



BRUAG
Innovation for Architecture

Balcony Railings

CELLON® classic, design

Technical data sheet for planning,
construction and execution

A.3

Version 3.0

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General Information

01.

Material

Our **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 panels

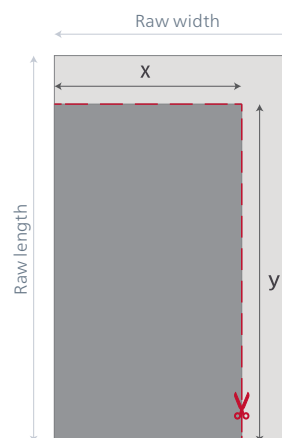
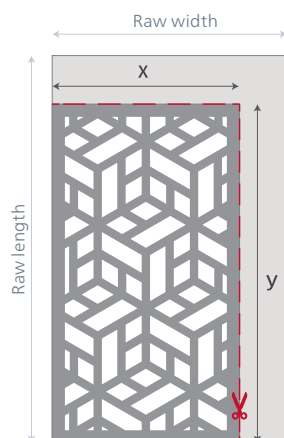
CELLON® design

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

plain panels

CELLON® classic

Raw width	Raw length
1200 mm	2400 mm
1280 mm	3000 mm *
900 mm	3600 mm



Note

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.

*Only this format is also available with a decor surface in stone or wood look.

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

CELLON® panels must never be stored unprotected horizontally outdoors. If water remains on the horizontally lying panels, damage to the paint may occur! Please always place the dry PU foam foils supplied as a separating layer between the individual boards.

The boards can be cleaned with water and a cloth or magic sponge. Careful use of a high-pressure cleaner is also possible with sufficient distance and little pressure. 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.

General Information

01.

Breakthrough Safety/Railing Statics

Our CELLON® panels are to be considered as fillings and must meet the requirements for breakthrough safety. The perforations from the balcony design collection are tested in accordance with the ETB guidelines "Components that protect against falling" and meet these requirements. Customer-specific designs/perforations must be assessed on a case-by-case basis.

The mandatory and load-bearing substructure with its supports must be calculated and the number determined by the metal worker. The metal worker must also determine the distances between the posts. These depend, among other things, on the dimensioning of the substructure. Our panels can also be mounted on existing substructures, there it is important to ensure that our fastening and planning instructions are followed as well. The panel thickness to be selected depends on the design, the support of the panels, the type of object and the locally applicable building regulations.

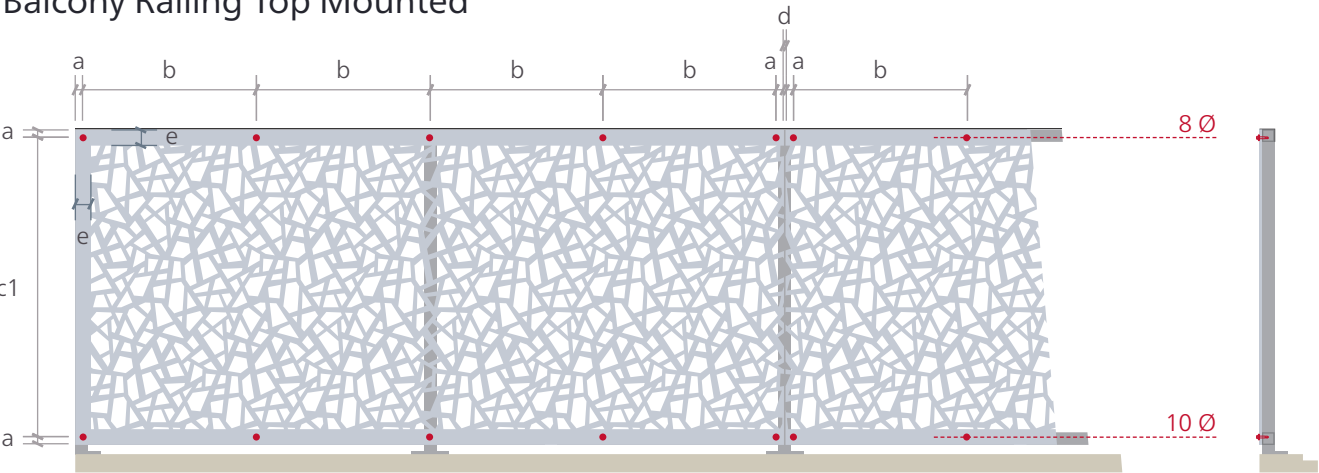
Protection against Overclimbing

In addition to break-through safety, the CELLON® panels with their perforations must meet the requirements for protection against overclimbing. Depending on the country and region, different guidelines and regulations apply, which must be observed when planning. We cannot make any statements about this or check the plans accordingly. This is the responsibility of the respective planning and execution body.

