fleece, white	Perforated area: 18.1 % Mass: 10.2 kg/m ²	25 pieces
	7061105110	Acoustic Design Panel VF 15/30R Acoustic fleece, black	1,200 x 1,980 x 12.5 mm	59.4 m ²
	7061105120	Acoustic Design Panel VF 15/30R Acoustic fleece, white	Perforated area: 19.6 % Mass: 8.0 kg/m ²	25 pieces
	7062105110	Acoustic Design Panel VF 15/30R Acoustic fleece, black	1,200 x 1,980 x 15.0 mm	59.4 m ²
	7062105120	Acoustic Design Panel VF 15/30R Acoustic fleece, white	Perforated area: 19.6 % Mass: 10.5 kg/m ²	25 pieces
	7061106110	Acoustic Design Panel VF 8/12/50R Acoustic fleece, black	1,200 x 2,000 x 12.5 mm	60.0 m ²
	7061106120	Acoustic Design Panel VF 8/12/50R Acoustic fleece, white	Perforated area: 13.1 % Mass: 8.7 kg/m ²	25 pieces
	7062106110	Acoustic Design Panel VF 8/12/50R Acoustic fleece, black	1,200 x 2,000 x 15.0 mm	60.0 m ²
	7062106120	Acoustic Design Panel VF 8/12/50R Acoustic fleece, white	Perforated area: 13.1 % Mass: 10.9 kg/m ²	25 pieces

Illustration	Item number	Description	Details	m ² /pallet Pcs./pallet
	7061107110	Acoustic Design Panel VF 12/20/66R Acoustic fleece, black	1,188 x 1,980 x 12.5 mm	58.8 m ²
	7061107120	Acoustic Design Panel VF 12/20/66R Acoustic fleece, white	Perforated area: 19.6 % Mass: 8.0 kg/m ²	25 pieces
	7062107110	Acoustic Design Panel VF 12/20/66R Acoustic fleece, black	1,188 x 1,980 x 15.0 mm	58.8 m ²
	7062107120	Acoustic Design Panel VF 12/20/66R Acoustic fleece, white	Perforated area: 19.6 % Mass: 10.0 kg/m ²	25 pieces
	7061108110	Acoustic Design Panel VF 8/18Q Acoustic fleece, black	1,188 x 1,980 x 12.5 mm	59.3 m ²
	7061108120	Acoustic Design Panel VF 8/18Q Acoustic fleece, white	Perforated area: 19.8 % Mass: 8.0 kg/m ²	25 pieces
	7062108110	Acoustic Design Panel VF 8/18Q Acoustic fleece, black	1,188 x 1,980 x 15.0 mm	59.38 m ²
	7062108120	Acoustic Design Panel VF 8/18Q Acoustic fleece, white	Perforated area: 19.8 % Mass: 10.0 kg/m ²	25 pieces
	7061109110	Acoustic Design Panel VF 12/25Q Acoustic fleece, black	1,200 x 2,000 x 12.5 mm	60.0 m ²
	7061109120	Acoustic Design Panel VF 12/25Q Acoustic fleece, white	Perforated area: 23.0 % Mass: 7.7 kg/m ²	25 pieces
	7062109110	Acoustic Design Panel VF 12/25Q Acoustic fleece, black	1,200 x 2,000 x 15.0 mm	60.0 m ²
	7062109120	Acoustic Design Panel VF 12/25Q Acoustic fleece, white	Perforated area: 23.0 % Mass: 9.6 kg/m ²	25 pieces
	7061110110	Acoustic Design Panel VF 8/15/20R Acoustic fleece, black	1,200 x 1,980 x 12.5 mm	60.0 m ² *
	7061110120	Acoustic Design Panel VF 8/15/20R Acoustic fleece, white	Perforated area: 9.5 % Mass: 9.1 kg/m ²	25 pieces
	7062110110	Acoustic Design Panel VF 8/15/20R Acoustic fleece, black	1,200 x 1,980 x 15.0 mm	60.0 m ² *
	7062110120	Acoustic Design Panel VF 8/15/20R Acoustic fleece, white	Perforated area: 9.5 % Mass: 11.3 kg/m ²	25 pieces
	7061111110	Acoustic Design Panel VF 12/20/35R Acoustic fleece, black	1,200 x 2,000 x 12.5 mm	60.0 m ² *
	7061111120	Acoustic Design Panel VF 12/20/35R Acoustic fleece, white	Perforated area: 11.0 % Mass: 8.9 kg/m ²	25 pieces
	7062111110	Acoustic Design Panel VF 12/20/35R Acoustic fleece, black	1,200 x 2,000 x 15.0 mm	60.0 m ² *
	7062111120	Acoustic Design Panel VF 12/20/35R Acoustic fleece, white	Perforated area: 11.0 % Mass: 11.1 kg/m ²	25 pieces

