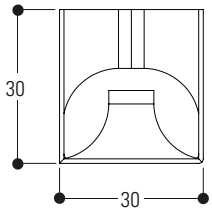
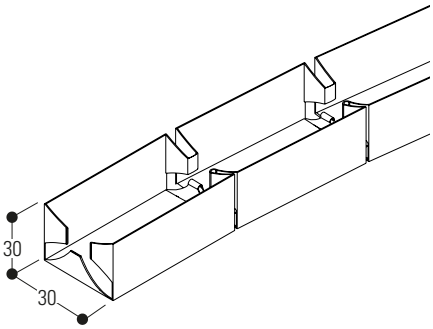
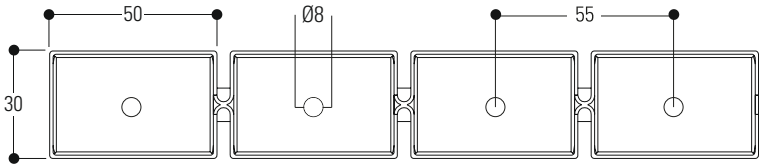
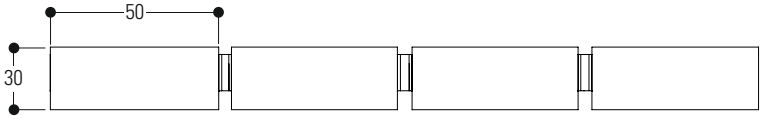
VERTEBRA®

GV30









GENERAL DESCRIPTION

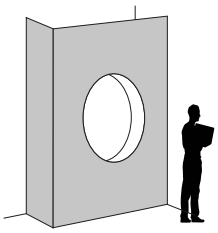
Flexible rail profile with articulated elements at 50 mm pitch, suitable as a rail for creating linear and curved counter-wall shapes, curved stairways, curved upstands, curved cladding for pillars and curved manholes. It is also used as a curved perimeter profile.

MATERIAL USED

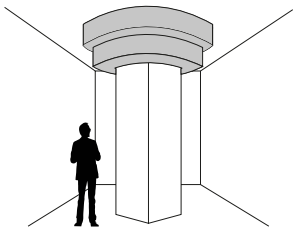
The profile is made of carbon steel type **DX51D Z100**, continuously hot-dip galvanised, having a yield strength greater than 300 N/mm² and defined by European standard EN 10346 with zinc cladding of 100 g/m² (on request higher grammage).
Additional cladding consists of:

- Zinc-aluminium type **DX51D+AZ**: this combination gives the profile excellent corrosion resistance, superior to that of galvanised steel profiles, making them suitable for both indoor and outdoor use.
- Zinc-magnesium type **DX51D+ZM**: This type of cladding gives the profile an extraordinary degree of corrosion protection on the surface and is self-healing on the cut edges, making it suitable for even the harshest environments.

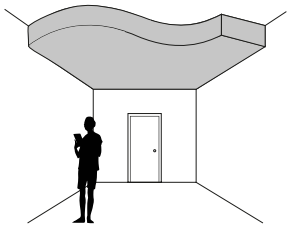
REPRESENTATION



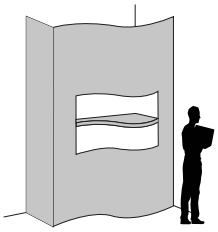
LINEAR COUNTER-WALL SHAPE



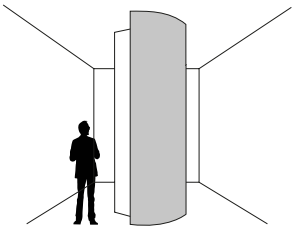
CURVED STEPPED



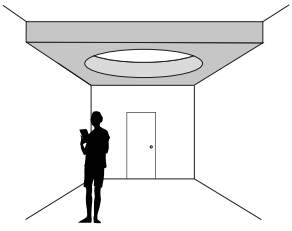
CURVED SAIL



CURVED COUNTER-WALL FORM



PILLAR CLADDING



CURVED TUBE

ADVANTAGES AND APPLICATIONS GV30 PROFILE

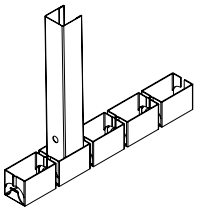
The **GV30** rail, with its flexible geometry and structure, offers the possibility to easily create curved structural elements such as: curved linear and curved counter-wall shapes, curved stepped, curved sheds, column cladding and curved manholes; adapting to any design requirement thanks to the 8 mm holes positioned at a pitch of 55 mm, making application simple, easy and intuitive.

-Profile suitable for application with **M29**

-Profile suitable for application with **SP 49/27**

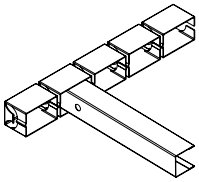
N.B the depictions on the following pages are suitable for experienced and 'do it yourself' users

FIXING TO THE FLOOR



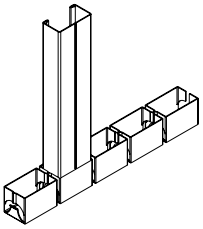
GV30 with **M29**

PERIMETER FIXING



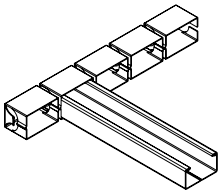
GV30 with **M29**

FIXING TO THE FLOOR



GV30 with **SP 49/27**

PERIMETER FIXING



GV30 con **SP 49/27**

NORMATIVE REFERENCES

- Construction product according to Regulation (EU) 305/2011
- CE marking in accordance with EN 14195 and EN 13964
- Sheet metal quality and cladding grade in accordance with EN 10143 and EN 10346

CE MARKING

The products listed in this catalogue are intended for use inside buildings. Each product is provided with a Declaration of Performance (DoP). Reaction to fire: class A1/Durability: class B (building components exposed to variable relative humidity up to 90% and variable temperatures up to 30°C but without corrosive contaminants, except class C5-M products).

