



STRUCTURAL

WOOD & COMPOSITE DECKING



TECHNICAL SHEET



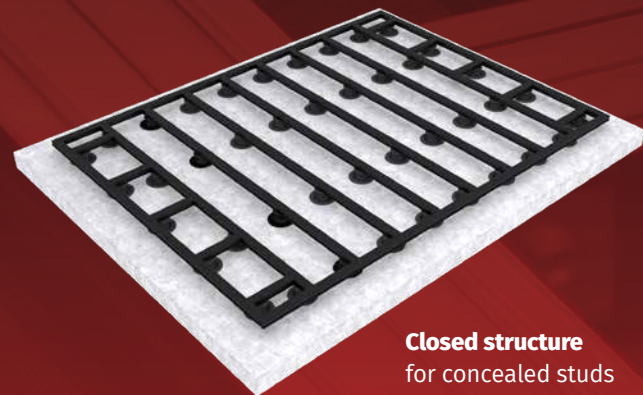
APPLICATIONS & BENEFITS

To successfully complete a STRUCTURAL project, it is necessary to familiarize yourself with local building codes and follow **our installation instructions**.

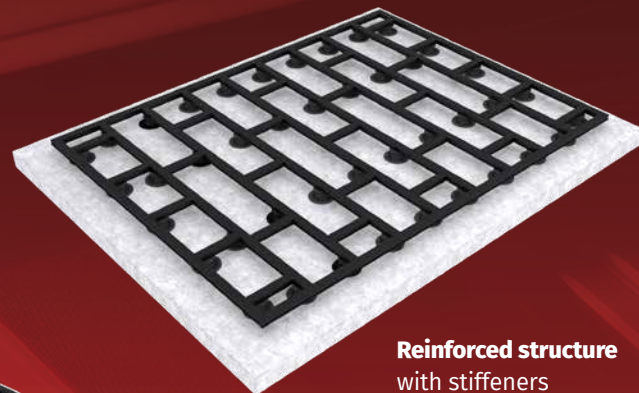
A deck is a structure subjected to extreme stress from the loads it bears and from outdoor conditions that place strain on the entire structure.

Stability and durability are essential.

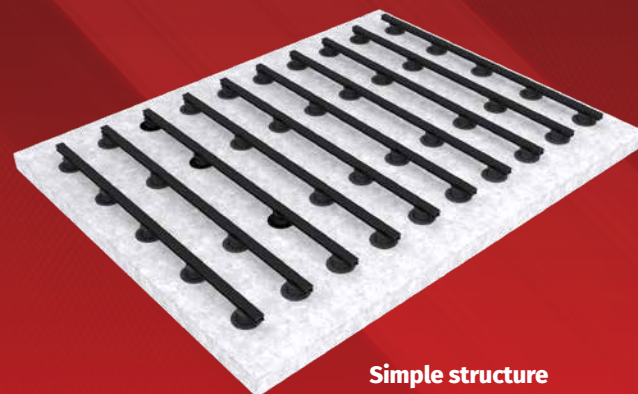
- Quick installation, no structural work required
- Modularity of the structure and layout
- Quick and easy leveling
- Installation on uneven or stabilized ground
- Installation on waterproofed surfaces
- Unmatched durability of aluminum
- Lightweight for easy transport and handling
- High mechanical performance and strength



