

# 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.

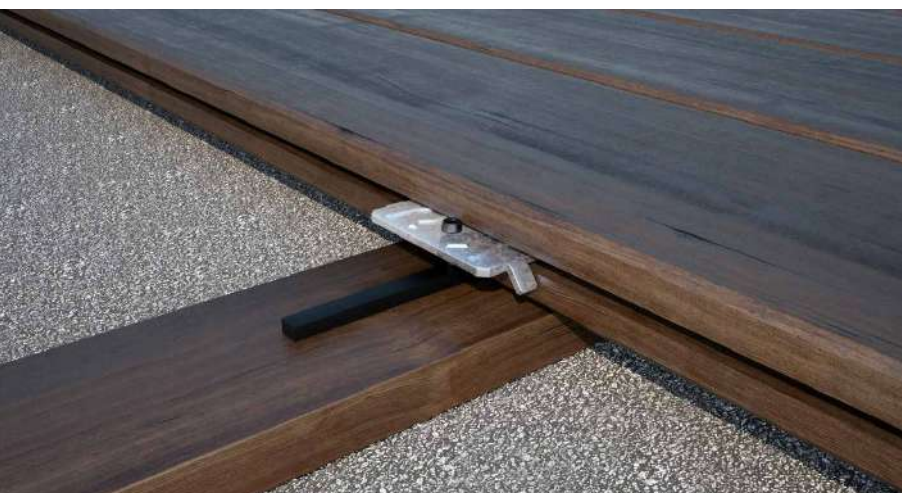
### SYMMETRICAL GROOVING

Makes it possible to install deck planks regardless of the position of the grooving (symmetrical). Ribbed surface provides high mechanical strength.



## CHARACTERISTICS

FOCUS	extremely precise joints
CLADDING	black anti-rust coating   zinc plated
BOARDS	symmetrical grooving
JOINTS	7.0 mm
FASTENERS	KKTN540 , KKAN440



## MATERIAL

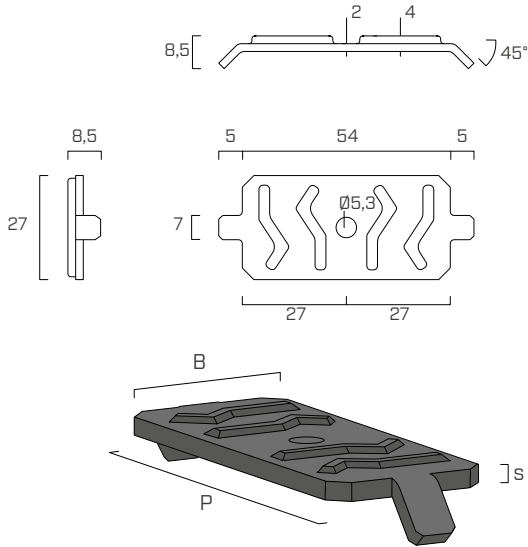
Aluminium with coloured organic coating and carbon steel with zinc plated.

## FIELDS OF USE

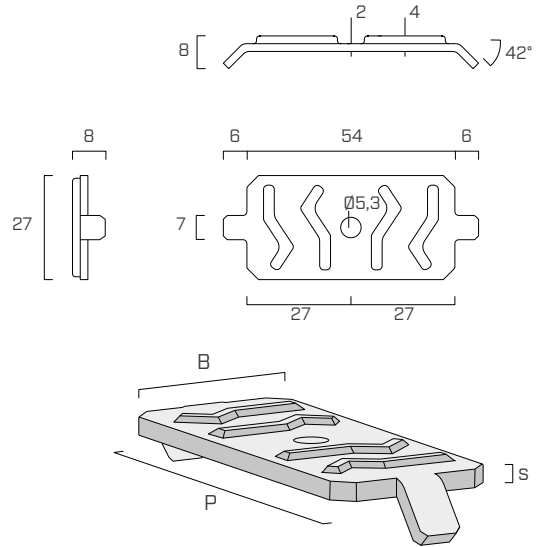
Outdoor use. Fastening timber or WPC boards on substructures in wood, WPC or aluminium. Suitable for service classes 1-2-3.