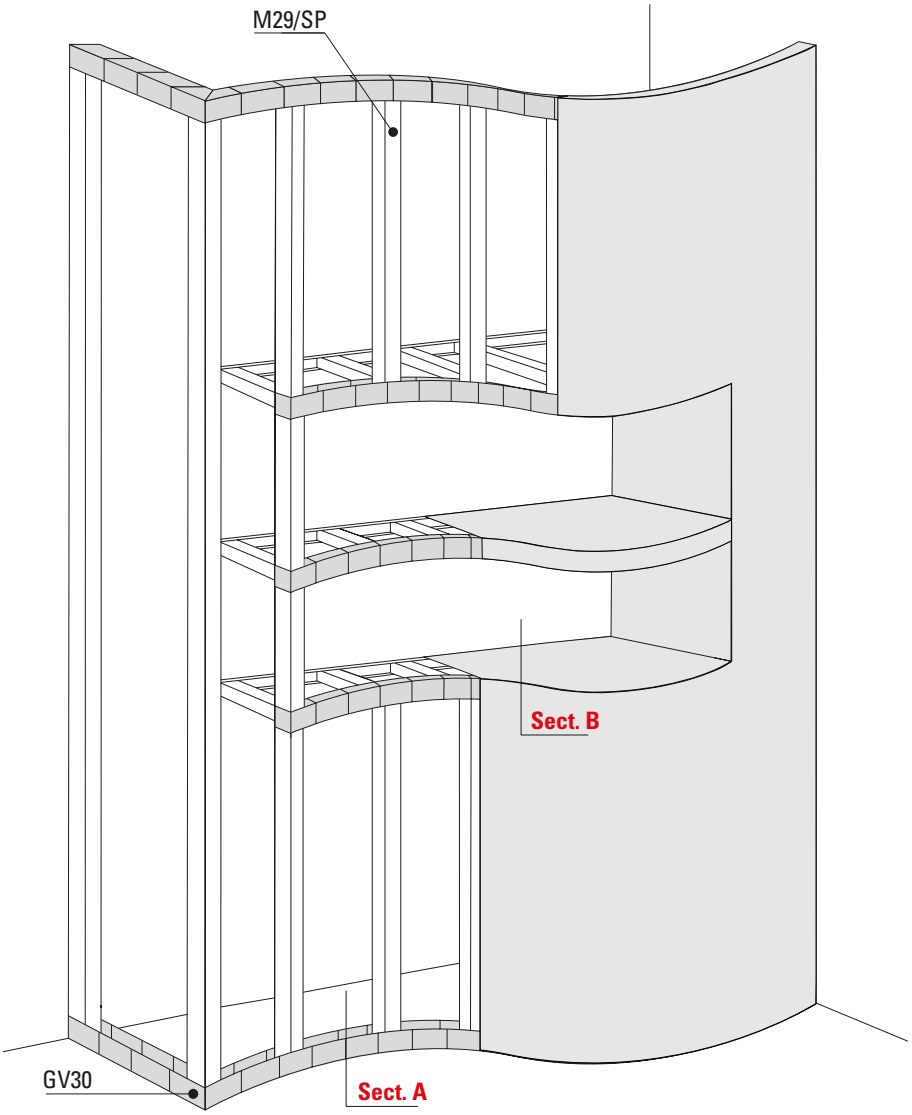
PRODUCT STORAGE

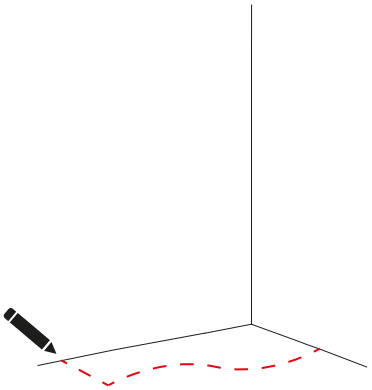
Store parcels in covered places with a relatively dry atmosphere and at a temperature as constant as possible in order to avoid condensation phenomena that may reduce the passivation state protecting the galvanised surface. If the material is stored outdoors (not recommended), use a cover that provides perfect protection against the weather (rain, fog, snow), taking care to place the packages at a slight angle. This cover must in any case be such as to allow adequate ventilation (not putting the two surfaces in direct contact), so that moisture does not accumulate and create condensation.

PACKAGING MATERIAL

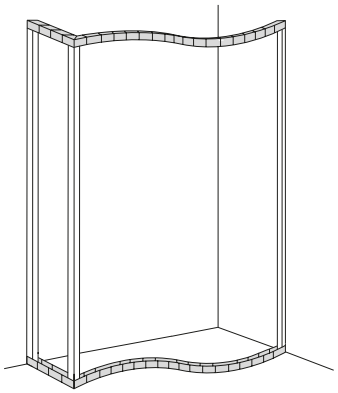
The packaging is made with plastic strapping. The pallet is made of plastic strapping, wooden stand and laths. The packaging is suitably dimensioned to facilitate handling in warehouses and on construction sites. In the packaging the GV profiles are packed inside a rail profile.

CURVE FALSE WALL WITH CURVE ELEMENT

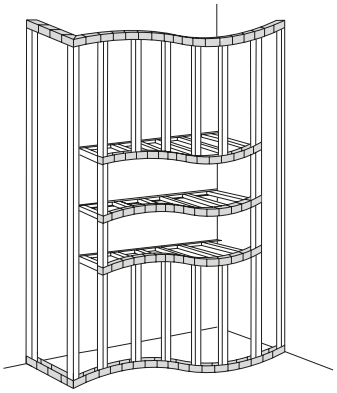




1. Draw the lines to the floor and ceiling of the curved wall;



2. Shape the GV30 rail and fix it to the floor and ceiling;

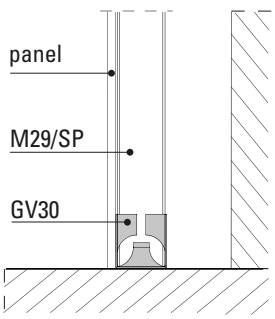


3. Insert the M29 studs with a suitable pitch for the curvature radius and fix on the GV30 rail;

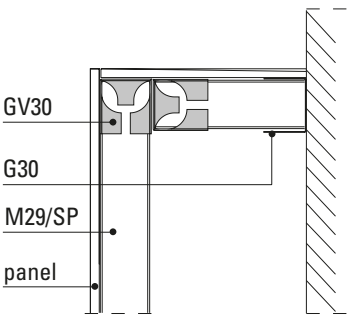
4. In the final step, close the sides of the wall by means of plasterboard panels of 6 to 15 mm.

N.B The pitch of the studs is adjusted according to the radius of curvature of the flexible rail. The tighter the rail radius, the tighter the studs fixing will be. The tighter the rail radius, the tighter the studs fixing will be.

