

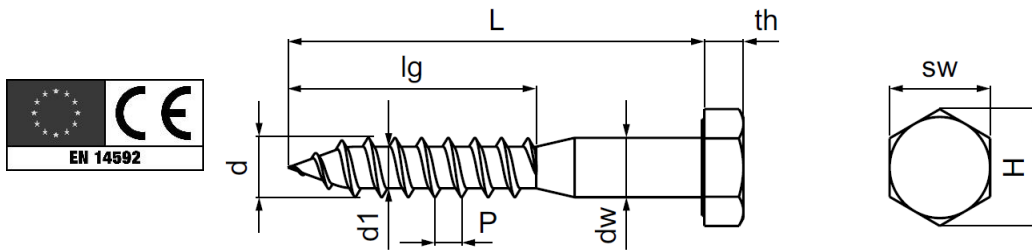
# SCHEDA TECNICA - TECHNICAL SHEET

## TIRAFONDO

Vite TE a legno DIN 571 – UNI 704  
Hex head wood screw DIN 571 – UNI 704

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## GEOMETRIA PRODOTTO - PRODUCT GEOMETRY



vite screw d x L	lg [mm]	d <sub>1</sub> <sup>a)</sup> [mm]	P [mm]	H [mm]	th [mm]	sw [mm]	Cod. Zincato bianco White zinc plated	Cod. Inox A2 Stainless steel A2
5x30	18	3,5	2,2	8,63	3,5	8	05200b05030	
5x40	24						05200b05040	
5x50	30						05200b05050	
5x60	36						05200b05060	
6x20	12	4,2	2,6	10,89	4	10	05200b06020	
6x25	15						05200b06025	
6x30	18						05200b06030	
6x35	21						05200b06035	
6x40	24						05200b06040	05230x06040
6x50	30						05200b06050	05230x06050
6x60	36						05200b06060	05230x06060
6x70	42						05200b06070	
6x80	48						05200b06080	05230x06080
6x90	54						05200b06090	
6x100	60						05200b06100	05230x06100
6x110	66						05200b06110	
6x120	72						05200b06120	
6x130	75						05200b06130	
6x140	75						05200b06140	
6x150	75						05200b06150	
6x160	96	05200b06160						
6x180	100	05200b06180						
6x200	100	05200b06200						
7x45	27	4,9	3	13,07	5	12	05200b07045	
7x50	30						05200b07050	
7x60	36						05200b07060	
7x70	42						05200b07070	
7x80	48						05200b07080	
7x100	60						05200b07100	
7x120	72						05200b07120	
7x150	75						05200b07150	
7x160	96						05200b07160	
7x170	100						05200b07170	
7x180	100						05200b07180	
7x190	100						05200b07190	
7x200	100	05200b07200						
7x210	100	05200b07210						
7x220	100	05200b07220						
8x25	15	5,6	3,5	14,20	5,5	13	05200b08025	
8x30	18						05200b08030	
8x35	21						05200b08035	
8x40	24						05200b08040	05230x08040
8x50	30						05200b08050	
8x60	36						05200b08060	05230x08060
8x70	42						05200b08070	
8x80	48						05200b08080	05230x08080
8x90	54						05200b08090	
8x100	60						05200b08100	05230x08100
8x110	66						05200b08110	
8x120	72						05200b08120	05230x08120
8x130	78						05200b08130	

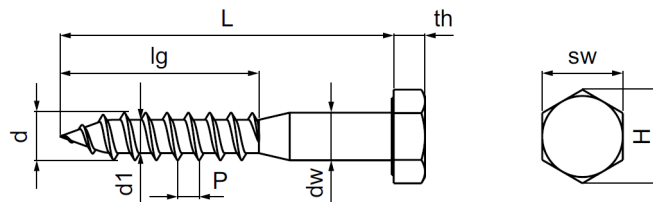
a) diametro nocciolo parte filettata - core diameter threaded part

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vite screw d x L	lg [mm]	d <sub>1</sub> <sup>a)</sup> [mm]	P [mm]	H [mm]	th [mm]	sw [mm]	Cod. Zincato bianco White zinc plated	Cod. Inox A2 Stainless steel A2
8x140	84	5,6	3,5	14,20	5,5	13	05200b08140	
8x150	90						05200b08150	
8x160	96						05200b08160	
8x180	108						05200b08180	
8x200	120						05200b08200	
8x220	100						05200b08220	
8x240	100						05200b08240	
8x250	100						05200b08250	
8x260	100						05200b08260	
8x280	100						05200b08280	
8x300	100						05200b08300	
10x40	24						7	4,5
10x50	30	05200b10050						
10x60	36	05200b10060	05230x10060					
10x70	42	05200b10070						
10x80	48	05200b10080	05230x10080					
10x90	54	05200b10090						
10x100	60	05200b10100	05230x10100					
10x110	66	05200b10110						
10x120	72	05200b10120	05230x10120					
10x130	78	05200b10130						
10x140	84	05200b10140						
10x150	90	05200b10150						
10x160	96	05200b10160						
10x180	108	05200b10180						
10x200	120	05200b10200						
10x220	100	05200b10220						
10x240	100	05200b10240						
10x250	100	05200b10250						
10x260	100	05200b10260						
10x280	100	05200b10280						
10x300	100	05200b10300						
12x50	30	9	5	20,88	8	19	05200b12050	
12x60	36						05200b12060	
12x70	42						05200b12070	
12x80	48						05200b12080	
12x90	54						05200b12090	
12x100	60						05200b12100	
12x110	66						05200b12110	
12x120	72						05200b12120	
12x130	78						05200b12130	
12x140	84						05200b12140	
12x150	90						05200b12150	
12x160	96						05200b12160	
12x180	108						05200b12180	
12x200	120						05200b12200	
12x220	100						05200b12220	
12x240	100						05200b12240	
12x250	100						05200b12250	
12x260	100						05200b12260	
12x280	100						05200b12280	
12x300	100						05200b12300	
12x320	192	05200b12320						
12x340	204	05200b12340						
12x360	216	05200b12360						
12x380	228	05200b12380						
12x400	240	05200b12400						