Closed structure
for concealed studs

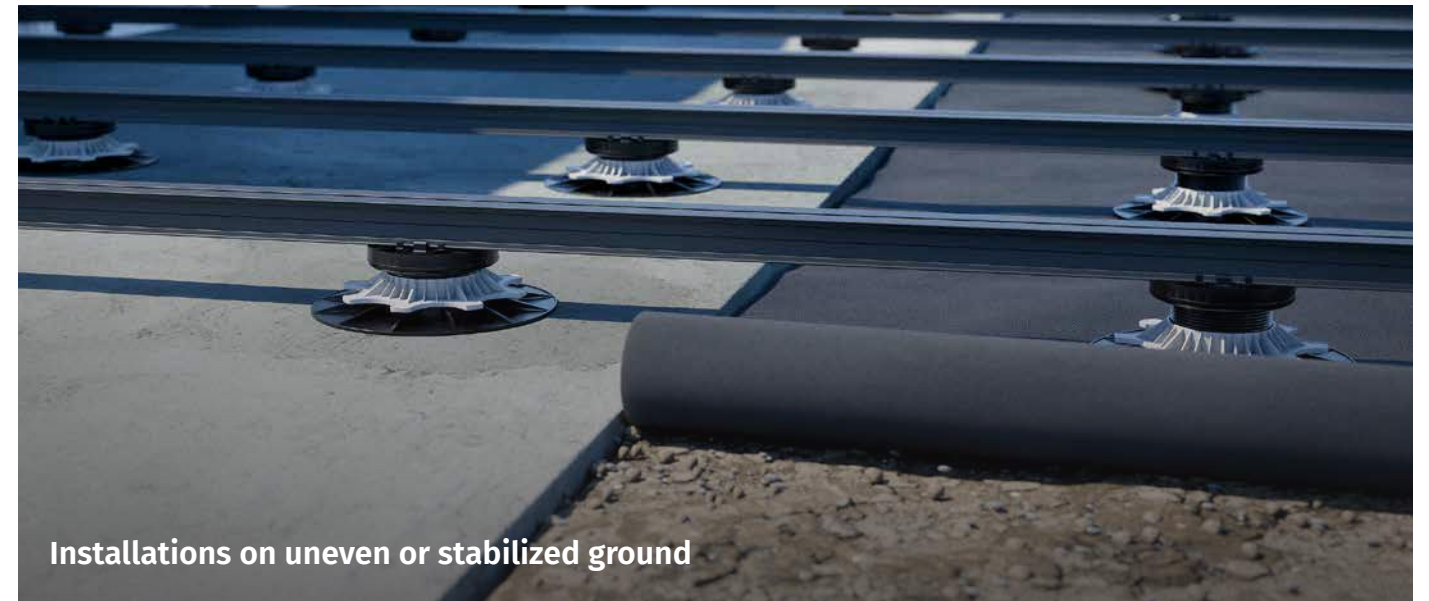


Reinforced structure
with stiffeners



Simple structure

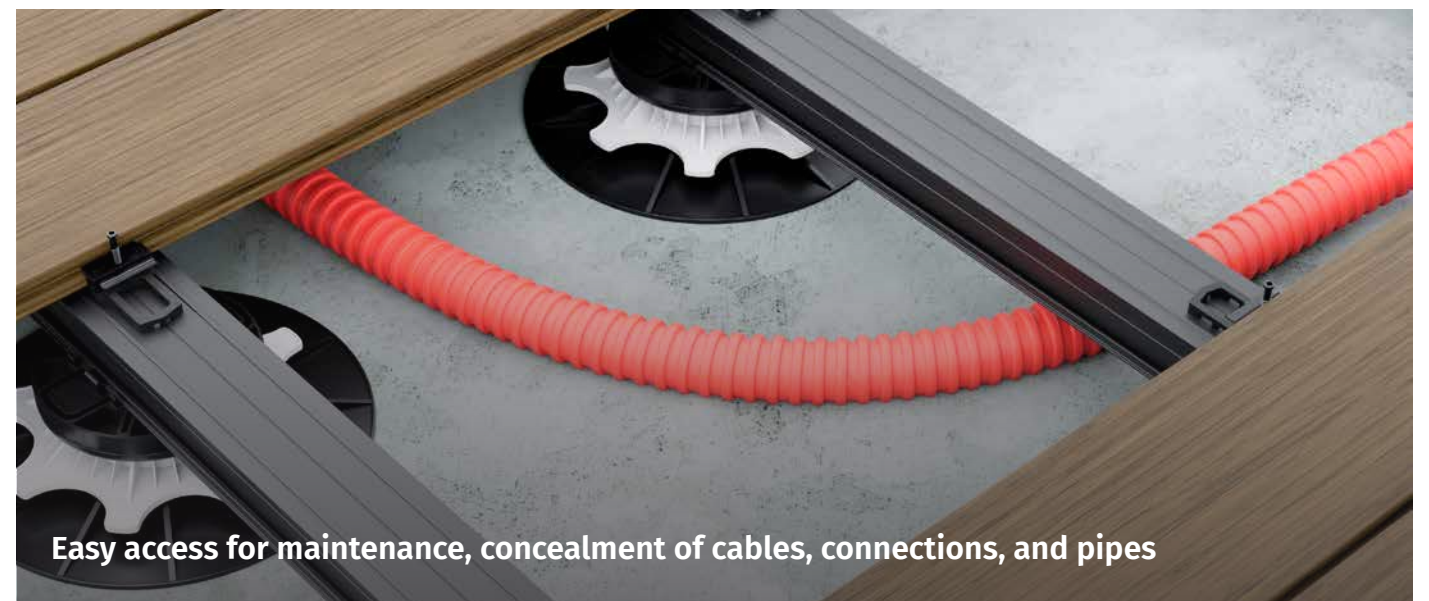
A well-designed structure must take into account: 1/ the dimensions and characteristics of the boards to be laid to define a suitable spacing between the joist, 2/ the dimensions of the entire terrace surface to be covered, 3/ the installation heights, 4/ the presence of adjacent perimeter elements (walls, fences, etc.)



Installations on uneven or stabilized ground



Installation on waterproofed surfaces

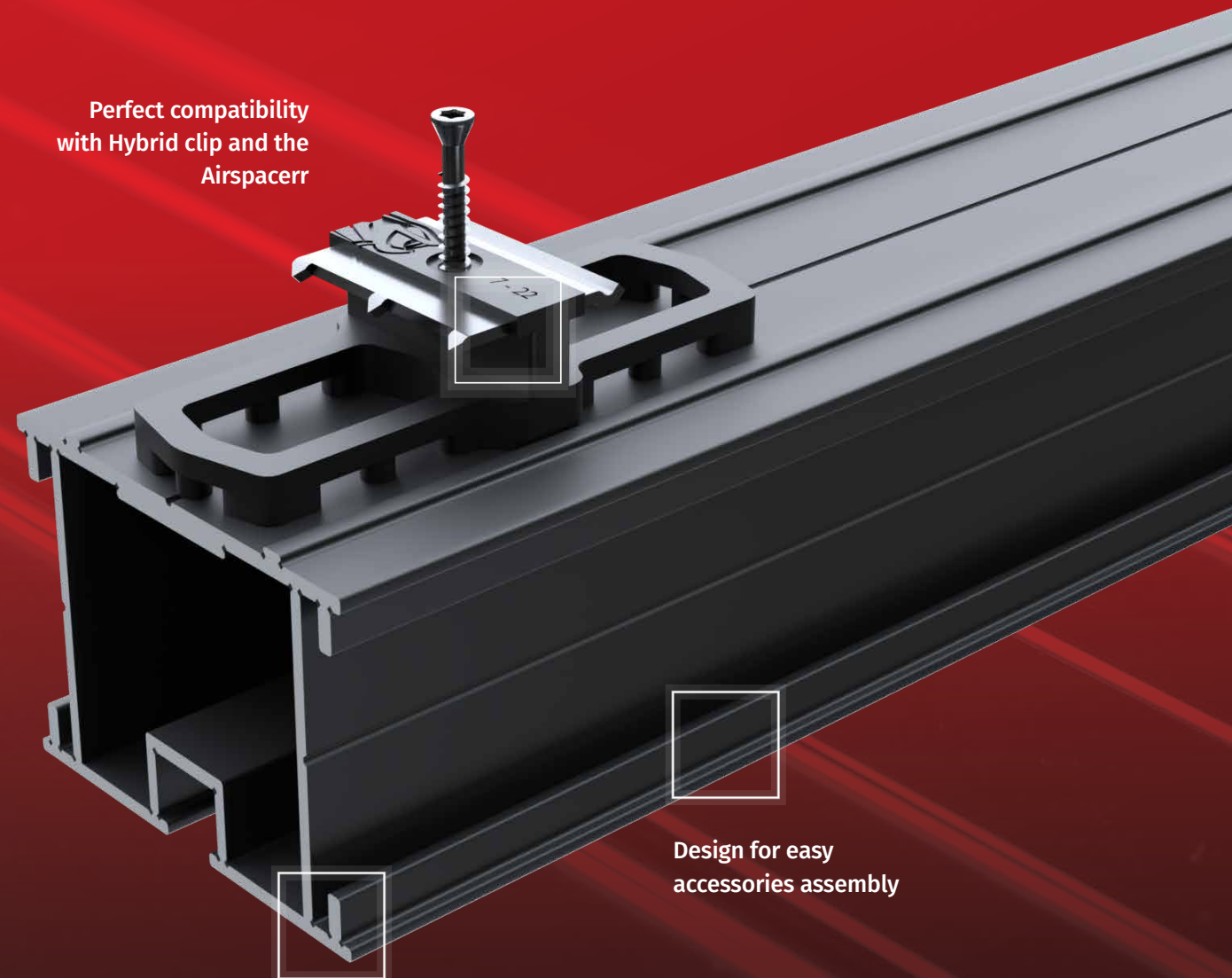


Easy access for maintenance, concealment of cables, connections, and pipes



STRUCTURAL JOISTS

Perfect compatibility
with Hybrid clip and the
Airsacerr



Clip-on tabs on
pedestals

Design for easy
accessories assembly

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)



