# FLAT | FLIP

CONNECTOR FOR DECKING

INVISIBLE
Completely hidden. The version in aluminium with black coating guarantees an attractive result; the galvanized steel version offers good performance at low cost.

FAST INSTALLATION
Fast, easy installation thanks to the single-screw fastening and the integrated spacer-tab for precise spacing. Ideal for application with the PROFID spacer.
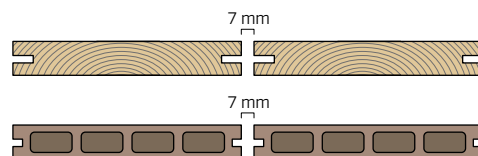
SYMMETRICAL GROOVING
Makes it possible to install deck planks regardless of the position of the grooving (symmetrical). Ribbed surface provides high mechanical strength.

FLAT

FLIP
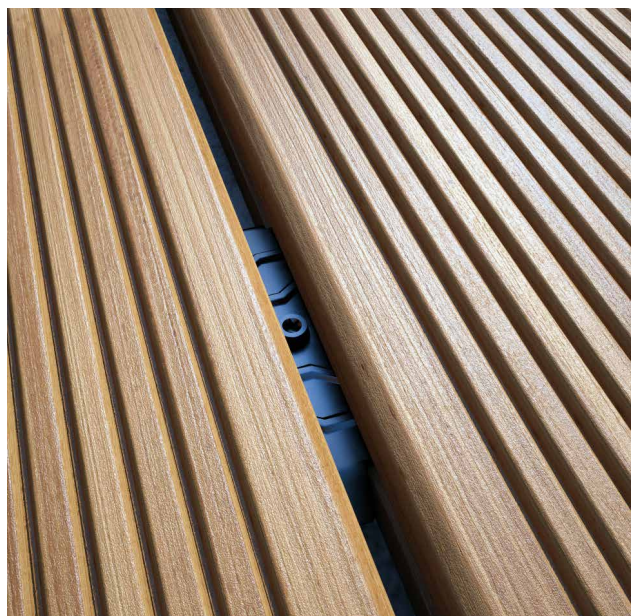
CALCULATION TOOL

BOARDS

7 mm

7 mm

FASTENING ON

timber | WPC | aluminium

MATERIAL

alu   aluminium with organic coloured coating

Zn ELECTRO PLATED   electrogalvanized carbon steel
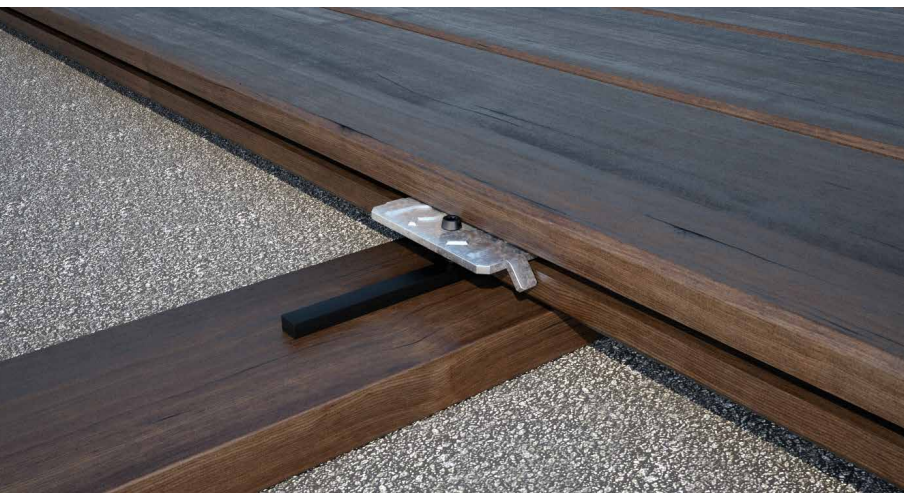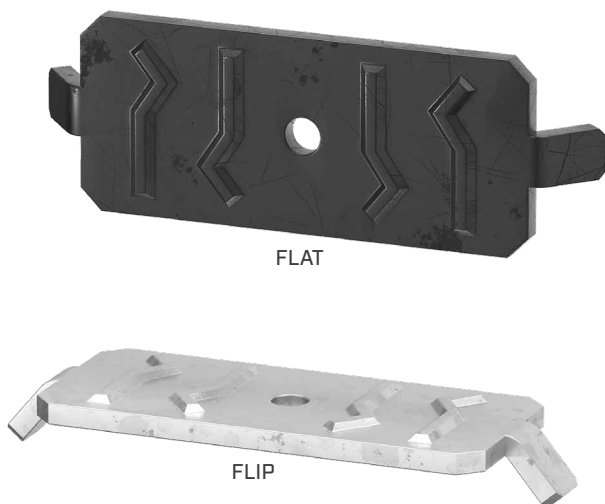
FIELDS OF USE
Outdoor use.
Fastening of timber or WPC boards with symmetrical milling on substructures in wood, WPC or aluminium.
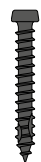
▌ CODES AND DIMENSIONS

