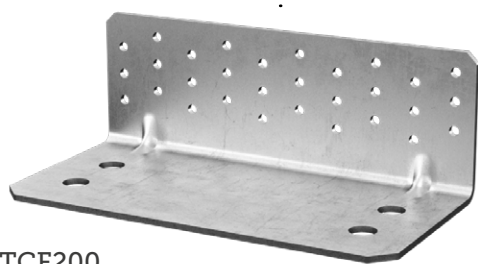


TITAN F

CE
ETA 11/0496

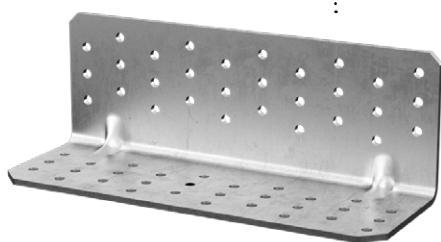
ANGOLARE PER ELEVATE FORZE DI TAGLIO
ANGLE BRACKET FOR HIGH SHEAR FORCES

Giunzioni legno-legno
e legno-calcestruzzo
Timber-to-timber and
timber-to-concrete
joints

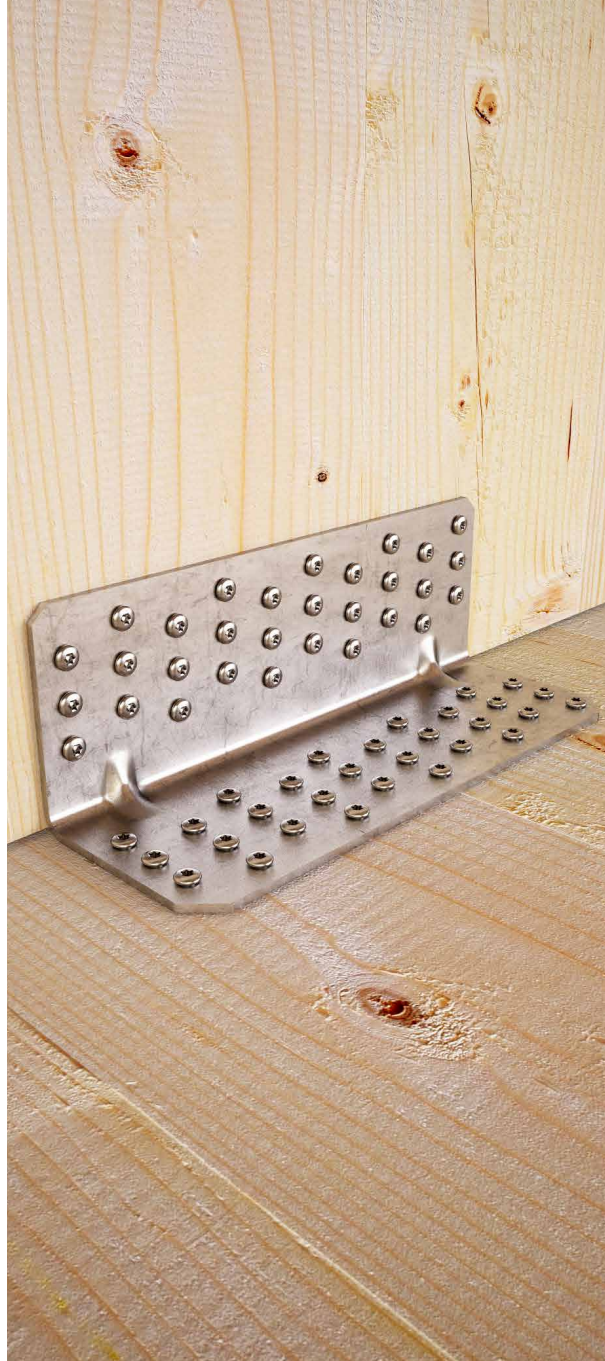


TCF200

Resistenze a taglio
eccezionali
Exceptional shear
resistance

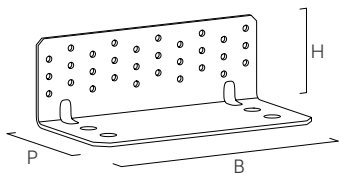



TTF200



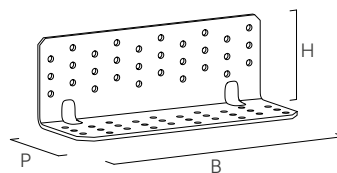
CODICI E DIMENSIONI CODES AND DIMENSIONS


