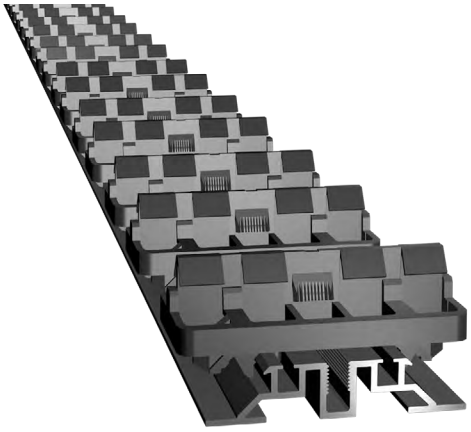
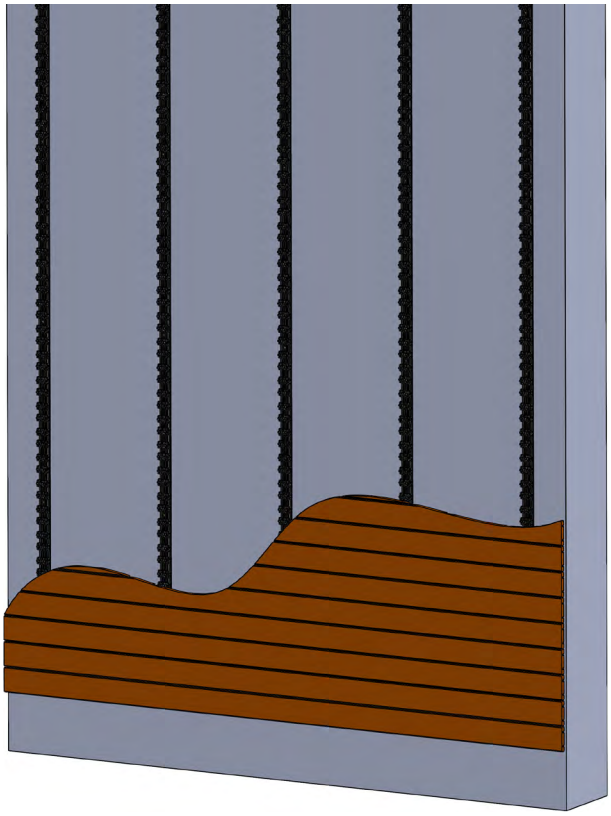
FLAT RAIL WITH PYROCLIP - CLADDING

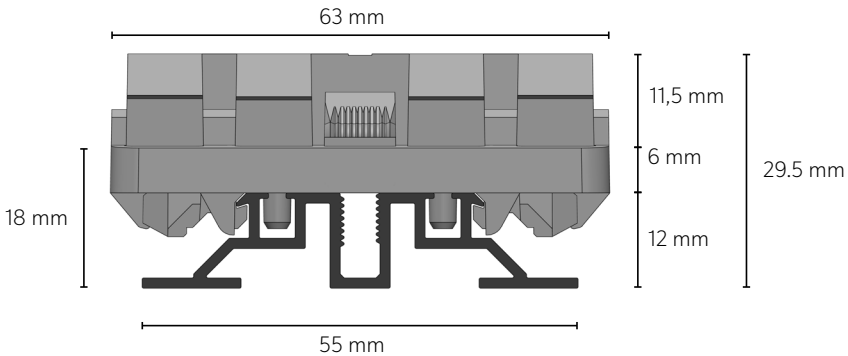
Use: allows for the installation of vertical or horizontal cladding for projects requiring fire classification

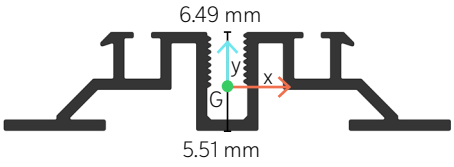


FLAT RAIL



DIMENSIONS OF A FLAT RAIL WITH CLIPS





Position of the centre of gravity (G)

MOMENTS OF INERTIA:
Ixx = 2384,2 mm^4
Iyy = 28960 mm^4
Ixx/v = 367,4 mm^3

SUMMARY

CALCULATION ASSUMPTIONS

The scope of application of the approach used is that defined in NF DTU 41.2 (French norms):

- Maximum pressures on the building envelope (generally depression in the corners of the structure) calculated with the following pressure coefficients:
  - Cpe = -1.4
  - Cpi = 0
- Building heights limited to 10 m and 28 m,
- All wind zones,
- All categories of site roughness (protected, normal),
- Flat terrain (average slope ≤ 5%, orography coefficient Co = 1).

