BRUAG
Innovation for Architecture

Wall & Ceiling Panelling

MDF design, classic
OAK PLYWOOD design, classic
CELLON® design

Technical data sheet for planning,
construction and execution

I.1

Version 3.0

Table of Contents

General Information 01.

Material

The **MDF board** is a wood-based material made of finely fibrillated softwood, which is pressed into a board product that is equally homogeneous in the longitudinal and transverse directions.

Application area: Interior (e.g. ceiling and wall cladding, stair railings)
Panel thickness (weight): 10mm (approx. 7kg/m²), 19mm (approx. 14kg/m²), 30mm (approx. 22kg/m²)
Reaction to fire class: RF3, D-s2-d0 (EN 13986)

The **OAK PLYWOOD panel** consists of individual layers of wood, which are glued and pressed crosswise to their fibre direction. This reduces directional properties such as swelling and shrinkage.

Application area: Interior (e.g. ceiling and wall cladding)
Panel thickness (weight): 18mm (approx. 7kg/m²)
Reaction to fire class: RF4, E (EN 13986)

The **CELLON® panel** is a high-pressure laminate panel (HPL Compact or solid core panel) consisting of 70% cellulose webs and 30% phenolic resin. The extremely weather and frost-resistant material is ideal for outdoor applications.

Application area: mounted vertically in outdoor areas (e.g. facades, balcony railings)
Panel thickness (weight): 8mm (approx. 12kg/m²), 10mm (approx. 15kg/m²)
Reaction to fire class: RF2, B1 (DIN 4102-1), B-s1-d0 (EN 13501-1)

The raw panels are project-specifically cut to the desired dimensions using laser technology (including drill holes). You choose the **width (x)** and the **length (y)** of the panels individually. Do you want round cuts or additional cut-outs? Simply draw them in your DXF plan and they will be **manufactured to size**.

Panel Formats

Please consider the following raw panel formats for waste optimisation:

perforated or plain panels

MDF® design, classic

Raw width	Raw length
2050 mm	4080 mm

perforated or plain panels

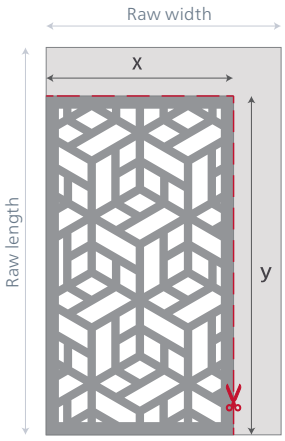
OAK PLYWOOD design, classic

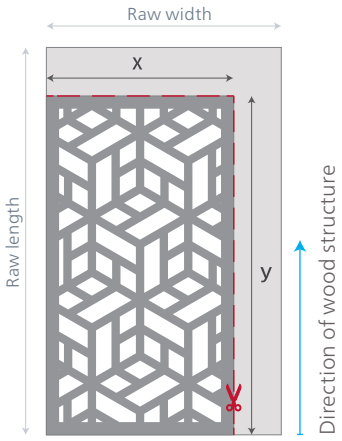
Raw width	Raw length
1500 mm	3000 mm

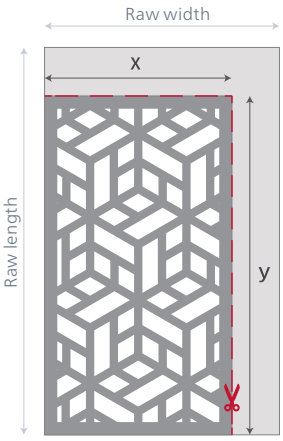
perforated panels

CELLON® design

Raw width	Raw length
1200 mm	2400 mm
1280 mm	3000 mm
1500 mm	3600 mm
1800 mm	3600 mm







Whenever possible, the raw material sizes should be considered when planning the panel layout so that panel waste can be minimised. We support you with this.

General Information 01.

Data Transmission for Orders

Please note the following when placing an order:

Data Format

- DWG / DXF Data
- Cadwork 2D or 3D Data
- Parts lists in Excel (if only as Excel without CAD file is sent, it might result in additional work in our work preparation)

Data Content and Structure

- Panels are drawn on a separate layer
- Drawing in 1:1 ratio
- Measurement of at least one long and short side to be able to verify the scale
- Boreholes (drawn as a closed circle), cut-outs, etc. are marked accordingly
- Special requests for grouping and/or palletisation must be explicitly specified. Normally there is room on one pallet for 120 square metres of panels. Within the pallet there is no sorting by panel numbers etc.

Own Design (the following specifications must be observed for own designs)

- Design must be created as CAD drawing (DWG or DXF file)
- Contours must be neatly closed and drawn as a line (not several lines on top of each other)
- Size ratio must be clearly visible

In the event of post-processing by Bruag Design Factory AG, the resulting additional work will be invoiced.

Storage and Cleaning Instructions

The panels must never be stored outdoors. The panels can be cleaned with water and a fabric or magic sponge. Do not use any chemical cleaning agents.

