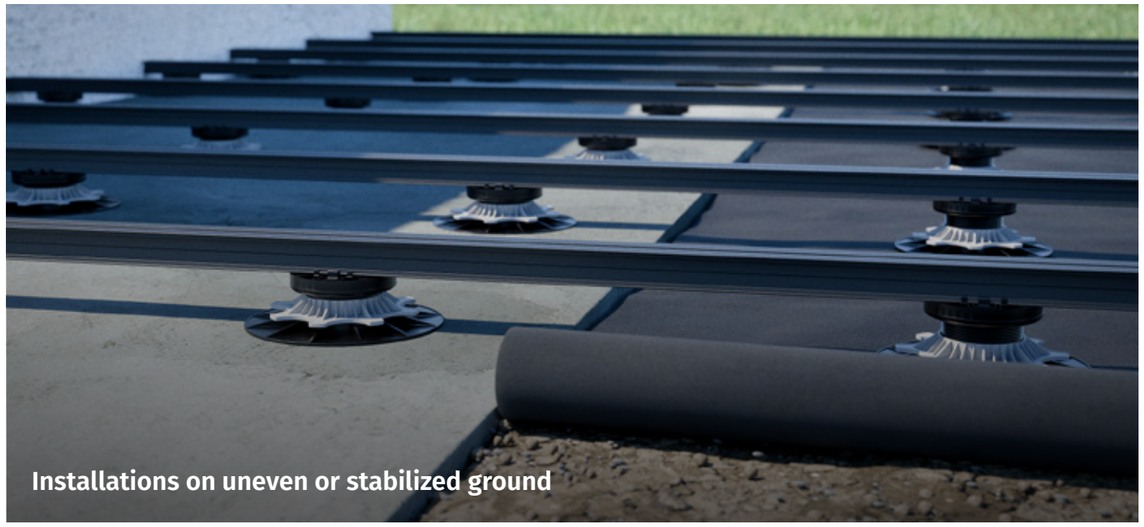
CERAM STRUCTURAL

COBRA GLOBAL DECKING SYSTEM FASTENER®

APPLICATIONS

To successfully complete a STRUCTURAL project, it is necessary to familiarize yourself with local building codes and follow **our installation instructions.**
A deck is a structure subjected to extreme stress from the loads it bears and from outdoor conditions that place strain on the entire structure.
Stability and durability are essential.



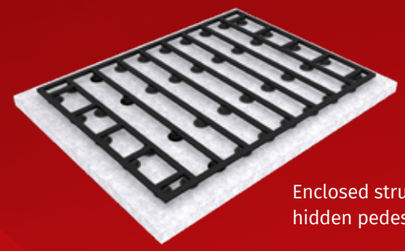
Installations on uneven or stabilized ground

Installation on waterproofed surfaces

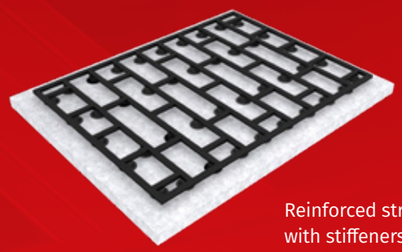
Proper structural design requires taking into account : 1) the exact dimensions of the ceramic tiles to be installed, 2) the dimensions of the entire terrace area to be covered, 3) the installation heights, and 4) the existence of adjacent perimeter elements (walls, fences, etc.)

PRODUCTS BENEFITS

- **Quick installation, no structural work required**
- **Modularity of the structure and layout**
- **Fewer pedestals required**
- **Even load distribution**
- **Hidden pedestals inside the frame**
- **Quick and easy leveling**
- **Installation on many surface types**
- **Installation with low installation height**
- **Preserves waterproofed surfaces**



Enclosed structure for hidden pedestals.