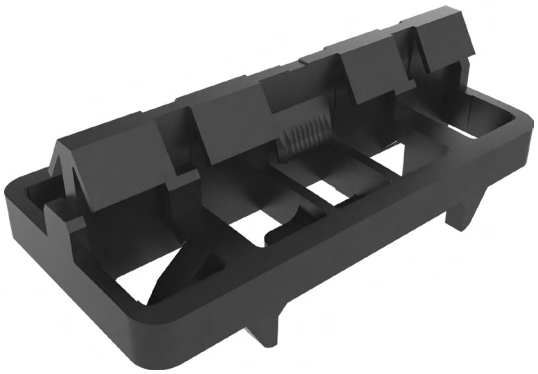
FCBA study dated 30/05/2023

The fastening methods shown in this document are valid for cladding and soffit applications.

ALUMINIUM RAIL

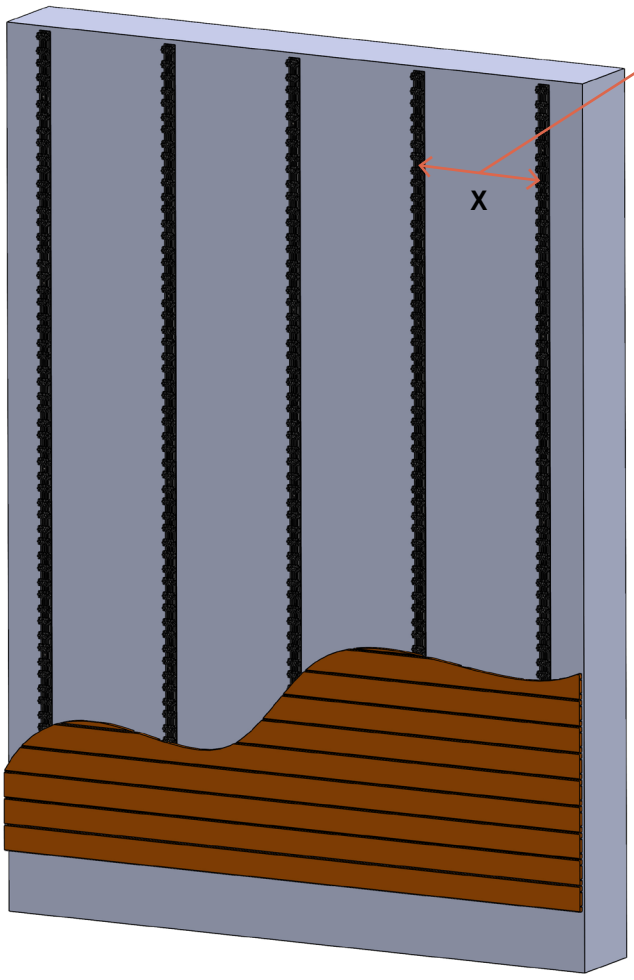
Material	Aluminium EN AW-6060
Mass per meter of rail without clips	0,423 kg
Colour	Black
Thermal Treatment	T6
Tensile strength (MPa)	190
Tensile stress at yield (MPa)	150
Minimal elongation (%)	6
Tensile modulus (MPa)	70000
Coefficient of linear expansion (10^{-6}/K)	24
Fusion Temperature (°C)	585-655
Thermal conductivity (W/mK)	160