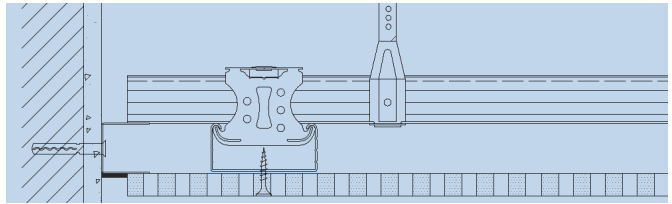


*Note: Despite being perforated irregularly, random perforation panels still yield a certain linear layout as the abutting panel edges must be non-perforated in any case. This is unavoidable and independent of the workmanship of the specialist contractor.



Wall connection:

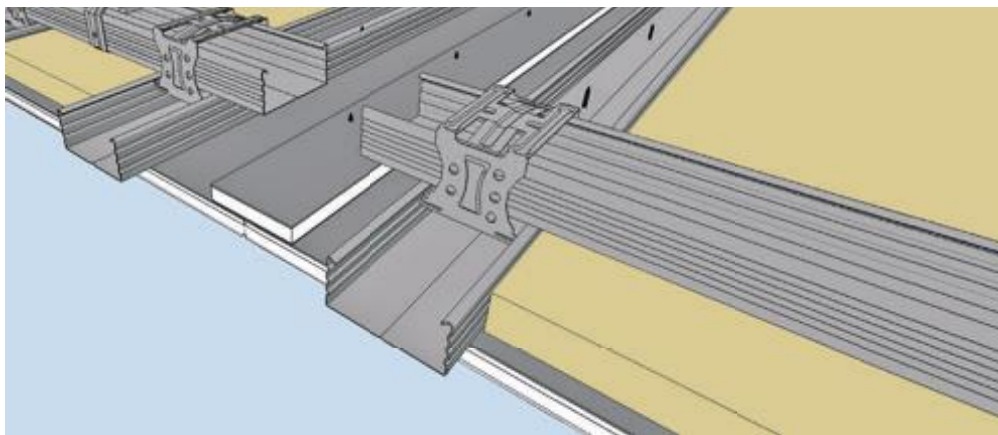
For filled wall connections, or wall connections filled from below, a double layer fleece strip is used to separate acoustic ceiling from wall.



Wall connection – shadow gap:

For wall connections with shadow gap, the panel is only installed up to UD profile as this may be covered with a strip of adhesive double layer fleece in order to colour shadow gap.

Please contact us if you require additional technical details on possible wall connections.



Expansion joints:

To prevent cracking in ceiling surface, expansion joints have to be provided every 10 linear metres / 100 m² of ceiling area.

Framework must be completely severed (see illustration) and panel strips above joint fixed to one side of ceiling structure only.

Tip: Panel strip may be covered with adhesive double layer fleece on visible side if colouring expansion joint in either black or white is desired.

Material required per m² based on a ceiling of 100 m² (10 m x 10 m, not considering loss or waste, approximate values):

Metal framework, suspended bracket centre distance 1,000 mm, primary profile spacing 900 mm, secondary profile spacing 333 mm

Item number	Item description	Unit	Quantity
Fixation			
Standard	Safety nail, DN 6 x 35	piece	1.3
Suspended brackets			
2016X000	Direct suspended bracket 50/120/200 and	piece	1.3
50809000	Tapping screw LN 3.5 x 9.5	piece	2.6
or			
20128 / 20151	Vernier hanger / vernier bottom part and	piece	1.3
25501000	Vernier security pin and	piece	1.3
25XXX000	Vernier top part, 200 - 2,000 mm, custom lengths on request	piece	1.3
Profiles and connectors			
100XX000	CD profile 60/27/0.6 rK, l=XXX mm	m	4.1
10230000	UD profile 28/27/0.6, 3,000 mm	m	0.4
20159000	Connector, lengthwise, CD 60/27	piece	0.8
20135000	Cross connector, CD 60/27	piece	3.3
52130000	Perforated panel screw SN 3.5 x 30	piece	22

Note: In case of shorter secondary profile centres, the quantities consumed shall be increased accordingly.

Primary profiles are rigidly hung from structural soffit with suspended brackets using fixing materials approved by the relevant building authorities.

Centre distance and number of suspended brackets, as well as fixation, are subject to site requirements and EN 13964/DIN 18181.