Cutting and Drilling Guidelines

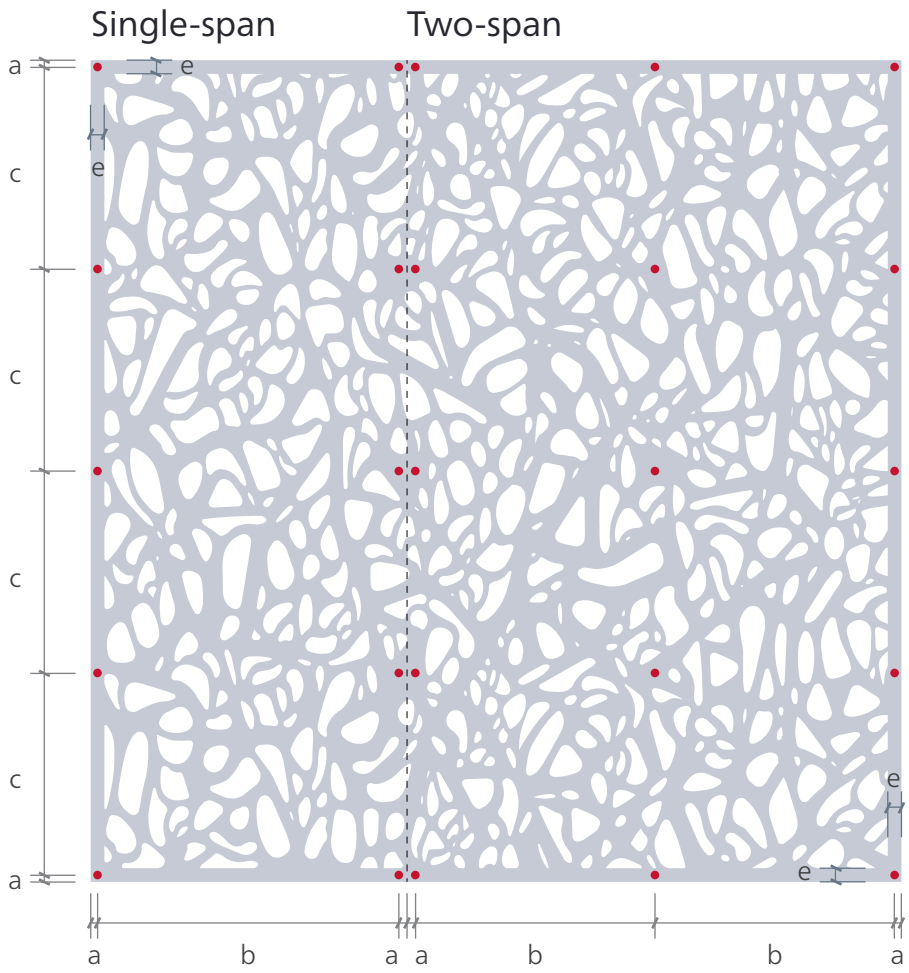
Basically, cutting to size on site should be avoided and the panels should already be ordered to the project-specific size whenever possible. However, in exceptional cases it is possible to process the panels on site, with the note that the panels are coated and the cut edge will therefore not have the same colour after cutting as the surface. Tools with carbide cutting edges or diamond cutting edges are advantageous as cutting items. The visible side should be at the top when cutting and, if possible, a guide rail should be used.

Spiral or dowel drills made of solid carbide are ideally used for drilling.

The material does not require post-treatment from the point of view of weather protection. However, if necessary, the edge can be coated with the supplied reserve paint.

Fastenings 02.

Fastening Distances



Back side

Felt

bis 1800 mm gemäss Kollektion (approx. 40 Farben)

Acoustic foil

up to 1200 mm translucent

• **borehole**

Ø 8 mm can be drawn directly in DXF/DWG file

Position in mm	Description	Maximum distance MDF 10 mm	MDF 19 mm	OAK PLYWOOD 18 mm	CELLON® 8 mm	CELLON® 10 mm
a	Distance borehole to edge			20		
b	Horizontal borehole distance	700	875	875	970	970
c	Vertical borehole distance	600	700	700	645	645
e	Frame without perforation			50		

Reciprocal conversion:
c (adjusted) = **b** (max) / **b** (effectiv) x **c** (max)
b (adjusted) = **c** (max) / **c** (effectiv) x **b** (max)

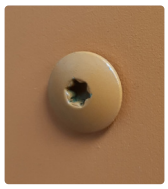
Fastenings 02.

Fasteners

Wooden Substrucure

Truss-head Screw

Material:	Stainless steel A2
Length:	38 mm
Nominal diameter:	4.8 mm
Head diameter:	12 mm
Drives:	TX20
Borehole diameter:	8 mm



Metal Substructure

Hexagon-head screw (self-drilling with sealing washer)

Material:	Stainless steel A2 (with drill point and shaped thread made of hardened steel)
Length:	32 mm
Nominal diameter:	5.5 mm
Head diameter:	16 mm
Drives:	SW8, hexagon head
Borehole diameter:	8 mm

Blind Rivet

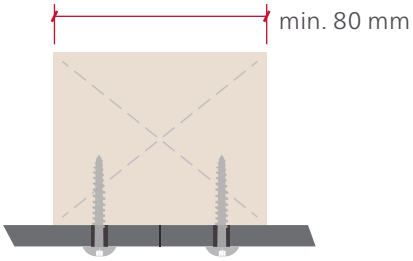
Material:	Aluminium/Stainless steel A2
Length:	8-13 mm
Nominal diameter:	5.0 mm
Head diameter:	14 mm
Drives:	Blind rivet tool
Borehole diameter:	8 mm

Substructure 03.