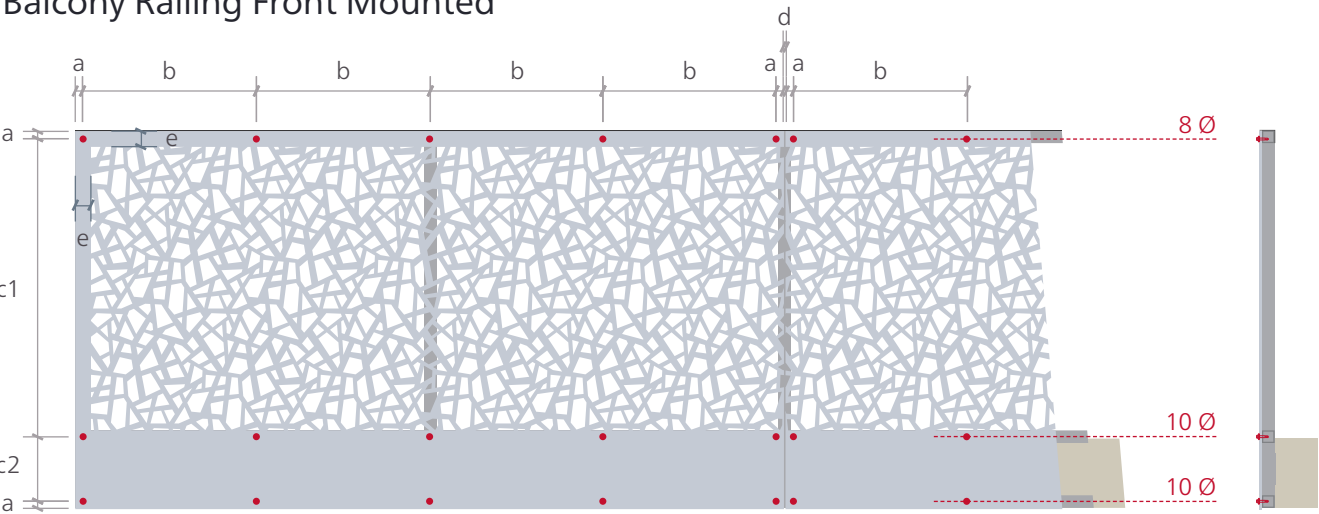
Fastenings

Fastening Distances

Balcony Railing Top Mounted



Balcony Railing Front Mounted



Position	Description	Minimum distance	Maximum distance	Recommended distance	Unit
a	Distance borehole to edge	25	100	25	mm
b	Horizontal borehole distance	n/a	500	500	mm
c1	Vertical borehole distance (1)	n/a	1000	900 - 1000	mm
c2	Vertical borehole distance (2)	n/a	700	n/a	mm
d	Joint	5	n/a	n/a	mm
e	Frame without perforation	50	n/a	50	mm

Panels longer than **2.5m** shall at least have joints of **6mm**.

The values given are guidelines and do not release you from having an object-related inspection carried out by a qualified engineer. Test results for the tests according to ETB Guideline, EN 789, EN1048, EN 14358, EN 383, EN 1383, EN 310 and EN 13879 can be found in a separate test report.

Fastenings

02.

Fasteners

Metal Substructure

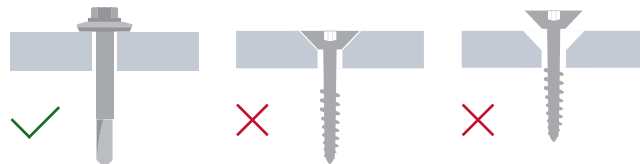
Hexagon-head screw (self-drilling with sealing washer)

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



Note

Screws and rivets are to be placed concentrically in the drilled holes.
NO COUNTERSUNK SCREWS MUST BE USED!