CD 60/27 secondary profiles are attached to CD 60/27 primary profiles using cross connectors.

CD 60/27 are extended using straight connectors. For primary grid profiles, always ensure that joint is close to a suspended bracket (max. 100 mm). Joints should generally be staggered.

Plasterboards should be installed in accordance with EN 13964/DIN 18181 and manufacturer's guidelines.

Additional items such as lighting, ventilation, sprinkler systems etc. must be individually suspended.

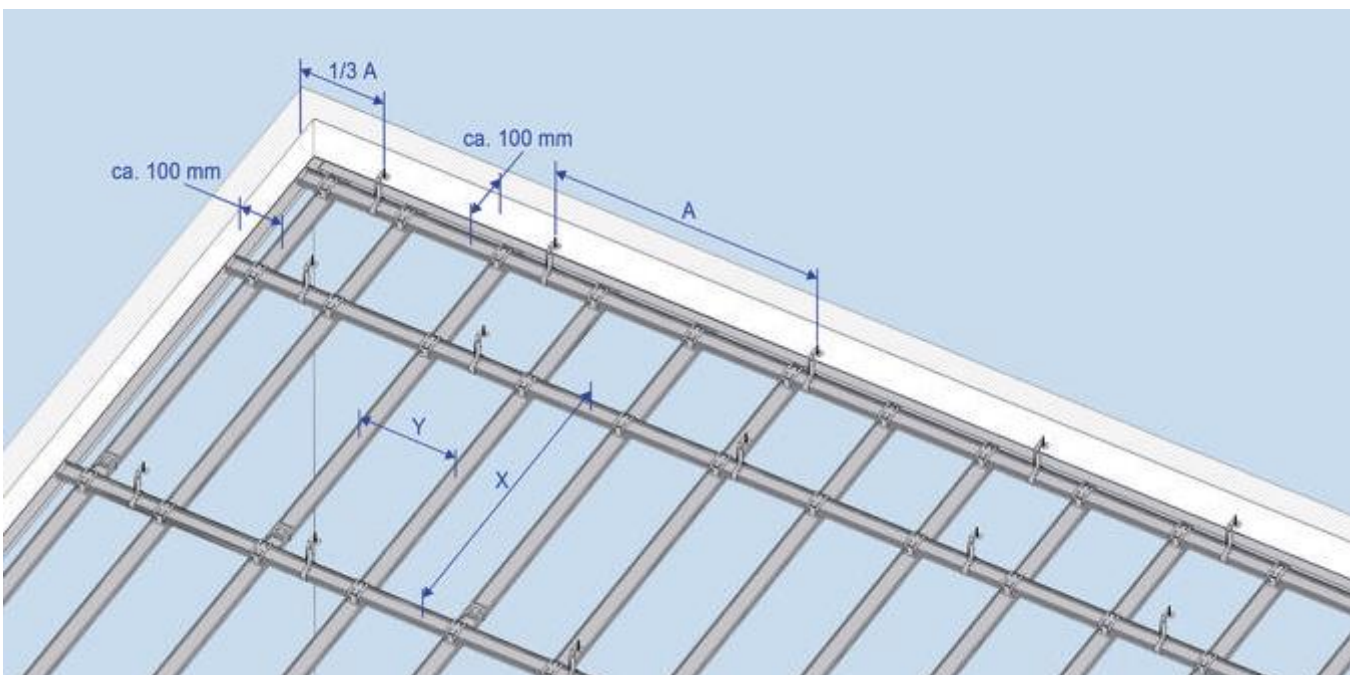
Any changes in framework owing to integrated ceiling components must be considered.

Block perforations and block slotting require different secondary profile centre distances which are shown in our tables.

Ball-impact Resistant Ceiling framework

Technical data	Unit	Perforated panel ceiling						
Panel thickness	mm	12.5						
Distributed load	kN/m ²	≤ 0.15					≤ 0.30	
Centre distance of suspended bracket A	mm	1,150	1,050	1,000	950	900	900	750
Centre distance of primary profiles X	mm	600	800	900	1,000	1,100	600	1,000
Centre distance of secondary profiles Y	mm	see table below						

Item	Unit	Centre distance of secondary profiles Y
see table on page 107		



Our ceiling system was tested in accordance with DIN 18032-3: 1997-04 “Gyms, halls for gymnastics and games and multi-purpose use, testing of ball impact resistance” as well as EN 13964: 2007-02, Appendix D “Suspended ceilings: requirements and testing methods, impact resistance”.

Our acoustic design panels were tested by an accredited testing institute on the basis of the aforementioned standards. The testing consisted in the ceiling panels being pelted with a handball with a total of 36 shots at various angles of impact on the suspended ceiling.

