



DECLARATION OF PERFORMANCE
according Annex III of the Regulation (EU) No 305/2011

Name of the product **E-JET X screws**

No. **DOP 20_1-21/1**

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| 1. Unique identification code of the product-type: | E-JET X screws |
| 2. Intended use: | Screws for use in timber constructions |
| 3. Manufacturer: | Verbindungselemente Engel GmbH
Weltestraße 2+4
D-88250 Weingarten |
| 5. System of AVCP: | System 3 |
| 6. European Assessment Document: | EAD 130118-01-0603 |
| European Technical Assessment: | ETA-21/0055 of 21.05.2021 |
| Technical Assessment Body: | Deutsches Institut für Bautechnik (DIBt) |
| 7. Declared performances: | |

Essential features	Measure	Performance				
		Diameter d				
	[mm]	Ø 6,0	Ø 8,0	Ø 10,0	Ø 12,0	
Basic Works Requirement 1: Mechanical resistance and stability (BWR 1)						
Characteristic yield moment $M_{y,k}$	[Nm]	10,0	20,0	30,0	42,0	
Characteristic tensile capacity $f_{tens,k}$	[kN]	12,0	21,0	27,0	36,0	
Characteristic torsional strength $f_{tor,k}$	[Nm]	10,0	24,0	39,0	58,0	
Characteristic withdrawal parameter $f_{ax,k}$ ($\alpha=90^\circ$)	[N/mm ²]	11,0		10,0		
Characteristic head pull-through parameter $f_{head,k}$ t = thickness of wood based panels	[N/mm ²]	12mm ≤ t ≤ 20mm: 8				
		t > 20mm: 9,4				
Characteristic yield strength $f_{y,k}$	[N/mm ²]	npd				
Insertion moment $f_{tor,k} / R_{tor,mean}$ ($\geq 1,5$)		complies				
Spacing, end and edge distances a		EN 1995-1-1				
Minimum wood thickness t_1	a = min. 25 · d	[mm]	30	30	40	100
	others		EN 1995-1-1			
Slip modulus for mainly axially loaded screws K_{ser}	[N/mm ²]	$780 \cdot d^{0,2} \cdot l_{ef}^{0,4}$				
Bending angle α	[°]	min. $45/d^{0,7}+20$				
Durability against corrosion, coating thickness	[µm]	≥3				
Basic Works Requirement 2: Safety in case of fire						
Reaction to fire		Class A1				
Basic Works Requirement 4: Safety and accessibility in use						
Same as BWR 1						

The performance of the product identified above is in conformity with the set of declared performances. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer.

Signed for and on behalf of the manufacturer by:

i. V. Markus Keppeler, Quality management
Weingarten, 01.06.2021