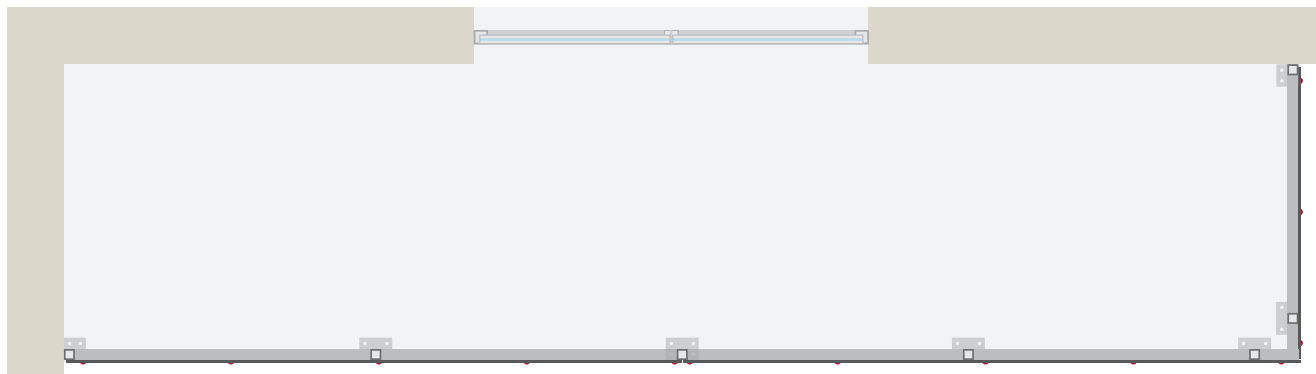
Substructure

03.

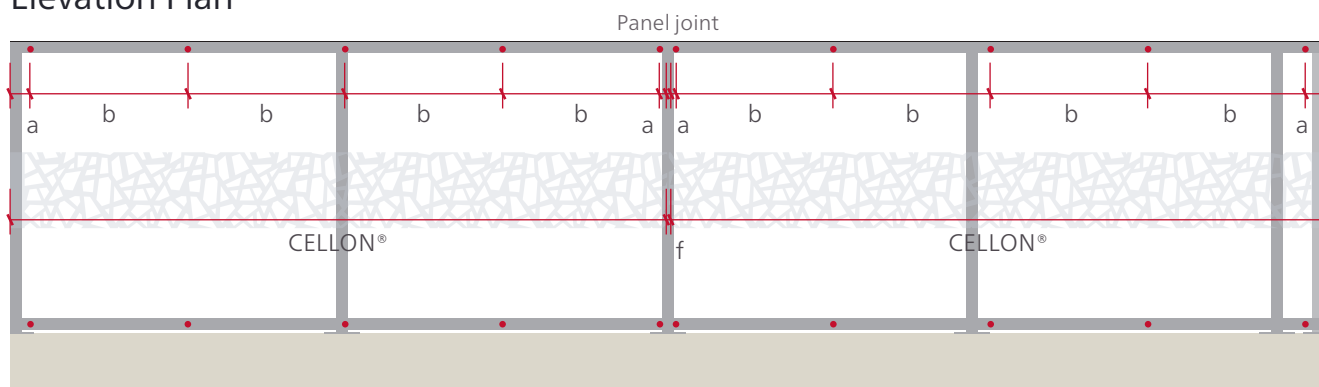
Balcony Railing Top Mounted

The following illustrations with their dimensions are only examples of a possible construction and serve for a better understanding.

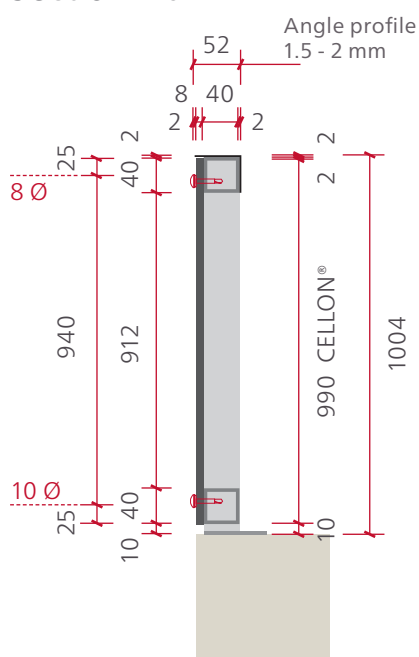
Floor Plan



Elevation Plan



Section Plan



Note

The details of the railing statics, including the **dimensioning** of the substructure, must be carried out in accordance with the structural and static regulations of the respective region and **defined by the metal construction company**.