LEGNO-CALCESTRUZZO TIMBER-TO-CONCRETE



CODICE CODE	B x P x H [mm]	s [mm]	n _H Ø 13	n _V Ø 5	
TCF200	200 x 103 x 71	3	4	30	10

LEGNO-LEGNO TIMBER-TO-TIMBER



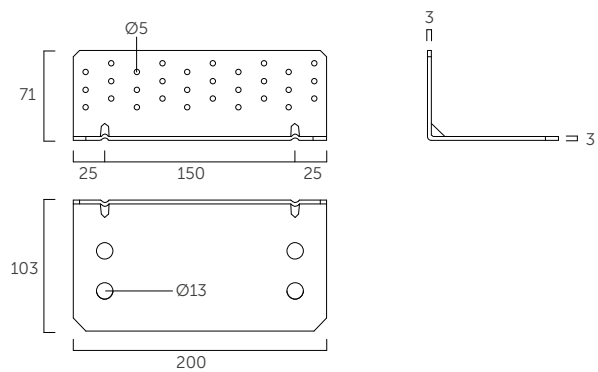
CODICE CODE	B x P x H [mm]	s [mm]	n _H Ø 5	n _V Ø 5	
TTF200	200 x 71 x 71	3	30	30	10

MATERIALE / MATERIAL

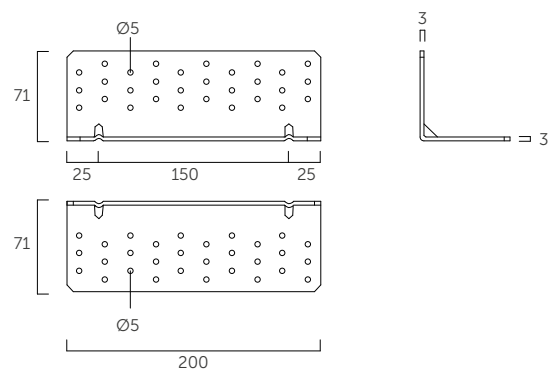
Acciaio al carbonio DX51D con zincatura Z275.
Z275 bright zinc plated DX51D carbon steel.

GEOMETRIA GEOMETRY

TCF200

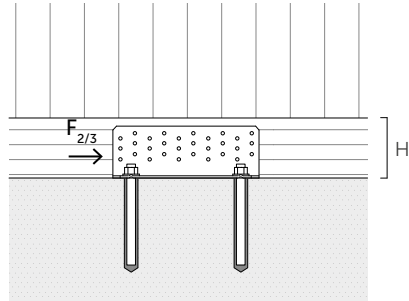


TTF200



TCF200

GIUNZIONE A TAGLIO - LEGNO/CALCESTRUZZO
SHEAR JOINT - TIMBER-TO-CONCRETE



$R_{2/3,k}$ LEGNO
 $R_{2/3,k}$ TIMBER

configurazione trave di banchina sill beam configuration	fissaggio fori Ø5 holes fastening Ø 5			$R_{2/3,k}$ timber [kN]
	tipo type	Ø x L [mm]	n_v [pz/pcs]	
$H_v \geq 90$ mm	chiodi Anker LBA Anker nail LBA	Ø4,0 x 60	30	35,5
	viti LBS screws LBS	Ø5,0 x 50		42,5
$H_v = 80$ mm	chiodi Anker LBA Anker nail LBA	Ø4,0 x 60	25	31,0
	viti LBS screws LBS	Ø5,0 x 50		37,2
$H_v = 70$ mm	chiodi Anker LBA Anker nail LBA	Ø4,0 x 60	15	20,9
	viti LBS screws LBS	Ø5,0 x 50		25,1
$H_v = 60$ mm	chiodi Anker LBA Anker nail LBA	Ø4,0 x 60	10	15,1
	viti LBS screws LBS	Ø5,0 x 50		18,1