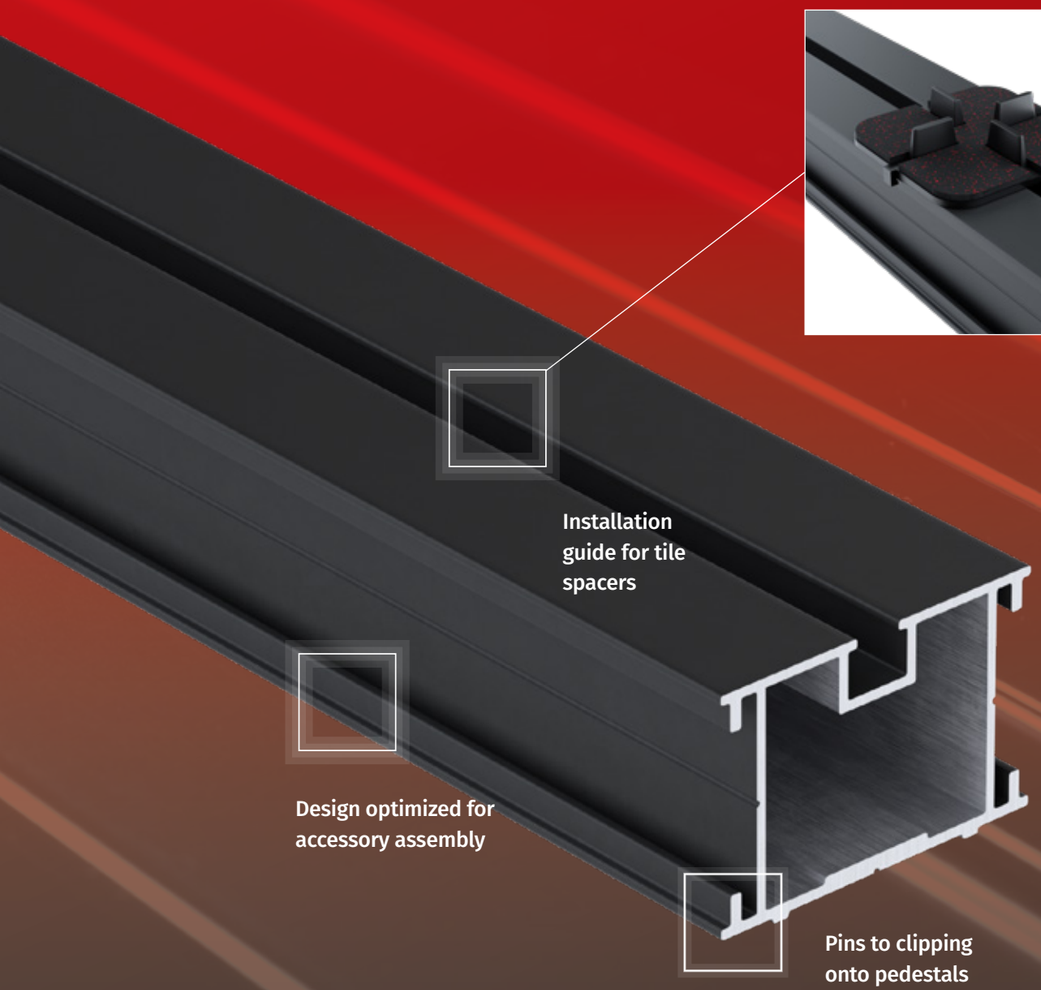
Reinforced structure with stiffeners.

- **Easy access for maintenance**
- **Hidden cables, connections, and pipes**

- **Easy drainage of water between joints**

COBRA GLOBAL DECKING SYSTEM FASTENER®

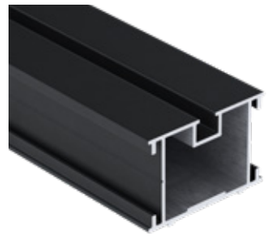
STRUCTURAL JOISTS



MATERIAL	EN AW 6063 (T5) aluminum alloy
FINISH	Black RAL 9005 Matte QUALICOAT coating
STANDARD LENGTHS	400 cm and 200 cm

JOIST
40 x 24 mm

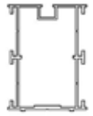
200cm **FD2278 (1,5 kg)** / 400cm **FD2097 (3 kg)**



JOIST
60 x 40 mm

200cm **FD2277 (2,3 kg)** / 400cm **FD1892 (4,6 kg)**

JOIST
60 x 80 mm



200cm **FD2275 (3,5 kg)** / 400cm **FD1893 (6,9 kg)**

JOIST
60 x 120 mm

200cm **FD2276 (4,9 kg)** / 400cm **FD1894 (9,8 kg)**

JOISTS	MAX. DISTANCE BETWEEN SUPPORTS (MM) 2 supports	3+ supports	Overhang
Design 1 (private use) : Point load 2 kN and distributed load 3.5 kN/m²			
40x60	780	1160	180
80x60	1750	2560	400
120x60	2660	3560	600
Application 2 (café, restaurant, etc.) : Point load 3 kN and distributed load 2.5 kN/m²			
40x60	630	950	150
80x60	1430	2140	350
120x60	2340	3510	550
Load condition 3 (ERP): Point load 5 kN and distributed load 5 kN/m²			
40x60	490	750	120
80x60	1110	1910	260
120x60	1810	3420	450

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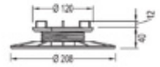
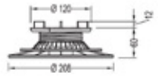
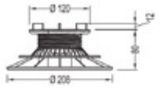
INSTALLATION ON PEDESTALS



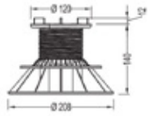
H 25 - 40 mm
FD2120



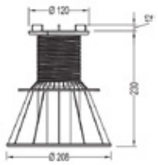
H 40 - 60 mm
FD2121



H 50 - 80 mm
FD2122

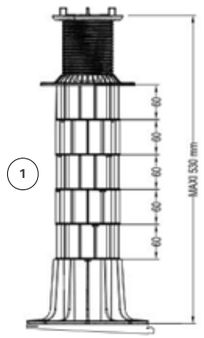


H 80 - 140 mm
FD2123



H 140 - 230 mm
FD2124

800 KG
COMPRESSIVE LOAD



2 - 5%

1. **60 MM RAISER** FD0206
Stackable up to 5 units to reach a height of 530 mm

2. **SLOPE ADJUSTER** FD0338
Combined discs for correcting slopes of 2% to 5%

PREPARATION : The ground for your deck must be prepared.
Make sure it is stable and sturdy. For installation on gravel or sand, lay **GEODECK** geotextile fabric over the entire surface to prevent unwanted weeds from growing under the deck.
When using a bed of fine gravel or sand, we recommend placing a stable concrete slab under each pedestal to ensure sufficient compressive strength.

The joist is installed and removed by simply snapping it onto the head of the adjustable pedestal.

The AL60 adapter (FD0677) allows STRUCTURAL joists to be clipped onto other adjustable pedestals available on the market.