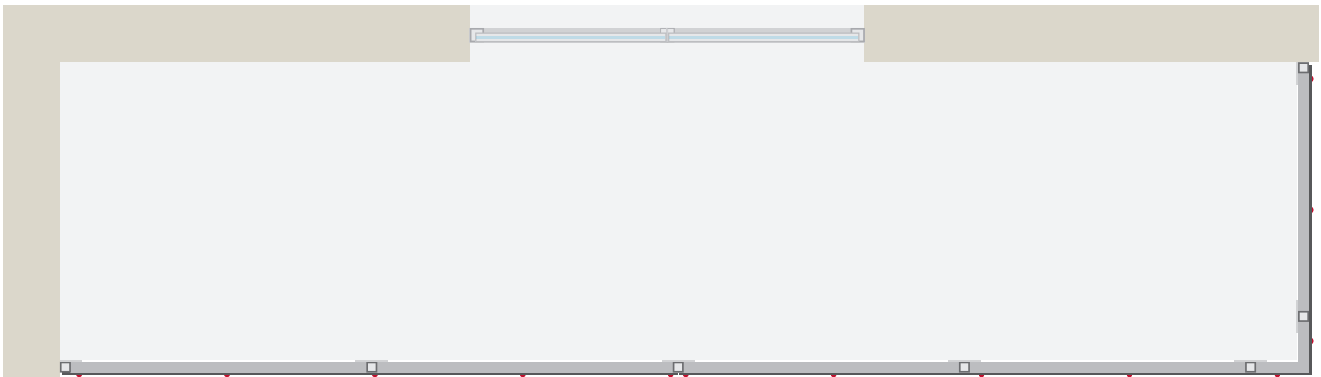
Substructure

03.

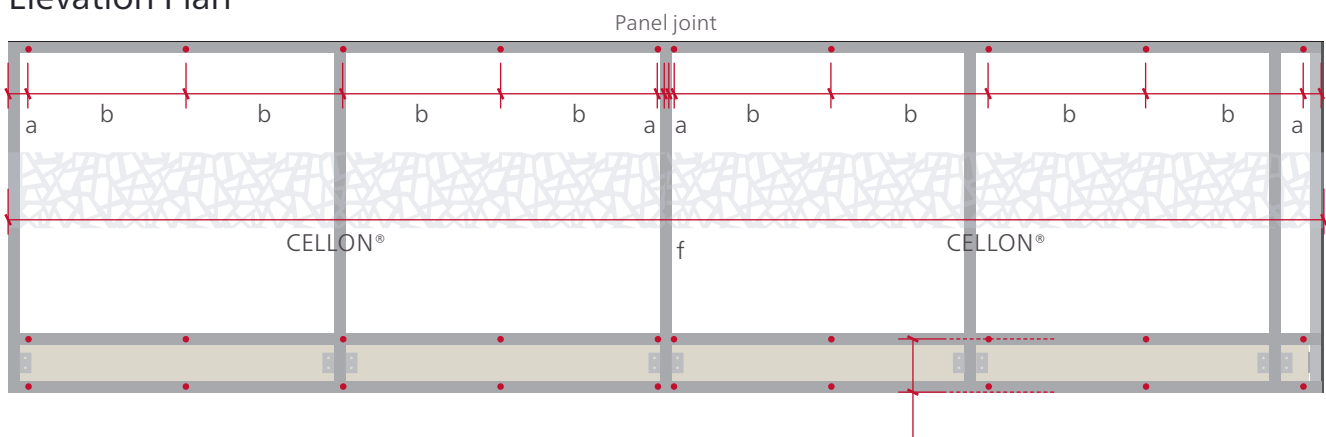
Balcony Railing Front Mounted

The following illustrations with their dimensions are only examples of a possible construction and serve for a better understanding.

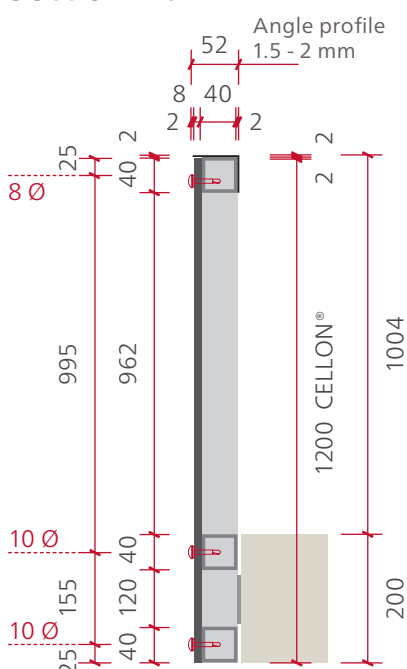
Floor Plan



Elevation Plan



Section Plan



Overhang the panel a maximum of 100 mm below the last fixing point. Otherwise there is a risk that the panels will bend slightly below the last fixing point and there will be an overtooth between the individual panels.