## GEOMETRY

### FLAT COLOR



### FLIP



## CODES AND DIMENSIONS

### FLAT COLOR

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

### FLIP

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 <sub>1</sub> [mm]	CODE	L [mm]	pcs
5 TX 20	KKTN540	40	200

### KKA COLOR

fastening on aluminium for FLAT and FLIP



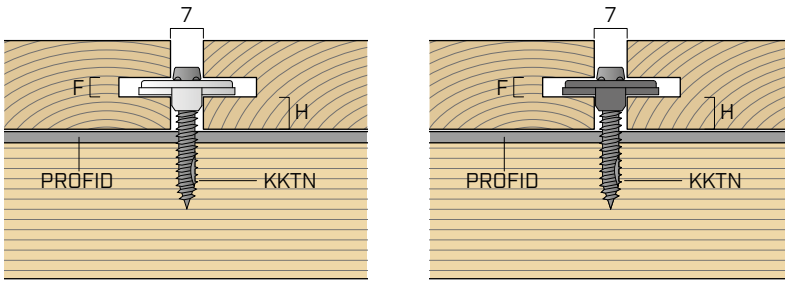
d <sub>1</sub> [mm]	CODE	L [mm]	pcs
4 TX 20	KKAN420	20	200
	KKAN430	30	200
	KKAN440	40	200
5 TX 25	KKAN540	40	200



## WOOD PLASTIC COMPOSITE (WPC)

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

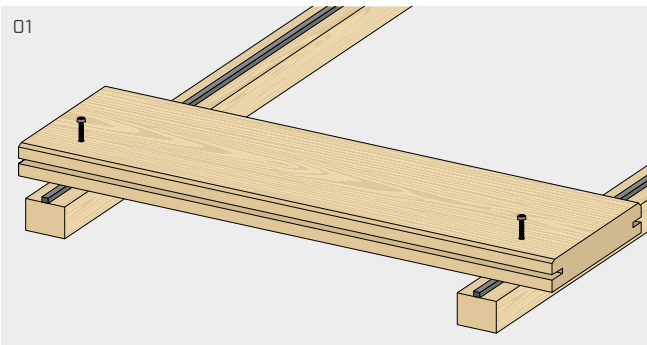
## GROOVING GEOMETRY



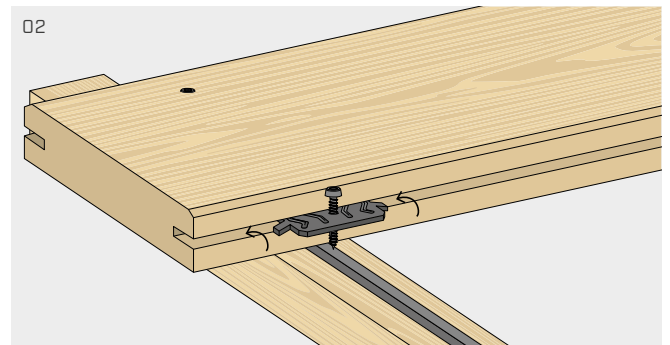
### SYMMETRICAL GROOVING

Min. thickness	F	4 mm
Min. recommended height H	H	free

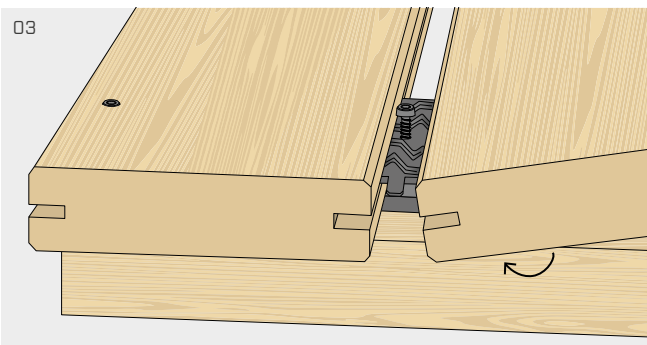
## INSTALLATION



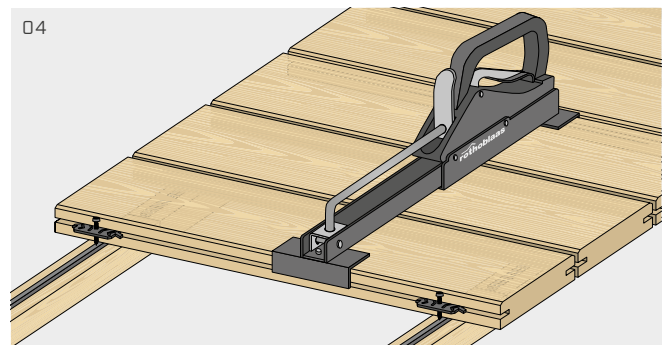
Position the PROFID spacer at the joist centerline. First board: fix it with suitable screws, left visible or hidden thanks to specific accessories.