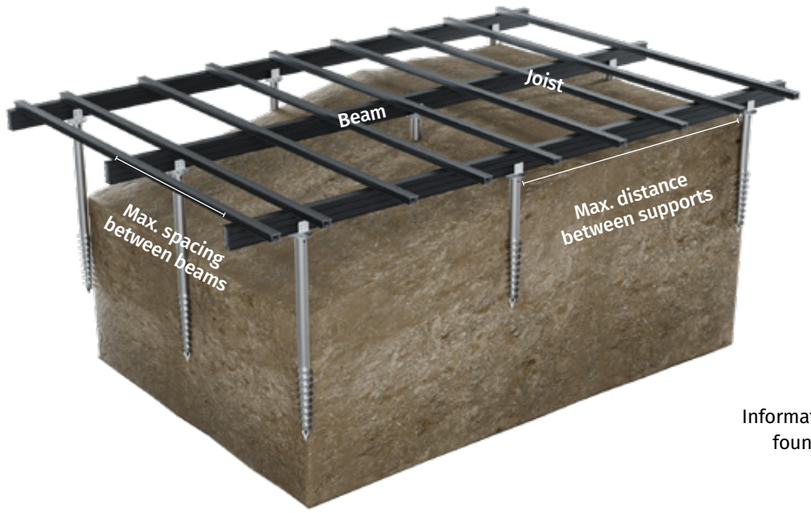
Information regarding Cobra NIVO adjustable pedestals

SCREW FOUNDATION INSTALLATION

A cross-braced structure is recommended for installation on foundation screws.
The calculation of the number and placement of foundation screws depends on the soil type, the load to be supported, the capacity of the screws, the structural characteristics, and the configuration of the structure. The reliability of the foundation screw installation depends on compliance with installation procedures, the materials used, and the soil type.

CROSSED STRUCTURE TABLE

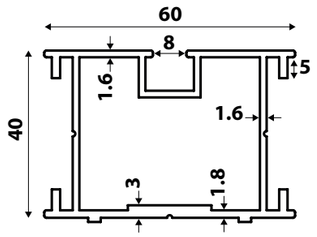
		BEAM ON 2 SUPPORTS			BEAM ON 3 OR MORE SUPPORTS		
		40x60	80x60	120x60	40x60	80x60	120x60
	MAX. SPACING BETWEEN BEAMS (MM)	MAX. DISTANCE BETWEEN SUPPORTS (MM)					
Joist	Load Condition 1 (private use): Point load 2 kN and distributed load 3.5 kN/m²						
40x60	1160	780	1340	1860	960	1800	2500
80x60	2560		1030	1430		1260	1690
120x60	3560			1280			1430
Joist	Load Category 2 (café, restaurant, etc.): Point load 3 kN and distributed load 2.5 kN/m²						
40x60	950	630	1430	2230	840	2140	2990
80x60	2140		1220	1700		1630	2190
120x60	3510			1440			1710
Joist	Load condition 3 (public building): Point load 5 kN and distributed load 5 kN/m²						
40x60	750	370	1110	1810	500	1910	2610
80x60	1910		1010	1400		1220	1630
120x60	3420			1150			1220



SPIRAL

Information regarding foundation screws Cobra SPIRAL

STRUCTURAL joists are designed in France and manufactured in Europe at production sites **certified to ISO 9001 and ISO 14001,** in compliance with the highest standards of industrial quality and environmental management.



EXTRUDED ALUMINUM - EN AW 6063 T5

Complies with standard EN 573-3
Indicative equivalents : - JIS H 4100 / - AA 6063 (ASTM B221)
Chemical designation : EN AW - AlMg0.7Si

MECHANICAL PROPERTIES (Ref. UNI EN 755-2)	
Temper	T5
Thickness e (mm)	e < 10
Rm (MPa) min.	200
Rp0.2 (MPa) min.	160
A % min.	7
A50 mm % min.	6
HBW (Brinnell) - typical	65

PHYSICAL PROPERTIES	
Density (kg/dm³)	2.70 g/cm³
Melting point (°C)	600/655
Poisson's ratio	0.33
Modulus of elasticity (MPa)	69.000
Tangential modulus of elasticity (MPa)	26.000
Linear thermal expansion coefficient	23X10-6 C
Thermal conductivity at 20°C	190W/m.K
Electrical conductivity at 20°C	27/30 MS/m

TECHNICAL SPECIFICATIONS	
Coating properties	O
Corrosion resistance	O
Cold formability	S
Machinability	S
Weldability	B
Profile Formability	O
I=insufficient, S=sufficient, B=good, O=optimal	

PHYSICAL CHARACTERISTICS	
Warp	less than L/800 according to EN 755-9
Bending	less than L/800 according to EN 755-9
L = total length of the profile	
Length tolerance :	0,24 mm/m/10 °C

COATING : The Qualicoat certification is a European standard that guarantees quality.
It provides long-lasting protection that helps ensure lasting performance.