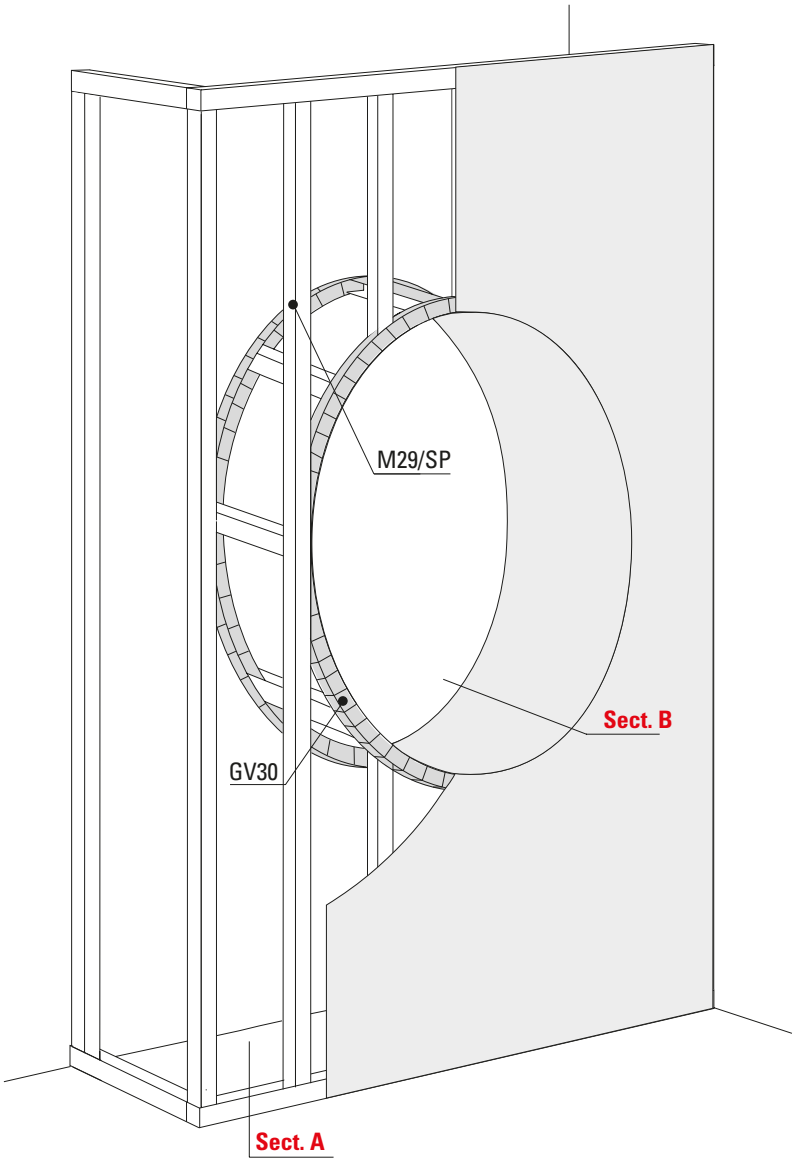
Sect. A

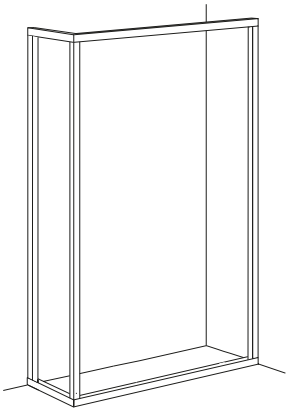


Sect. B

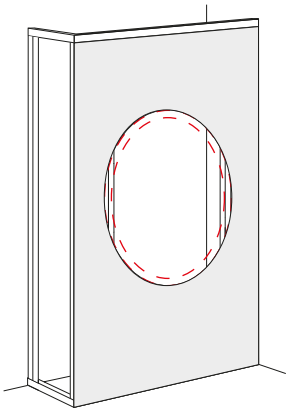


CIRCLE IN LINEAR FALSE WALL

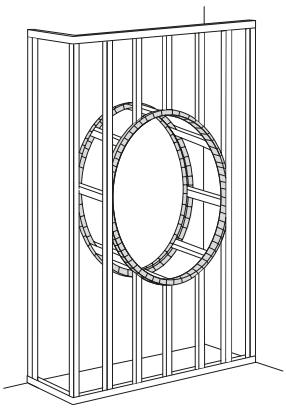




1. Fix the rails to the floor and to the ceiling by means of M29 studs;



2. Leave space free for inserting the desired shape, position the plasterboard model made earlier and shape the GV30 rail onto it;

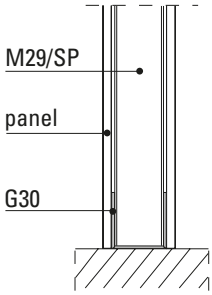


3. Insert the M29 studs with a suitable pitch for the curvature radius and fix on the GV30 rail;

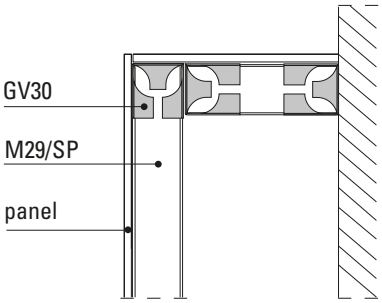
4. In the final step, close the sides of the wall by means of plasterboard panels of 6 to 15 mm.

N.B The pitch of the studs is adjusted according to the radius of curvature of the flexible rail. The tighter the rail radius, the tighter the studs fixing will be.