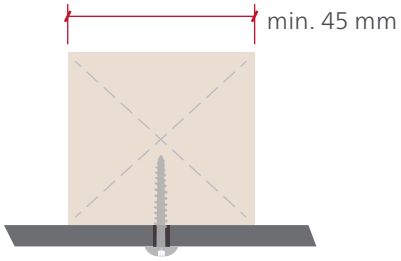
The substructure can be made in wood or metal.

Wooden Substructure

in Joint Area



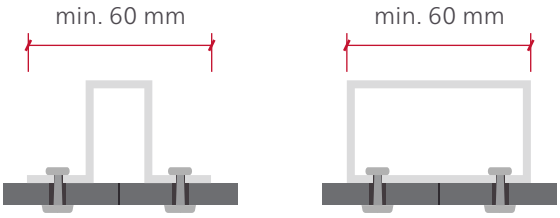
at Intermediate Batten



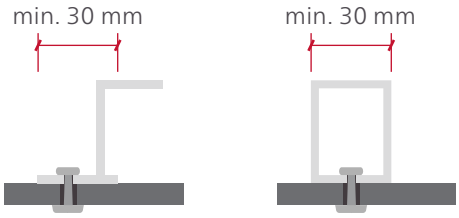
Metal Substructure

Metal Profiles

in Joint Area

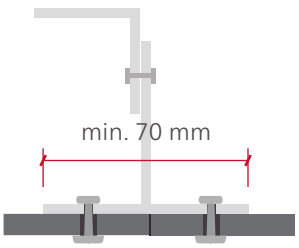


at Intermediate Fixation

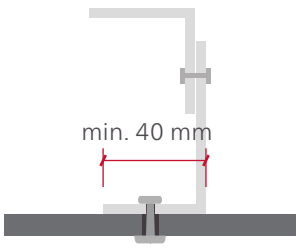


Hangers in the Ceiling Area

in Joint Area



at Intermediate Fixation