Note

The details of the railing statics, including the **dimensioning** of the substructure, must be carried out in accordance with the structural and static regulations of the respective region and **defined by the metal construction company**.

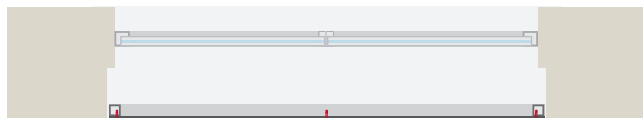
Substructure

03.

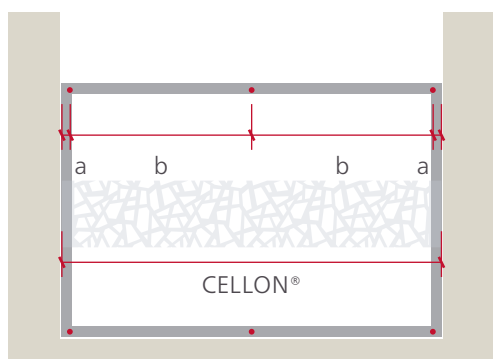
Guarding Floor-to-Ceiling Window with Panel on Surrounding Square Tube

The following illustrations with their dimensions are only examples of a possible construction and serve for a better understanding.

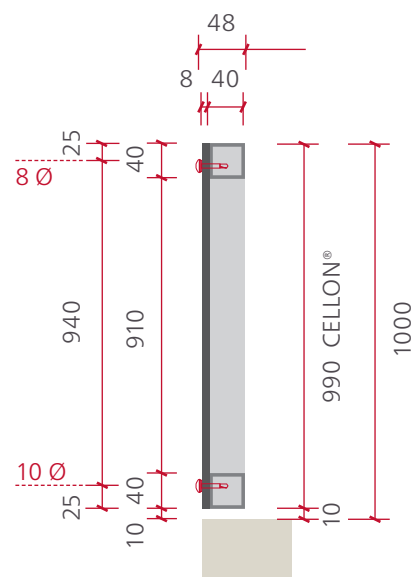
Floor Plan



Elevation Plan



Section Plan

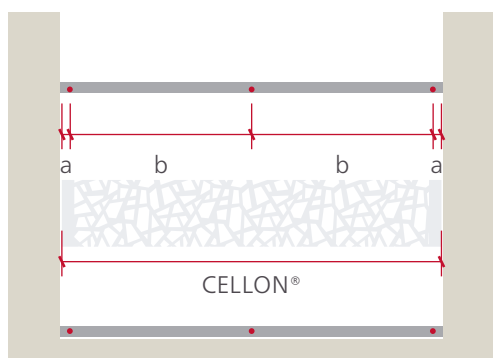


Guarding Floor-to-Ceiling Window with Panel on Horizontal Square Tube

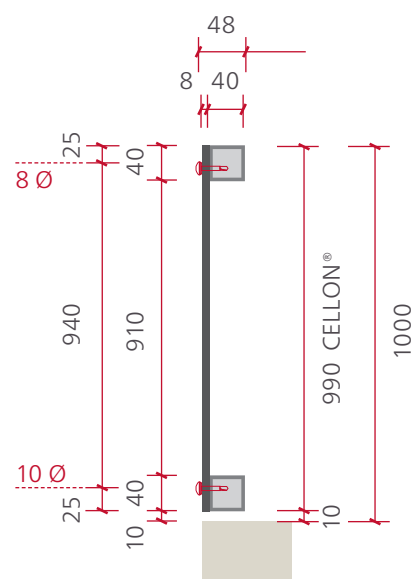
Floor Plan



Elevation Plan



Section Plan



Substructure

03.

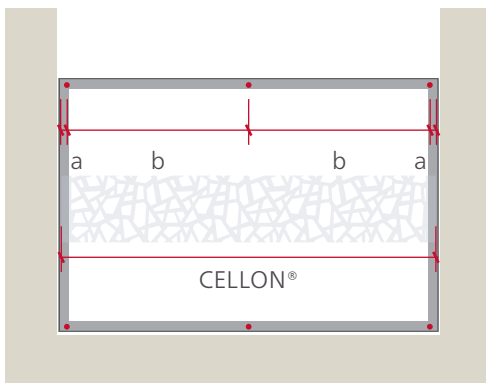
Guarding Floor-to-Ceiling Window with Panel on Surrounding L-profile

The following illustrations with their dimensions are only examples of a possible construction and serve for a better understanding.