Class	Min. avg. thickness	Min. local thickness
AA 10	10 µm	8 µm

COBRA GLOBAL DECKING SYSTEM FASTENER®

JOINTS

INTERIOR CORNERS

FD2054

PERPENDICULAR CONNECTIONS

FD2214

FD2094

OUTER CORNERS

FD1896

JOINTING OF JOISTS

FD1903
(x100)

4.8 x 16 mm self-tapping screw, one size fits all accessories

COBRA GLOBAL DECKING SYSTEM FASTENER®

40x60mm

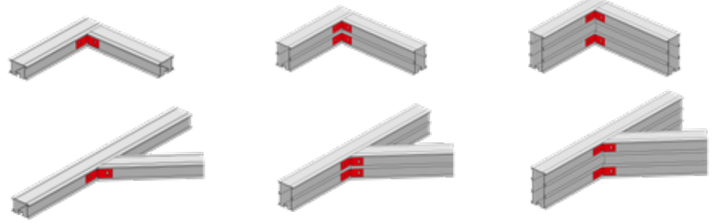
80x60mm

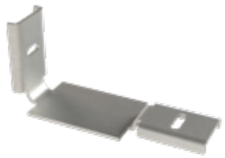
120x60mm

FD2054
(x20)

FD1898
(x20)

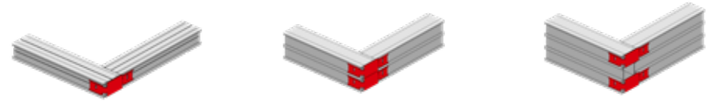
INTERIOR CORNERS





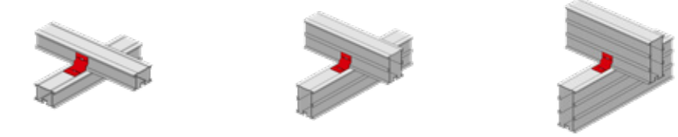
FD2094
(x10)

EXTERIOR CORNERS



OVERLAP & ANCHORS

FD1897
(x10)

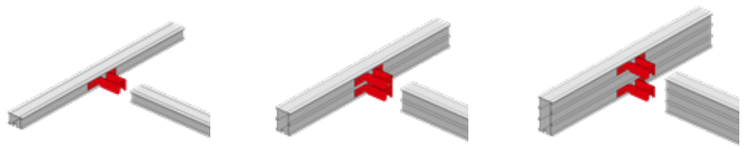


VERTICAL CORNERS

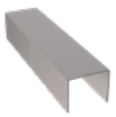
FD2356
(x8)

T-CONNECTIONS

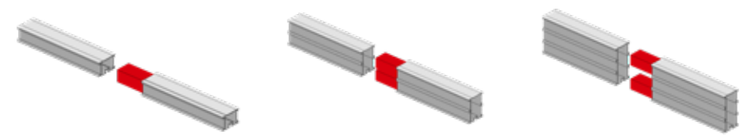
FD2214
(x8)



CONNECTIONS



FD1896
(x4)

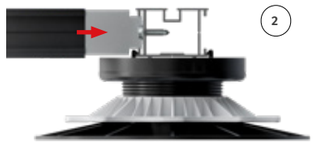


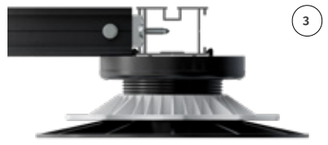
CONNECTOR ASSEMBLY

INSTALLATION OF THE OMEGA CONNECTOR

FD2214

Insert the Omega connector, tile side facing up with the square opening facing upward, into the side slot of the joist (1). Slide it into position until it is perpendicular to the joint you want to make. Once in position, slide the other joist into place until it stops (2). Secure the Omega brackets on both sides, then fasten the joined joist on each side with FD1903 self-tapping screws (3).

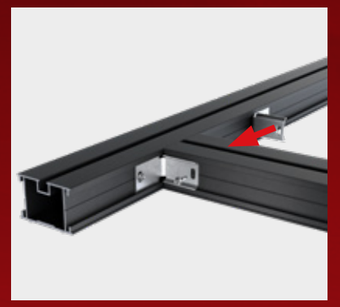


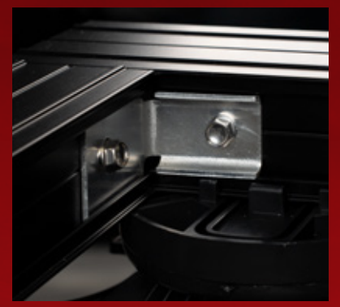


First, insert and position as many Omega brackets as are needed for the connections to be made on each joist.
If a corner joint is required on a joist after components have already been secured along the rail, use FD2054 or FD1898 brackets.

INSTALLATION OF THE SLIDING BRACKET FOR AN INTERIOR CORNER

FD2054

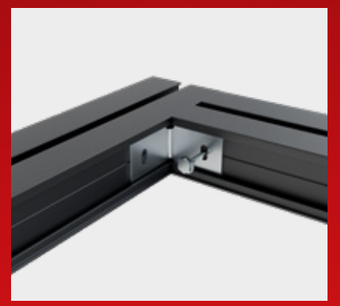




Insert the bracket into the side slot of the joist. Slide it into position until it reaches the desired angle. The assembly must be held in place on both sides with another bracket, and secure the bracket on each side with FD1903 stainless steel screws. This 90° bracket is foldable to secure open angles up to 135°

INSTALLATION OF THE SIMPLE BRACKET FOR AN INTERIOR CORNER

FD1898



This bracket does not need to be inserted into the side rail beforehand. It is placed directly at the assembly point when other components are already mounted on the joist. Secure with 2 FD1903 stainless steel screws. This 90° bracket is foldable to secure open angles up to 135°

INSTALLATION OF THE PERIPHERAL BRACKET FOR EXTERNAL CORNERS

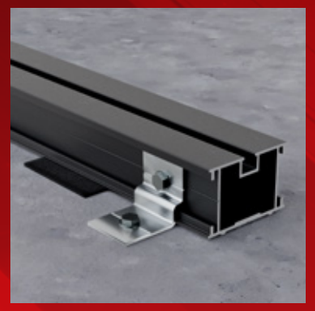
FD2094

The perimeter bracket secures the outside corners and fills the gap at the end of the joist, where it becomes possible to screw in a component. Attach an inside corner bracket on the opposite side to secure the assembly.