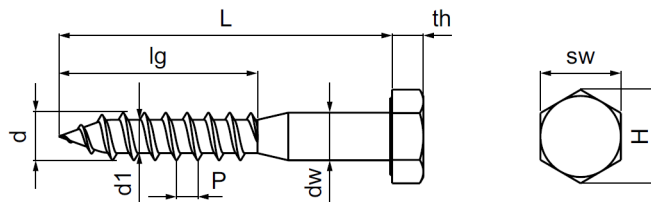
a) diametro nocciolo parte filettata - core diameter threaded part

# SCHEDA TECNICA - TECHNICAL SHEET

## TIRAFONDO

Vite TE a legno DIN 571 – UNI 704  
Hex head wood screw DIN 571 – UNI 704

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vite screw d x L	lg [mm]	d <sub>1</sub> <sup>a)</sup> [mm]	P [mm]	H [mm]	th [mm]	sw [mm]	Cod. Zincato bianco White zinc plated	Cod. Inox A2 Stainless steel A2
16x120	72	12	5,5	26,17	10	24	05200b16120	
16x140	84						05200b16140	
16x160	96						05200b16160	
16x200	120						05200b16200	
16x220	132						05200b16220	

<sup>a)</sup> diametro nocciolo parte filettata - core diameter threaded part

## CARATTERISTICHE PRODOTTO - PRODUCT FEATURES

Tipo / Type	Materiale / Material	Rivestimento / Coating
Vite - acciaio zincato Screw - zinc plated	acciaio CB 4 FF KD EU 119-74/2 cl. 4.8 steel CB 4 FF KD EU 119-74/2 gr. 4.8	zincatura bianca $\geq 5\mu\text{m}$ ISO 4042 white zinc plated $\geq 5\mu\text{m}$ ISO 4042
Vite - acciaio inox Screw - stainless steel	inox A2 (AISI 304) stainless steel A2 (AISI 304)	-

## Prestazioni - Performances EN14592:2008 + A1:2012

	$\emptyset$	5	6	7	8	10	12	16
Momento di snervamento caratteristico Characteristic yield moment	$M_{y,k}$ [Nmm]	2299	6003	9572	16611	21495	66836	109588
Resistenza caratteristica a Trazione Characteristic tensile capacity	$f_{\text{tens},k}$ [kN]	5,20	7,39	9,13	11,81	18,90	34,17	46,27
Resistenza caratteristica a Torsione Characteristic strenght in torsion capacity	$f_{\text{tor},k}$ [Nm]	2,13	4,07	9,10	15,66	27,16	44,74	105,9
Parametro caratteristico a estrazione Characteristic withdrawal parameter	$f_{\text{ax},k}$ [N/mm <sup>2</sup> ]	11,48	7,67	6,48	5,06	7,41	7,36	6,99
Densità caratteristica legno associata ad $f_{\text{ax},k}$ Associated wood density for $f_{\text{ax},k}$	$\rho_{a,fax,k}$ [kg/m <sup>3</sup> ]	495						
Parametro caratteristico all'attraversamento della testa Characteristic head pull-through parameter	$f_{\text{head},k}$ [N/mm <sup>2</sup> ]	32,12	37,34	23,34	22,58	19,53	23,55	16,53
Densità caratteristica legno associata ad $f_{\text{head},k}$ Associated wood density for $f_{\text{head},k}$	$\rho_{a,fhead,k}$ [kg/m <sup>3</sup> ]	430						
Durabilità Durability EN1995:2014 [EC5]		Classe di servizio 2 Corrosion protection class 2						