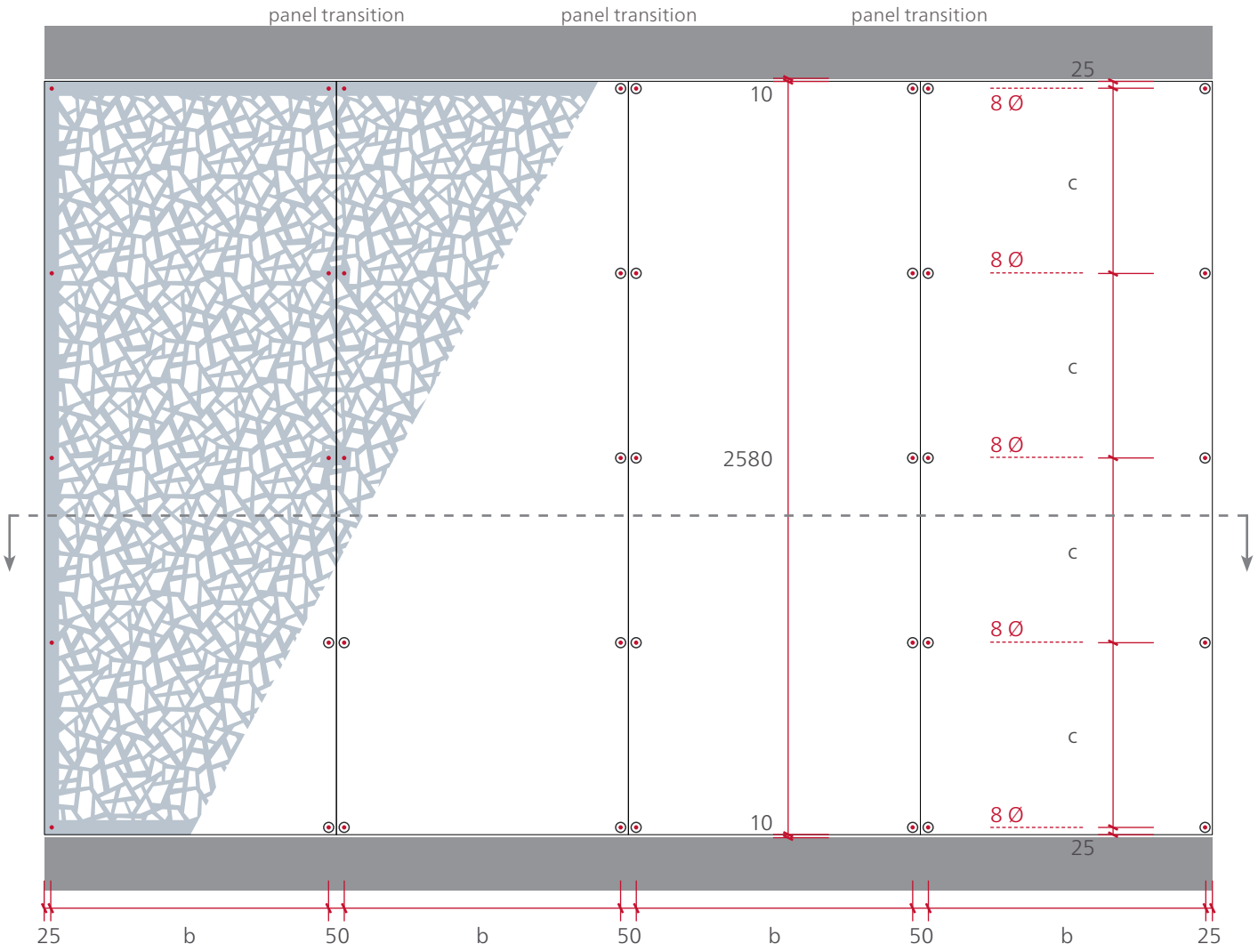


Construction Solutions 04.

Wall Cladding with Invisible Substructure

Perforated panels made of MDF, OAK PLYWOOD or CELLON® can be installed directly on a painted or natural wall. Spacer screws ensure that the substructure will not interrupt the design.

Elevation Plan



Detail

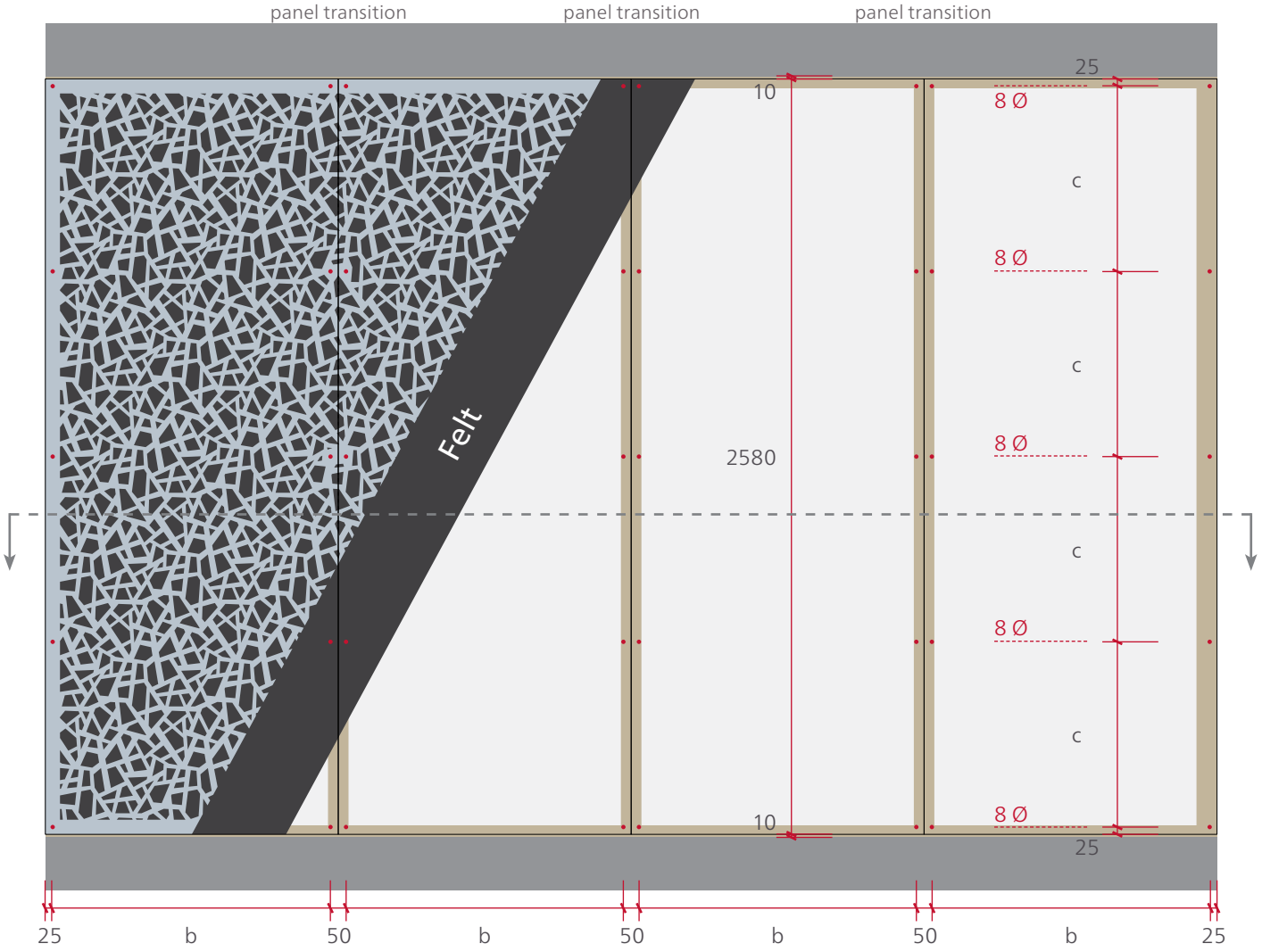
1 Wall
2 Cavity
3 MDF, OAK PLYWOOD or CELLON® panel

Construction Solutions 04.