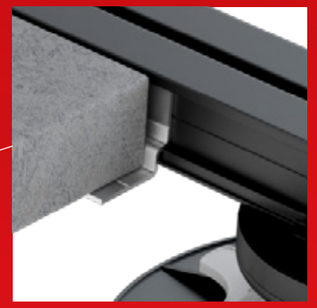
CONNECTOR INSTALLATION

INSTALLATION OF THE FIXING BRACKET

FD1897



This bracket allows you to secure the joists to the floor or stack them, for example to create a cross-braced structure. Its design facilitates assembly in the side channel and allows for shimming up to 5 mm under the joist. It is secured with 2 FD1903 screws



STRUCTURE BALLASTED WITH CONCRETE SLABS

This bracket also allows for the installation of ballast slabs between the joists of a structure that cannot be anchored to the ground. Example: installation on a waterproof membrane for a rooftop terrace exposed to high winds.
Each bracket can support a vertical load of 10 kg.

INSTALLATION OF THE JOINT SLEEVE

FD1896

This 18-cm-long sleeve, marked in the center, allows two joists to be joined end-to-end. It is secured on both sides of the joint using four FD1903 screws. Note : The joint between two Structural joists (40, 80, or 120x60) must not be more than 10 cm from a support point

INSTALLATION OF THE VERTICAL CORNER CONNECTOR

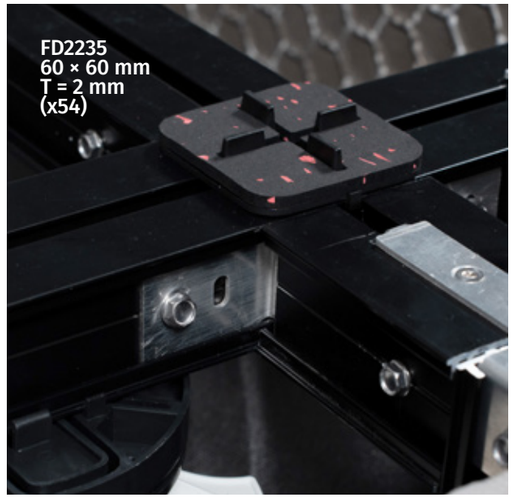
FD2356

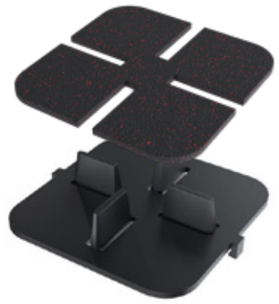
This connector makes it easy to create 90° vertical angles. The 40x60 joists snap together to form a perpendicular assembly that is secured with 4 FD1903 screws. The vertical joist is cut to the required height. This assembly facilitates the construction of steps, risers, and the installation of side finishing pieces.

FD2093 (x10)

To connect 80x60 or 120x60 joists, installing the FD2093 cap on the opposite side ensures a perfectly aligned and perpendicular assembly.