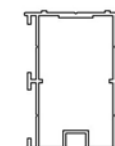
JOIST
60 x 40 mm

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)

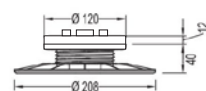


MAX. DISTANCE BETWEEN SUPPORTS (MM)

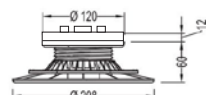
JOISTS	2 supports	3+ supports	Overhang
Load Category 1 (private use): Point load 2 kN and distributed load 3.5 kN/m²			
40x60	780	1160	180
80x60	1750	2560	400
120x60	2660	3560	600
Load Category 2 (cafe, restaurant, etc.): Point load 3 kN and Distributed load 2.5 kN/m²			
40x60	630	950	150
80x60	1430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



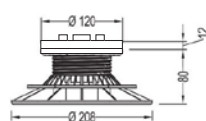
INSTALLATION ON PEDESTALS



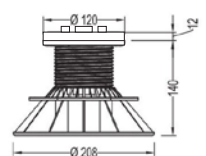
H 37 - 52 mm
FD2120



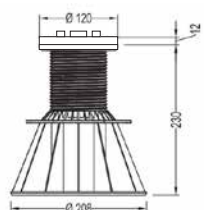
H 52 - 72 mm
FD2121



H 62 - 92 mm
FD2122



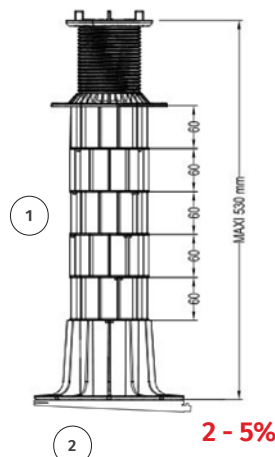
H 92 - 152 mm
FD2123



H 152 - 242 mm
FD2124



800 KG
COMPRESSIVE LOAD



- 1 **60 MM RAISER FD0206**
Stackable up to 5 units high to reach a height of 542 mm
- 2 **SLOPE CORRECTOR FD0338**
Combined discs to correct slopes from 2% to 5%

PREPARATION : The ground for your deck must be prepared. Ensure it is stable and sturdy. For installation on gravel or sand, lay **GEODECK geotextile over the entire surface to prevent unwanted weeds from growing under the deck.**

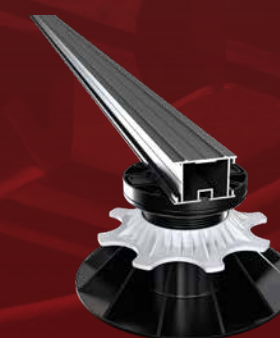
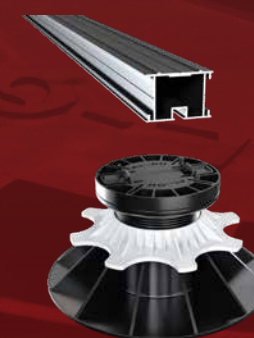
In the case of a bed of fine gravel or sand, we recommend placing a stable concrete slab under each pedestal to ensure sufficient compressive strength.



Installation of
STRUCTURAL joists via
simple clipping



100% recycled
polypropylene



The joist is installed and removed by simply clipping 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

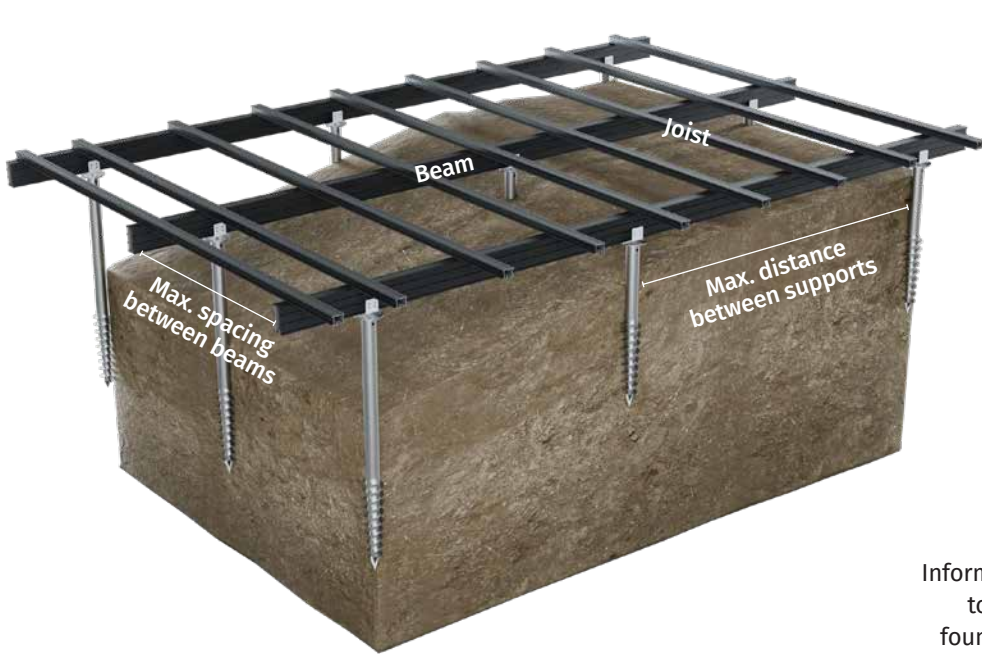


INSTALLATION ON FOUNDATION SCREWS

A cross-braced structure is recommended for installation on foundation screws.
The calculation of the number and positioning of foundation screws depends on the soil type, the load to be supported, the capacity of the screws, the characteristics of the structure, and its configuration. The reliability of the foundation screw installation depends on adherence to the installation steps, the materials used, and the soil type.

STRUCTURE
TABLE
CROSS-BEAMS

STRUCTURE TABLE CROSS-BEAMS		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)					
Joists size	Load 1 (private use): Point load 2 kN and distributed load 3.5 kN/m131						
40x60	1160	780	1340	1860	960	1800	2500
80x60	2560		1030	1430		1260	1690
120x60	3560			1280			1430
Joists size	Load case 2 (cafe, 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
Joists size	Load case 3 (ERP): 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



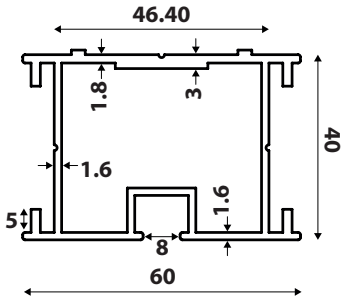
Information relating
to Cobra SPIRAL
foundation screws



STRUCTURAL joists are designed in France and manufactured in Europe at production sitesn **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 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	O
I=insufficient, S=sufficient, B=good, O=optimal	

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

COATING: The Qualicoat label is a European standard guaranteeing its quality. It ensures long-lasting protection that contributes to sustained performance.

