

CE - Leistungserklärung (Declaration of Performance)

gemäß der Bauprodukte-Verordnung (EU) Nr. 305/2011
acc. to Construction Products Regulation (EU) Nr.305/2011



LEDERER

DoP.- Nr. 2330011

- Eindeutige Kenncodes der Produkte:** L 9079 (Bi-Metall Dünnschrauben 4,5 und 6,0mm)
Identification code of the product-type:
- Serien-/Chargennummer:** Siehe Etikett
Serial-/Charge number: See tag
- Verwendungszweck:** Befestigungsschraube für Metallbauteile und -verkleidung
gem. EAD 330046 - 01-602
Intended use: Fastening screws for metal members and sheeting
in accordance with EAD 330046 - 01-602
- Hersteller / Manufacturer:** Lederer GmbH, Katzbachstr.4, 58256 Ennepetal, Germany
- Bewertungssystem der Leistungsbeständigkeit:** System 2+
Assessment of performance reliability
- Notifizierte Stelle:** KIT Stahl- und Leichtbau Karlsruhe
Notified Body Otto-Amman-Platz 1, 76131 Karlsruhe
NB- Nr. 0769-CPR-VAS-00917-1

7. Erklärte Leistungen / Explained performances:

Wesentliche charakteristische Merkmale Essential characteristic features	Leistungen Performance ETA-23/0856
Querkrafttragfähigkeit der Verbindung Shear Resistance of the connection	Ø 4,5mm: Annex 3-5 Ø 6,0mm: Annex 6-8
Zugtragfähigkeit der Verbindung Tension Resistance of the connection	Ø 4,5mm: Annex 3-5 Ø 6,0mm: Annex 6-8
Bemessungswert der Tragfähigkeit bei Kombination aus zug- und Querkraft (Interaktion) Design Resistance in case of combined Tension and Shear Forces (Interaction)	Annex 2
Überprüfung der Verformungskapazität bei Zugkräften aus Temperatureinwirkung Check of Deformation Capacity in case of constraining forces due to temperature	Keine Leistung festgelegt Non Performance Determined
Dauerhaftigkeit / Durability	3.1
Brandverhalten / Reaction of fire	class A1

8. Erklärung / Declaration:

Das Produkt entspricht der o.a. erklärten Leistung nach Punkt 7. Verantwortlich für die Erstellung der Leistungserklärung ist allein der Hersteller gem. Nr.4.

The product is in conformity with the declared performance in point 7. Liable for issuing this declaration of performance is solely the manufacturer respective No.4.

Ennepetal, 03.03.2025


i.A. Jörg Baumann – Leitung Qualitätsmanagement - Lederer GmbH

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Determination of Design Values

The design value of tension and shear resistance has to be determined as follows:

$$N_{R,d} = \frac{N_{R,k}}{\gamma_M} \qquad V_{R,d} = \frac{V_{R,k}}{\gamma_M}$$

The characteristic values $N_{R,k}$ and $V_{R,k}$ are given in the Annexes. For intermediate dimension of metal member or sheeting or substructure the characteristic value of the thinner dimension is used.

The recommended partial safety factor $\gamma_M = 1,33$ is used, provided no partial safety factor is given in national regulations or national Annexes to Eurocode 3.

For the types of connection (a, b, c, d) listed in the Annexes it is not necessary to take into account the effect of constrains due to temperature. Otherwise this has to be considered unless constrains due to temperature do not occur or are not significant (e.g. sufficient flexibility of the substructure).

For asymmetric metal substructures with thickness $t_1 < 5$ mm (for instance Z- or C-shaped profiles), the characteristic value $N_{R,k}$ given in the Annexes has to be reduced to 70%.

In case of combined tension and shear forces the following interaction equation is taken into account:

$$\frac{N_{S,d}}{N_{R,d}} + \frac{V_{S,d}}{V_{R,d}} \leq 1,0$$

$N_{S,d}$ and $V_{S,d}$ indicates the design values of applied tension and shear forces.

Installation conditions

The installation is carried out according to the manufacturer's instructions.

The fastening screws are screwed-in with electric screw driver. The use of impact wrenches is not allowed.

The fastening screws are fixed rectangular to the surface of the metal member or sheeting.

The metal member or sheeting and substructure are in contact to each other. The use of compression resistant thermal insulation strips up to a thickness of 3 mm is allowed.

The thickness (or minimum thickness) of metal substructure needs to be covered by the clamping length of the fastening screw. Otherwise only the screwed-in clamping length of the fastening screw may be considered.

Aluminum members and sheeting

Characteristic values of tension resistance of the connection can be determined as follows:

$$N_{R,k} = \min \left\{ \begin{array}{l} N_{R,I,k} \\ N_{R,II,k} \end{array} \right.$$

The characteristic value $N_{R,I,k}$ has to be determined according to EN 1999-1-4:2007 + AC:2009, equation (8.13).