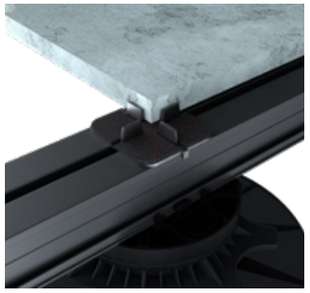
TILING & FINISHING

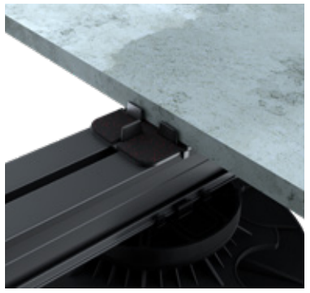




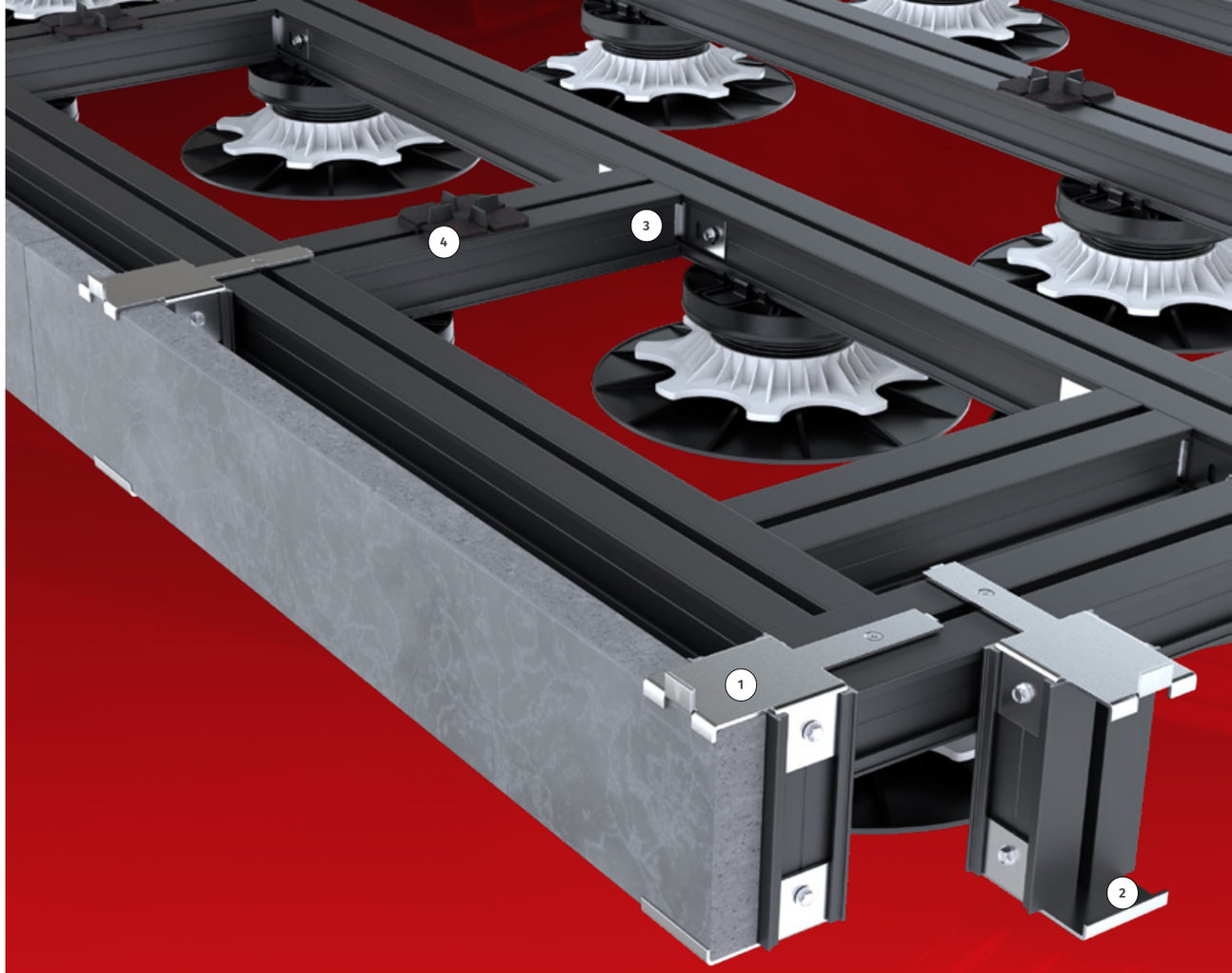
The spacers **fit into the groove of the joist and snap into place using their two pins.** They slide for easy and precise installation of the flooring. Installing them with the pins positioned inside the central groove allows you to adjust the alignment of the planks on the joist if necessary.

The 3mm-thick **recycled rubber** pad, supplied with each spacer, provides **comfort and cushioning during installation.**





Break-off tabs allow the spacer to be adapted to different tile installation configurations.
The use of wire cutters is recommended.



The brackets and the Omega connector are attached to the JOISTS using FD1903 self-tapping stainless steel screws.

1

FD2237 (x8)

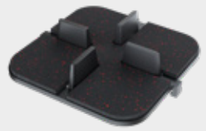
2

FD2236 (x8)

3

FD2214 (x8)

4



FD2235 (x54)

The FD2237 top bracket is secured in the center groove of the joist using the supplied self-tapping stainless steel countersunk screw.

