

HDC-PCY ROUND HEAD FOR PLATES

ZINC CLEAR / STEEL

CERTIFICATION

TDS

ZP

Technical Data Sheet



For Install Support

techadvice@allfasteners.com.au



For Specification Support

engineering@allfasteners.com.au



For Customer Support

1800 255 349

HDC-PCY

TIMBER CONSTRUCTION SCREW ROUND HEAD FOR PLATES

Timber Construction Screw Round Head for Plates

Construction cylindrical head screws with full thread and TX drive for structural connections and reinforcements of wooden members.

- Solid Timbers
- Glued Laminated Timbers - CLT, KVH, BSH / GLT
- Laminated Veneer Lumber - LVL



EUROPEAN TECHNICAL
ASSESSMENT
ETA-18/0817

FEATURES



Round Head with Cylindrical Underhead and TX Drive - Allows safe and secure fastening of perforated and angular metal plates. TX drive guarantees optimum torque transfer.



Underhead Reinforcement - Wider screw diameter under the head improves shear strength of the screw.



High Torque - Allows screws to be installed without pre-drilling, even in hardwood substrates.



Wax Coating - Wax coating applied during the production process significantly reduces the torque.

SUBSTRATES



Solid Timbers

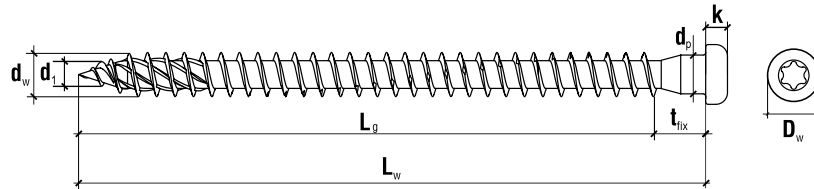


Glued Laminated Timbers
CLT, KVH, BSH / GLT



Laminated Veneer Lumber
LVL

PRODUCT LIST



Codes and dimensions

	Product code	Dimensions	Thread Length	Max. Fixture Length	Type of Drive	Quantity
	Zinc - white	$d_w \times L_w$ [mm]	L_g [mm]	t_{fix} [mm]	[-]	[pcs]
HDC-C 4						
Ø 4	3WKLCZ05030	5x30	22	8	TX20	250
	3WKLCZ05035	5x35	30	5	TX20	250
	3WKLCZ05040	5x40	30	10	TX20	250
	3WKLCZ05050	5x50	40	10	TX20	250
	3WKLCZ05060	5x60	50	10	TX20	250
	3WKLCZ05070	5x70	60	10	TX20	250

MECHANICAL CHARACTERISTICS

TIMBER

Geometry

Product	Outer thread diameter	Inner thread diameter	Underhead diameter	Head diameter	Head thickness	Length range
	d_w [mm]	d_i [mm]	d_p [mm]	D_w [mm]	k [mm]	L_w [mm]
WKLC Ø5	5	3,15	4,80	7,4	2,70	30-70

Mechanical characteristics

Product	Characteristic yield moment	Characteristic withdrawal resistance parameter	Characteristic head-pull-through resistance parameter	Characteristic tensile strength	Characteristic torsional strength
	M_{yk} [N*m]	f_{ak} [N/mm ²]	$f_{head,k}$ [N/mm ²]	$f_{tens,k}$ [kN]	f_{tork} [N*m]
WKLC Ø5	6	12	20,2	9	6

Characteristic withdrawal and head-pull-through resistance based on reference density of timber $\rho_a = 350 \text{ kg/m}^3$

INSTALLATION PARAMETERS

TIMBER

Minimum distances for laterally loaded screws - timber

Angle between force and fiber direction $\alpha = 0^\circ$		Angle between force and fiber direction $\alpha = 90^\circ$	
WITHOUT PRE-DRILLED HOLE		WITHOUT PRE-DRILLED HOLE	
d_w [mm]	Ø 5	d_w [mm]	Ø 5
a_1 [mm]	42	a_1 [mm]	17,5
a_2 [mm]	17,5	a_2 [mm]	17,5
$a_{3,t}$ [mm]	75	$a_{3,t}$ [mm]	50
$a_{3,c}$ [mm]	50	$a_{3,c}$ [mm]	50
$a_{4,t}$ [mm]	25	$a_{4,t}$ [mm]	50
$a_{4,c}$ [mm]	25	$a_{4,c}$ [mm]	25
WITH PRE-DRILLED HOLE		WITH PRE-DRILLED HOLE	
d_w [mm]	Ø 5	d_w [mm]	Ø 5
d_0 [mm]	3	d_0 [mm]	3
$d_{0,steel}$ [mm]	5	$d_{0,steel}$ [mm]	5
a_1 [mm]	17,5	a_1 [mm]	14
a_2 [mm]	10,5	a_2 [mm]	14
$a_{3,t}$ [mm]	60	$a_{3,t}$ [mm]	35
$a_{3,c}$ [mm]	35	$a_{3,c}$ [mm]	35
$a_{4,t}$ [mm]	15	$a_{4,t}$ [mm]	35
$a_{4,c}$ [mm]	15	$a_{4,c}$ [mm]	15