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





CONNECTIONS



FD2054



FD2055



FD2214



FD1895



FD2094



FD2093



FD1896



FD1987



FD1903
(x100)

4.8 x 16 mm self-tapping screw,
same screw to fix all Structural
accessories



FD0609

3x60x90mm rubber shims for
shimming under the joist,
insulating it from the ground,
and ensuring drainage



40x60mm



80x60mm



120x60mm



FD2054
(x20)

FD1898
(x20)



FD2094
(x10)



FD1897
(x10)



FD2093
(x10)

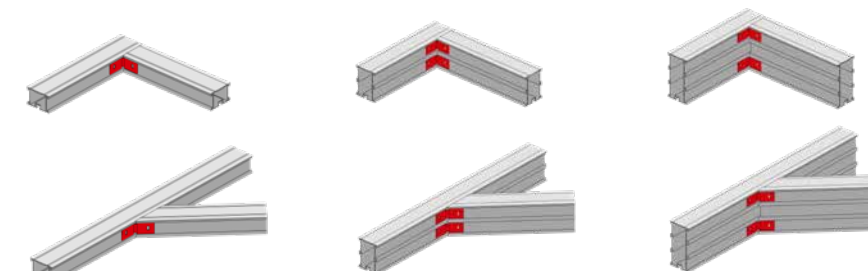


FD2214
(x8)

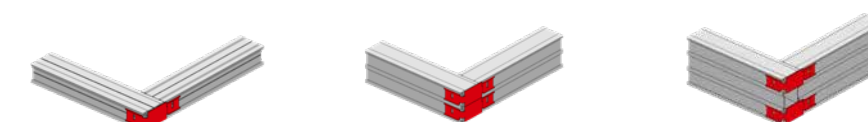


FD1896
(x4)

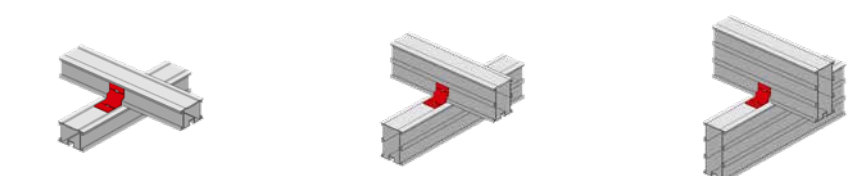
INTERIOR CORNERS



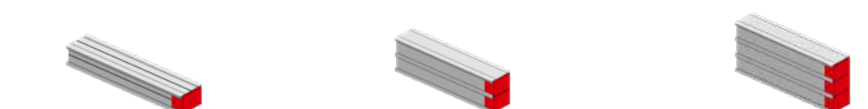
EXTERIOR CORNERS



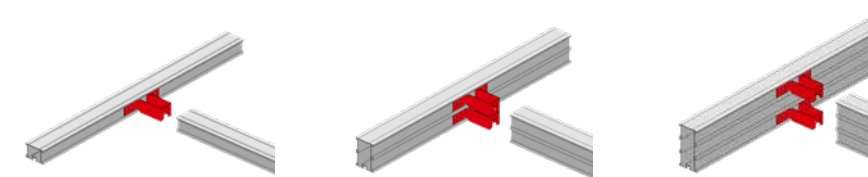
OVERLAP & ANCHORS



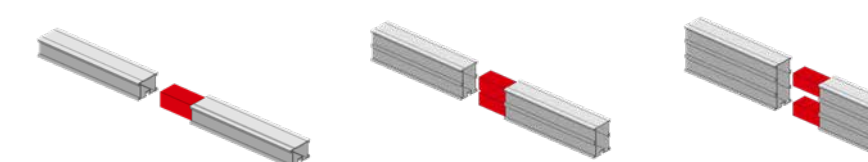
JOIST CAPS



T-CONNECTIONS



JOINTS



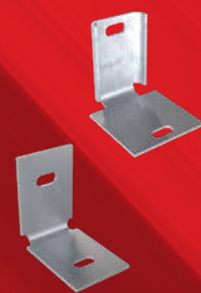


CONNECTORS INSTALLATION

OMEGA CONNECTOR FD2214



Insert the Omega connector, decking side with the square opening down, into the lateral slide of the joist (1). Slide it to the position of the perpendicular connection to be made. Once positioned, fit the other joist until it reaches the stop (2). Secure the Omega on both sides then fix the fitted joist on each side with FD1903 self-drilling screws (3).



Insert and position in advance as many Omega connectors as there are connections to be made on each joist.
If an angled connection is required on a joist after elements have already been fixed along the slide, use angle brackets FD2054 or FD1898 instead.

SLIDING BRACKET FOR INTERIOR ANGLE FD2054



Insert the bracket into the lateral slide of the joist. Slide it to the position of the angle to be made. The assembly must be secured on both sides with another bracket and fix the bracket on each side with stainless steel screws FD1903. This 90° bracket is foldable to fix open angles up to 135°

SIMPLE BRACKET FOR INTERIOR ANGLE FD1898



This bracket does not need to be inserted in advance into the lateral slide. It is placed directly at the assembly point when other elements are already mounted on the joist. Fix with 2 stainless steel screws FD1903. This 90° bracket is foldable to fix open angles up to 135°

PERIPHERAL BRACKET FOR EXTERIOR ANGLE FD2094



The peripheral bracket allows exterior angles to be fixed and fills the gap at the end of the joist where it becomes possible to screw an element. Fix an interior angle bracket on the opposite side to secure the assembly



CONNECTORS INSTALLATION

FIXING BRACKET FD1897



This bracket allows joist to be fixed to the ground or stacked on top of each other, for example to create a crossed structure. Its design facilitates assembly in the lateral slide and allows adjustment of up to 5 mm under the joist. It is fixed with 2 FD1903 screws



WEIGHTING THE STRUCTURE WITH CONCRETE SLABS

This bracket also allows for the integration of ballast slabs between the joists of a structure that cannot be anchored to the ground.

Example: installation on a waterproof membrane of a rooftop terrace exposed to high winds. Each bracket can support a vertical load of 10kg.



JOINT SLEEVE FD1896



This 18 cm long sleeve, cut out in the center, allows two joists to be butt-jointed. It is secured on both sides of the joint using four FD1903 screws.

