

## DECLARATION OF PERFORMANCE

No. LE\_5390210095\_WinkelverbinderTypV

**This is an English translation of the original German wording.  
In cases of doubt, the German version applies**

1. Unique identification code of the product:

**Angle Connector Type V  
Art. pre-no.: 539021 \*; 0681632101**

2. Type, batch, or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

**Batch number: see packaging**

3. Intended use(s):

<b>Product type</b>	Angle Connector Type V
<b>For use in</b>	wood structures
<b>Material</b>	D11 according to EN 10025-2:2004, hot-galvanized
<b>Load</b>	See ETA 14/0274

4. Manufacturer as required pursuant to Article 11(5)

**Adolf Würth GmbH & Co. KG  
Reinhold-Würth-Str. 12 - 17  
D-74653 Künzelsau, Germany**

5. Authorized representative whose mandate covers the tasks specified in Article 12(2):

**Not relevant**

6. System(s) of assessment and verification of constancy of performance of the construction product as set out in Annex V

**2+**

7. a) When the construction product is covered by a harmonized standard:

**Not relevant**

When 7(a) applies, the notified body or bodies:

**Not relevant**

7. b) When the construction product is covered by a European Assessment Document

When 7(b) applies:

European Technical Assessment

**ETA 14/0274**

Technical Assessment Body

ETA Danmark A/S

Notified Body

Karlsruhe Institute of Technology (KIT) No. 769

8. Declared performance:

Property	Performance
<b>Mechanical resistance and stability (BWR 1)</b>	
Rigidity	No assessed performance
Ductility under cyclic testing	No assessed performance
Load-bearing capacity	ETA 14/0274 Tables B2-B17

	Characteristic load bearing capacity F <sub>1a</sub> - Purlin, 1 x bracket/connection			Characteristic load bearing capacity F <sub>1b</sub> - Column, 1 x bracket/connection			Characteristic load bearing capacity F <sub>1a</sub> - Purlin, 2 x bracket/connection			Characteristic load bearing capacity F <sub>1b</sub> - Column, 2 x bracket/connection		
	Number of nails	F <sub>1a,k</sub> [kN]	k <sub>t</sub>	Number of nails	F <sub>1b,k</sub> [kN]	k <sub>t</sub>	Number of nails	F <sub>1a,k</sub> [kN]	k <sub>t</sub>	Number of nails	F <sub>1b,k</sub> [kN]	k <sub>t</sub>
V 95	9	13.7	1.3	3	4.6	1.3	9	27.4	1.3	3	9.2	1.3
V 135	14	21.2		6	9.1		14	42.4		6	18.3	
V-MH 137	2	10.9		1	2.9		2	21.9		1	11.5	
V 285				9	13.7					9	27.5	

	Type V 95						Type V 135						Type V-MH137					
	Characteristic load bearing capacity F <sub>2,Rk</sub> [kN] 1 x bracket/connection			k <sub>t</sub> factor F <sub>2</sub>			Characteristic load bearing capacity F <sub>2,Rk</sub> [kN] 1 x bracket/connection			k <sub>t</sub> force F <sub>2</sub>			Characteristic load bearing capacity F <sub>2,Rk</sub> [kN] 1 x bracket/connection			k <sub>t</sub> force F <sub>2</sub>		
	H [mm]						H [mm]						H [mm]					
W [m]	0.12	0.14	0.18	0.12	0.14	0.18	0.16	0.18	0.22	0.16	0.18	0.22	0.16	0.18	0.22	0.16	0.18	0.22
0.06	4.29	4.58	0.68	2.16	2.24	2.44	4.45	4.94	5.03	1.94	2.82	4.50	3.83	3.73	3.95	1.70	1.73	2.04
0.10	3.72	3.81	3.98	2.05	2.08	2.15	3.91	3.98	4.06	2.02	2.06	2.04	3.45	3.55	3.71	1.61	1.63	1.65
0.14	3.56	3.61	3.70	2.01	2.03	2.07	3.73	3.77	3.83	1.94	1.97	2.02	3.71	3.34	3.44	1.65	1.59	1.61

	Type V 95			Type V 135			Type V-MH 137		
H [mm]	Characteristic load bearing capacity F <sub>3,Rk</sub> [kN] 1 x bracket/connection		H [mm]	Characteristic load bearing capacity F <sub>3,Rk</sub> [kN] 1 x bracket/connection		H [mm]	Characteristic load bearing capacity F <sub>3,Rk</sub> [kN] 1 x bracket/connection		
	Steel	Timber		Steel	Timber		Steel	Timber	
0.12	1.15	2.06	0.16	1.24		0.16	0.65		
0.14	0.90	1.35	0.18	0.94		0.18	0.53		
0.18	0.62	0.79	0.22	0.48		0.22	0.38		

	Characteristic load bearing capacity $F_{4/5,Rk}$ [kN] 1 x bracket/connection
Type V 95	7.58
Type V 135	7.99
Type V-MH 137	8.57

The interaction equations were applied to various purlin widths and depths.

	Type V 95			Type V 135		
	Characteristic load bearing capacity $F_{4/5,Rk}$ [kN] 1 x bracket/connection					
	H [mm]			H [mm]		
W [m]	0.12	0.14	0.18	0.16	0.18	0.22
0.06	6.63	6.37	5.83	7.14	6.96	6.57
0.10	7.19	7.07	6.79	7.65	7.57	7.38
0.14	7.38	7.31	7.14	7.81	7.77	7.66

	Characteristic load bearing capacity $F_{6,Rk}$ [kN] 1 x bracket/connection	Characteristic load bearing capacity $F_{7,Rk}$ [kN] 1 x bracket/connection
Type V 95	1.72	3.44
Type V 135	2.76	5.53
Type V MH 137	2.14	4.28

Property	Performance	
<b>Fire protection (BWR 2)</b>	Euroclass A1	EN 13501-1 and EU Commission Decision 96/603/EC, as amended by EU Commission Decision 2000/605/EC
<b>Hygiene, health and environment (BWR 3)</b>	No hazardous materials	
<b>Sustainable use of natural resources (BWR 7)</b>	No assessed performance	

9. When pursuant to Articles 37 and 38 appropriate technical documentation and/or Specific Technical Documentation has been used

### ETAG 015

The performance of the above product corresponds to the declared performance. The declaration of performance is issued in compliance with EU Regulation 305/2011 under the sole responsibility of the above manufacturer.

Signed for and on behalf of the manufacturer by:



Frank Wolpert  
(Head of Product Management)  
Künzelsau, 1/20/2018



Dr.-Ing. Siegfried Beichter  
(Head of Quality, Authorized Signatory)