

RISTEK

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DECLARATION OF PERFORMANCE DoP

No: 12 / 2018-12-21

- 1 Product type**
Connector plate
- 2 Product identification**
LL13 Combi
- 3 Intended Use**
Punched metal plate fasteners for structural timber products
- 4 Manufacturer**
Ristek Oy, Teollisuustie 7, FIN-15540Villähde, FINLAND e-mail: sales@ristek.fi
- 5 Authorized representative**
 - OÜ Teemu-E, Peterbulimnt 71, EE 11415 Tallinn Estonia, e-mail: teemu@teemu.ee
 - UAB Metalistas LT, Šermukšnių g. 19, LT-35113Panevėzys Lietuva,
e-mail: brone.tomkeviciene@metalistas.lt
- 6 Attestation of Conformity System**
AVCP Class 2+
- 7 Technical specification -hEN**
Initial assessment of FCP
Certificate of factory production control (FPC)
Harmonized Standard
0809 VTT Expert Services Oy
0809 – CPR – 1134
EN 14545: 2008
- 8 Technical specification –ETA**
N/A
- 9 Declared performance**
See table on page 2
- 10 The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9. This declaration is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and behalf of the manufacturer by:Ristek Oy



Kimmo Köntti, Managing director

Villähde 21.12.2018

9 Declared performance

Essential characters	Performance	Harmonised technical specification
Steel	S350GD+Z275-M-A	EN 10346: 2009
Yield strength (min)	350 MPa	EN 14545: 2008
Ultimate elongation A_{80}	16 %	
Durability, corrosion protection	Hot-dip zinc coating Z275-M-A	
Thickness	1,3 mm	
Characteristic plate anchorage capacity for solid timber C24 and glued laminated timber GL30c Characteristic density C24 $\rho_k=350\text{kg/m}^3$ and GL30c $\rho_k=390\text{kg/m}^3$ Thickness ≥ 40 mm	$f_{a,0,0,k}=3,68\text{ N/mm}^2$ $f_{a,90,90,k}=2,00\text{ N/mm}^2$ $k_1=-0,003$ $k_2=-0,040$ $\alpha_0=63^\circ$	EN 14545: 2008 VTT-S-02368-17 VTT certificate nro 184/03
Characteristic plate anchorage capacity for Kerto-S-LVL Characteristic density $\rho_k=480\text{kg/m}^3$ Thickness ≥ 40 mm	$f_{a,0,0,k}=3,90\text{ N/mm}^2$ $f_{a,90,90,k}=2,07\text{ N/mm}^2$ $k_1=-0,018$ $k_2=-0,030$ $\alpha_0=45^\circ$	VTT-C-1781-21
Characteristic plate anchorage capacity for Kerto-T-LVL:ää Characteristic density $\rho_k=480\text{kg/m}^3$ Thickness ≥ 40 mm	$f_{a,0,0,k}=3,59\text{ N/mm}^2$ $f_{a,90,90,k}=1,90\text{ N/mm}^2$ $k_1=-0,018$ $k_2=-0,030$ $\alpha_0=45^\circ$	
Characteristic plate tension, compression and shear capacity	$f_{t,0,k}=264\text{ N/mm}$ $f_{c,0,k}=111\text{ N/mm}$ $f_{v,0,k}=123\text{ N/mm}$ $f_{t,90,k}=192\text{ N/mm}$ $f_{c,90,k}=85\text{ N/mm}$ $f_{v,90,k}=97\text{ N/mm}$ $\nu_0=25^\circ$ $K_V=0,53$	
Instantaneous rotational stiffness for solid timber and glued laminated timber (corresponding EN 14545:2008 slip modulus k_{ser} , with timber density $\rho_m=430\text{kg/m}^3$)	$K_{F,ser}=8,7\text{N/mm}^3$ (for segment with spikes)	
Corresponding value for Kerto-S-LVL (EN 14374)	$K_{F,ser}=9,2\text{N/mm}^3$ (for segment with spikes)	
For anchor nails with a declared length of at least 40 mm, the following characteristic lateral load-carrying capacities may be used	$R_k=1280\text{ N}$ (C40 lujuusluokka) $R_k=1250\text{ N}$ (C35) $R_k=1220\text{ N}$ (C30) $R_k=1120\text{ N}$ (C24) $R_k=1030\text{ N}$ (C18) $R_k=930\text{ N}$ (C14) $R_k=1440\text{ N}$ (Kerto-S LVL) $R_k=1320\text{ N}$ (Kerto-T LVL)	VTT-S-02368-17
Nail root ductility	Passed	
Service Class	2	EN 1995-1-1