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Authorised and notified according to Article 29 of the Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011

MEMBER OF EOTA

European Technical Assessment ETA-22/0641 of 2022/10/17

I General Part

Technical Assessment Body issuing the ETA and designated according to Article 66 of the Regulation (EU) No 305/2011: ETA-Danmark A/S

Trade name of the construction product:	Blind rivets type ECORIV
Product family to which the above construction product belongs:	Blind rivets for connections of metal sheets
Manufacturer:	EJOT SE & Co. KG Market Unit Construction In der Stockwiese 35 DE-57334 Bad Laasphe Telephone: +49 275 29 080 www.ejot.de
Manufacturing plant:	EJOT Production Plants
This European Technical Assessment contains:	15 pages including 10 annexes which form an integral part of the document
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, based on:	European Assessment Document (EAD) No. 331064-00-0602: Blind rivets for connections of metal sheets and plates
This version replaces:	-

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II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of product and intended use.

The blind rivets type ECORIV are made of stainless steel, carbon steel and/or aluminium. The blind rivets and the corresponding connections are subject to tension and/or shear forces. Examples of the blind rivets are shown in Figure 1.

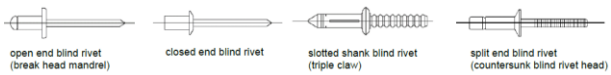


Figure 1: Examples of blind rivets

The blind rivets, described in this ETA are summarized in Table 1.

Rivet	Material	
	Body	**Mandrel**
Blind rivet ECORIV:		
A1/E 4,8xL	Aluminium EN AW 5052 EN 485-2	1.4301 (A2)
A1/E-5,0xL K14/K16	Aluminium EN AW 5052 EN 485-2	1.4301 (A2)
A1/V-5,0xL K14/K16	Aluminium EN AW 5754 EN 485-2	Carbon steel
Multi-range blind rivet ECORIV		
A1/E 4,8xL	Aluminium EN AW 5052 EN 485-2	1.4301 (A2)
Closed-end blind rivet ECORIV		
A1/V 4,8xL	Aluminium EN AW 5019 EN 485-2	1.4301 (A2)
Al/E 4,8xL	Aluminium EN AW 5019 EN 485-2	Carbon steel
E/E 4,8xL	Aluminium EN AW 5754 EN 485-2	1.4301 (A2)
Folding blind rivet ECORIV		
Alu 5,2xL	Aluminium EN AW 5754 EN 485-2	Aluminium EN AW 5754 EN 485-2

Table 1: Blind rivets, dimensions and material

See also annex 3-8 for more information about the blind rivets and the pre-drill diameter.

2 Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

Blind rivets type ECORIV are intended to be used for joining metal members. They are intended to be used for fastening metal sheeting to metal substructure, joining sheet metals or other thin-gauge metal members primarily applied in lightweight constructions.

Blind rivets are intended to be used in connections under static or quasi-static actions whereby the blind rivet is subjected to tension or shear forces.

More information in table, section 3: “Performance of the product and references to the methods used for its assessment”.

The Assessment in accordance with 331064-00-0602 provides the property and resistance values of the blind rivets required for calculation set out in EN 1993-1-8 and EN 1993-1-3 (joints of steel members) or EN 1999-1-1 and EN 1999-1-4 (joints of aluminium members).

Since these calculation approaches are limited to narrow boundary conditions, assessment methods are also made available which provide load-bearing capacity values for applications outside these limits. In any case, the determination of characteristic values is based on tests.

The provisions made in this European Technical Assessment are based on an assumed intended working life of the blind rivets of 25 years, provided the manufacturers conditions laid down in the manufacturers data sheet for the packaging, transport, storage, installation, use, maintenance and repair are met.

The indications given as to the working life of the construction product cannot be interpreted as a guarantee neither given by the product manufacturer or his representative nor by the Technical Assessment Body issuing an ETA based on the EAD No. 331064-00-0602 but are regarded only as means for expressing the expected economically reasonable working life of the product.

3 Performance of the product and references to the methods used for its assessment

Characteristic	Assessment of characteristic
3.1 Mechanical resistance and stability (BWR1)	
Nominal tensile load of blind rivet $F_{t,nom}$ [kN]	No performance assessed
Nominal shear load of blind rivet $F_{v,nom}$ [kN]	No performance assessed
Tension resistance of blind rivet $F_{t,Rk}$ [kN]	No performance assessed
Shear resistance of blind rivet $F_{v,Rk}$ [kN]	No performance assessed
Mandrel head retention capability $F_{hr,k}$ [kN]	No performance assessed
Pull-through resistance (blind rivet head) $F_{p.Rk}$ [kN]	No performance assessed
Pull-out resistance (blind rivet head) $F_{o,Rk}$ [kN]	No performance assessed
Tension resistance in certain joint $F_{j,t,Rk} = N_{Rk}$ [kN]	See annex 3-10
Shear resistance in certain joint $F_{j,v,Rk} = V_{R,k}$ [kN]	See annex 3-10
3.2 Safety in case of fire (BWR2)	
Reaction to fire	The product is classified as **Euroclass A1** in accordance with EN 13501-1 and EC Decision 96/603/EC.
3.3 Aspects of durability	
Corrosion protection	No performance assessed

See additional information in section 3.8 – 3.9.