TILES INSTALLATION & FINISHING PARTS


1
FD2356

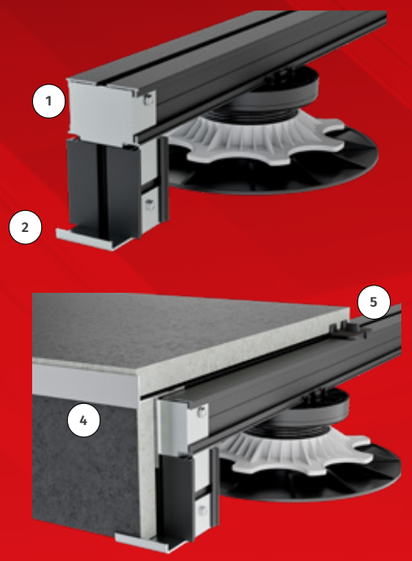

2
FD2236


3
FD2214

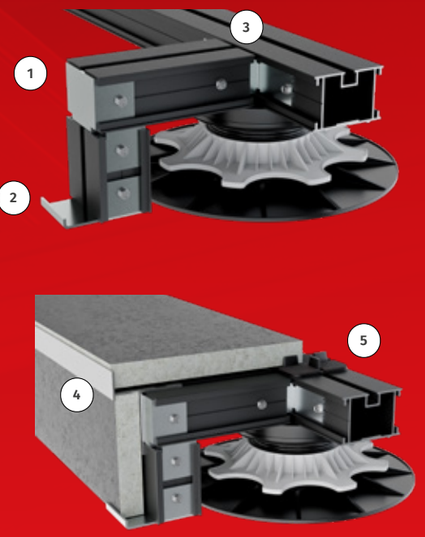

4
FD2357


5
FD2235

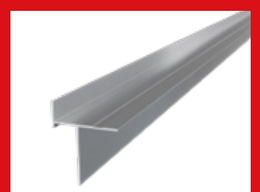
INSTALLATION ON JOIST END

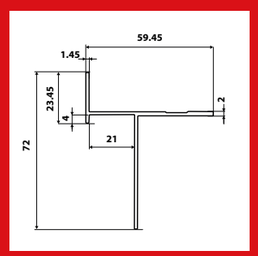


PERPENDICULAR INSTALLATION



1. Install the joists perpendicular to each other. The vertical component is cut to the desired step height, minus 4,3 cm.
2. Snap the bottom hook into place and secure it under the vertical component.
3. For side mounting, use an Omega bracket and a piece of joist cut to the required length.
4. Place the baseboard, then slide the aluminium finishing profile behind and against the structure. Apply a polyurethane adhesive sealant suitable for outdoor use between the baseboard and the structure if necessary. Secure the aluminium profile to the structure with a stainless steel countersunk screw.
5. Place the necessary tile spacer on the joist, then the required 3mm shims on the profile to be perfectly aligned. Position the flooring.

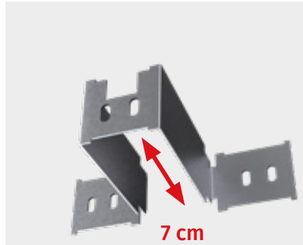

Anodized aluminum profile (2 ml).

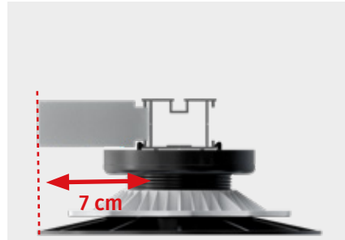


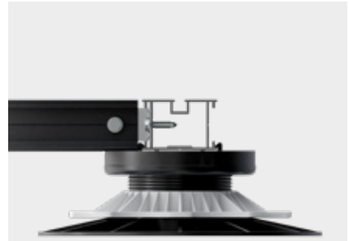

Adhesive installation

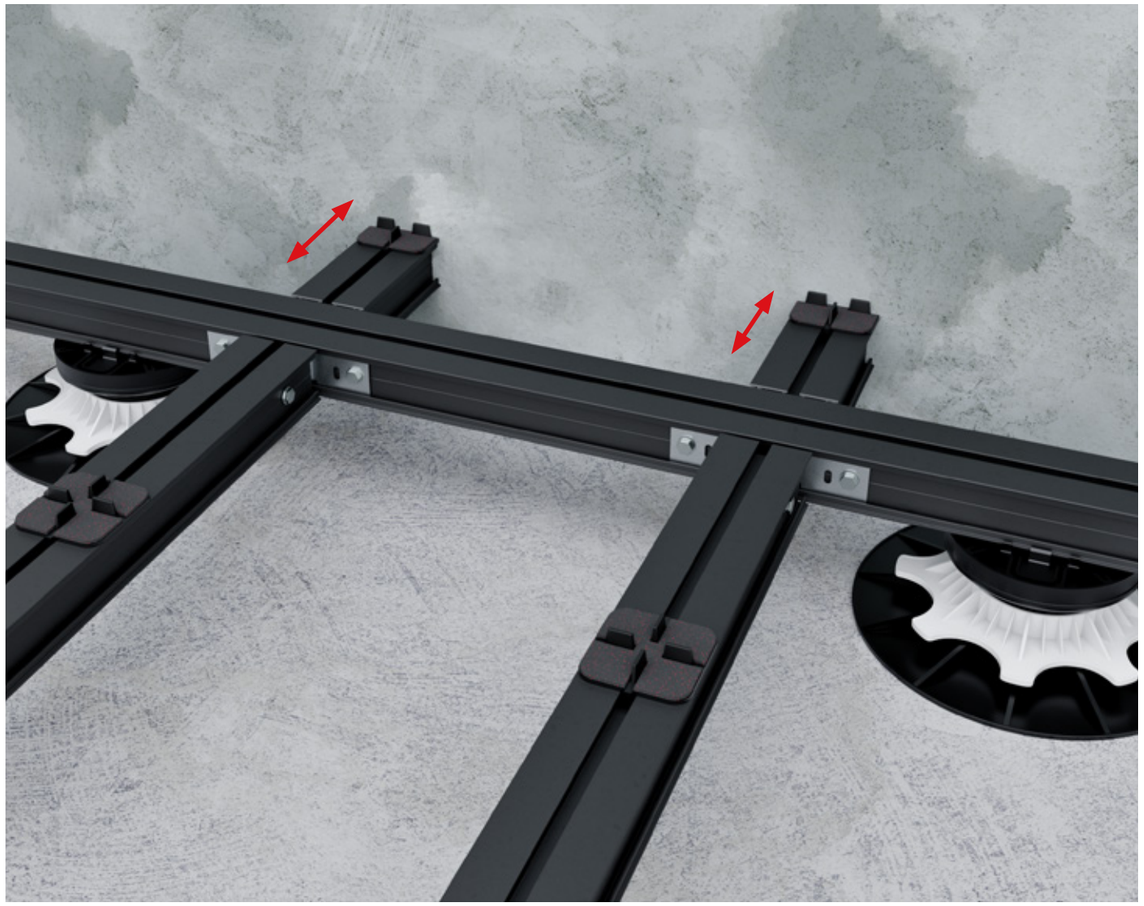
SUPPORT WITH ADJACENT WALL

For installation along a wall, the base of the pedestals placed under the structure moves the joist 7 cm away. Installing perpendicular joist sections, mounted on Omega supports creates the necessary supports along the wall.
The Omega bracket is precisely sized to cover the 7 cm overhang at the base of the pedestal.