# SCHEDA TECNICA - TECHNICAL SHEET

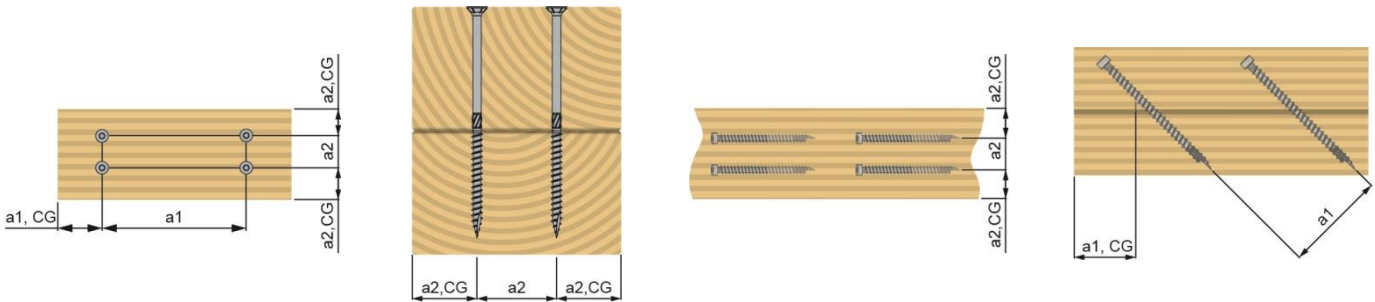
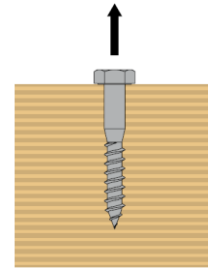
## TIRAFONDO

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Hex head wood screw DIN 571 – UNI 704

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### DISTANZE MINIME DI INSTALLAZIONE PER VITI SOLLECITATE A TRAZIONE MINIMUM INSTALLATION DISTANCES FOR AXIALLY LOADED SCREWS

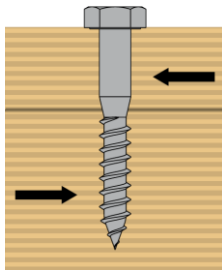
Ø	5	6	7	8	10	12	16
a <sub>1</sub> [mm]	35	42	49	56	70	84	112
a <sub>2</sub> [mm]	25	30	35	40	50	60	80
a <sub>1,CG</sub> [mm]	50	60	70	80	100	120	160
a <sub>2,CG</sub> [mm]	20	24	28	32	40	48	64



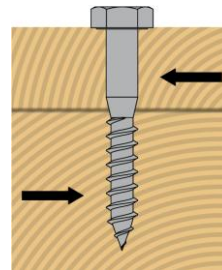
NOTE: Le distanze minime per le viti caricate assialmente sono determinate secondo EN 1995-1-1 :2014, e sono indipendenti dall'angolo di inserimento della vite rispetto alle fibre.

Minimum distances for axially loaded screws are determined according to EN 1995-1-1 :2014, and they are independent from the angle between the screw and the fibre.

### DISTANZE MINIME DI INSTALLAZIONE PER VITI SOLLECITATE A TAGLIO MINIMUM INSTALLATION DISTANCES FOR LATERALLY LOADED SCREWS



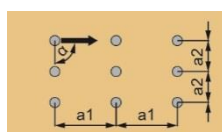
Angolo tra forza e fibre del legno  
Angle between force and the wood fibres  
 $\alpha=0^\circ$



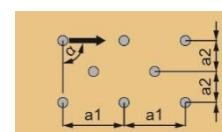
Angolo tra forza e fibre del legno  
Angle between force and the wood fibres  
 $\alpha=90^\circ$

Ø	Senza preforo Without pilot hole												Con preforo With pilot hole															
	$\alpha=0^\circ$						$\alpha=90^\circ$						$\alpha=0^\circ$						$\alpha=90^\circ$									
	5	6	7	8	10	12	16	5	6	7	8	10	12	16	5	6	7	8	10	12	16	5	6	7	8	10	12	16
a <sub>1</sub> [mm]	50	60	35	40	50	60	80	25	30	28	32	40	48	64	25	30	35	40	50	60	80	20	24	28	32	40	48	64
a <sub>2</sub> [mm]	25	30	28	32	40	48	64	25	30	28	32	40	48	64	15	18	28	32	40	48	64	20	24	28	32	40	48	64
d <sub>p</sub> [mm]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,5	4	4,8	5,5	7	9	11,5	3,5	4	4,8	5,5	7	9	11,5

d<sub>p</sub> = diametro preforo - pilot hole diameter



$0^\circ \leq \alpha \leq 90^\circ$



$0^\circ \leq \alpha \leq 90^\circ$

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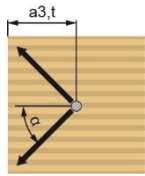
## TIRAFONDO

Vite TE a legno DIN 571 – UNI 704  
Hex head wood screw DIN 571 – UNI 704

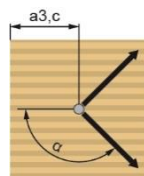
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Ø	Senza preforo Without pilot hole												Con preforo With pilot hole															
	α=0°						α=90°						α=0°						α=90°									
	5	6	7	8	10	12	16	5	6	7	8	10	12	16	5	6	7	8	10	12	16	5	6	7	8	10	12	16
a <sub>3,t</sub> [mm]	75	90	80	80	80	84	112	50	60	80	80	80	84	112	60	72	80	80	80	84	112	35	42	80	80	80	84	112
a <sub>3,c</sub> [mm]	50	60	28	32	40	48	64	50	60	49	56	70	84	112	35	42	28	32	40	48	64	35	42	49	56	70	84	112
a <sub>4,t</sub> [mm]	25	30	21	24	30	36	48	50	60	28	32	40	48	64	15	18	21	24	30	36	48	35	42	28	32	40	48	64
a <sub>4,c</sub> [mm]	25	30	21	24	30	36	48	25	30	21	24	30	36	48	15	18	21	24	30	36	48	15	21	21	24	30	36	48
d <sub>p</sub> [mm]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,5	4	4,8	5,5	7	9	11,5	3,5	4	4,8	5,5	7	9	11,5