FLAT

alu

CODE	material	P x B x s [mm]	pcs
FLAT	black alluminum	54 x 27 x 4	200

FLIP

Zn ELECTRO PLATED

CODE	material	P x B x s [mm]	pcs
FLIP	zinc-plated steel	54 x 27 x 4	200

KKT COLOR
fastening on wood and WPC for FLAT and FLIP

d_1 [mm]	CODE	L [mm]	pcs
5 TX 20	**KKTN540**	40	200

KKA COLOR
fastening on aluminium for FLAT and FLIP

d_1 [mm]	CODE	L [mm]	pcs
4 TX 20	**KKAN420**	20	200
	KKAN430	30	200
	KKAN440	40	200
5 TX 25	**KKAN540**	40	200

▌ GEOMETRY
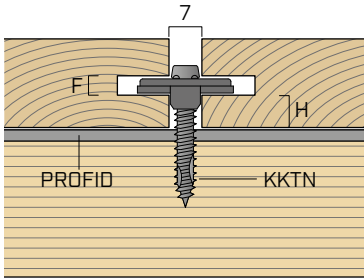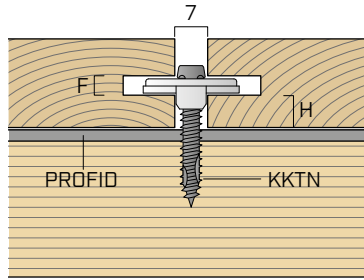
FLAT
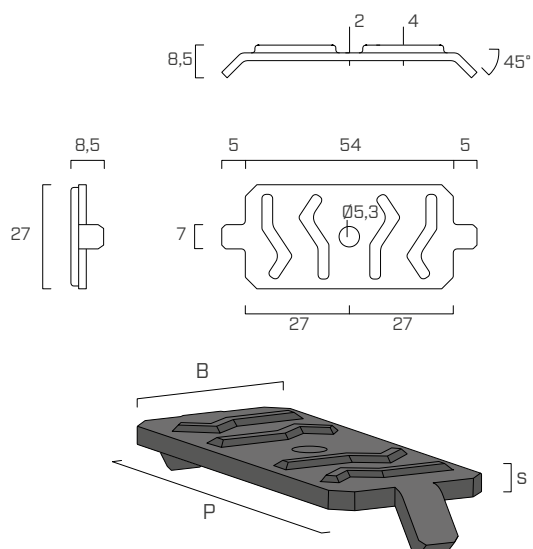
FLIP
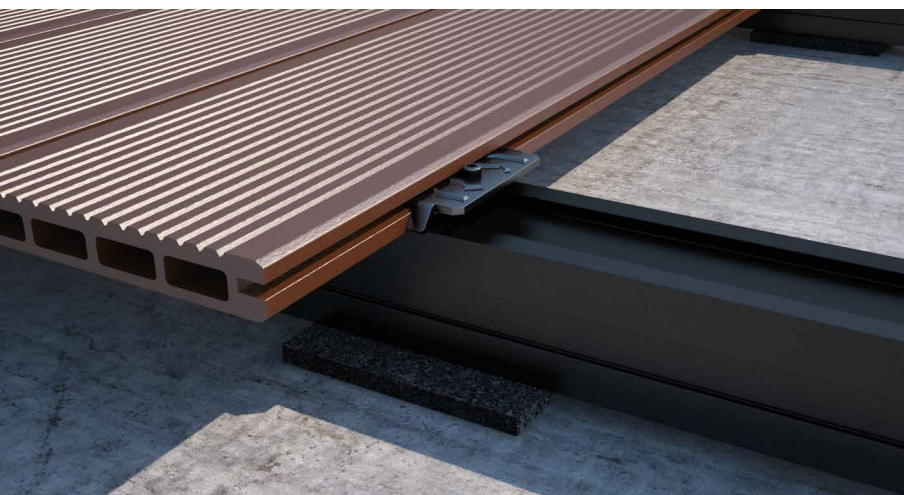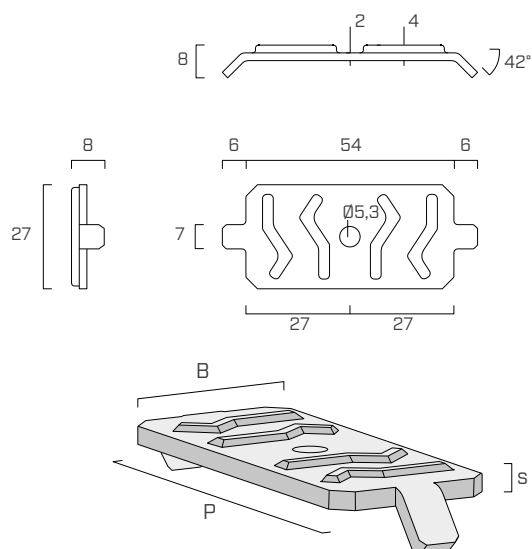
WOOD PLASTIC COMPOSITE (WPC)