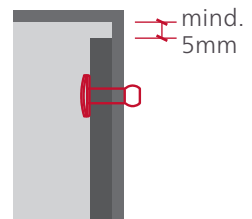
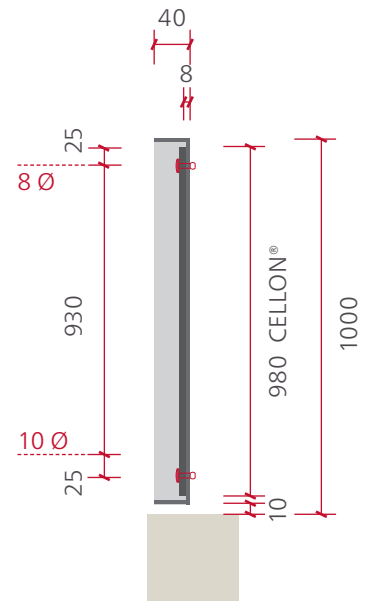
Floor Plan



Elevation Plan



Section Plan



Note

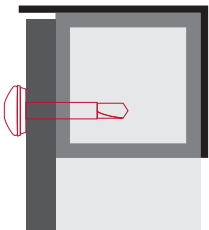
The details of the railing statics, including the **dimensioning** of the substructure, must be carried out in accordance with the structural and static regulations of the respective region and **defined by the metal construction company**.

Corner & Transition Profiles

04.

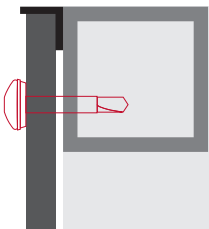
Handrail Variations

With Front Edge



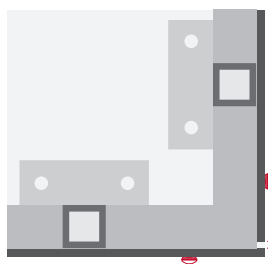
We recommend covering the front edge for the handrail to protect the edge of the panel for example from hail or driving rain, to avoid a gap between the frame and the panel as well as to create a clean uniform finish. This can be done with a simple L-profile that runs slightly over the panel and is glued on the metal frame.

with L-profile



Alternatively, a smaller angle profile is also possible, which is clamped between the metal frame and the panel before being screwed in place. This way, at least the upper edge of the panel is covered. The profile does not have to be interrupted if there is a substructure with an attached handrail.

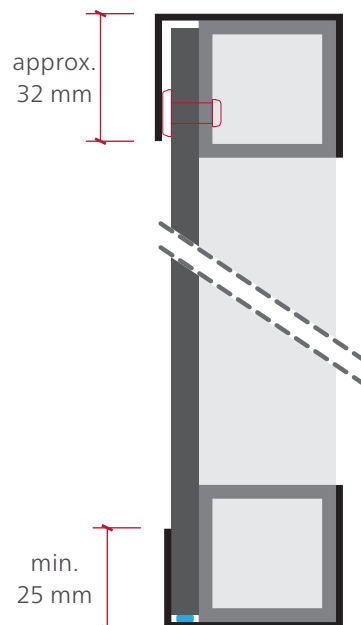
Corner Connection



min. 5 mm

Corners are usually butt-jointed.
Mitering is not possible.

Concealed Version



The panel is glued in the lower profile. Drainage must be guaranteed.

Construction Solutions

05.

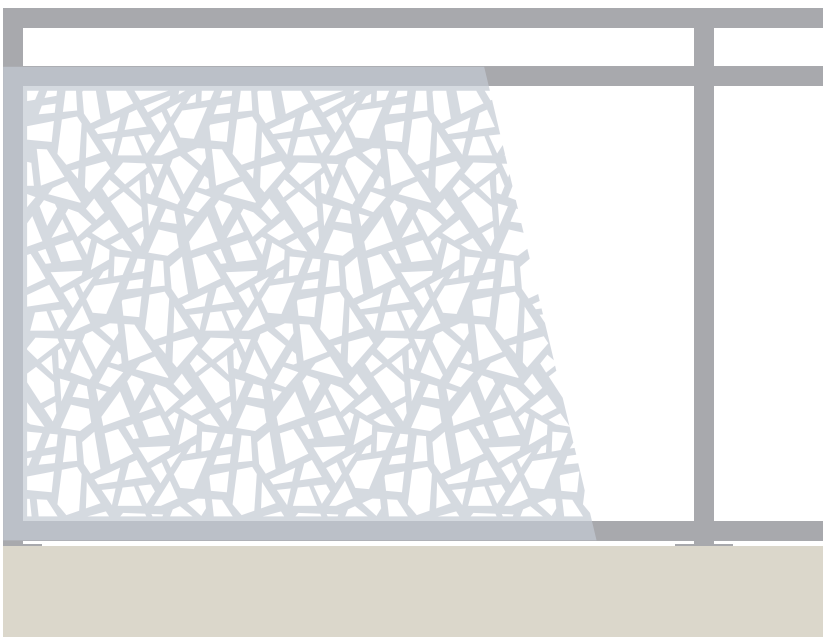
Balcony Railing Top Mounted with Handrail