Wall Cladding with Felt

When working with simple wooden battens or metal profiles as a substructure, this can be hidden by stapled felt. With this construction, you can specifically play with contrasts and harmonious colors. By adding a sound absorber, perforated wall cladding can be easily supplemented to form an acoustic wall. For more information, see technical data sheet I.3 Room Acoustics Systems & Noise Virus Catcher®.

Elevation Plan



Detail

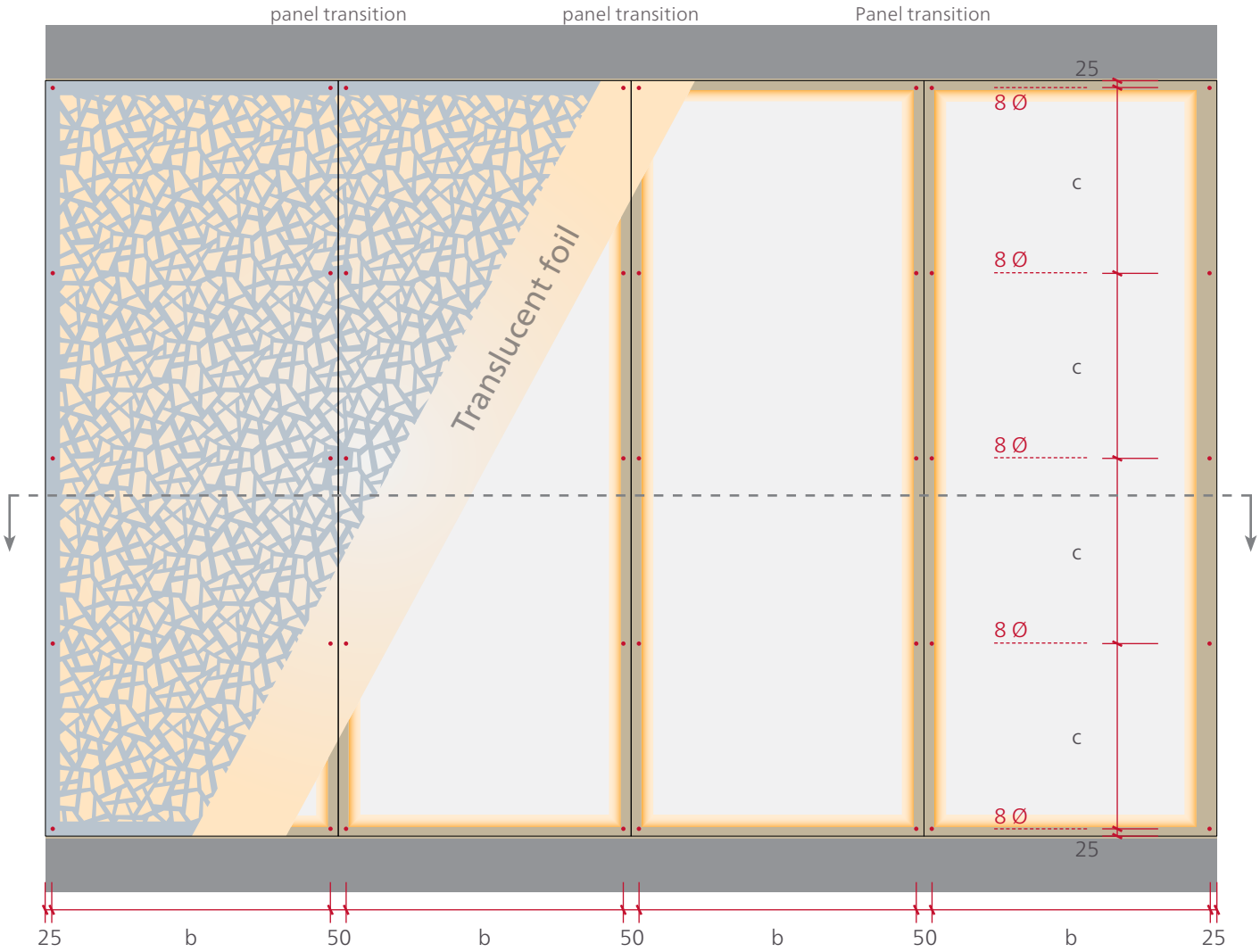
1 Wall
2 Substructure in wood or metal
3 Felt
4 MDF, OAK PLYWOOD or CELLON® panel

Construction Solutions 04.