Ideal for fastening WPC boards. Can also be used for fastening on aluminium using KKA COLOR screws (KKAN440).
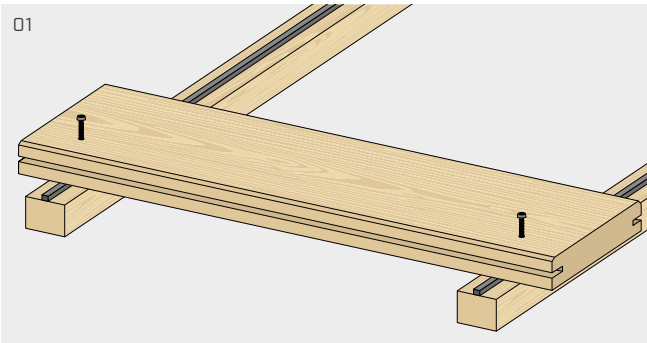
GROOVING GEOMETRY

FLAT

FLIP

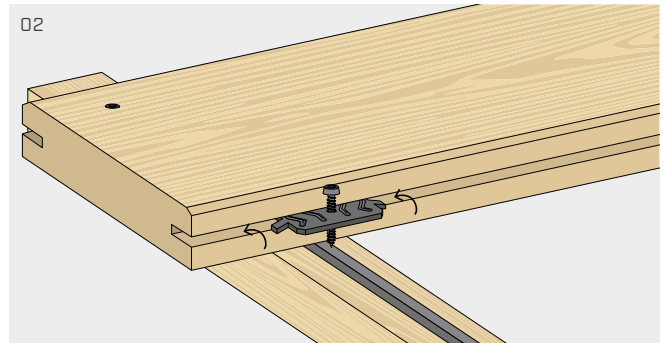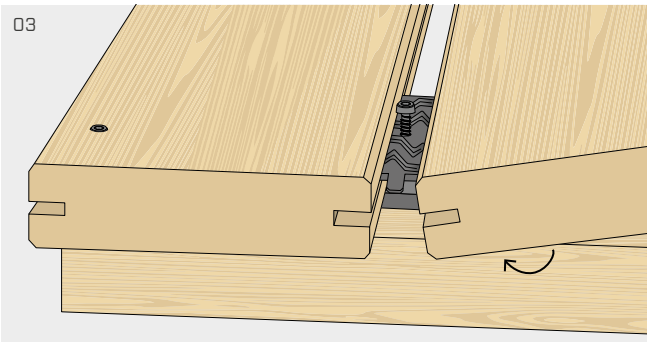| SYMMETRICAL GROOVING		
Min. thickness	F	4 mm
Min. recommended height H	H	free