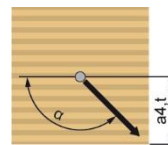
d<sub>p</sub> = diametro preforo - pilot hole diameter



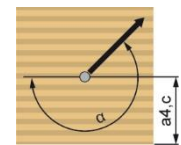
-90° ≤ α ≤ 90°



90° ≤ α ≤ 270°



0° ≤ α ≤ 180°



180° ≤ α ≤ 360°

NOTE: Le distanze minime per viti caricate a taglio sono determinate secondo EN 1995-1-1:2014 con densità caratt. del legno ρ<sub>k</sub> ≤ 420 kg/m<sup>3</sup>  
The minimum distances for laterally loaded screws are calculated according to EN 1995-1-1:2014 with wood characteristic density ρ<sub>k</sub> ≤ 420 kg/m<sup>3</sup>.

## INSTALLAZIONE - INSTALLATION

Vite Screw	Preforo Pilot hole [mm]	Coppia max. serraggio* - acciaio zincato Max screwing torque* - zinc plated steel [Nm]	Coppia max. serraggio* - inox Max screwing torque* - stainless steel [Nm]	Avvitatore* Max drilling speed* [giri/min. - r.p.m]
Ø5	3,5	4,0	4,5	600
Ø6	4	5,0	7,0	
Ø7	4,8	7,0	10,0	
Ø8	5,5	10,0	15,0	
Ø10	7	20,0	30,0	
Ø12	9	45,0	-	
Ø16	11,5	90,0	-	

\* Regolazione in funzione del tipo di installazione / Regulate according to type of installation.

## RESISTENZE CARATTERISTICHE - CHARACTERISTIC RESISTANCES

Metodo di calcolo - Design Method EN1995-1-1:2014

Dati di posa - Installation data				TAGLIO - SHEAR		TRAZIONE - TENSILE		
Ø	L [mm]	l <sub>ef</sub> =l <sub>g</sub> [mm]	h <sub>w1</sub> [mm]	Legno - Legno Timber - Timber	Acciaio - Legno Steel - Timber	Estrazione filetto Thread pull-out	Penetrazione testa / estrazione filetto Head pull-through / thread pull-out	
				F <sub>V,Rk</sub> <sup>(1)</sup> [kN] α=0° - 0° / 90° - 90°	F <sub>V,Rk</sub> <sup>(2)</sup> [kN] α=0° / 90°	F <sub>ax,Rk</sub> [kN]	F <sub>head,Rk</sub> [kN]	
5	30	18	12	0,86d / 0,72d	1,5 [mm]	1,03b / 0,91b	0,84	0,84
	40	24	16			1,10b / 0,98b	1,11	1,11
	50	30	20			1,17b / 1,04b	1,39	1,39
	60	36	24			1,24b / 1,11b	1,67	1,67

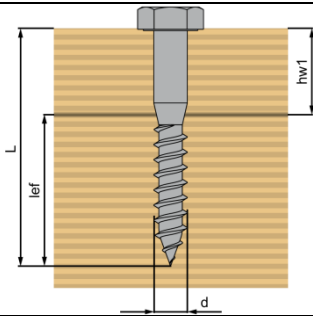
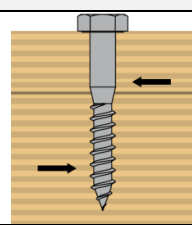
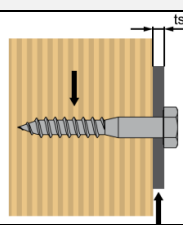
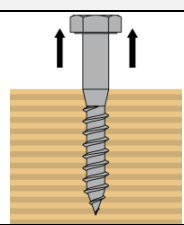
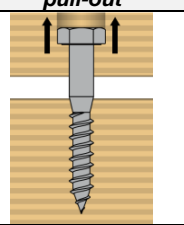
1kN ≅ 100 kgf