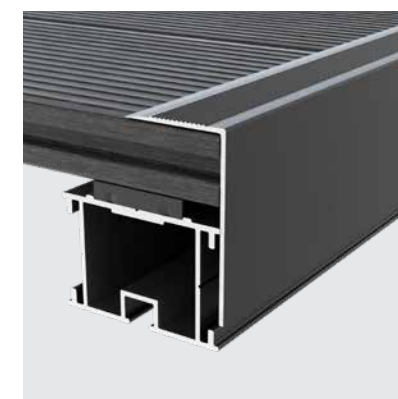
Note: the joint must not be more than 10 cm from the support point.

MITRE ANGLE BRACKET FD1899



This 90° bracket allows the creation of vertical angles with a 45° mitre cut between the joist.

FINISHING CORNER 35x60mm x 2m - Anthracite RAL7016 FD1938



Lacquered aluminium trim to glue or screw for terrace edge finishing.



CONNECTORS INSTALLATION

GAMMA VERTICAL ANGLE CONNECTOR FD2356



This connector allows vertical 90° angles to be easily created. The 40x60 section joist fit together to form a perpendicular assembly fixed with 4 FD1903 screws. The vertical joist is cut to the required elevation height. This assembly facilitates the creation of steps, elevations and the installation of lateral finishing elements.



For the connection of 80x60 or 120x60 joist, fitting the FD2093 cap on the opposite side ensures a perfectly aligned and perpendicular assembly.

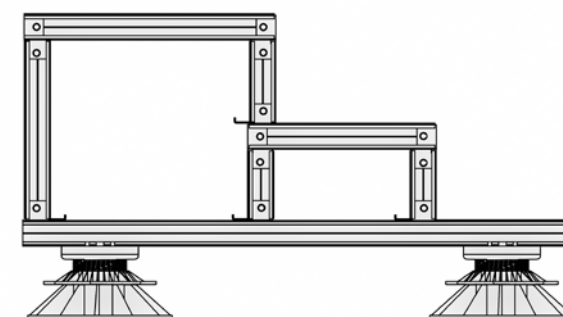
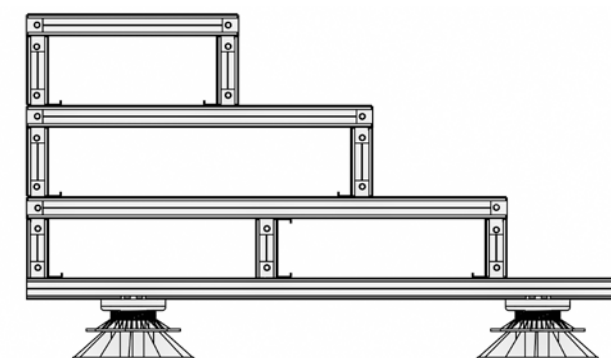
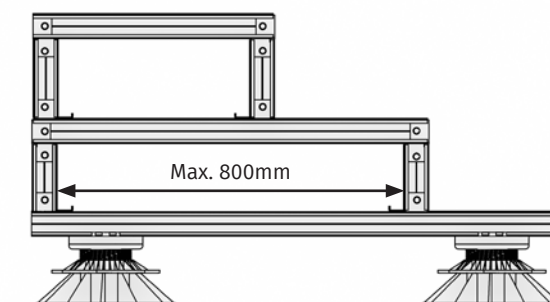
FLEXIBILITY AND CREATIVITY

The Structural system allows multiple structures such as steps and multi-level platforms to be easily designed and built.

A multitude of assemblies is possible using just a few connectors such as the Gamma, the Omega FD2214 and the low hook FD2236.

Connected by cut-to-size joist, the use of offcuts is optimized.

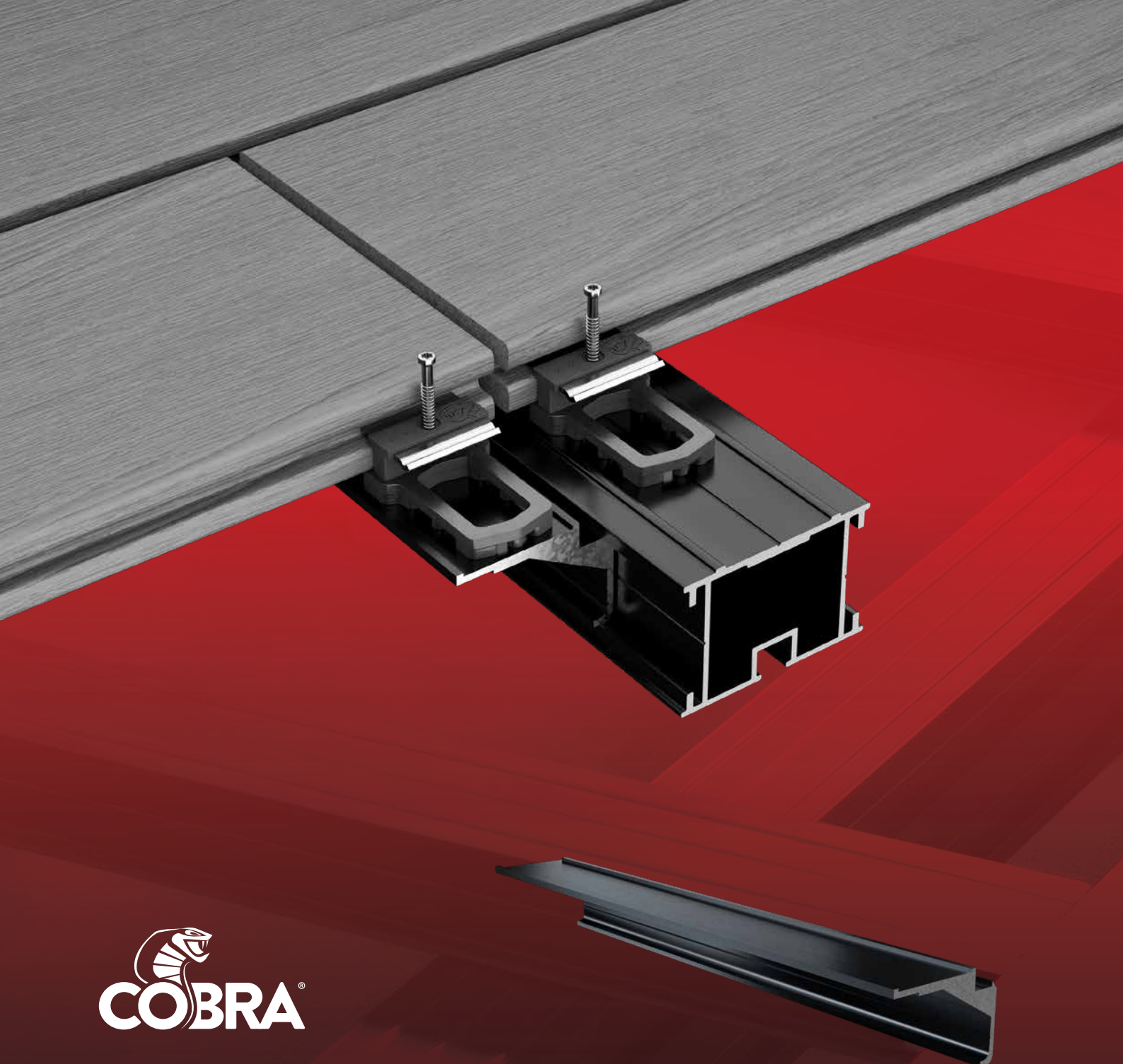
All fixed elements are integrated without presenting any protrusion on the structure that could interfere with the installation of decking boards and surface coverings.