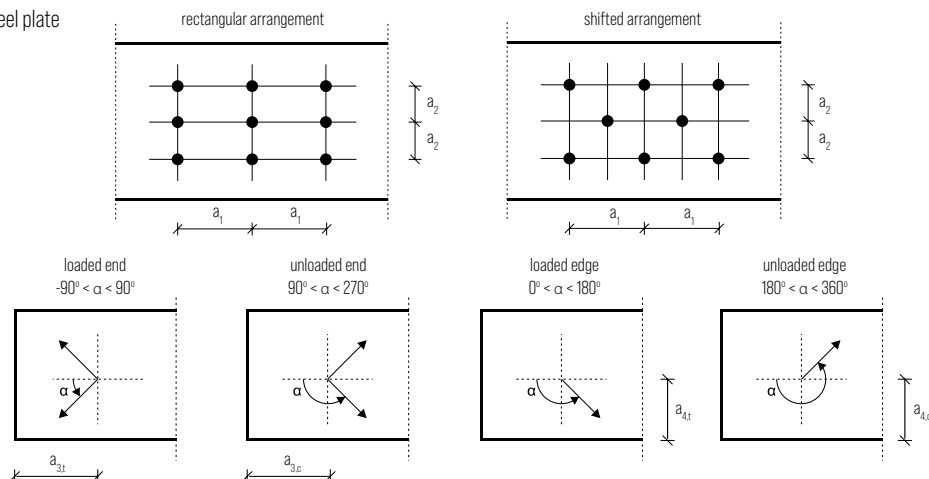
1. Minimum distances in accordance with EN 1995 and ETA-18/0817

2. Minimum distances is valid for timber characteristic density of $\rho_k \leq 420 \text{ kg/m}^3$

3. In case of connection timber-timber minimum distances (a_1 , a_2) should be multiplied by a factor of 1,45

4. Hole diameter d_0 is valid for softwood

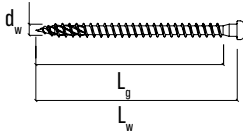
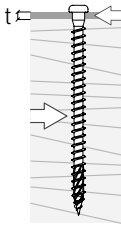
5. Hole diameter $d_{0,steel}$ is valid for steel plate

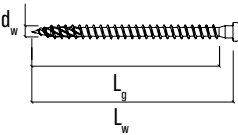
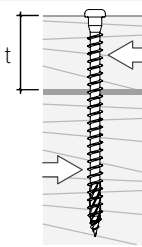
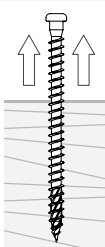
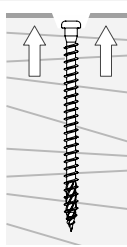


CHARACTERISTIC RESISTANCES

TIMBER

Characteristic resistances for laterally and axially loaded screws - timber

DIMENSIONS			SHEAR													
Diameter	Length	Thread length	steel - timber													
																
d_w [mm]	L_w [mm]	L_g [mm]	R_{v,k} [kN]													
WKLC-5																
ø5	30	22	t = 1,5 mm	1,01	t = 2,0 mm	0,99	t = 2,5 mm	0,97	t = 3,0 mm	1,09	t = 4 mm	1,33	t = 5 mm	1,57	t = 6 mm	1,55
	35	30		1,19		1,17		1,15		1,29		1,55		1,82		1,78
	40	30		1,36		1,35		1,33		1,46		1,71		1,97		1,94
	50	40		1,72		1,70		1,68		1,80		2,04		2,28		2,28
	60	50		1,94		1,94		1,94		2,03		2,23		2,43		2,43
	70	60		2,09		2,09		2,09		2,18		2,38		2,58		2,58

DIMENSIONS			SHEAR		TENSION	
Diameter	Length	Thread length	timber-timber		Withdrawal	Head pull-through
						
d_w [mm]	L_w [mm]	L_g [mm]	t [mm]	R_{v,k} [kN]	R_{ax,k} [kN]	R_{head,k} [kN]
WKLC-5						
ø5	30	22	10	0,88	1,32	1,11
	35	30	15	0,93	1,80	1,11
	40	30	20	1,01	1,80	1,11
	50	40	25	1,19	2,40	1,11
	60	50	30	1,38	3,00	1,11
	70	60	35	1,46	3,60	1,11

1. Characteristic resistances in accordance with EN 1995 and ETA-18/0817

2. In order to obtain a design resistance, use the following formula :

$$R_d = \frac{R_k * k_{mod}}{\gamma_M}$$

Factors γ_M and k_{mod} should be taken in accordance with EN 1995

3. Characteristic resistances were calculated for a characteristic density of timber $\rho_k = 350 \text{ kg/m}^3$

4. Characteristic shear resistances were calculated for connections without pre-drilled holes

5. Characteristic shear resistances for steel-timber connections were calculated for thin steel plate with thickness $t \leq 0,5d_w$

6. Characteristic shear resistances for steel-timber connections were calculated for intermediate steel plate with thickness $0,5d_w < t < d_w$

7. Characteristic shear resistances for steel-timber connections were calculated for thick steel plate with thickness $t \geq d_w$

8. Characteristic withdrawal resistances were calculated assuming an angle of 90° between screw and grain direction and for penetration length equal L_g

9. Characteristic head pull-through resistances were calculated for timber element

HDC-PCY

TIMBER CONSTRUCTION SCREW ROUND HEAD FOR PLATES



.....

Important Note: Whilst all reasonable care is taken in compiling technical data on the Company's products, all information, recommendations, or suggestions regarding the use of such products are made without guarantee, since the conditions of use are beyond the control of the Company. It is the customer's responsibility to satisfy himself that each product is fit for the purpose for which he intends to use it, that the actual conditions of use are suitable, and that in the light of our continual research and development programme the information relating to each product has not been superseded. Allfasteners, its agencies and employees, disclaim any and all liability in respect of anything or the consequences of anything done or omitted to be done in reliance upon the whole or any part of this document.

Allfasteners® 78-84 Logistics Street Keilor Park VIC 3042 Australia +61 3 9330 0555 Allfasteners Pty Ltd. ACN 113 948 100 ABN 86 766 075 300
Copyright © 2024. The contents of this document remains the property of Allfasteners® and may not be reproduced without prior written permission.