3.8 Methods of verification

The characteristic values of the blind rivets are based on the EAD 331064-00-0602.

3.9 General aspects related to the fitness for use of the product.

The European Technical Assessment is issued for the product based on agreed data/information, deposited with ETA-Danmark, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to ETA-Danmark before the changes are introduced. ETA-Danmark will decide if such changes affect the ETA and consequently the validity of the CE marking based on the ETA and if so whether further assessment or alterations to the ETA, shall be necessary.

The blind rivets type Ecodriv are manufactured in accordance with the provisions of this European Technical Assessment using the manufacturing processes as identified in the inspection of the plant by the notified inspection body and laid down in the technical documentation.

4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base.

4.1 AVCP system

According to the Commission Decision 98/241/EC, as amended by the Commission Decision 2001/596/EC, the system(s) of assessment and verification of constancy of performance is system 2+ (see Annex V to Regulation (EU) No 305/2011).

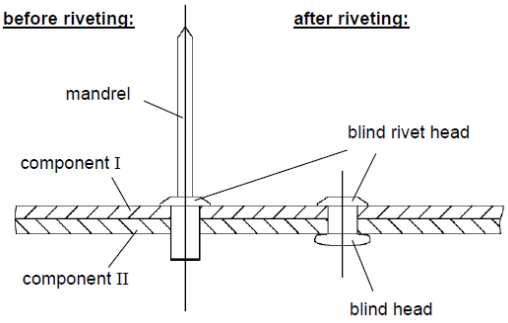
5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD.

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at ETA-Danmark prior to CE marking

Issued in Copenhagen on 2022-10-17 by

Thomas Bruun
Managing Director, ETA-Danmark

Examples of execution of a connection (from EAD 331064-00-0602)



Terms for materials

Sleeve	Material of the sleeve of the rivet
Mandrel	Material of the mandrel of the rivet
Component I	Material of the metal member or sheeting which is fastened to the substructure (accessible for installation).
Component II	Material of the substructure where the blind head is formed.

Terms for dimensions

t_I	Thickness of component I
t_{II}	Thickness of component II
$\Sigma(t_i)$	Sum of the thicknesses of all components

Terms for performances

$V_{R,k}$	Characteristic value of shear resistance of the connection $V_{Rk} = F_{v,t,Rk}$ according to EAD 331064-00-0602
$N_{R,k}$	Characteristic value of tension resistance of the connection $N_{Rk} = F_{j,t,Rk}$ according to EAD 331064-00-0602

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 is $\gamma_M = 1{,}33$, if no partial safety factor is given in national regulations or national Annexes to Eurocode 3.

For asymmetric metal substructures with thickness $t_{II} < 5$ 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

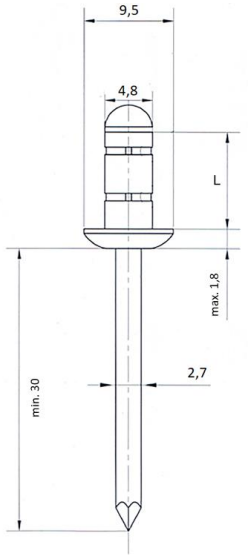
The installation is carried out according to the manufacturer's instructions.
The rivets may only be used in connections where no or only negligibly small temperature-related constraint stresses occur.
The rivets may only be installed with machinery recommended by the manufacturer.
The rivets are fixed rectangular to the surface of the metal member or sheeting.
The thickness of the clamped components has to correspond to the clamping length of the rivet.

Minimum Sheet Thickness

The following minimum core thicknesses are used for the evaluation.
The minimum core thicknesses for steel sheets are obtained from the nominal thicknesses by deducting the limited tolerances according to DIN EN 10143:2006 Table 2 for a nominal width ≥ 1500 mm. Additional the zinc coating is taken into account by deducting 0,04 mm.
The table below shows the resulting minimum sheet thicknesses for steel sheeting for nominal thicknesses from 0,50 mm to 2,00 mm. The assumptions regarding the tolerances according table shall be verified based on the tolerances used for the actual sheeting on site.