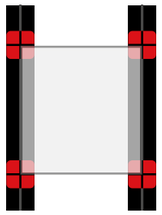


SUPPORT POINTS

INSTALLATION RECOMMENDATION ON STRUCTURAL

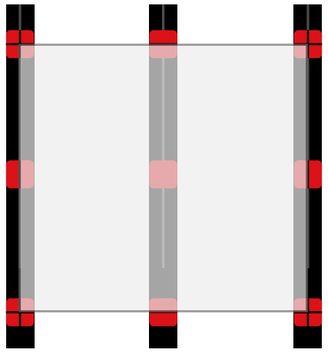
Square up to 60 x 60 cm

4



Square up to 120 x 120 cm

9

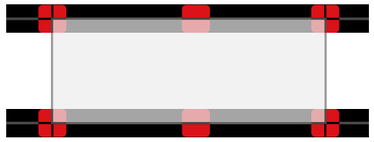


Rectangle 30 x 60 cm

4

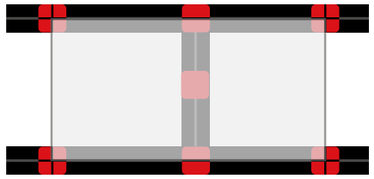
Rectangle 40-45 x 80-120 cm

6



Rectangle 50-60 x 90-120 cm

7



These installation recommendations apply to the Cobra STRUCTURAL system. For the number of support points and their positioning during installation, always follow the recommendations in the tile manufacturer's installation and maintenance instructions, as well as applicable technical regulations and industry standards. In the event of different or special conditions, appropriate checks and adjustments must be made. Cobra Fastener is not liable for any damage resulting from errors or failure to follow the tile manufacturer's installation instructions.

PRODUCTS LISTING

	FD2097	STRUCTURAL - Aluminum JOIST 24x40x4000mm
	FD2278	STRUCTURAL - Aluminum JOIST 24x40x2000mm
	FD1892	STRUCTURAL - Aluminum JOIST 40x60x4000mm
	FD2277	STRUCTURAL - Aluminum JOIST 40x60x2000mm
	FD1893	STRUCTURAL - Aluminum JOIST 80x60x4000mm
	FD2275	STRUCTURAL - Aluminum JOIST 80x60x2000mm
	FD1894	STRUCTURAL - Aluminum JOIST 120x60x4000mm
	FD2276	STRUCTURAL - Aluminum JOIST 120x60x2000mm
	FD1903	STRUCTURAL - Set of 100 4.8x16 mm self-tapping stainless steel screws
	FD1896	STRUCTURAL - Set of 4 JOIST end caps
	FD1897	STRUCTURAL - Set of 10 mounting brackets for aluminum JOISTS
	FD1898	STRUCTURAL - Set of 20 90° brackets for inside corners
	FD2054	STRUCTURAL - Set of 20 90° sliding brackets for inside corners
	FD2094	STRUCTURAL - Set of 10 90° brackets for outside corners
	FD1899	STRUCTURAL - Set of 10 90° flat brackets for vertical corners
	FD2356	STRUCTURAL - Set of 8 Gamma connectors
	FD2214	STRUCTURAL - Set of 8 Omega connectors

	FD2093	STRUCTURAL - Set of 10 JOIST caps
	FD2235	STRUCTURAL CERAM - Set of 54 60x60 spacers + rubber shims
	FD2237	STRUCTURAL CERAM - Set of 8 tall hooks + self-tapping screws
	FD2236	STRUCTURAL CERAM - Set of 8 low hooks
	FD2357	STRUCTURAL CERAM – Aluminium trim profile (2ml)
	FD2110	STRUCTURAL - Set of 200 A4 stainless steel screws 5.5x45 mm - aluminum JOIST
	FD2120	NIVO - STRUCTURAL H25 - 40mm pedestal
	FD2121	NIVO - STRUCTURAL pedestal H40-60mm
	FD2122	NIVO - STRUCTURAL Support Block H50-80mm
	FD2123	NIVO - STRUCTURAL Pedestal H80-140mm
	FD2124	NIVO - STRUCTURAL Pedestal H140-230mm
	FD0206	NIVO - 60mm Spacers
	FD0338	NIVO - Slope correction discs 2-5%
	FD0677	NIVO - AL60 Connectors for 60mm Aluminum JOISTS
	FD0607	COBRA INSTALL - GEODECK - Geotextile felt 100 g/m² (2x10 m = 20 m²)
	FD0210	COBRA INSTALL - RUBBERPAD - Set of 24 rubber spacers 8x90x90 mm
	FD0609	COBRA INSTALL - RUBBERPAD - Set of 60 rubber shims 3x60x90 mm

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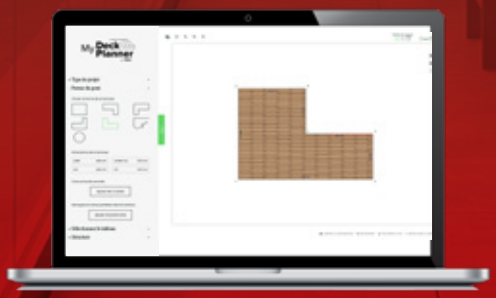

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