GRAD PYROCLIP



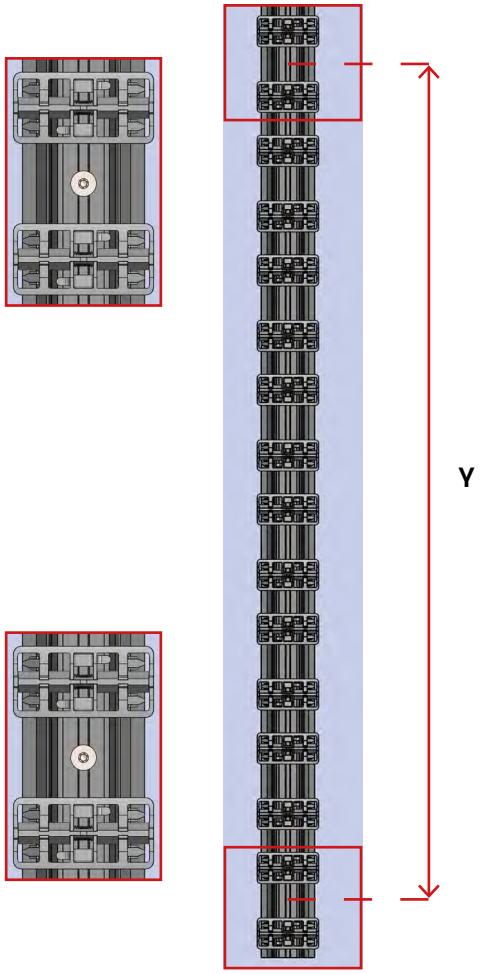
Material	Polybutylene terephthalate (PBT)
Density (kg/m³)	1380
Colour	Black
Tensile stress at yield (MPa)	40
Fusion temperature (°C)	225
Tensile modulus (MPa)	2000
Coefficient of linear expansion (10^{-6}/K)	190

RAIL FASTENING DIRECTLY TO THE WALL

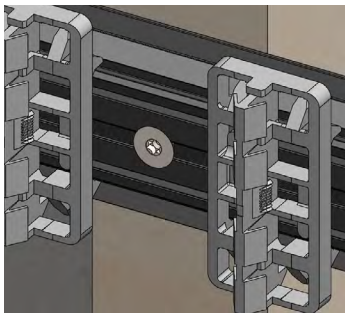


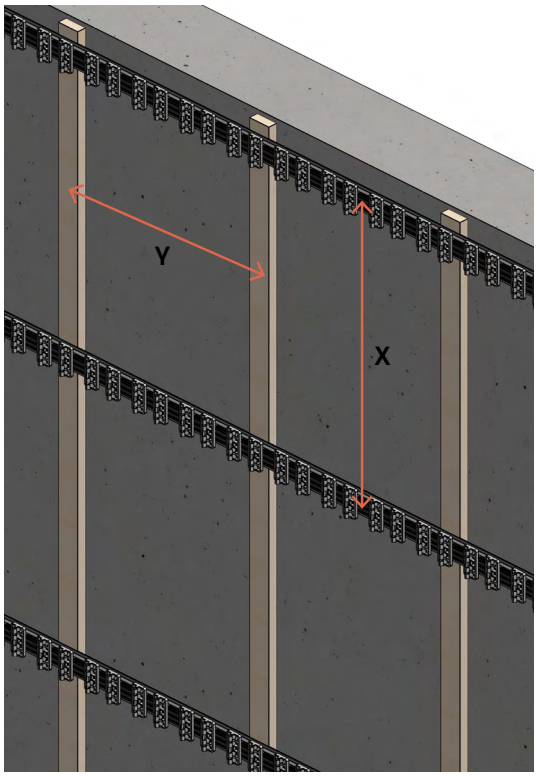
Maximum rail spacing is 650 mm.

Maximum fastener spacing is 890 mm; this value may vary according to geographical area (see table p.10).