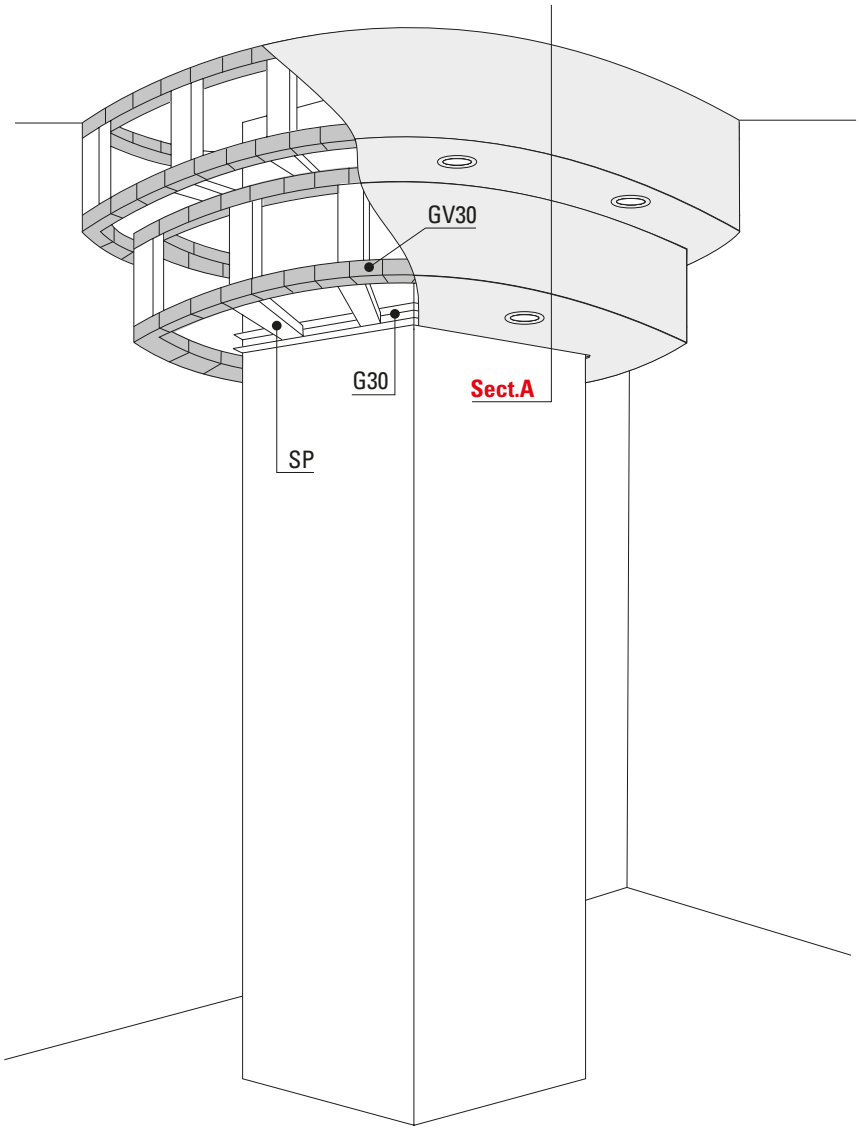
Sect. A



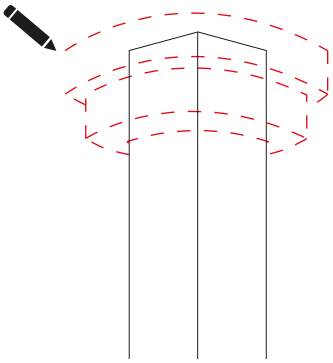
Sect. B



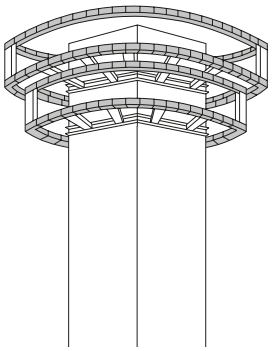
CURVE STAIR-STEP



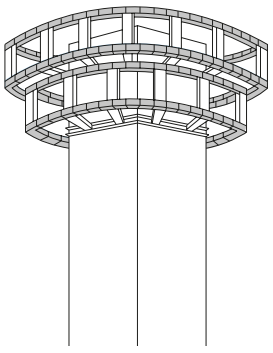
4. In the final stage, fasten the plasterboard panels 6 to 15 mm on the metal structure.



1. Draw the lines on the ceiling and on the pillar to be clad with the curve stair-step;

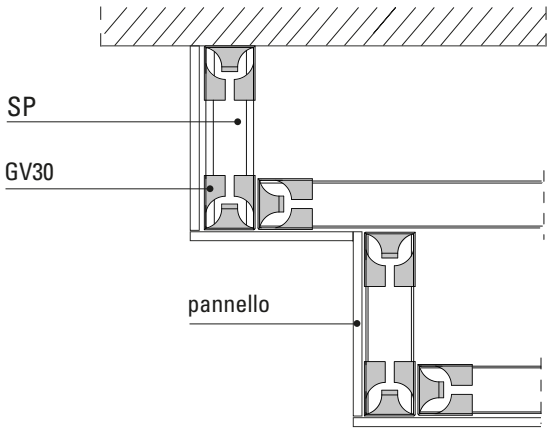


2. Shape and fix the GV30 on the ceiling and pillar, then fix the SP studs positioned between the rails;



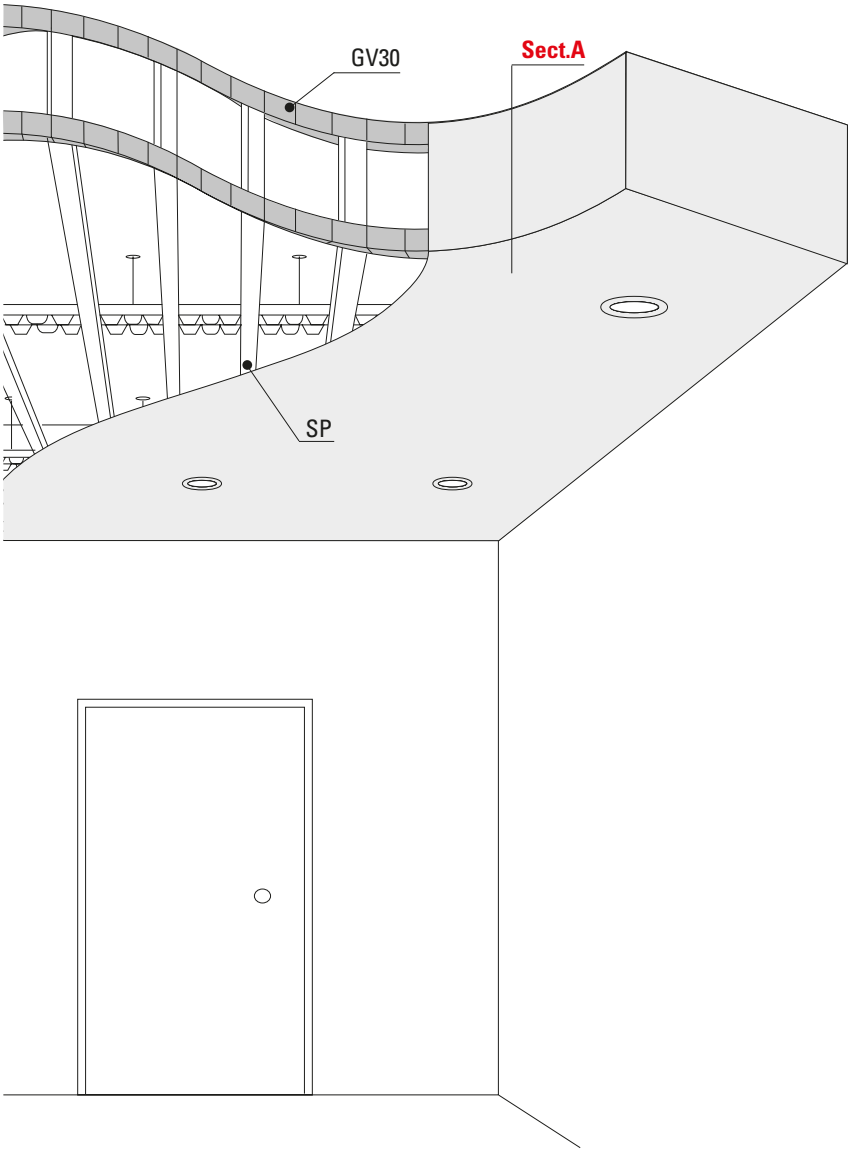
3. Complete the stair-step by positioning the remaining studs along the entire metal structure;