The characteristic value $N_{R,II,k}$ is given in the corresponding Annex of the fastening screw.

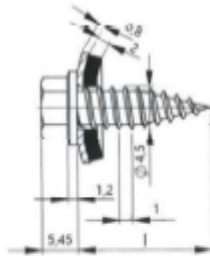
Basics for the design	Annex 2
Dünnschraube L-9079	

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Materials

- Fastener: stainless steel (A2) – EN ISO 3506
 Washer: stainless steel (A2) – EN ISO 3506
 Component I: S280GD, S320GD or S350GD - EN 10346
 Component II: S235 - EN 10025-1
 S280GD to S350GD - EN 10346

Drilling capacity $\Sigma t \leq 2.50$ mm

t_i [mm]	t_{ij} [mm]									
	0.40	0.50	0.55	0.83	0.75	0.88	1.00	1.25	1.50	
$V_{R,k}$ [kN]	0.40	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
	0.50	0.95	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26
	0.55	0.95	1.26	1.39	1.39	1.39	1.39	1.39	1.39	1.39
	0.83	0.95	1.26	1.39	1.61	1.61	1.61	1.61	1.61	1.61
	0.75	0.95	1.26	1.39	1.61	1.93	1.93	1.93	1.93	1.93
	0.88	0.95	1.26	1.39	1.61	1.93	1.93	1.93	1.93	1.93
	1.00	0.95	1.26	1.39	1.61	1.93	1.93	2.90	2.90	2.90
	1.25	0.95	1.26	1.39	1.61	1.93	1.93	2.90	2.90	2.90
$N_{R,k}$ [kN]	0.40	0.52	0.70	0.83	1.04	1.35	1.47	1.47	1.47	1.47
	0.50	0.52	0.70	0.83	1.04	1.35	1.58	1.58	1.58	1.58
	0.55	0.52	0.70	0.83	1.04	1.35	1.60	1.80	1.80	1.80
	0.83	0.52	0.70	0.83	1.04	1.35	1.60	1.84	2.16	2.16
	0.75	0.52	0.70	0.83	1.04	1.35	1.60	1.84	2.52	2.70
	0.88	0.52	0.70	0.83	1.04	1.35	1.60	1.84	2.52	2.70
	1.00	0.52	0.70	0.83	1.04	1.35	1.60	1.84	2.52	2.70
1.25	0.52	0.70	0.83	1.04	1.35	1.60	1.84	2.52	2.70	
$N_{R,II,k}$ [kN]	0.52	0.70	0.83	1.04	1.35	1.60	1.84	2.52	3.20	

self tapping screw

Dünnschraube L-9079 Ø 4.5xL

Annex 3

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		Component I: Aluminum alloy with $R_m \geq 165 \text{ N/mm}^2$ Component II: S280GD to S350GD, S235									
		t_2 [mm]									
$V_{R,k}$ [kN]	t_1 [mm]	0.40	0.50	0.55	0.63	0.75	0.88	1.00	1.25	1.50	
	0.40	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	
	0.50	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	
	0.60	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	
	0.70	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	
	0.80	0.95	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	
	1.00	0.95	1.26	1.39	1.58	1.58	1.58	1.58	1.58	1.58	
	1.20	0.95	1.26	1.39	1.61	1.66	1.66	1.66	1.66	1.66	
	1.50	0.95	1.26	1.39	1.61	1.79	1.79	1.79	1.79	1.79	
	2.00	0.95	1.26	1.39	1.61	1.79	1.79	1.79	1.79	1.79	
$N_{R,II,k}$ [kN]		0.52	0.70	0.83	1.04	1.35	1.60	1.84	2.52	3.20	

		Component I: Aluminum alloy with $R_m \geq 215 \text{ N/mm}^2$ Component II: S280GD to S350GD, S235									
		t_2 [mm]									
$V_{R,k}$ [kN]	t_1 [mm]	0.40	0.50	0.55	0.63	0.75	0.88	1.00	1.25	1.50	
	0.40	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	
	0.50	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	
	0.60	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	
	0.70	0.95	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	
	0.80	0.95	1.26	1.36	1.36	1.36	1.36	1.36	1.36	1.36	
	1.00	0.95	1.26	1.39	1.61	1.93	1.93	2.06	2.06	2.06	
	1.20	0.95	1.26	1.39	1.61	1.93	1.93	2.17	2.17	2.17	
	1.50	0.95	1.26	1.39	1.61	1.93	1.93	2.34	2.34	2.34	
	2.00	0.95	1.26	1.39	1.61	1.93	1.93	2.34	2.34	2.34	
$N_{R,II,k}$ [kN]		0.52	0.70	0.83	1.04	1.35	1.60	1.84	2.52	3.20	