FASTENING RAILS TO A FURRING SYSTEM

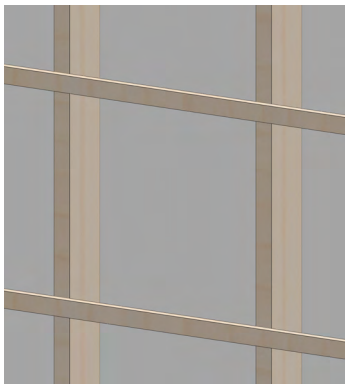


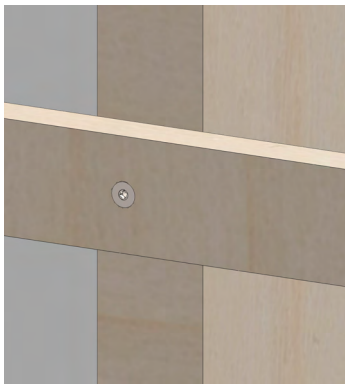


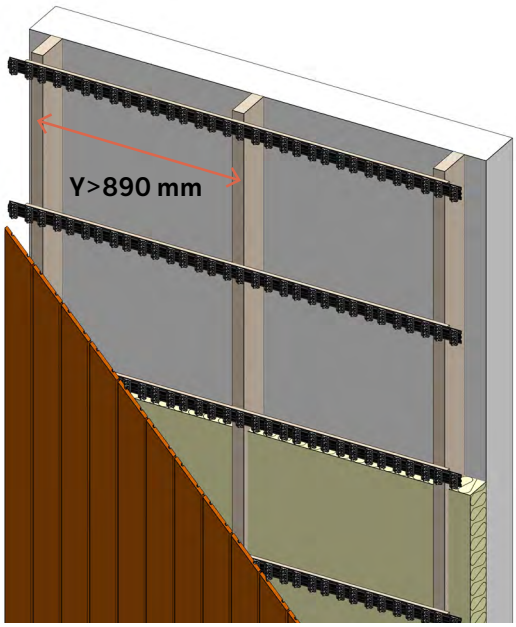
If the rails are fastened to a timber structure with existing furring system, it is important to ensure that the furring spacing is **similar to or less than the maximum rail fastening spacing of 890 mm.**

Rails should also be fastened with fasteners suitable for this type of structure.

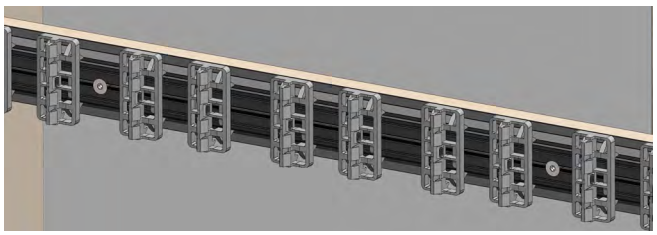
When the center-to-center distance of the existing wood structure is greater than the maximum rail fastening center-to-center distance (890 mm), the structure must be adapted with a double furring system.







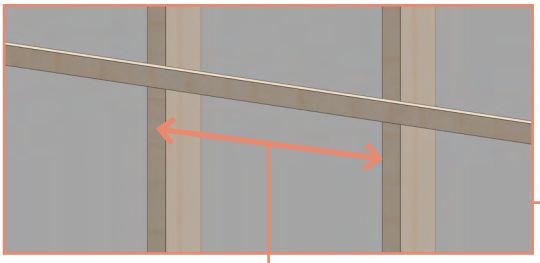
The horizontal furring strips are fastened to the existing furring using countersunk screws, so that the screw head can be flush and does not interfere with the installation of the rail on the furring strip.