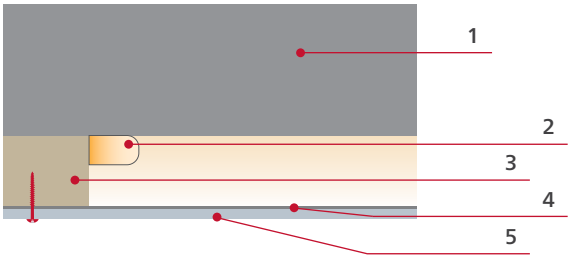
Wall Cladding with Foil and LED Backlighting

If you combine a perforated panel made of MDF, OAK PLYWOOD or CELLON® with a translucent foil, it is possible to create a stylish backlight. Attention must be paid to the position of the substructure, as this interrupts the light distribution.

Elevation Plan



Detail



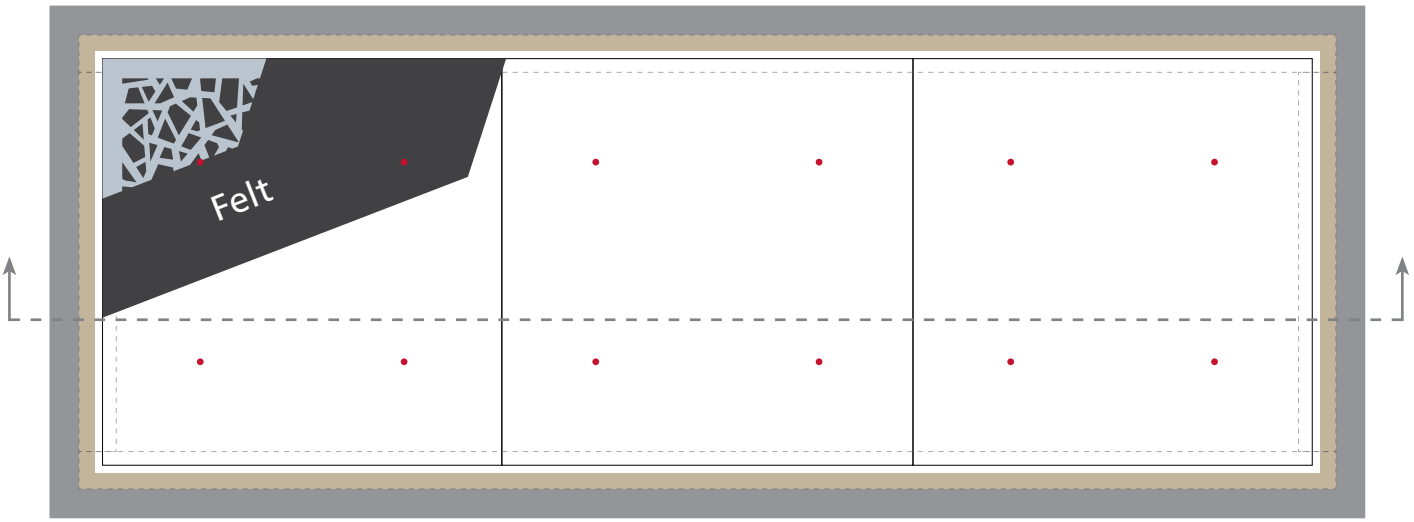
1 Wall
2 LED lighting
3 Substructure in wood or metal
4 Translucent foil
5 MDF, OAK PLYWOOD or CELLON® panel

Construction Solutions 04.

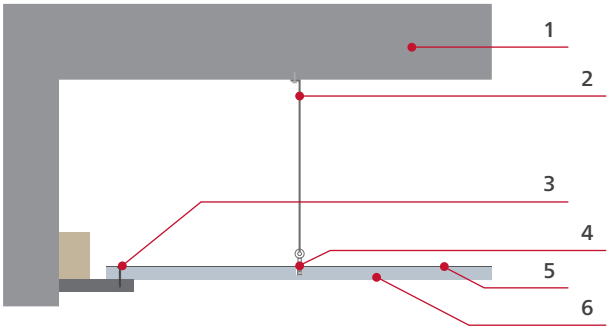
Ceiling Cladding with Invisible Substructure

The panels can also be used for suspended ceiling systems. The number of hangers and spacing must be done according to the guidelines from the manufacturer of the system. Panel weight with MDF 19mm, OAK PLYWOOD 18mm or CELLON® 8mm with approx. 40% open area = approx. 10 kg /m².