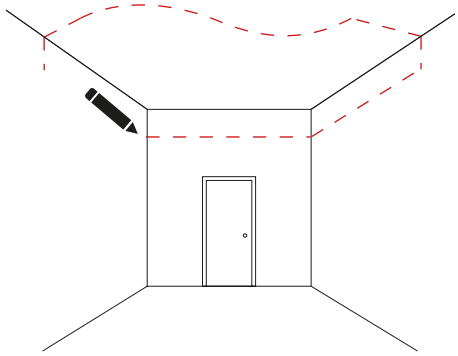
Sect. A



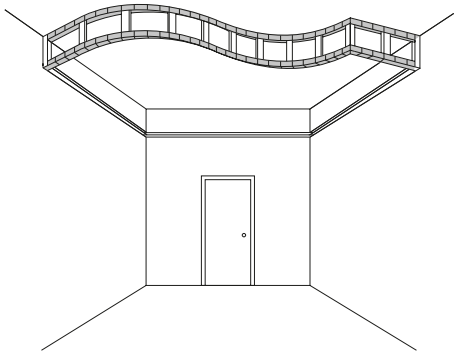
N.B The pitch of the studs is adjusted according to the radius of curvature of the flexible rail. The tighter the rail radius, the tighter the fixing of the studs will be.

CURVE UPSTAND

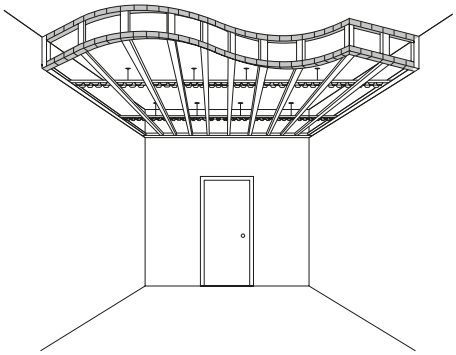




1. Draw the curve to be made on the ceiling and the perimeter area of the walls;



2. Shape and fix the GV30 to the ceiling. Then fix the perimeter rails and position the SP studs between the rails;

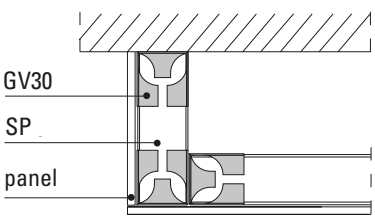


3. Complete the curve upstand by positioning the carriers with the suspensions fixed to the ceiling and then add the studs along the entire metal structure;

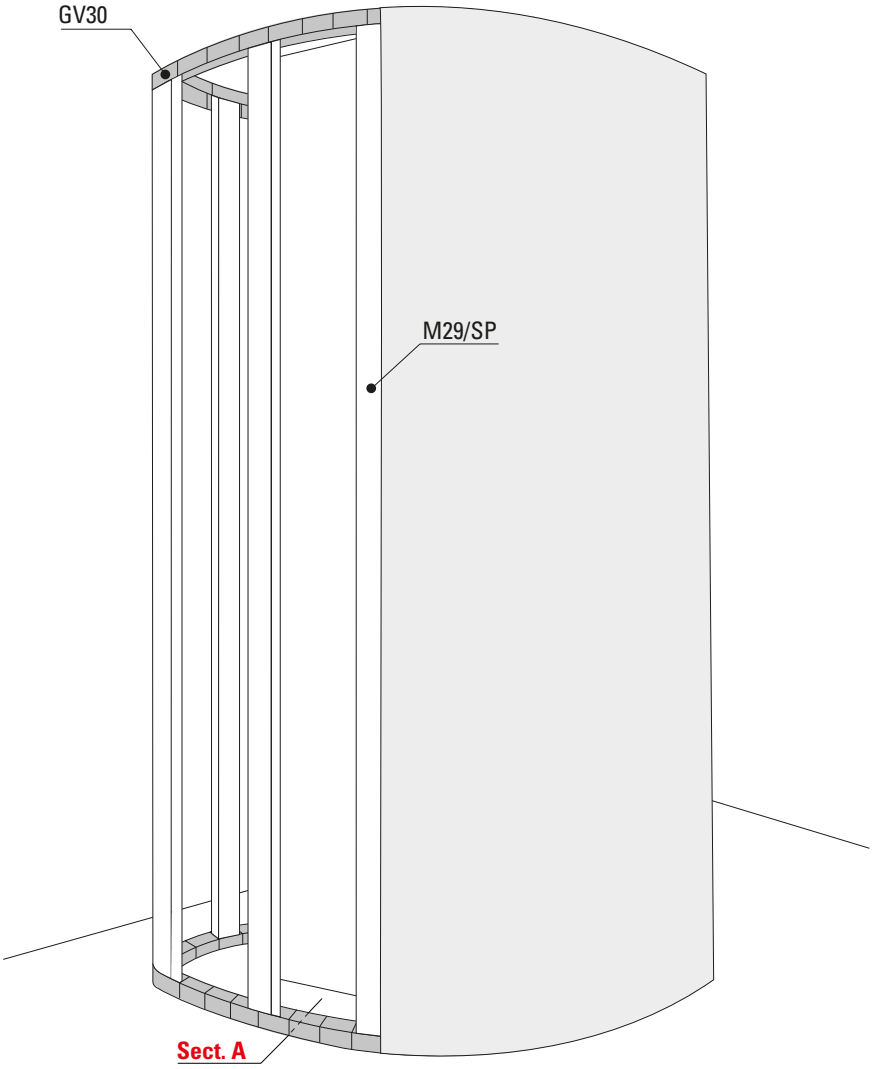
4. In the final stage, the 6 to 15 mm plasterboard panels are fixed to the metal structure.

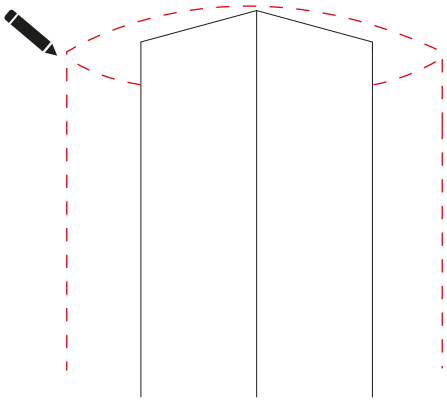
N.B The pitch of the studs is adjusted according to the curvature radius of the flexible rail. The tighter the rail radius, the tighter the fixing of the studs will be.