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## TIRAFONDO

Vite TE a legno DIN 571 – UNI 704  
Hex head wood screw DIN 571 – UNI 704

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Dati di posa - Installation data				TAGLIO - SHEAR		TRAZIONE - TENSILE		
				<b>Legno - Legno</b> <i>Timber - Timber</i> 	<b>Acciaio - Legno</b> <i>Steel - Timber</i> 	<b>Estrazione filetto</b> <i>Thread pull-out</i> 	<b>Penetrazione testa / estrazione filetto</b> <i>Head pull-through / thread pull-out</i> 	
Ø	L [mm]	l <sub>ef</sub> =l <sub>g</sub> [mm]	h <sub>w1</sub> [mm]	F <sub>V,Rk</sub> <sup>(1)</sup> [kN]	F <sub>V,Rk</sub> <sup>(2)</sup> [kN]	F <sub>ax,Rk</sub> [kN]	F <sub>head,Rk</sub> [kN]	
				α=0°- 0° / 90°- 90°	ts      α=0° / 90°			
6	50	30	20	1,51 <sub>d</sub> / 1,23 <sub>d</sub>	1,5 [mm]	1,12	1,12	
	60	36	24	1,71 <sub>d</sub> / 1,37 <sub>d</sub>		1,74 <sub>b</sub> / 1,51 <sub>b</sub>	1,34	1,34
	70	42	28	1,85 <sub>f</sub> / 1,53 <sub>d</sub>		1,79 <sub>b</sub> / 1,56 <sub>b</sub>	1,56	1,56
	80	48	32	1,91 <sub>f</sub> / 1,67 <sub>f</sub>		1,85 <sub>b</sub> / 1,62 <sub>b</sub>	1,79	1,79
	90	54	36	1,96 <sub>f</sub> / 1,73 <sub>f</sub>		1,91 <sub>b</sub> / 1,67 <sub>b</sub>	2,01	2,01
	100	60	40	2,02 <sub>f</sub> / 1,78 <sub>f</sub>		1,92 <sub>b</sub> / 1,68 <sub>b</sub>	2,23	2,23
	110	66	44	2,07 <sub>f</sub> / 1,84 <sub>f</sub>			2,46	2,46
	120	72	48	2,13 <sub>f</sub> / 1,90 <sub>f</sub>			2,68	2,68
	130	75	55	2,16 <sub>f</sub> / 1,92 <sub>f</sub>			2,79	2,79
	140	75	65				3,58	3,38
	150	75	75	2,31 <sub>f</sub> / 2,07 <sub>f</sub>				
	160	96	64			2,75 <sub>f</sub> / 2,42 <sub>f</sub>	2 [mm]	1,10
180	100	80	2,26 <sub>b</sub> / 1,94 <sub>b</sub>	1,32	1,32			
200	100	100	2,32 <sub>b</sub> / 1,99 <sub>b</sub>	1,54	1,54			
50	30	20	1,82 <sub>d</sub> / 1,48 <sub>d</sub>	2,37 <sub>b</sub> / 2,05 <sub>b</sub>	1,76			1,76
60	36	24	2,03 <sub>d</sub> / 1,63 <sub>d</sub>	2,43 <sub>b</sub> / 2,10 <sub>b</sub>	2,20			2,20
70	42	28	2,25 <sub>d</sub> / 1,79 <sub>d</sub>	2,54 <sub>b</sub> / 2,21 <sub>b</sub>	2,64			2,64
80	48	32	2,43 <sub>f</sub> / 1,96 <sub>d</sub>	2,65 <sub>b</sub> / 2,32 <sub>b</sub>	2,75	2,75		
90	54	36	2,54 <sub>f</sub> / 2,21 <sub>f</sub>	2,67 <sub>b</sub> / 2,35 <sub>b</sub>	3,52	3,04		
100	60	40	2,65 <sub>f</sub> / 2,32 <sub>f</sub>	2,82 <sub>b</sub> / 2,50 <sub>b</sub>	3,67	3,04		
120	72	48	2,67 <sub>f</sub> / 2,35 <sub>f</sub>					
150	75	75	2,75 <sub>f</sub> / 2,42 <sub>f</sub>					
160	96	64						
170	100	70						
180	100	80						
190	100	90						
200	100	100						
210	100	110						
220	100	120						
8	50	30	20	2,24 <sub>d</sub> / 1,83 <sub>d</sub>	2,5 [mm]	0,98	0,98	
	60	36	24	2,44 <sub>d</sub> / 1,96 <sub>d</sub>		3,04 <sub>b</sub> / 2,57 <sub>b</sub>	1,18	1,18
	70	42	28	2,65 <sub>d</sub> / 2,11 <sub>d</sub>		3,08 <sub>b</sub> / 2,62 <sub>b</sub>	1,38	1,38
	80	48	32	2,89 <sub>d</sub> / 2,27 <sub>d</sub>		3,13 <sub>b</sub> / 2,67 <sub>b</sub>	1,57	1,57
	90	54	36	3,13 <sub>d</sub> / 2,44 <sub>d</sub>		3,18 <sub>b</sub> / 2,72 <sub>b</sub>	1,77	1,77
	100	60	40	3,28 <sub>f</sub> / 2,62 <sub>d</sub>		3,23 <sub>b</sub> / 2,77 <sub>b</sub>	1,97	1,97
	110	66	44	3,33 <sub>f</sub> / 2,81 <sub>d</sub>		3,28 <sub>b</sub> / 2,82 <sub>b</sub>	2,16	2,16
	120	72	48	3,38 <sub>f</sub> / 2,91 <sub>f</sub>		3,33 <sub>b</sub> / 2,86 <sub>b</sub>	2,36	2,36
	130	78	52	3,43 <sub>f</sub> / 2,96 <sub>f</sub>		3,38 <sub>b</sub> / 2,91 <sub>b</sub>	2,56	2,56
	140	84	56	3,48 <sub>f</sub> / 3,01 <sub>f</sub>		3,43 <sub>b</sub> / 2,96 <sub>b</sub>	2,75	2,75
	150	90	60	3,53 <sub>f</sub> / 3,06 <sub>f</sub>		3,48 <sub>b</sub> / 3,01 <sub>b</sub>	2,95	2,95