Visualization

Perforation 50050-B1, price category 5



Elevation Plan



Section Plan



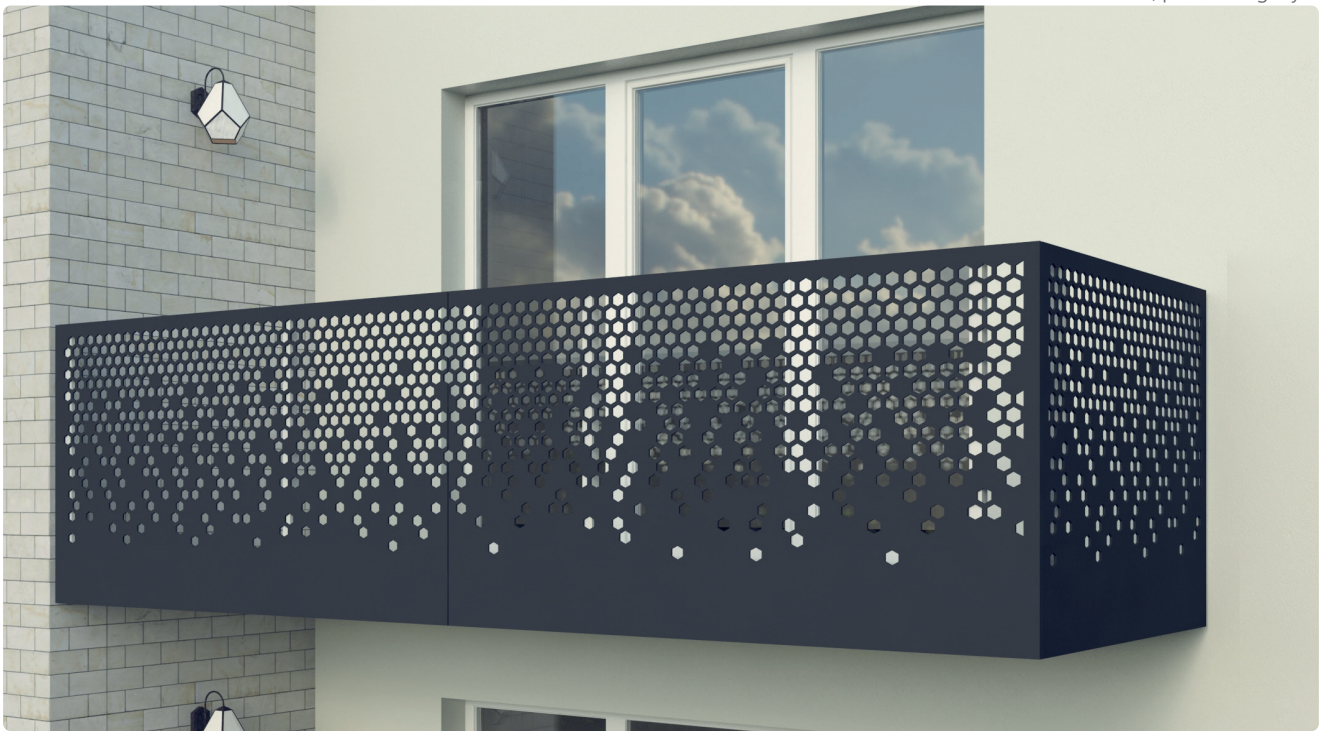
Construction Solutions

05.

