



EN

DECLARATION OF PERFORMANCE

according to Annex III of the Regulation (EU) Nr. 305/2011 (Construction Products Regulation)

Hilti timber construction screws S-WCF, S-WXF, S-WDF
Nr. Hilti-SF-DoP-042

- 1. Unique identification code of the product-type:** Hilti timber construction screws S-WCF, S-WXF, S-WDF
- 2. Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):** Type and Lot-Number displayed on the packaging
- 3. Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:**

Generic type and use	Screws for connections in load bearing timber structures (load bearing timber construction screws)
Product size covered	Ø 8.0 mm / Ø 10.0 mm / Ø 12.0 mm
Fastener material	Hardened carbon steel, electrogalvanized, passivated
Loading	Static & quasi static

4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5): Hilti AG, Business Unit Direct Fastening, 9494 Schaan, Principality of Liechtenstein

5. Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2): n.a.

6. System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V: System 3

7. In case of the declaration of performance concerning a construction product covered by a harmonized standard: n.a.

8. In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued: On the basis of EAD 130118-01-0603 issued ETA-22/0772. The notified body Holzforschung Austria (NB 1359) performed third party tasks under system 3.

9. Declared performance:

Essential characteristic	Performance	Harmonized technical specification
Dimensions	see table 1 in the Annex	EAD 130118-01-0603
Characteristic yield moment		
Bending angle		
Characteristic withdrawal parameter		
Characteristic head pull-through parameter		
Characteristic tensile strength		
Characteristic yield strength		
Characteristic torsional strength		
Insertion moment		
Slip modulus		
Durability against corrosion		
Reaction to fire		
Min. spacing, end and edge distances	see table 2 in the Annex	

10. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:

Rafael Garcia
Head of Business Unit Direct Fastening

Hilti AG, Schaan, 01.05.2024

Pierre Hohmeier
Head of Quality Screw Fastening

Table 1: Characteristic load bearing capacities

Essential characteristic	Unit	Performance (for $\rho_k = 350 \text{ kg/m}^3$, e.g. C24)		
		S-WCF, S-WXF		S-WDF S-WCF, S-WXF
Identification code	[-]			
Dimension d	[mm]	Ø 8.0	Ø 10.0	Ø 12.0
Characteristic tensile strength $f_{\text{tens},k}$	[kN]	24.1	40.0	46.7 45.0 (S-WDF)
Characteristic yield moment $M_{y,k}$	[Nm]	20.3	36.7	48.5
Bending angle	[°]	> 45°	> 45°	> 45°
Characteristic withdrawal parameter $f_{\text{ax},k,90^\circ}$	[N/mm ²]	13.1	12.5	11.2
Characteristic yield strength $f_{y,k}$	[N/mm ²]	950	950	950
Characteristic torsional strength $f_{\text{tor},k}$	[Nm]	25.8	55.0	73.0
Insertion moment $f_{\text{tor},k} / R_{\text{tor,mean}}$	[-]	≥ 1.5	≥ 1.5	≥ 1.5
Slip modulus for mainly axially loaded screws $K_{\text{ser,ax}}$	[N/mm]	Softwood: $K_{\text{ser,ax}} = 25 \cdot d \cdot l_{\text{ef}}$ LVL Beech: $K_{\text{ser,ax}} = 53 \cdot d \cdot l_{\text{ef}}$		
Reaction to fire	[-]	Class A1		
Service class Corrosion protection	Class	II	II	II
Countersunk head (S-WCF) Head diameter d_k	[mm]	Ø 15.0	Ø 18.5	Ø 21.0
Characteristic head pull-through parameter $f_{\text{head},k}$	[N/mm ²]	12.4	12.2	10.3
Cylinder head (S-WXF) Head diameter d_k	[mm]	Ø 10.2	Ø 13.4	Ø 14.2
Characteristic head pull-through parameter $f_{\text{head},k}$	[N/mm ²]	-	-	-
Dual head (S-WDF) Head diameter d_k	[mm]	-	-	SW 17.0
Characteristic head pull-through parameter $f_{\text{head},k}$	[N/mm ²]	-	-	17.1

Table 2: Minimum spacing, end and edge distances

Screw spacing [mm]		Axially loaded		Axially and shear loaded or only shear loaded		
		Timber and wood-based products made of softwood (pre-drilled, not pre-drilled) and hardwood (predrilled)		Cross laminated timber		Timber and wood-based products made of softwood (pre-drilled, not pre-drilled) and hardwood (predrilled)
		side- and end-grain		Wide face	Narrow face	side- and end-grain
Boundary condition	$a_1 \cdot a_2$	$\geq 25 d^2$	$\geq 21 d^2$	-	-	-
Spacings II	a_1	5 d	7 d	4 d	10 d	analogous to pre-drilled or non pre-drilled nails, according to EN 1995-1-1, Table 8.2 LVL Beech analogous to non pre-drilled nails, according to EN 1995-1-1, Table 8.2
Edge distance II	$a_{1,c}$	5 d		-	-	
Spacings I	a_2	2.5 d	3 d	2.5 d	3 d	
Edge distance I	$a_{2,c}$	4 d		-	-	
Edge distance II loaded	$a_{3,t}$	-	-	6 d	12 d	
Edge distance II unloaded	$a_{3,c}$	-	-	6 d	7 d	
Edge distance I loaded	$a_{4,t}$	-	-	6 d	5 d	
Edge distance I unloaded	$a_{4,c}$	-	-	2.5 d	3 d	
Spacing between the crossing screws	a_{cross}	1.5 d				