Nominal thickness [mm]	Minimum thickness [mm]
0,40	0,31
0,50	0,41
0,63	0,53
0,75	0,65
1,00	0,89
1,25	1,12
1,50	1,37
2,00	1,85

Minimum core thickness for steel sheeting



Materials:

sleeve: Aluminium EN AW 5052 - EN 485-2:2016

mandrel: Stainless steel A2 – EN 3506-1
carbon steel

Component I: S280GD to S550GD – EN 10346

Component II: S280GD to S550GD – EN 10346
S235 to S355 – EN 10025-1

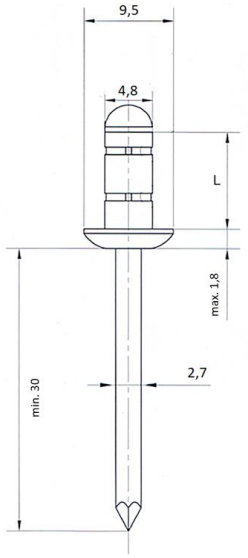
Pre-drill-diameter component I: Ø 4.9 mm
Pre-drill-diameter component II: Ø 4.9 mm

			nominal thickness of component II t_{II} [mm]							
			0.50	0.63	0.75	0.88	1.00	1.25	1.50	≥ 2.00
nominal thickness of component I t_I [mm]	$V_{R,k}$ [kN]	0.50	-	-	-	-	1.03	1.03	1.03	1.03
		0.63	-	-	-	1.03	1.03	1.03	1.03	1.03
		0.75	-	-	1.03	1.03	1.03	1.03	1.03	1.03
		0.88	-	1.03	1.03	1.03	1.03	1.03	1.03	1.03
		1.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
		1.25	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
		1.50	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
		≥ 2.00	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
	$N_{R,k}$ [kN]	0.50	-	-	-	-	1.07	1.07	1.07	1.07
		0.63	-	-	-	0.91	1.07	1.07	1.07	1.07
		0.75	-	-	0.73	0.91	1.07	1.07	1.07	1.07
		0.88	-	0.57	0.73	0.91	1.07	1.07	1.07	1.07
		1.00	0.40	0.57	0.73	0.91	1.07	1.07	1.07	1.07
		1.25	0.40	0.57	0.73	0.91	1.07	1.07	1.07	1.07
		1.50	0.40	0.57	0.73	0.91	1.07	1.07	1.07	1.07
		≥ 2.00	0.40	0.57	0.73	0.91	1.07	1.07	1.07	1.07

Blind rivet

Multi-range blind rivet ECORIV Al/E 4.8xL
Multi-range blind rivet ECORIV Al/V 4.8xL

Annex 3



Materials:

sleeve: Aluminium EN AW 5052 - EN 485-2:2016

mandrel: Stainless steel A2 – EN 3506-1
carbon steel

Component I: Aluminium EN AW-3103 with Rm ≥ 130 N/mm²

Component II: S280GD to S550GD – EN 10346
S235 to S355 – EN 10025-1

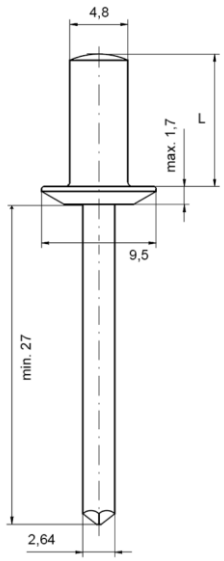
Pre-drill-diameter component I: Ø 5.1 mm
Pre-drill-diameter component II: Ø 4.9 mm

			nominal thickness of component II t_{II} [mm]								
			0.50	0.55	0.63	0.75	0.88	1.00	1.25	1.50	≥ 2.00
nominal thickness of component I t_I [mm]	$V_{R,k}$ [kN]	0.55	-	-	-	-	-	-	-	-	-
		0.60	-	-	-	-	-	-	-	-	-
		0.70	-	-	-	-	-	-	-	-	-
		0.80	-	-	-	-	-	-	-	-	-
		1.00	-	-	-	-	-	-	-	-	-
		1.20	-	-	-	-	-	-	-	-	-
		1.50	-	-	-	-	-	-	-	-	-
		≥ 2.00	1.05	1.08	1.14	1.14	1.14	1.14	1.14	1.14	1.14
	$N_{R,k}$ [kN]	0.50	-	-	-	-	-	-	-	-	-
		0.60	-	-	-	-	-	-	-	-	-
		0.70	-	-	-	-	-	-	-	-	-
		0.80	-	-	-	-	-	-	-	-	-
		1.00	-	-	-	-	-	-	-	-	-
		1.20	-	-	-	-	-	-	-	-	-
		1.50	-	-	-	-	-	-	-	-	-
		≥ 2.00	0.40	0.46	0.57	0.73	0.91	1.07	1.07	1.07	1.07