Sect. A

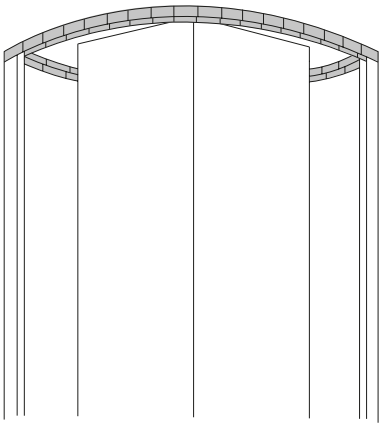


PILLAR CURVE CLADDING

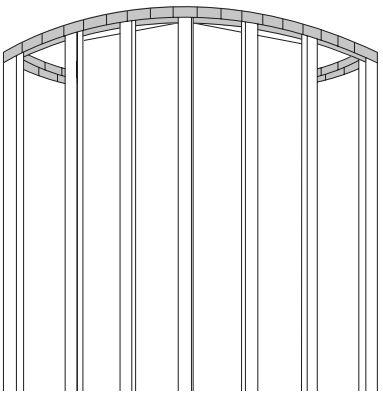




1. Draw the circular line of the cladding on the floor and on the ceiling;



2. Shape and fix the GV30 rail on the floor and on the pillar, and then fix the M29 studs by positioning them between the rails;

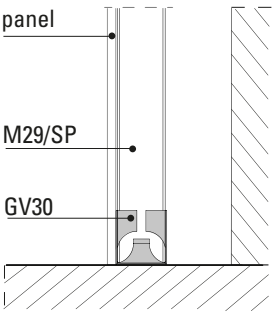


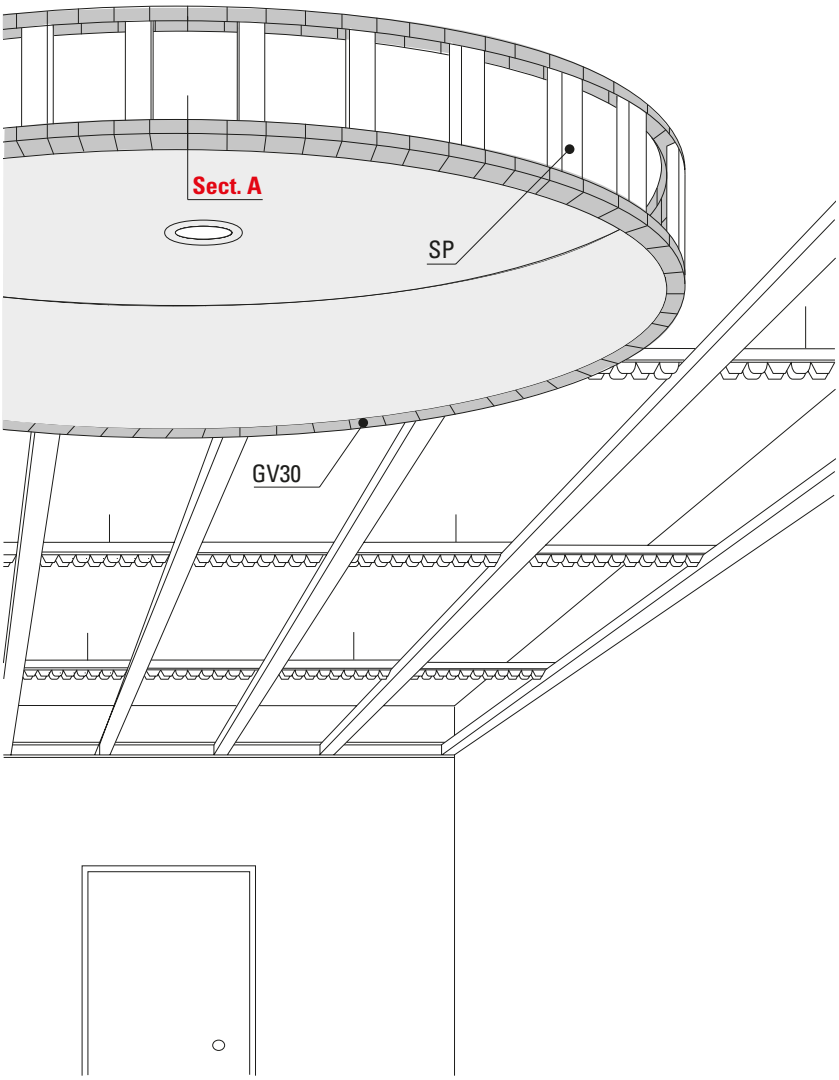
3. Complete the cladding by positioning the remaining studs along the metal structure;

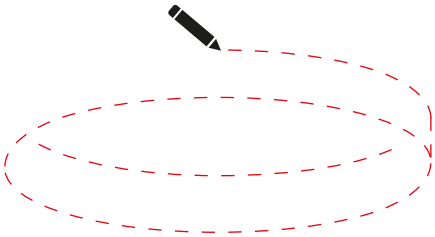
4. In the final stage, fix the 6 to 15 mm plasterboard panels to the metal structure.

N.B The pitch of the studs is adjusted according to the radius of curvature of the flexible rail. The tighter the rail radius, the tighter the fixing of the studs will be.

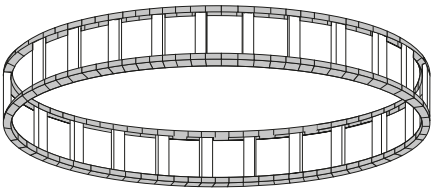
Sect. A



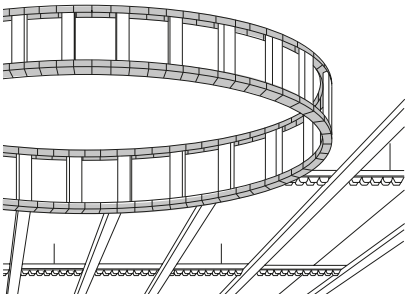




1. Draw the lines of the curved pit on the ceiling;



2. Shape and fix the GV30 rail, then proceed with fixing the SP studs by positioning them between the rails;

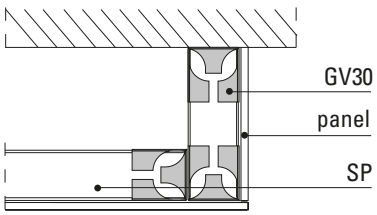


3. Complete the pit by positioning the remaining studs along the metal structure;

4. In the final stage, the 6 to 15 mm plasterboard panels are fixed to the metal structure.

N.B The pitch of the studs is adjusted according to the radius of curvature of the flexible rail. The tighter the rail radius, the tighter the fixing of the studs.