Floor Plan



Shadowline



1 Concrete ceiling
2 Adjustable wire hanger
3 Locking screw
4 Threaded sleeve
5 Felt
6 MDF or OAK PLYWOOD Platte

Connection with Lamello

Connection with Overlap

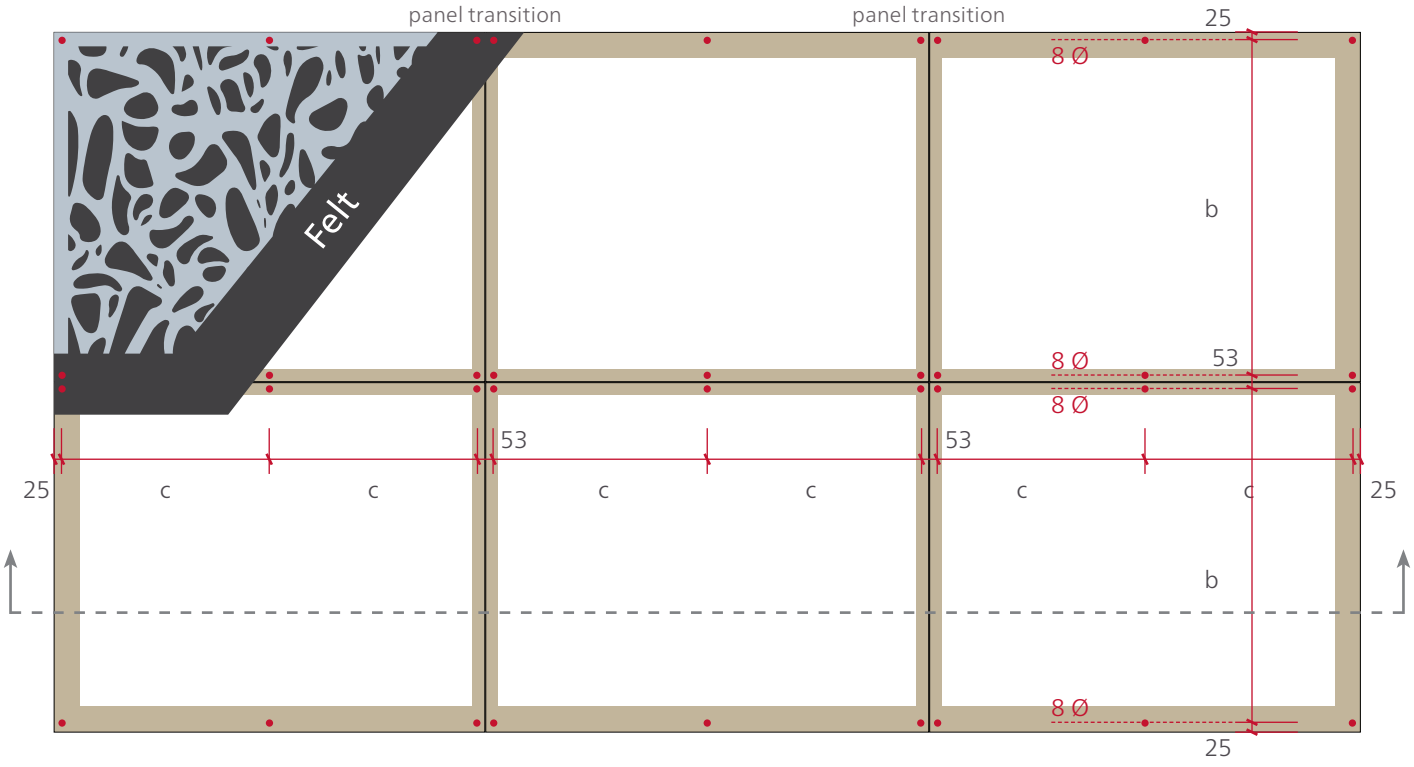
Threaded sleeve

Construction Solutions 04.

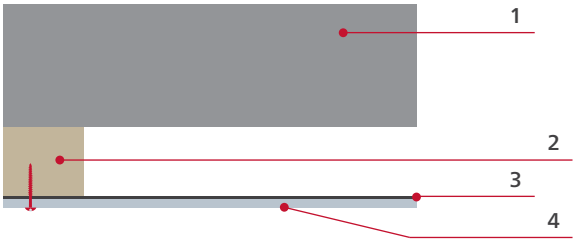
Ceiling Cladding with Felt

In the ceiling area, the substructure is also easiest to hide using a felt. It is recommended to fix the substructure first, then to staple the felt directly to the substructure and finally to mount the panel. It is important to make sure that the staples are not visible through the perforation of the panel. It is best to use staples in the same color of the felt. In this way, the perforation can run over several panels without any edges. For elements that are already covered with felt on the back at the factory, we recommend a closed edge of at least 10 mm at the butt joints. This allows the transitions to be processed optimally and prevents the felt from creasing in the joint area. Therefore, the pattern is very slightly interrupted.