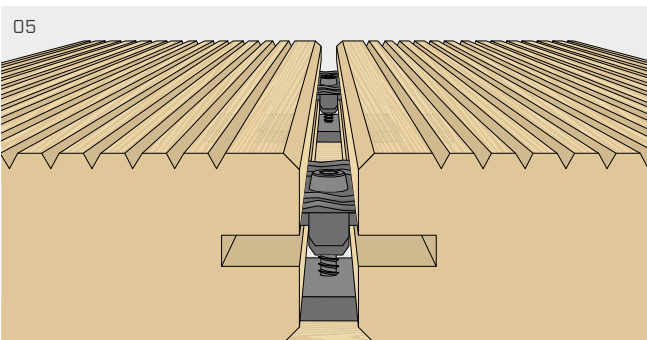
Insert the FLAT/FLIP fastener into the groove cut so that the spacer tab adheres to the board.



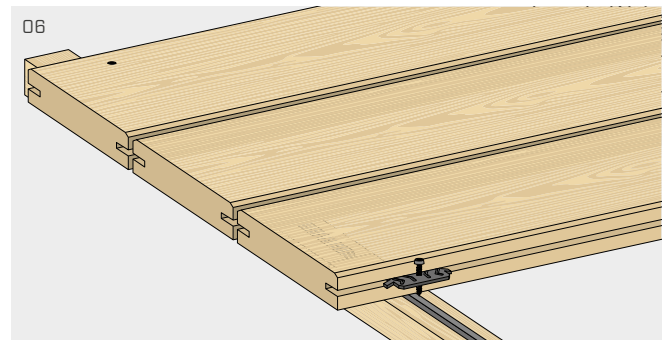
Position the next board by inserting it into the FLAT/FLIP fastener.



Using the CRAB MINI clamp, tighten the two boards until the gap between them is 7 mm (see product page 334).

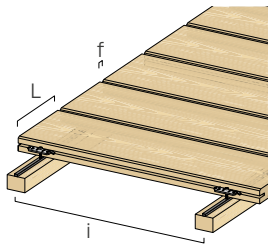


Fix the fastener to the joist underneath by using the KKTN screw.