1kN ≅ 100 kgf

# SCHEDA TECNICA - TECHNICAL SHEET

## TIRAFONDO

Vite TE a legno DIN 571 – UNI 704  
Hex head wood screw DIN 571 – UNI 704

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Dati di posa - Installation data				TAGLIO - SHEAR		TRAZIONE - TENSILE		
				Legno - Legno Timber - Timber	Acciaio - Legno Steel - Timber	Estrazione filetto Thread pull-out	Penetrazione testa / estrazione filetto Head pull-through / thread pull-out	
Ø	L [mm]	l <sub>ef</sub> =l <sub>g</sub> [mm]	h <sub>w1</sub> [mm]	F <sub>V,Rk</sub> <sup>1)</sup> [kN]	F <sub>V,Rk</sub> <sup>2)</sup> [kN]	F <sub>ax,Rk</sub> [kN]	F <sub>head,Rk</sub> [kN]	
				α=0° - 0° / 90° - 90°	ts			α=0° / 90°
8	160	96	64	3,58 <sub>f</sub> / 3,11 <sub>f</sub>	2,5 [mm]	3,58 <sub>b</sub> / 3,11 <sub>b</sub>	3,15	3,15
	180	108	72	3,65 <sub>f</sub> / 3,19 <sub>f</sub>		3,67 <sub>b</sub> / 3,21 <sub>b</sub>	3,54	3,46
	200	120	80	3,65 <sub>f</sub> / 3,19 <sub>f</sub>		3,77 <sub>b</sub> / 3,31 <sub>b</sub>	3,96	3,46
	220	100	120	3,61 <sub>f</sub> / 3,14 <sub>f</sub>			3,28	3,28
	240	100	140					
	250	100	150					
	260	100	160					
	280	100	180					
300	100	200						
10	50	30	20	2,98 <sub>d</sub> / 2,43 <sub>d</sub>	3 [mm]	4,00 <sub>b</sub> / 3,38 <sub>b</sub>	1,80	1,80
	60	36	24	3,24 <sub>d</sub> / 2,62 <sub>d</sub>		4,09 <sub>b</sub> / 3,47 <sub>b</sub>	2,16	2,16
	70	42	28	3,54 <sub>d</sub> / 2,83 <sub>d</sub>		4,18 <sub>b</sub> / 3,56 <sub>b</sub>	2,52	2,52
	80	48	32	3,86 <sub>d</sub> / 3,06 <sub>d</sub>		4,27 <sub>b</sub> / 3,65 <sub>b</sub>	2,88	2,88
	90	54	36	4,20 <sub>d</sub> / 3,30 <sub>d</sub>		4,36 <sub>b</sub> / 3,74 <sub>b</sub>	3,24	3,24
	100	60	40	4,45 <sub>f</sub> / 3,55 <sub>d</sub>		4,45 <sub>b</sub> / 3,83 <sub>b</sub>	3,60	3,60
	110	66	44	4,54 <sub>f</sub> / 3,80 <sub>d</sub>		4,54 <sub>b</sub> / 3,92 <sub>b</sub>	3,96	3,96
	120	72	48	4,63 <sub>f</sub> / 4,01 <sub>f</sub>		4,63 <sub>b</sub> / 4,01 <sub>b</sub>	4,32	4,32
	130	78	52	4,72 <sub>f</sub> / 4,10 <sub>f</sub>		4,72 <sub>b</sub> / 4,10 <sub>b</sub>	4,68	4,68
	140	84	56	4,81 <sub>f</sub> / 4,19 <sub>f</sub>		4,81 <sub>b</sub> / 4,19 <sub>b</sub>	5,04	5,04
	150	90	60	4,83 <sub>f</sub> / 4,21 <sub>f</sub>		4,90 <sub>b</sub> / 4,28 <sub>b</sub>	5,40	5,11
	160	96	64			4,99 <sub>b</sub> / 4,37 <sub>b</sub>	5,76	
	180	108	72			5,17 <sub>b</sub> / 4,55 <sub>b</sub>	6,48	
	200	120	80			5,35 <sub>b</sub> / 4,73 <sub>b</sub>	7,20	
	220	100	120			5,05 <sub>b</sub> / 4,43 <sub>b</sub>	6,00	
	240	100	140					
250	100	150						
260	100	160						
280	100	180						
300	100	200						
12	50	30	20	5,11 <sub>d</sub> / 3,71 <sub>a</sub>	3 [mm]	7,55 <sub>b</sub> / 6,26 <sub>b</sub>	2,14	2,14
	60	36	24	5,32 <sub>d</sub> / 4,37 <sub>d</sub>		7,65 <sub>b</sub> / 6,37 <sub>b</sub>	2,57	2,57
	70	42	28	5,58 <sub>d</sub> / 4,37 <sub>d</sub>		7,76 <sub>b</sub> / 6,48 <sub>b</sub>	3,00	3,00
	80	48	32	5,87 <sub>d</sub> / 4,74 <sub>d</sub>		7,87 <sub>b</sub> / 6,58 <sub>b</sub>	3,43	3,43
	90	54	36	6,20 <sub>d</sub> / 4,96 <sub>d</sub>		7,97 <sub>b</sub> / 6,69 <sub>b</sub>	3,86	3,86
	100	60	40	6,56 <sub>d</sub> / 5,20 <sub>d</sub>		8,08 <sub>b</sub> / 6,80 <sub>b</sub>	4,29	4,29
	110	66	44	6,93 <sub>d</sub> / 5,45 <sub>d</sub>		8,19 <sub>b</sub> / 6,91 <sub>b</sub>	4,72	4,72
	120	72	48	7,32 <sub>d</sub> / 5,72 <sub>d</sub>		8,30 <sub>b</sub> / 7,01 <sub>b</sub>	5,15	5,15
	130	78	52	7,72 <sub>d</sub> / 6,01 <sub>d</sub>		8,40 <sub>b</sub> / 7,12 <sub>b</sub>	5,58	5,58