INSTALLATION

01

Position the PROFID spacer at the joist centerline. First board: fix it with suitable screws, left visible or hidden thanks to specific accessories.
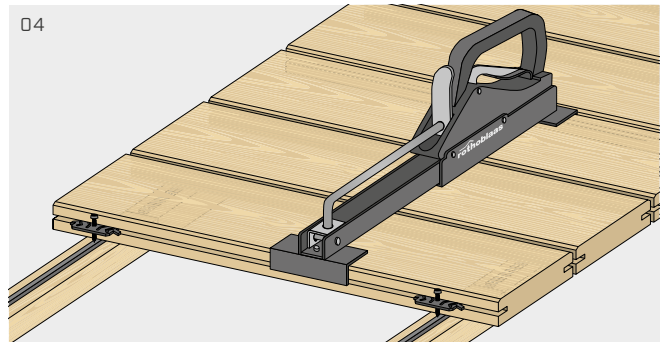

02

Insert the FLAT/FLIP fastener into the groove cut so that the spacer tab adheres to the board.
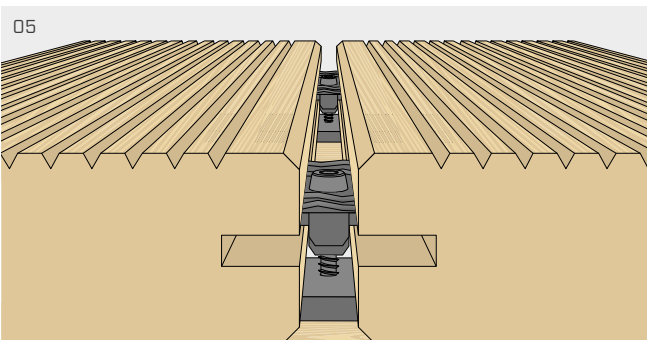

03

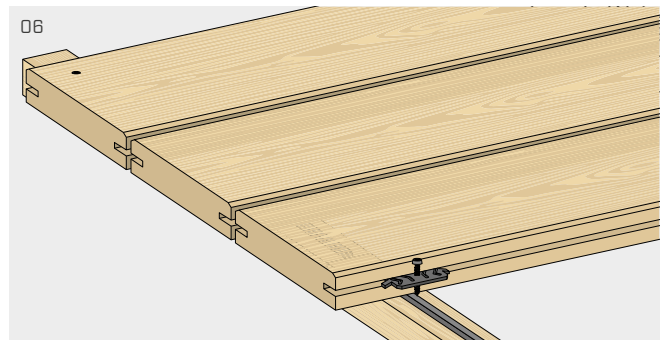Position the next board by inserting it into the FLAT/FLIP fastener.

04

Using the CRAB MINI or CRAB MAXI clamp, tighten the two boards until the gap between them is 7 mm (see product page 395).
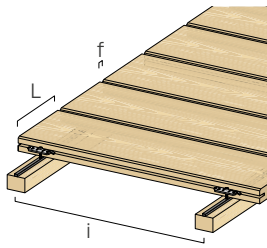

05

Fix the fastener to the joist underneath by using the KKTN screw.

06

Repeat the operations for the remaining boards.
Last board: repeat step 01.