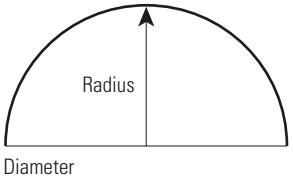
Sect. A



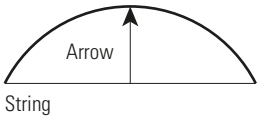
DRAWING OF CIRCUMFERENCE AND ELLIPSE ARCS

In order to realise curved structures, curved lines or arcs must necessarily be drawn; the circumference arc is certainly the most commonly used. A circumference arc is called a '**round arc**' if it represents a semi-circumference; it is called a '**declined arc**' if it is drawn only in part, i.e. if the distance between the ends of the arc (called the '**chord**') is less than the diameter; while an '**arrow**' is defined as the maximum distance of the chord from the semi-circumference.

Round arc

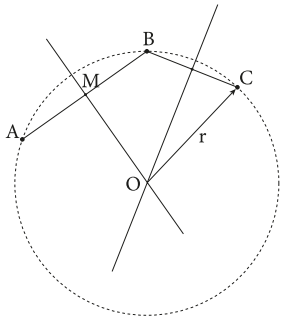


Lowered arc



Tracing the arc of a circumference by three points:

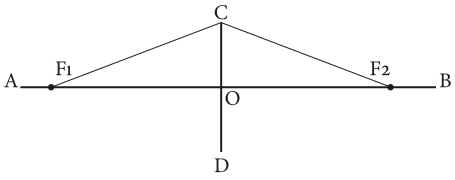
- The points are joined to obtain the segments AB and BC;
- The midpoints, called segments, are determined;
- The perpendicular bisectors through the midpoints are extended until they intersect at point 0;
- The arc of a circle with centre 0 and radius r equal to the segment OC is drawn.



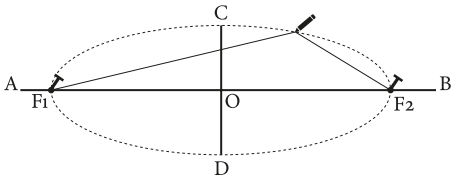
This case often occurs on construction sites when a barrel vault is to be built in a corridor, for example; the starting point of the vault is called the **impost height**, while the highest point is called the **vault height.**

Drawing the ellipse using the "gardener's method

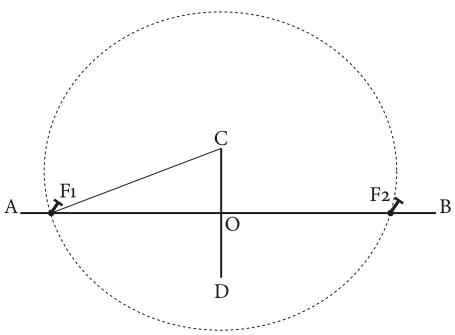
In order to draw the **ellipse**, two particular points, called " focuses ", are needed, which are positioned on the **major axis** and are at the same distance from the centre of the ellipse, point of intersection of the major and **minor axes.**



We take a string of length equal to half the major axis and point it at C, tracing an arc of circumference that intersects AB at points F1 and F2;
A string of a length equal to the major axis AB is taken; the ends are tied to two nails fixed at F1 and F2;
With a pencil, the string is stretched and the ellipse is drawn.

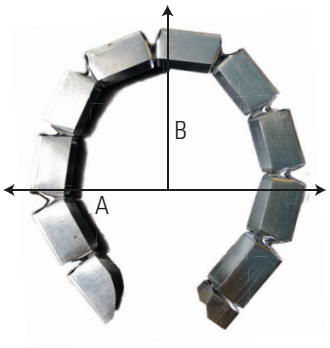


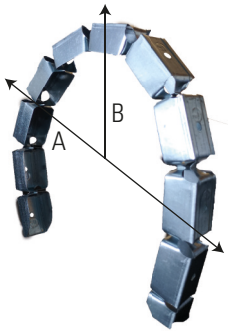
AB= major axis
CD= minor axis
F1 e F2= focuses
CF1= AO