1kN ≅ 100 kgf

# SCHEDA TECNICA - TECHNICAL SHEET

## TIRAFONDO

Vite TE a legno DIN 571 – UNI 704  
Hex head wood screw DIN 571 – UNI 704

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Dati di posa - Installation data				TAGLIO - SHEAR		TRAZIONE - TENSILE		
				<b>Legno - Legno</b> <b>Timber - Timber</b>	<b>Acciaio - Legno</b> <b>Steel - Timber</b>	<b>Estrazione filetto</b> <b>Thread pull-out</b>	<b>Penetrazione testa /</b> <b>estrazione filetto</b> <b>Head pull-through / thread</b> <b>pull-out</b>	
Ø	L [mm]	l <sub>ef</sub> =l <sub>d</sub> [mm]	h <sub>w1</sub> [mm]	F <sub>V,Rk</sub> <sup>(1)</sup> [kN]	F <sub>V,Rk</sub> <sup>(2)</sup> [kN]	F <sub>ax,Rk</sub> [kN]	F <sub>head,Rk</sub> [kN]	
				α=0°- 0° / 90°- 90°	ts α=0° / 90°			
12	140	84	56	8,14 <sub>d</sub> / 6,30 <sub>d</sub>	3 [mm]	6,00	6,00	
	150	90	60	8,56 <sub>d</sub> / 6,60 <sub>d</sub>		8,51 <sub>b</sub> / 7,23 <sub>b</sub>	6,43	6,43
	160	96	64	8,73 <sub>d</sub> / 6,90 <sub>d</sub>		8,62 <sub>b</sub> / 7,33 <sub>b</sub>	6,86	6,86
	180	108	72	8,93 <sub>f</sub> / 7,53 <sub>d</sub>		8,73 <sub>b</sub> / 7,44 <sub>b</sub>	7,72	7,70
	200	120	80	8,93 <sub>f</sub> / 7,65 <sub>f</sub>		8,84 <sub>b</sub> / 7,56 <sub>b</sub>	8,58	7,70
	220	100	120	8,80 <sub>f</sub> / 7,51 <sub>f</sub>		8,80 <sub>b</sub> / 7,51 <sub>b</sub>	7,15	7,15
	240	100	140					
	260	100	160	8,93 <sub>f</sub> / 7,65 <sub>f</sub>		8,84 <sub>b</sub> / 7,56 <sub>b</sub>	13,72	7,70
	280	100	180				14,58	
	300	100	200				15,44	
	320	192	128				16,30	
	340	204	136				17,16	
	360	216	144					
380	228	152	9,82 <sub>d</sub> / 7,61 <sub>d</sub>	3 [mm]	11,80 <sub>b</sub> / 9,81 <sub>b</sub>	6,52	6,52	
400	240	160			11,83 <sub>b</sub> / 9,83 <sub>b</sub>	7,60	7,25	
120	72	48	10,73 <sub>d</sub> / 8,20 <sub>d</sub>	8,69				
140	84	56	11,52 <sub>d</sub> / 8,64 <sub>d</sub>	10,86				
160	96	64	11,98 <sub>f</sub> / 9,64 <sub>d</sub>	11,95				
200	120	80	11,98 <sub>f</sub> / 9,99 <sub>f</sub>					

1kN ≅ 100 kgf

<sup>1)</sup> La lettera pedice dopo il valore numerico indica il modo di rottura con riferimento al §8.2.2 della norma EN1995:2014;  
The subscript letter after the numerical value indicates the breaking mode with reference to §8.2.2 of the EN1995: 2014 standard;

<sup>2)</sup> La lettera pedice dopo il valore numerico indica il modo di rottura con riferimento al §8.2.3 della norma EN1995:2014.  
The subscript letter after the numerical value indicates the breaking mode with reference to §8.2.3 of the EN1995: 2014 standard.