CALCULATION EXAMPLE

INCIDENCE ESTIMATE FORMULA PER m²

$1m^2/i/(L + f)$ = pcs of FLAT/FLIP at m²

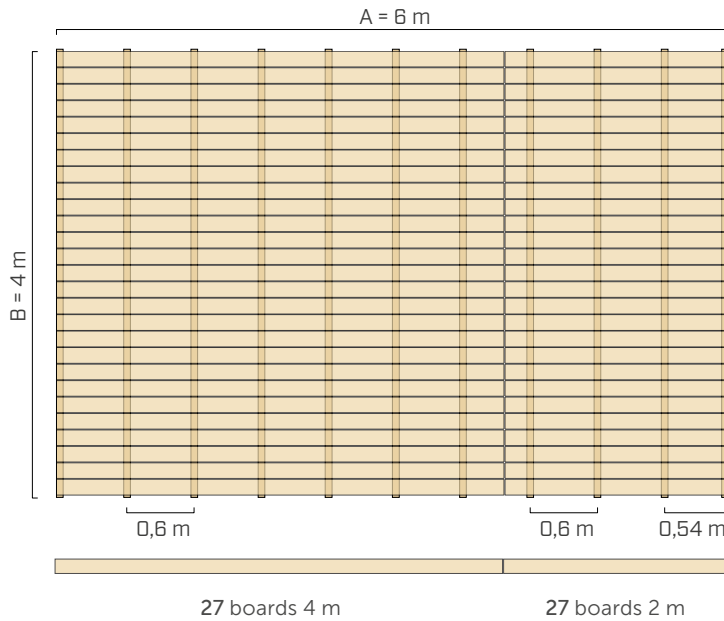**i =** battens spacing

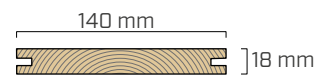**L =** board width

f = gap width

PRACTICAL EXAMPLE

NUMBER OF BOARDS AND BATTENS

A = 6 m

B = 4 m

0,6 m   0,6 m   0,54 m

27 boards 4 m   27 boards 2 m

PATIO SURFACE

$S = A \cdot B$ = 6 m · 4 m = 24 m²

WOODEN PLANKING

140 mm   ]18 mm

L = 140 mm

s = 18 mm

f = 7 mm

BATTENS

68 mm   ]38 mm
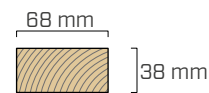
b = 68 mm

h = 38 mm

i = 0,6 m

no. boards   = [B/(L+f)]

= [4/(0,14+0,007)]= **27 boards**

no. 4 m boards = **27 boards**

no. 2 m boards = **27 boards**

no. battens = [A/i] + 1 = (6/0,6) +1 = **11 battens**

SCREW SELECTION

BOARD

FLAT/FLIP

BATTEN
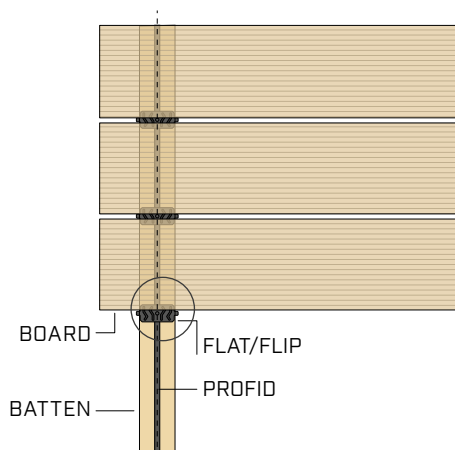
PROFID

Screw head thickness	$S_{screw\ head}$		2,8 mm
Grooving thickness	F		4 mm
Grooving dimension	H	(s-F)/2	7 mm
PROFID thickness	S_{PROFID}		8 mm
Pull-through length	L_{pen}	4 · d	20 mm
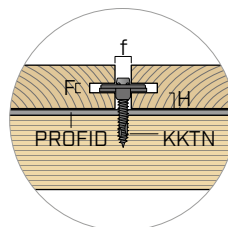
MINIMUM SCREW LENGTH

= $S_{screw\ head}$ + F + H + S_{PROFID} + L_{pen}

= 2,8 + 4 + 7 + 8 + 20 = **41,8 mm**

CHOICE OF SCREW   **KKTN550**

FLAT / FLIP NUMBER CALCULATION

QUANTITY FOR INCIDENCE FORMULA

I = S/i/(L + f) = pcs of FLAT/FLIP

I = 24 m²/0,6 m/(0,14 m + 0,007 m) = 272 pcs FLAT/FLIP

waste coefficient = 1,05

I = 272 · 1,05 = 286 pcs FLAT/FLIP

I = 286 pcs FLAT/FLIP

FLAT/FLIP NUMBER = 286 pcs

QUANTITY FOR THE NUMBER OF INTERSECTIONS

I = No. boards with FLAT/FLIP no. battens = pcs. of FLAT/FLIP

no. boards with FLAT/FLIP = (number of boards - 1) = (27 - 1) = 26 boards

no. of battens = (A/i) + 1 = (6/0.6) + 1 = 11 battens

no. intersections = I = 26 · 11 = 286 pcs FLAT/FLIP

I = 286 pcs FLAT/FLIP

SCREWS NUMBER = No. FLAT/FLIP = 286 pcs KKTN550