Various combinations are possible in order to adapt to needs and constraints



Benches, planters, storage boxes... the Structural system gives free rein to creativity



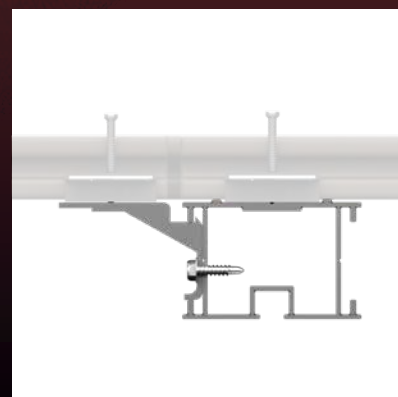
XTEND

JOINT SUPPORT FD1895

This 2-meter aluminum support allows for optimal joining of decking boards with compliant double fastening, without the need for double joists.

Easy assembly thanks to its design for convenient screwing.

Load-bearing capacity in compliance with DTU 43.1 and 51.4.



CUT-TO-LENGTH

Available in 2-meter profiles, Xtend **can be cut to size for optimized use** depending on the type of installation joints and the width of the decking to be joined.



Using Xtend in two pieces placed on either side to accommodate the fasteners creates a central space that allows water and debris accumulated at the board joint to drain away.

INSTALLATION WITH CLIPS



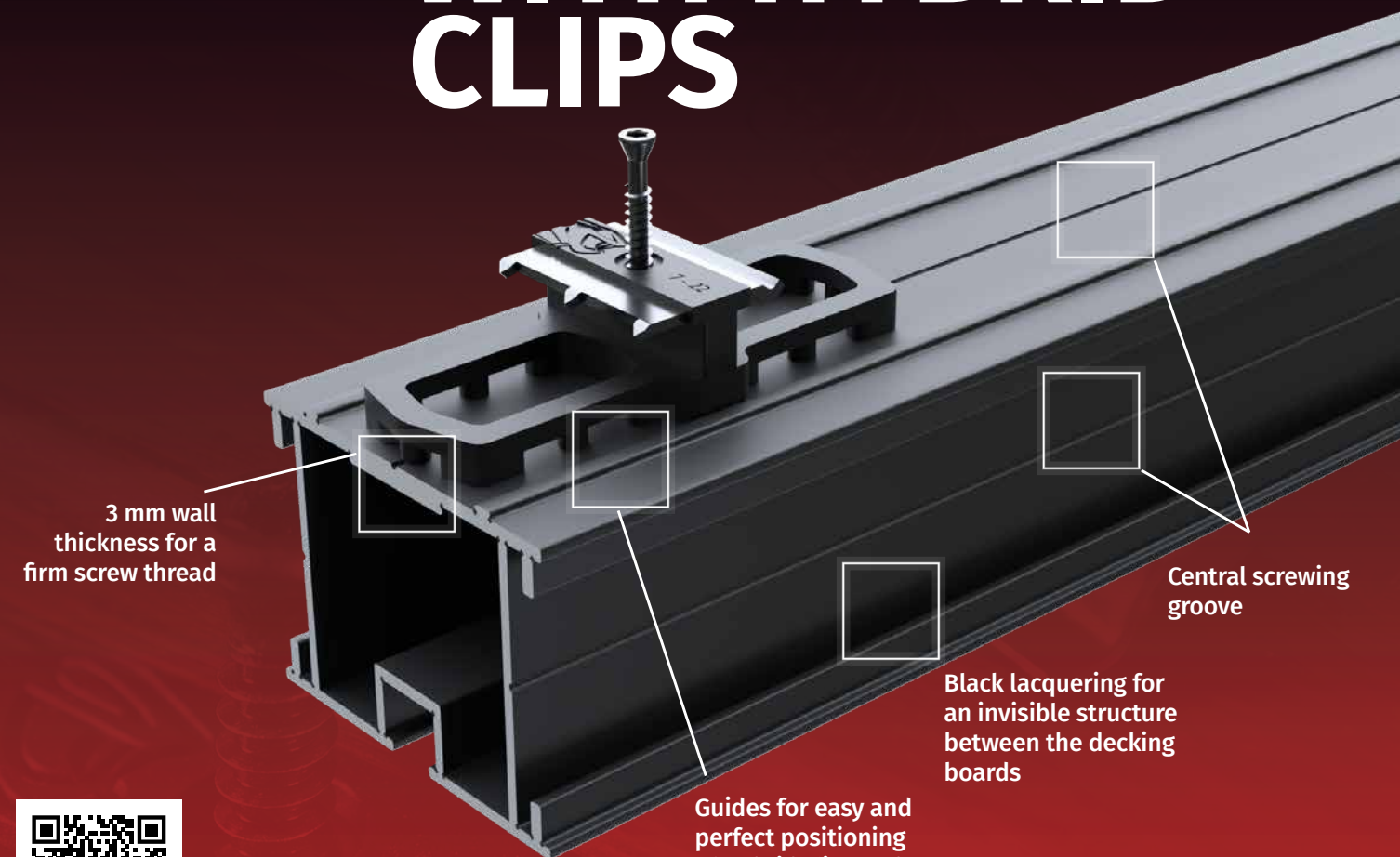
INSTALLATION WITH SCREWS



Xtend is compatible with the installation of slats **using invisible side clips or through-screws** suitable for aluminum structures.