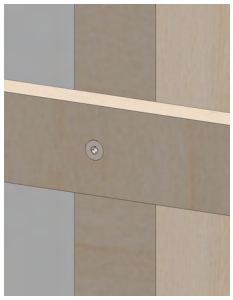
RAIL FASTENING ON DOUBLE FURRING SYSTEM

VERTICAL CLADDING

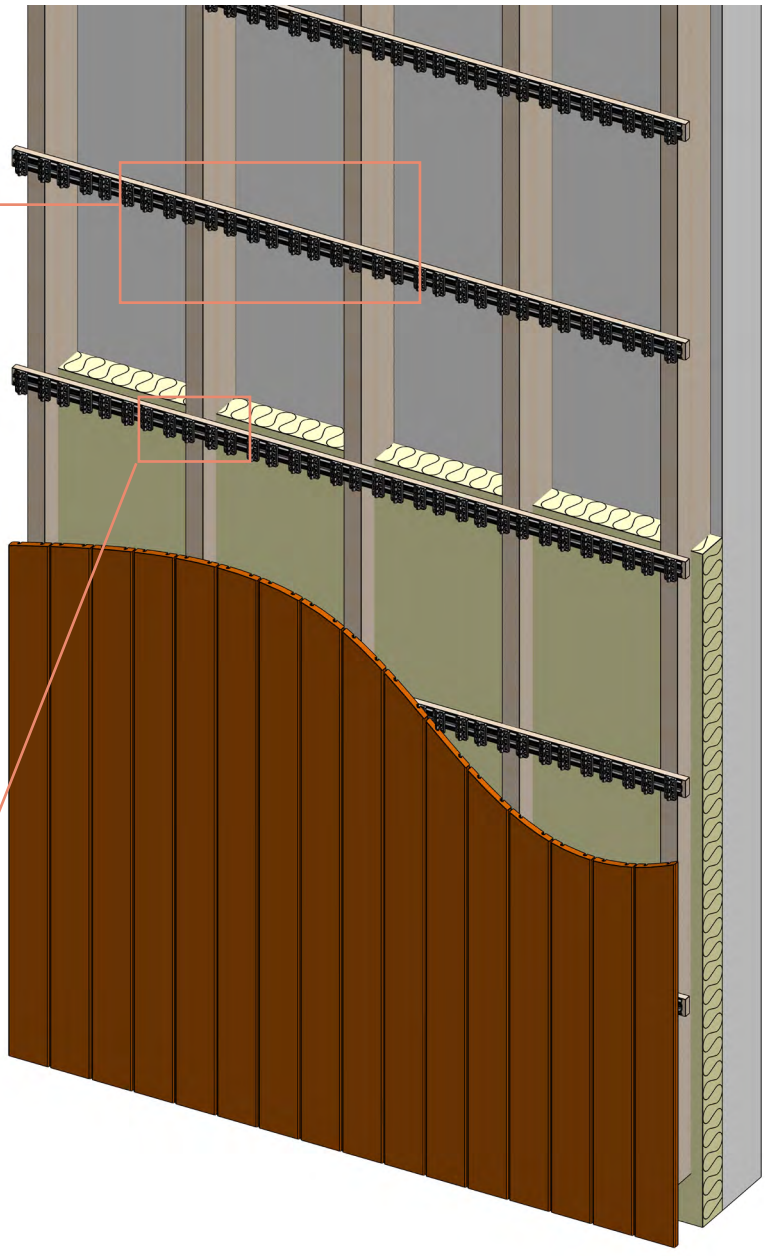
Horizontal cladding uses the same fastening principle, only the structure undergoes a few modifications



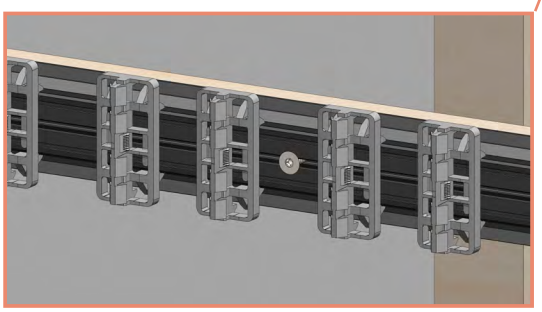
In cases where the spacing of the furring strips is greater than the maximum spacing for fastening the Flat Rail, a double-furring structure must be created and the rails fastened to these furring strips.

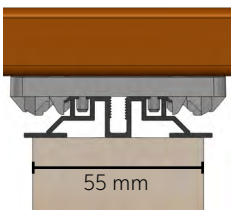


The horizontal furring strips are fastened to the existing furring strips using countersunk screws, so that the screw head can be embedded in the furring strip without interfering with the installation of the Flat Rail on the furring strip.



The rails are fastened to the horizontal furring strips with a screw suitable for this type of structure.





Minimum furring strip width is 55 mm