self tapping screw	Annex 5
Dünublechschraube L-9079 Ø 4.5xL	

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t_1 [mm]		t_2 [mm]								
		0.40	0.50	0.55	0.63	0.75	0.88	1.00	1.25	1.50
$V_{R,k}$ [kN]	0.40	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
	0.50	1.03	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
	0.55	1.03	1.17	1.57	1.57	1.57	1.57	1.57	1.57	1.57
	0.63	1.03	1.17	1.57	2.22	2.22	2.22	2.22	2.22	2.22
	0.75	1.03	1.17	1.57	2.22	3.18	3.18	3.18	3.18	3.18
	0.88	1.03	1.17	1.57	2.22	3.18	3.18	3.18	3.18	3.18
	1.00	1.03	1.17	1.57	2.22	3.18	3.18	3.18	3.18	3.18
	1.25	1.03	1.17	1.57	2.22	3.18	3.18	3.18	3.18	3.18
$N_{R,k}$ [kN]	0.40	0.68	0.92	1.06	1.28	1.46	1.46	1.46	1.46	1.46
	0.50	0.68	0.92	1.06	1.28	1.61	1.66	1.66	1.66	1.66
	0.55	0.68	0.92	1.06	1.28	1.61	1.91	1.96	1.96	1.96
	0.63	0.68	0.92	1.06	1.28	1.61	1.91	2.19	2.43	2.43
	0.75	0.68	0.92	1.06	1.28	1.61	1.91	2.19	3.08	3.15
	0.88	0.68	0.92	1.06	1.28	1.61	1.91	2.19	3.08	3.94
	1.00	0.68	0.92	1.06	1.28	1.61	1.91	2.19	3.08	3.96
	1.25	0.68	0.92	1.06	1.28	1.61	1.91	2.19	3.08	3.96
$N_{R,lik}$ [kN]		0.68	0.92	1.06	1.28	1.61	1.91	2.19	3.08	3.96

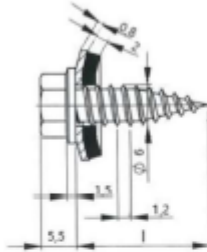
self tapping screw	Annex 6
Dünnschraube L-9079 Ø 6.0xL	

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Materials

Fastener: stainless steel (A2) – EN ISO 3506

Washer: stainless steel (A2) – EN ISO 3506

Component I: aluminum alloy – EN 573

Component II: S235 - EN 10025-1
S280GD to S350GD - EN 10346

Drilling capacity $\Sigma t \leq 2.50$ mm

Component I: Aluminum alloy with $R_m \geq 165$ N/mm ² Component II: S280GD to S350GD, S235										
t_i [mm]	t_{ii} [mm]									
	0.40	0.50	0.55	0.63	0.75	0.88	1.00	1.25	1.50	
$V_{R,k}$ [kN]	0.40	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
	0.50	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
	0.60	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
	0.70	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
	0.80	1.03	1.17	1.22	1.22	1.22	1.22	1.22	1.22	1.22
	1.00	1.03	1.17	1.57	1.58	1.58	1.58	1.58	1.58	1.58
	1.20	1.03	1.17	1.57	1.63	1.63	1.63	1.63	1.63	1.63
	1.50	1.03	1.17	1.57	1.70	1.70	1.70	1.70	1.70	1.70
	2.00	1.03	1.17	1.57	1.70	1.70	1.70	1.70	1.70	1.70
$N_{R,iLk}$ [kN]	0.68	0.92	1.06	1.28	1.61	1.91	2.19	3.08	3.98	

Component I: Aluminum alloy with $R_m \geq 215$ N/mm ² Component II: S280GD to S350GD, S235										
t_i [mm]	t_{ii} [mm]									
	0.40	0.50	0.55	0.63	0.75	0.88	1.00	1.25	1.50	
$V_{R,k}$ [kN]	0.40	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
	0.50	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
	0.60	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
	0.70	1.03	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
	0.80	1.03	1.17	1.57	1.59	1.59	1.59	1.59	1.59	1.59
	1.00	1.03	1.17	1.57	2.05	2.05	2.05	2.05	2.05	2.05
	1.20	1.03	1.17	1.57	2.11	2.11	2.11	2.11	2.11	2.11
	1.50	1.03	1.17	1.57	2.21	2.21	2.21	2.21	2.21	2.21
	2.00	1.03	1.17	1.57	2.21	2.21	2.21	2.21	2.21	2.21
$N_{R,iLk}$ [kN]	0.68	0.92	1.06	1.28	1.61	1.91	2.19	3.08	3.98	

self tapping screw	Annex 8
Dünnschraube L-9079 \varnothing 6.0xL	