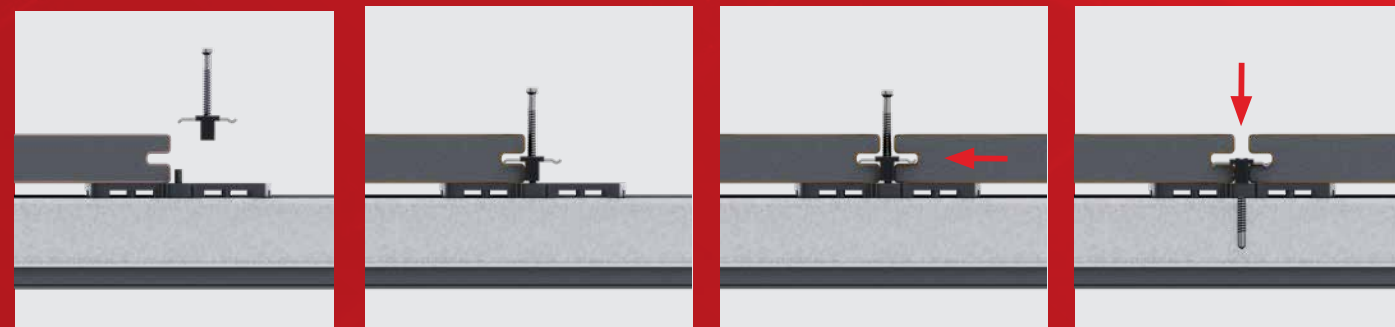
INSTALLATION WITH HYBRID CLIPS



Information relating to HYBRID clips

HYBRID + AIR SPACER

The Airspacer shim assembles easily and optimizes the installation of Hybrid clips. It contributes to extending the service life of the terrace and meets the requirements of DTU 51.4.



1 Place the Airspacer under the decking board. 2 Assemble the Hybrid clip on top and position the fin in the groove. 3 Place the next board on the other side of the clip. 4 Screw the clip into the joist.

A HYBRID CLIP SUITABLE FOR EVERY DECKING

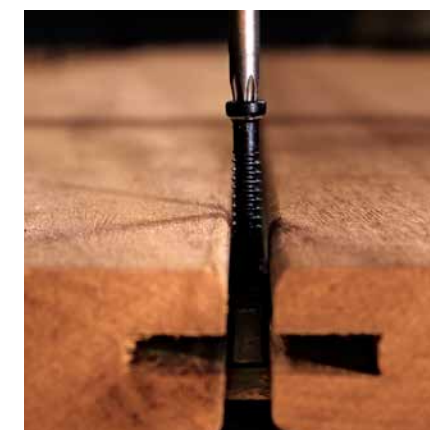
HYBRID 8-18
COMPOSITE & THERMO BOARDS



HYBRID 7-22
BAMBOU & THERMO BOARDS



HYBRID 8-25
HARDWOODS BOARDS



The HYBRID invisible clip for tropical wood, bamboo, or composite decking offers unique and exclusive technical features. HYBRID guarantees long-lasting stability and extreme resistance to pull-out, exceeding the requirements of the NF DTU 51.4 standard for decking board fasteners.

Visit cobrafastener.fr for more information on HYBRID clips.



START/END CLIP FD2274

It is equipped with a 4.2x32 mm A2 stainless steel self-drilling screw allowing boards to be fixed at the ends of the joist layout. Vertical or lateral fixing possible. Compatible with the use of the Airspacer. **The joist cap covers the hollow end to allow clip fixing.** Pre-drilling required.



X	Y	Z
8 mm	4 mm	10 mm

JOIST CAP FD2093



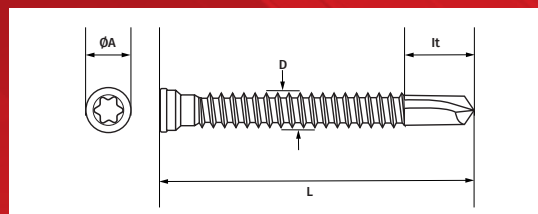


INSTALLATION WITH THROUGH SCREWS



SELF-TAPPING SCREW FOR ALUMINUM STRUCTURES FD2110

STRUCTURAL SCREW 5.5x45mm in A4 Stainless Steel (AISI316). Self-tapping for aluminum structures up to 3 mm thick. Suitable for areas highly exposed to corrosion. Narrow, stepped screw head to reduce decking splintering and ensure optimal clamping. Requires pre-drilling.

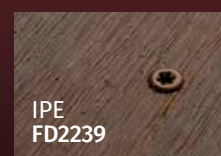
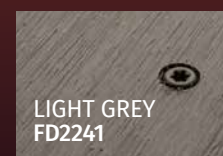
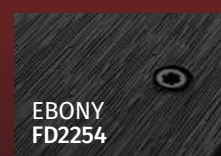
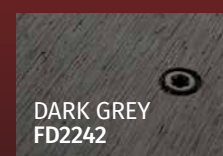


Size	A (mm)	L (mm)	D (mm)	It (mm)	Torx
M5.5 x 45	7,9 - 8	45	5,5	9,5	T20



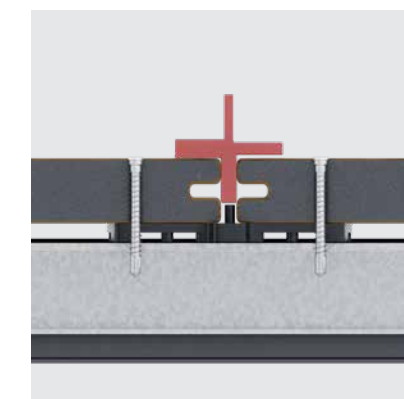
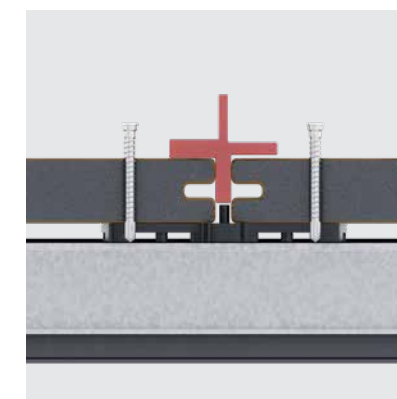
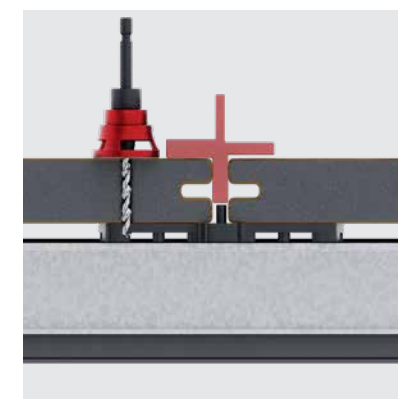
COLORED-HEAD SCREWS

Screws available in 6 colors. Ideal for fastening composite decking and installing trim, baseboards, access panels, etc. The countersink provides a flawless finish. Packs of 50 screws



INSTALLATION OF DECKING WITH EXPOSED SCREWS

INSTALLATION OF FINISHING BASE BOARDS



Pre-drilling the board and the aluminum joist helps limit board lifting when the screw hits the metal (mushrooming)



COBRA DRILL FD1579

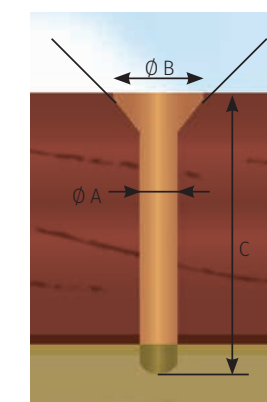
Drills and countersinks the board for a flawless finish. Aluminium stop collar on bearing.