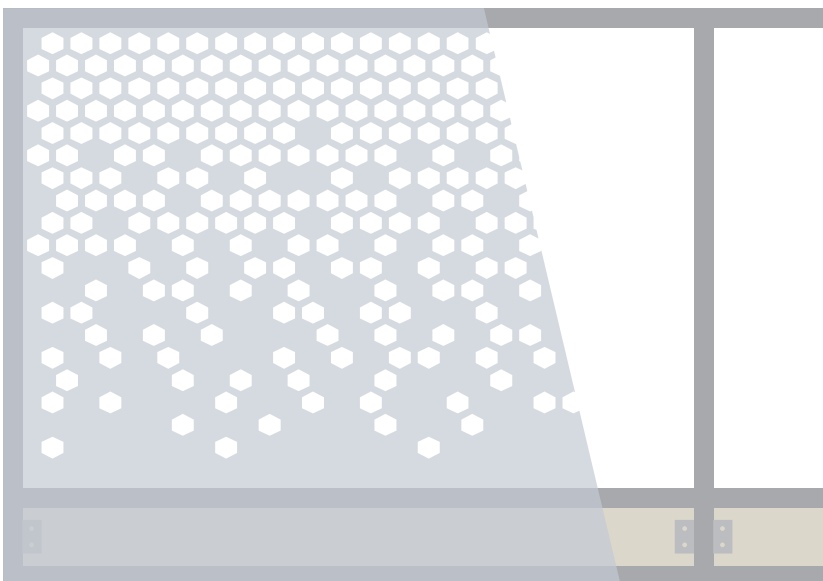
Balcony Railing Front Mounted without Handrail

Visualization

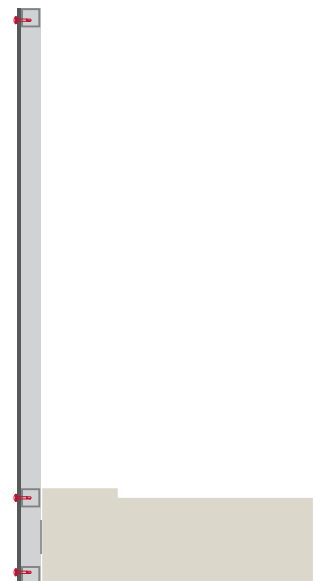
Perforation 50651-B2, price category 3



Elevation Plan



Section Plan



Construction Solutions

05.

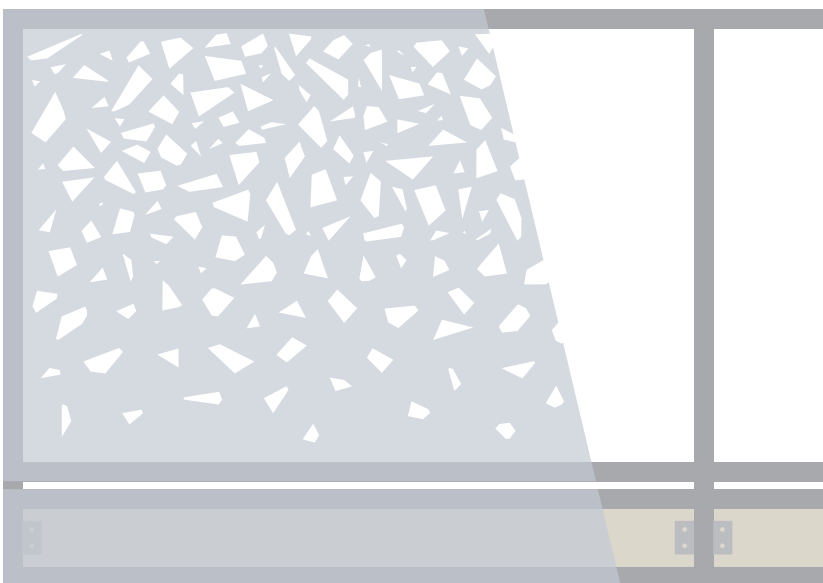
Balcony Railing Front Mounted and Divided

Visualization

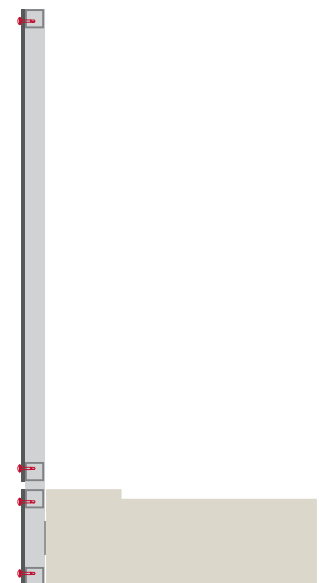
Perforation 50110-B2, price category 2



Elevation Plan



Section Plan

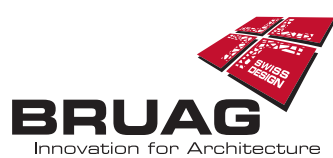


Design

06.

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





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