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

## CALCULATION EXAMPLE



### INCIDENCE ESTIMATE FORMULA PER m<sup>2</sup>

$$1\text{m}^2/i/(L + f) = \text{pcs of FLAT/FLIP at m}^2$$

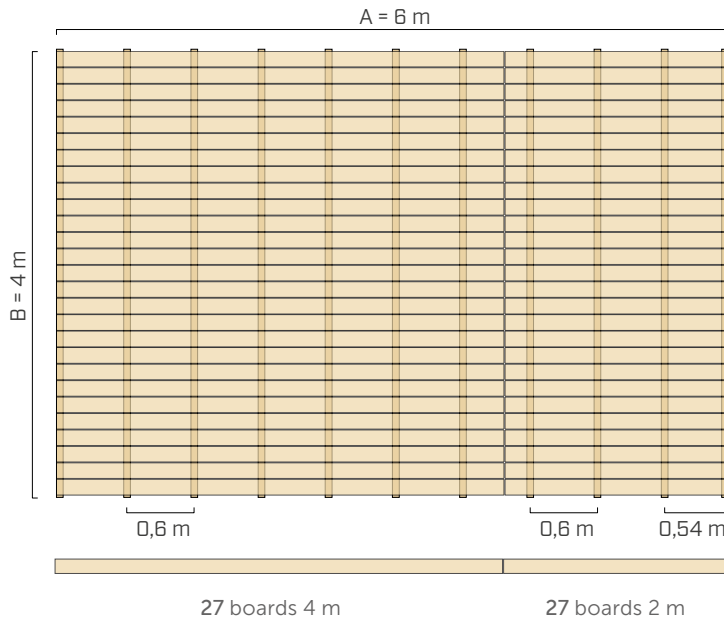
$i$  = joists spacing

$L$  = board width

$f$  = gap width

## PRACTICAL EXAMPLE

### NUMBER OF BOARDS AND JOISTS



### PATIO SURFACE

$$S = A \cdot B = 6 \text{ m} \cdot 4 \text{ m} = 24 \text{ m}^2$$

### WOODEN PLANKING

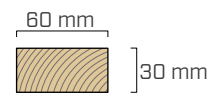


$L = 140 \text{ mm}$

$s = 18 \text{ mm}$

$f = 7 \text{ mm}$

### JOISTS



$b = 60 \text{ mm}$

$h = 30 \text{ mm}$

$i = 0,6 \text{ m}$

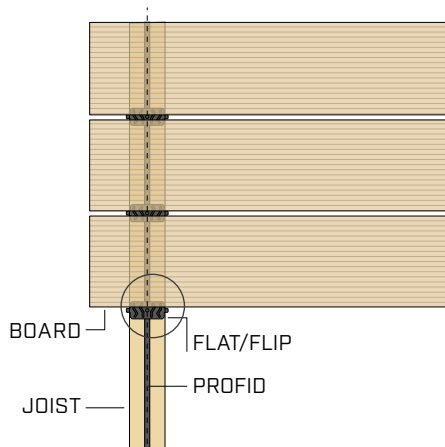
$$\begin{aligned} \text{no. boards} &= [B/(L+f)] \\ &= [4/(0,14+0,007)] = 27 \text{ boards} \end{aligned}$$

no. 4 m boards = 27 boards

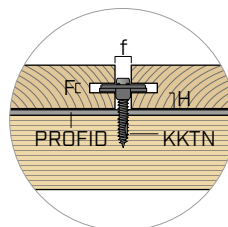
no. 2 m boards = 27 boards

$$\text{no. battens} = [A/i] + 1 = (6/0,6) + 1 = 11 \text{ battens}$$

### SCREW SELECTION



Head thickness	$S_{\text{screw head}}$	2,8 mm
Grooving thickness	$F$	4 mm
Grooving dimension	$H$	$(s-F)/2$ 7 mm
PROFID thickness	$S_{\text{PROFID}}$	8 mm
Pull-through length	$L_{\text{pen}}$	$4 \cdot d$ 20 mm



### MINIMUM SCREW LENGTH

$$\begin{aligned} &= S_{\text{screw head}} + F + H + S_{\text{PROFID}} + L_{\text{pen}} \\ &= 2,8 + 4 + 7 + 8 + 20 = 41,8 \text{ mm} \end{aligned}$$

### CHOICE OF SCREW

**KKTN550**

### FLAT / FLIP NUMBER CALCULATION

#### QUANTITY FOR INCIDENCE FORMULA

$$I = S/i/(L + f) = \text{pcs of FLAT/FLIP}$$

$$I = 24 \text{ m}^2/0,6 \text{ m}/(0,14 \text{ m} + 0,007 \text{ m}) = 272 \text{ pcs FLAT/FLIP}$$

waste coefficient = 1,05

$$I = 272 \cdot 1,05 = 286 \text{ pcs FLAT/FLIP}$$

$$I = 286 \text{ pcs FLAT/FLIP}$$

**FLAT/FLIP NUMBER = 286 pcs**

#### QUANTITY FOR THE NUMBER OF INTERSECTIONS

$$I = \text{No. boards with FLAT/FLIP} \cdot \text{no. battens} = \text{pcs. of FLAT/FLIP}$$

$$\text{no. boards with FLAT/FLIP} = (\text{number of boards} - 1)$$

$$= (27 - 1) = 26 \text{ boards}$$

$$\text{no. of joists} = (A/i) + 1 = (6/0,6) + 1 = 11 \text{ joists}$$

$$\text{no. intersections} = I = 26 \cdot 11 = 286 \text{ pcs FLAT/FLIP}$$

$$I = 286 \text{ pcs FLAT/FLIP}$$

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