Rubber cushion ring anti-mark

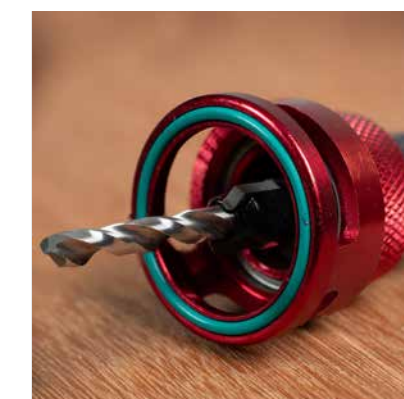
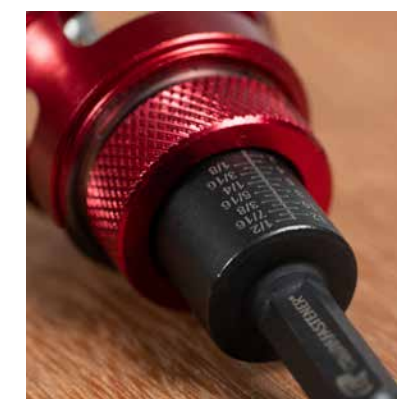
Carbon steel hexagonal shank 45-48 HRC

Adjustable countersink and drill bits with included key

2 high resistance HSS steel drill bits



	A	B	C max
Drill #1	3,6 mm	9 mm	35 mm
Drill #2	4,0 mm	9 mm	35 mm





REFERENCES

	FD2097	STRUCTURAL - Aluminum joist 24x40x4000mm		FD2356	STRUCTURAL - Set of 8 Gamma connectors
	FD2278	STRUCTURAL - Aluminum joist 24x40x2000mm		FD2214	STRUCTURAL - Set of 8 Omega connectors
	FD1892	STRUCTURAL - Aluminum joist 40x60x4000mm		FD2093	STRUCTURAL - Set of 10 joist caps
	FD2277	STRUCTURAL - Aluminum joist 40x60x2000mm		FD2110	STRUCTURAL - Set of 200 A4 stainless steel screws 5.5x45 mm - aluminum joist
	FD1893	STRUCTURAL - Aluminum joist 80x60x4000mm		FD2120	NIVO - STRUCTURAL Pedestal H25-40mm
	FD2275	STRUCTURAL - Aluminum joist 80x60x2000mm		FD2121	NIVO - STRUCTURAL Pedestal H40-60mm
	FD1894	STRUCTURAL - Aluminum joist 120x60x4000mm		FD2122	NIVO - STRUCTURAL Pedestal H50-80mm
	FD2276	STRUCTURAL - Aluminum joist 120x60x2000mm		FD2123	NIVO - STRUCTURAL Pedestal H80-140mm
	FD1903	STRUCTURAL - Set of 100 4.8x16 mm self-tapping stainless steel screws		FD2124	NIVO - STRUCTURAL Pedestal H140-230mm
	FD1896	STRUCTURAL - Set of 4 joist end caps		FD0206	NIVO - 60mm Extensions
	FD1897	STRUCTURAL - Set of 10 mounting brackets for aluminum joists		FD0338	NIVO - Slope correction discs 2-5%
	FD1898	STRUCTURAL - Set of 20 90° brackets for inside corners		FD0677	NIVO - AL60 Connectors for 60mm aluminum joists
	FD2054	STRUCTURAL - Set of 20 90° sliding brackets for inside corners		FD0607	COBRA INSTALL - GEODECK - Geotextile felt 100 g/m² (2x10 m = 20 m²)
	FD2094	STRUCTURAL - Set of 10 90° brackets for outside corners		FD0210	COBRA INSTALL - RUBBERPAD - Pack of 24 rubber shims 8x90x90 mm
	FD1899	STRUCTURAL - Set of 10 90° flat brackets for vertical corners		FD0609	COBRA INSTALL - RUBBERPAD - Pack of 60 rubber shims 3x60x90 mm

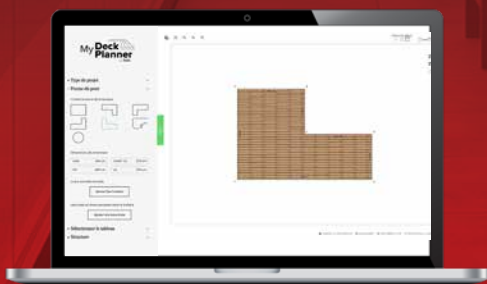


REFERENCES

	FD1989 FD0993 FD1987	HYBRID 8-18 - Set of 90 clips + self-tapping stainless steel screws. Sizes S/M/L		FD2098	COBRA TOOL - POWERGRIP - Decking clamp 600 mm
	FD2016 FD1334 FD1988	HYBRID 7-22 - Set of 90 clips + self-tapping stainless steel screws. Sizes S/M/L		FD1579	COBRA TOOL - DRILL BIT SET with Ø 3.6 and 4.0 mm drill bits
	FD0964	HYBRID 8-25 - Pack of 90 clips + self-tapping stainless steel screws. Size L		FD0604	COBRA TOOL - DECKSPACER - Pack of 8 decking board spacers
	FD1040	COBRA AIRSPACER - Set of 100 spacers for decking boards			
	FD2274	COBRA START & END - Set of 30 clips + self-tapping stainless steel screwse			
	FD2055	STRUCTURAL - Set of 10 black end clips			
	FD1938	STRUCTURAL - 35x60mm aluminum angle bracket - 2m - Anthracite RAL7016			
	FD1895	STRUCTURAL - XTEND Splicing bracket - 2m - Black RAL9005			
	FD2239	STRUCTURAL - Pack of 50 A4 SS screws 5.5x45mm - Ipe coloured head RAL8025			
	FD2240	STRUCTURAL - Pack of 50 A4 SS screws 5.5x45mm - Teak coloured head RAL8024			
	FD2241	STRUCTURAL - Pack of 50 A4 SS screws 5.5x45mm - Light Grey coloured head RAL7006			
	FD2242	STRUCTURAL - Pack of 50 A4 SS screws 5.5x45mm - Dark Grey coloured head RAL7022			
	FD2243	STRUCTURAL - Pack of 50 A4 SS screws 5.5x45mm - Cedar coloured head RAL1011			
	FD2254	STRUCTURAL - Pack of 50 A4 SS screws 5.5x45mm - Ebony coloured head RAL9005			

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