RADIUS CURVATURE

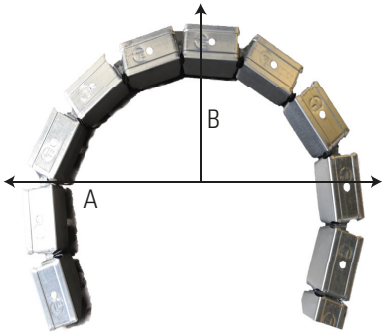
MIN. RADIUS CURVATURE

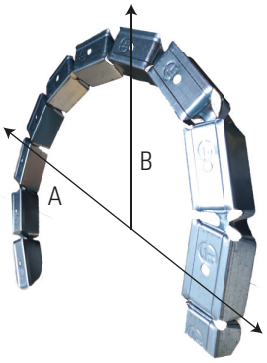




Diameter A: 24 cm Radius B: 12 cm

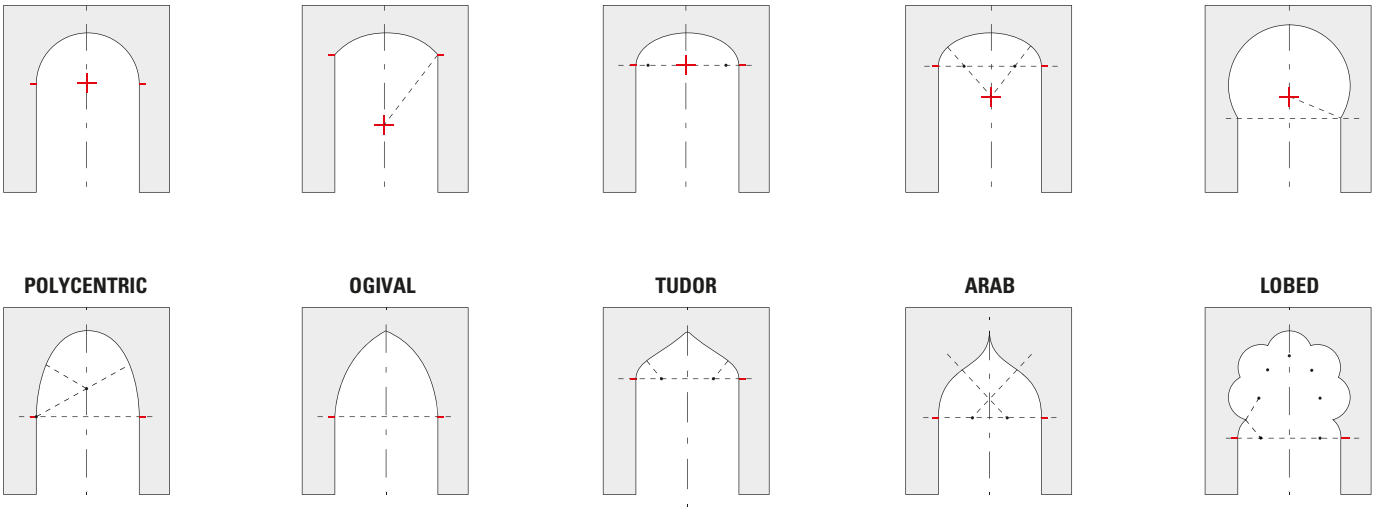
MIN. RADIUS DORSAL CURVATURE





Diameter A: 30 cm Radius B: 15 cm

TYPES OF ARCS WITH NOMENCLATURES AND CENTRES

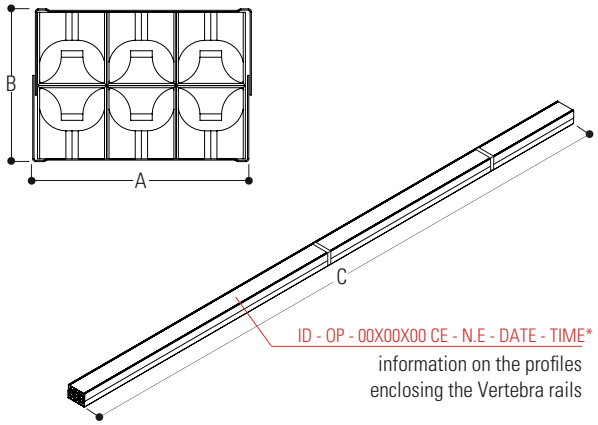


TECHNICAL DATA

CHARACTERISTIC	REFERENCE STANDARD	VALUE	UNIT OF MEASUREMENT
Type	EN 14195	Metal structure	-
Reaction to fire	EN 14195-1A	1	
Thickness	EN 10143	0,6 - 0,8	mm
Thickness tolerance	EN 10143	± 0,07	mm
Length	EN 14195	3000	mm
Length tolerance	EN 14195	± 4	mm
Protective cladding	EN 10346	5 ÷ 12	µm
Yield stress	EN 10143	340	N/mm2

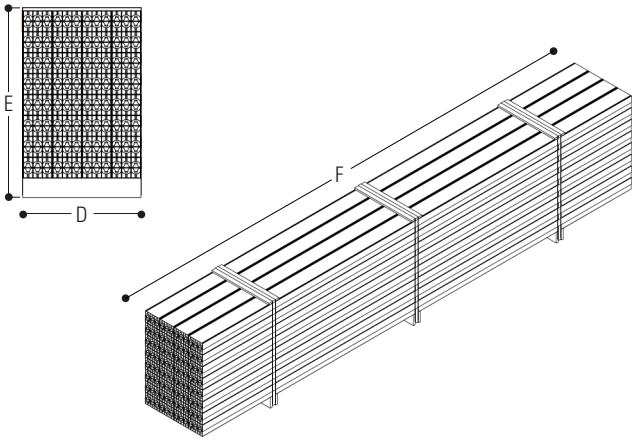
PACKAGING AND PALLET SHEET

PACKAGING



Profile weight	Kg/ml	0,408	3 m
	Kg/pc	1,224	
Profile pieces	Pcs	6	
Total per package	m	18	3 m
	Kg	12,00	
Dimensions	mm	100 (a) 60 (b) 3000 (c)	3 m

PALLET



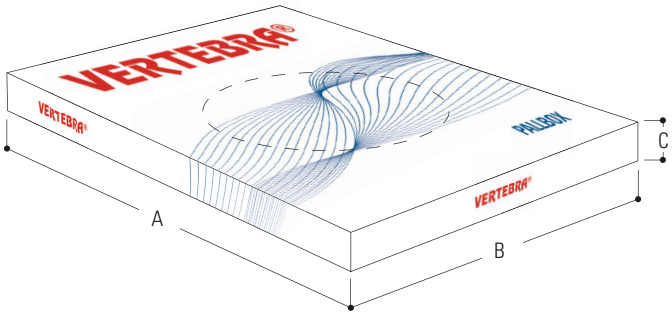
Packaging	Pcs	32	
Total profiles	Pcs	192	
Total per package	m	576	3 m
	Kg	384	
Dimensions	mm	400 (d) 580 (e) 3000 (f)	3 m

Weight calculated on thickness 6/10

N.B. - The weight of the package/pallet is subject to variation depending on the material tolerances described in the table.
- The total weight of the pallet also includes the value of the rails used to wrap the main profiles in the pack.
- All technical data and specifications in the data sheet are subject to change without notice.

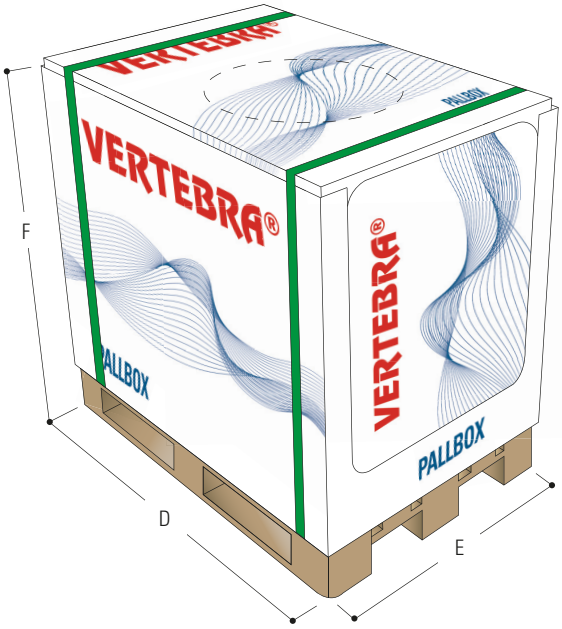
Vertebra® PallBox

PACKAGING



Profile weight	Kg/m	0,480	18 m
Profile pieces	Pcs	2	
Total per package	m	36	
	Kg	16,00	
Dimensions	mm	1150 (a) 720 (b) 65 (c)	

PALLBOX



Packaging	Pcs	13
Total profiles	Pcs	26
Total per package	m	468
	Kg	236
Dimensions	mm	1200 (d) 780 (e) 1120 (f)

Weight calculated on thickness 6/10

- The pallbox is placed on a Euro pallet, secured with strapping and protected with stretch film.
- The VERTEBRA profiles contained in the pallboxes are made of galvanised steel DX51D with a thickness of 0.6 mm.