The tested ceiling panels withstood the stress without any damage. The systems are thus tested as “ball-impact resistant” in compliance with DIN 18032-3 for the application area of “Ceiling” as well as EN 13964 Appendix D as “Class 1A”.

This applies to the following acoustic design ceiling panels in conjunction with the secondary profile centres indicated:

Acoustic design panel, th = 12.5 mm		
Item	Perforated area	Centre distance of secondary profiles Y (mm)
6/18 round	8.7 %	250
8/18 round	15.5 %	250
10/23 round	14.8 %	250
12/25 round	18.1 %	200
15/30 round	19.6 %	200
8/12/50 round	13.1 %	250
12/20/66 round	19.6 %	200
8/18 square	19.8 %	200
12/25 square	23.0 %	200
8/15/20 round	9.5 %	250
12/20/35 round	11.0 %	250

Acoustic design panel, th = 15.0 mm		
Item	Perforated area	Centre distance of secondary profiles Y (mm)
6/18 round	8.7 %	333
8/18 round	15.5 %	333
10/23 round	14.8 %	333
12/25 round	18.1 %	333
15/30 round	19.6 %	330
8/12/50 round	13.1 %	333
12/20/66 round	19.6 %	330
8/18 square	19.8 %	333
12/25 square	23.0 %	333
8/15/20 round	9.5 %	333
12/20/35 round	11.0 %	333



**Acoustic Design Panels for “Ball-impact Resistant Ceiling”
(with air purification effect) – VoglFuge system**

Suspended ceiling structure, one side clad with Vogl acoustic design panels, backed with sound absorbing fleece, mounted to a rigid ceiling framework of galvanised metal profiles, hung with flush and horizontally aligned suspended brackets and installed using fixing materials approved by the building authorities, installation in accordance with manufacturer's instructions, including all connection and jointing work as well as connection and fixing materials. Designed as "Ball-impact Resistant Ceiling".

System structure

Framework in accordance with DIN 18181:2007-02

Profiles:

Pressure-resistant design made from galvanised sheet steel profiles CD 60/27 as primary and secondary profiles in accordance with EN 14195

Suspended brackets:

- Rigid suspension in vernier system
- Use fixing materials approved by the relevant building authorities.

Connection:

For primary-secondary profile connection with cross connectors, use suspended brackets and cross connectors in accordance with EN 13964.

Suspended bracket centre distance: max. 900 mm,
Primary profile centre distance: max. 1,100 mm,
Secondary profile centre distance: 200 / 250 / 330 / 333 mm*

Covering:

Vogl Acoustic design panels as perforated ceiling panels in accordance with EN 14190, with air purification effect, one layer 12.5 mm*/15.0 mm*, laid edge-to-edge and fixed to the framework using Vogl perforated panel screws SN 30, with screw spacing max. 170 mm.

Perforation pattern / perforated area / mass per unit area:

- 6/18 round / 8.7 % / 9.1 kg/m²*
- 8/18 round / 15.5 % / 8.5 kg/m²*
- 10/23 round / 14.8 % / 8.5 kg/m²*
- 12/25 round / 18.1 % / 8.2 kg/m²*
- 15/30 round / 19.6 % / 8.0 kg/m²*
- 8/12/50 round / 13.1 % / 8.7 kg/m²*
- 12/20/66 round / 19.6 % / 8.0 kg/m²*
- 8/18 square / 19.8 % / 8.0 kg/m²*
- 12/25 square / 23.0 % / 7.7 kg/m²*
- 8/15/20 round / 9.5 % / 9.1 kg/m²*
- 12/20/35 round / 11.0 % / 8.9 kg/m²*

Ball-impact resistance:

Design tested as “Ball-impact Resistant Ceiling”:
“Ball-impact Resistant” in compliance with DIN 18032-3 for the application area of “Ceiling”; “Impact Resistance Class 1A” as per EN 13964 Appendix D

Distributed load:

- less than or equal to 0.15 kN/m²*
- less than or equal to 0.30 kN/m²*

Fleece backing:

Panels backed with sound absorbing fleece as:

- acoustic fleece, black*
- acoustic fleece, white*

Joint finishing / filling:

Fill screw heads using Vogl screw head and repair filler flush with surface. Carry out joint finishing using VoglFuge system in accordance with manufacturer's instructions.

Subbase:

Suspension height: h = mm
Installation height: h = mm
Room height: h = mm
Insulation thickness: th = mm

Complete system: Vogl Deckensysteme, or equivalent

* Delete as applicable