Valori di resistenza caratteristica calcolati in base ai requisiti certificati EN14592, nelle seguenti condizioni:

- progettazione e metodo di calcolo norma EN1995-1-1:2014 [Eurocodice 5];
- densità del legno  $\rho_k = 380 \text{ kg/m}^3$ , esempio legno massiccio C30 norma EN338:2016 o Lamellare GL24h-GL28c norma EN14080:2013 <sup>(1)</sup>;
- vite installata a 90° rispetto la direzione delle fibre del legno;
- vite installata senza preforo
- filetto totalmente inserito nel legno

The characteristic resistance values have been calculated based on EN14592 certified requirements, with the following conditions:

- design method according to EN1995-1-1:2014 [Eurocode 5];
- $\rho_k = 380 \text{ kg/m}^3$  timber density, solid timber quality C30 EN338:2016 std or GL24h-GL28c glued laminated timber EN14080:2013 <sup>(1)</sup> standard;
- screw installed at 90° to the direction of the wood fibres;
- application without pilot hole;
- thread completely inserted into the timber.

<sup>(1)</sup> Per connessioni in supporti X-LAM i valori di resistenza caratteristica possono differire in base alla conformazione del pannello, su richiesta si possono effettuare test in situ contattando la nostra Area Commerciale. - For connections in X-LAM timbers the reference values can vary according to the shape of the panel, on-site tests can be performed on request by contacting our Sales Area.



# SCHEDA TECNICA - TECHNICAL SHEET

## TIRAFONDO

Vite TE a legno DIN 571 – UNI 704  
Hex head wood screw DIN 571 – UNI 704

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## RESISTENZE di PROGETTO - DESIGN LOADS

Le resistenze di progetto si calcolano mediante i coefficienti parziali di sicurezza  $\gamma$  (ed il fattore  $k_{mod}$ ) definiti dagli Eurocodici pertinenti o dalle normative nazionali-locali in vigore.

Il dimensionamento e la progettazione degli elementi lignei devono essere svolti a parte.

Il valore di progetto finale dell'intera connessione sarà il valore minore tra quelli calcolati come segue relativamente ai diversi componenti del sistema di fissaggio.

*The design loads are calculated using the partial safety factors  $\gamma$  (and the factor  $k_{mod}$ ) as reported on the relevant Eurocodes or on the national design codes in use.*

*The designing of the Timber elements must be carried out separately.*

*The final design load will be the minimum value among those calculated as follows with respect to the different components of the fixing system.*

### Taglio - Shear

$$F_{V,Rd} = \frac{F_{V,Rk}}{\gamma_{M(T)}} \cdot k_{mod}$$

### Trazione - Tensile

$$F_{ax,Rd} = \min \left\{ \begin{array}{l} \frac{F_{ax,Rk}}{\gamma_{M(T)}} \cdot k_{mod} \\ \frac{F_{head,Rk}}{\gamma_{M(T)}} \cdot k_{mod} \\ \frac{f_{tens,k}}{\gamma_{M2}} \end{array} \right.$$

## CODICI DI RIFERIMENTO PER LA PROGETTAZIONE DELLA CONNESSIONE DESIGN METHOD CODES FOR CONNECTION

Progettazione - Design Method	LEGNO - TIMBER		ACCIAIO - STEEL
STATICA - STATIC	EN1995-1-1	[NTC]	EN1993-1-1 [NTC]
Coefficiente di sicurezza Partial safety factor	$\gamma_{M(T)} = 1,3$	$\gamma_{M(T)} = 1,5$	$\gamma_{M2} = 1,25$
Fattore carico-durata Load-duration factor	$k_{mod} = 0,7^{1)}$		-
SISMICA - SEISMIC	EN1998-1-1 [NTC]		EN1998-1-1 [NTC]

<sup>1)</sup> Valore riferito ad azione di lunga durata e classe di servizio classe 1-2, per altri casi vedi norme EN1995-1-1 e [NTC] = Norme Tecniche Costruzioni.  
Value refers to Long term action and Service class 1-2, for other cases see EN1995-1-1.

## RESISTENZE AMMISSIBILI - RECOMMENDED LOADS

Tratto dal documento Norme Italiane per la progettazione, esecuzione e collaudo delle costruzioni in legno NICOLE.

Taken from the Italian Standards document for the design, execution and testing of NICOLE timber constructions.

I valori di resistenza ammissibili del singolo connettore possono essere calcolati nel seguente modo:

Recommended loads of a singular connector can be calculated as follows:

### Taglio - Shear

$$F_{V,amm} = \frac{F_{V,Rk}}{\gamma_{M(T)} \cdot \gamma_Q} \cdot k_{mod}$$

### Trazione - Tensile

$$F_{ax,amm} = \min$$

con -with  $\gamma_Q = 1,5$

I valori di carico riportati hanno valore solo se l'installazione è stata eseguita correttamente. Il progettista è responsabile del dimensionamento e del numero dei fissaggi. *The load values are only valid if the installation has been carried out correctly. The design engineer is responsible for the designing and calculation of the fixing.*

Acquistando il prodotto, l'utilizzatore è tenuto ad osservare scrupolosamente le istruzioni riportate sul packaging e sulla documentazione relativa al prodotto disponibile sul sito internet [www.friulsider.com/download.html](http://www.friulsider.com/download.html). Friulsider S.p.A. non risponderà ad alcun titolo di danni a persone o cose che dovessero essere conseguenza di una conservazione od uso diversi da quelli descritti.

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