Floor Plan



Detail



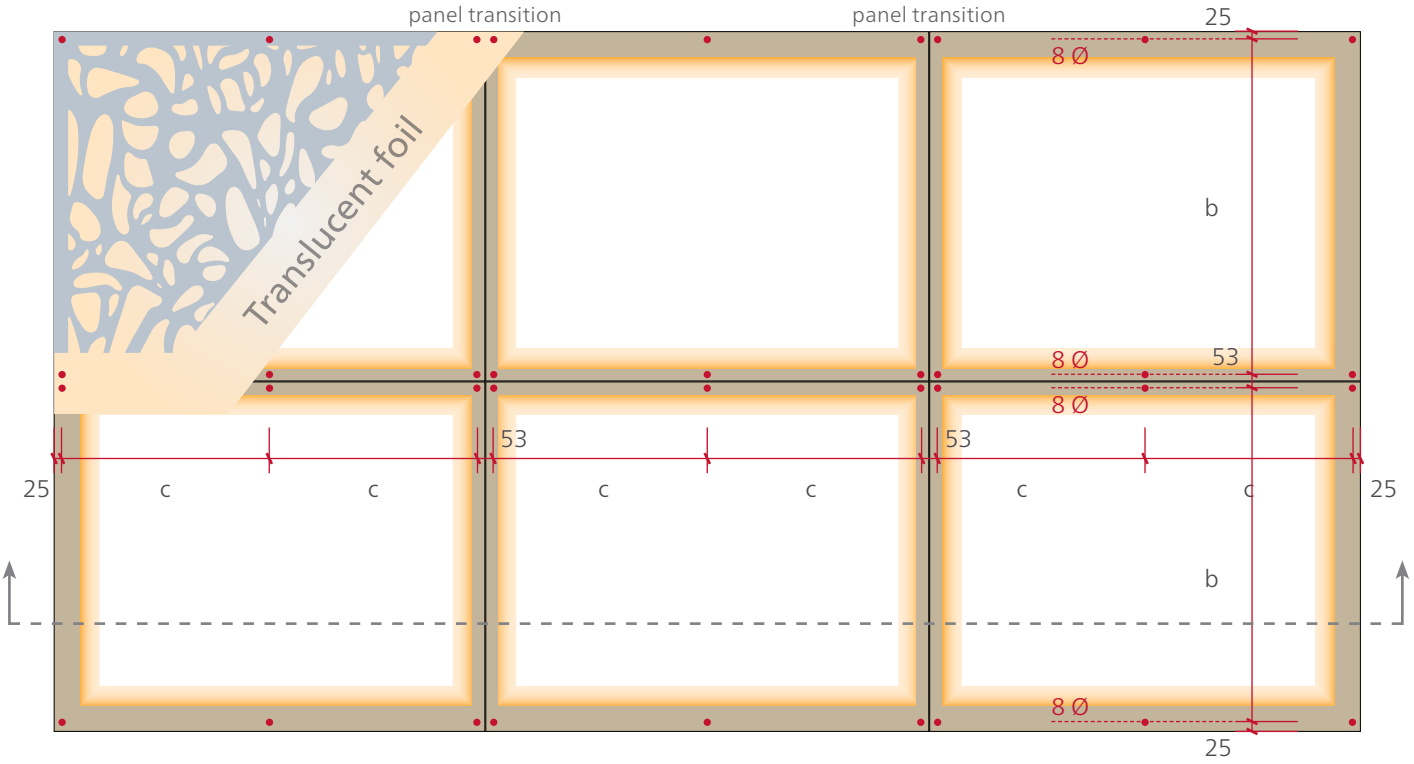
1 Concrete ceiling
2 Substructure in wood or metal
3 Felt
4 MDF, OAK PLYWOOD or CELLON® panel

Construction Solutions 04.

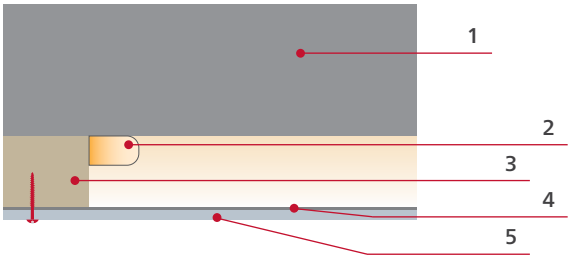
Ceiling Cladding with Felt and LED Backlighting

Perforated ceilings can also be backlit with LEDs using translucent foil. In this case, the LEDs should ideally be at a distance of 20-100mm from the foil, so that the light is properly diffused and thus uniformly illuminates the surface.

Floor Plan



Detail



1 Concrete ceiling
2 LED lighting
3 Substructure in wood or metal
4 Translucent foil
5 MDF, OAK PLYWOOD or CELLON® panel

Additional Details 05.

Panel Connections

Lamello for MDF

In the case of multi-part elements made of **MDF** and **OAK PLYWOOD**, **Lamello** connectors can be milled into the panel joints. A depth of 12 mm is required on each side for the milling. The pattern has sometimes to be adjusted slightly at these points.

Steel bolts for CELLON®

For multi-part elements made of **CELLON®**, 12 mm long **steel bolts** can be drilled in at the panel joints on the face side. This ensures that the panels are always in the same alignment.

Edge Characteristics

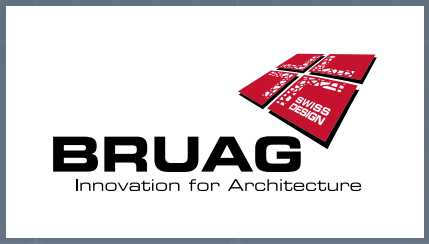
The edges are black due to the laser cutting. A shimmering through of the black laser edge cannot be completely avoided with light colors, especially in acute-angled perforations. Slight puncture points from the laser are visible in the perforations. This is a product property and therefore not a reason for complaint.

Our outer edges are not reworked manually. This means that certain unevenness can occur with MDF 19 and 30 mm.

Design

06.

You can find the entire **perforation collection** in our catalogue.



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