$R_{2/3,d}$ CALCESTRUZZO NON FESSURATO
 $R_{2/3,d}$ UNCRACKED CONCRETE

tipo type	Ø x L [mm]	n_H [pz/pcs]	$R_{2/3,d}$ concrete	
			IN ⁽¹⁾ [kN]	OUT ⁽²⁾ [kN]
VIN-FIX PRO	M12 x 130 cl. 5.8	2	29,7	24,4
SKR CE	M12 x min. 100	2	38,3	31,4

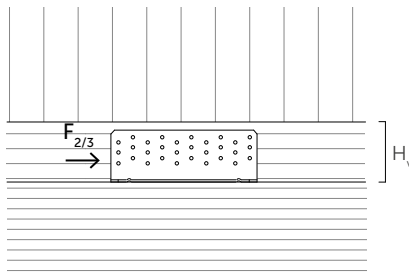
NOTE
NOTES

⁽¹⁾ Installazione degli ancoranti nei due fori interni (IN).
Installation of the anchors in internal holes (IN).

⁽²⁾ Installazione degli ancoranti nei due fori esterni (OUT).
Installation of the anchors in external holes (OUT).

TTF200

GIUNZIONE A TAGLIO - LEGNO/LEGNO
SHEAR JOINT - TIMBER-TO-TIMBER



$R_{2/3,k}$ LEGNO
 $R_{2/3,k}$ TIMBER

configurazione trave di banchina sill beam configuration	fissaggio fori Ø5 holes fastening Ø 5				$R_{2/3,k}$ timber [kN]
	tipo type	Ø x L [mm]	n_v [pz/pcs]	n_H [pz/pcs]	
$H_v \geq 90$ mm	chiodi Anker LBA Anker nail LBA	Ø4,0 x 60	30	30	35,5
	viti LBS screws LBS	Ø5,0 x 50			42,5
$H_v = 80$ mm	chiodi Anker LBA Anker nail LBA	Ø4,0 x 60	25	25	31,0
	viti LBS screws LBS	Ø5,0 x 50			37,2
$H_v = 70$ mm	chiodi Anker LBA Anker nail LBA	Ø4,0 x 60	15	15	20,9
	viti LBS screws LBS	Ø5,0 x 50			25,1
$H_v = 60$ mm	chiodi Anker LBA Anker nail LBA	Ø4,0 x 60	10	10	15,1
	viti LBS screws LBS	Ø5,0 x 50			18,1

PRINCIPI GENERALI GENERAL PRINCIPLES

- I valori caratteristici degli angolari TITAN sono secondo normativa EN 1995-1-1 in accordo a ETA-11/0496. I valori di progetto degli ancoranti per calcestruzzo sono calcolati in accordo alle rispettive Valutazioni Tecniche Europee.
The characteristic values of the TITAN angle brackets comply with the EN 1995-1-1 standard in accordance with ETA-11/0496. The design values of the anchors for concrete are calculated in accordance with the respective European Technical Assessments.
- I valori di resistenza di progetto si ricavano dai valori tabellati come segue:
Design resistance values can be obtained from the tabled values as follows:

$$R_d = \min \left\{ \begin{array}{l} \frac{R_{k,timber} \cdot k_{mod}}{\gamma_M} \\ R_{d,concrete} \end{array} \right.$$

I coefficienti k_{mod} e γ_M sono da assumersi in funzione della normativa vigente utilizzata per il calcolo.
Coefficients k_{mod} and γ_M must be taken according to the current Standard adopted for the design.

- In fase di calcolo si è considerata una massa volumica degli elementi lignei pari a $\rho_k = 350$ kg/m³ e calcestruzzo C20/25 con armatura rada, spessore minimo pari a 200 mm in assenza di distanze dal bordo.
The calculation process used a timber characteristic density of $\rho_k = 350$ kg/m³ and C20/25 concrete with a thin reinforcing layer, minimum thickness of 200 mm, where edge-distance is not a limiting factor.
- Il dimensionamento e la verifica degli elementi in legno e calcestruzzo devono essere svolti a parte.
Dimensioning and verification of timber and concrete elements must be carried out separately.