Blind rivet

Multi-range blind rivet ECORIV Al/E 4.8xL
Multi-range blind rivet ECORIV Al/V 4.8xL

Annex 4



Materials:

sleeve: Aluminium EN AW 5019 - EN 485-2:2016
Stainless steel A2 – EN 3506-1

mandrel: Stainless steel A2 – EN 3506-1
carbon steel

Component I: S280GD to S550GD – EN 10346

Component II: S280GD to S550GD – EN 10346
S235 to S355 – EN 10025-1

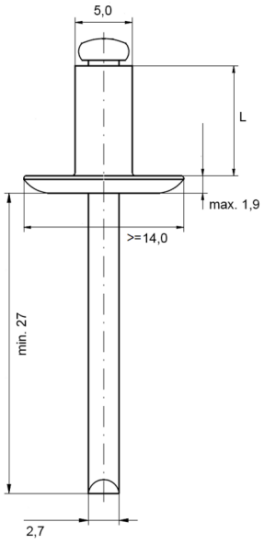
Pre-drill-diameter component I: Ø 4.9 mm
Pre-drill-diameter component II: Ø 4.9 mm

			nominal thickness of component II t_{II} [mm]							
			0.50	0.63	0.75	0.88	1.00	1.25	1.50	≥ 2.00
nominal thickness of component I t_I [mm]	$V_{R,k}$ [kN]	0.50	1.59	1.59	1.59	1.59	1.59	1.59	1.59	1.59
		0.63	1.59	1.70	1.70	1.70	1.70	1.70	1.70	1.70
		0.75	1.59	1.70	1.81	1.81	1.81	1.81	1.81	1.81
		0.88	1.59	1.70	1.81	1.81	1.81	1.81	1.81	1.81
		1.00	1.59	1.70	1.81	1.81	1.81	1.81	1.81	1.81
		1.25	1.59	1.70	1.81	1.81	1.81	1.81	1.81	1.81
		1.50	1.59	1.70	1.81	1.81	1.81	1.81	1.81	1.81
		≥ 2.00	1.59	1.70	1.81	1.81	1.81	1.81	1.81	1.81
	$N_{R,k}$ [kN]	0.50	0.54	0.71	0.87	1.09	1.29	1.40	1.40	1.40
		0.63	0.54	0.71	0.87	1.09	1.29	1.42	1.42	1.42
		0.75	0.54	0.71	0.87	1.09	1.29	1.44	1.44	1.44
		0.88	0.54	0.71	0.87	1.09	1.29	1.52	1.60	1.60
		1.00	0.54	0.71	0.87	1.09	1.29	1.52	1.74	1.74
		1.25	0.54	0.71	0.87	1.09	1.29	1.52	1.74	1.74
		1.50	0.54	0.71	0.87	1.09	1.29	1.52	1.74	1.74
		≥ 2.00	0.54	0.71	0.87	1.09	1.29	1.52	1.74	1.74

Blind rivet

Closed-end rivet ECORIV Al/E 4.8xL
Closed-end rivet ECORIV Al/V 4.8xL
Closed-end rivet ECORIV E/E 4.8xL

Annex 5



Materials:

sleeve: Aluminium EN AW 5754 - EN 485-2:2016

mandrel: Stainless steel A2 – EN 3506-1
carbon steel

Component I: S280GD to S550GD – EN 10346

Component II: S280GD to S550GD – EN 10346
S235 to S355 – EN 10025-1

Pre-drill-diameter component I: Ø 5.1 mm
Pre-drill-diameter component II: Ø 5.1 mm

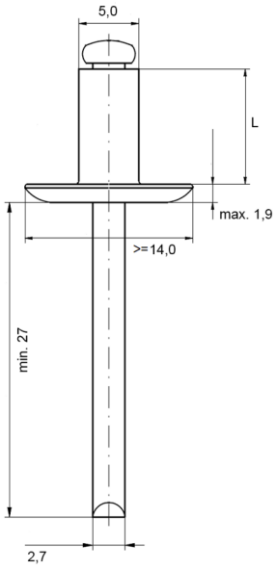
			nominal thickness of component II t_{II} [mm]							
			0.50	0.63	0.75	0.88	1.00	1.25	1.50	≥ 2.00
nominal thickness of component I t_I [mm]	$V_{R,k}$ [kN]	0.50	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
		0.63	1.15	1.26	1.26	1.26	1.26	1.26	1.26	1.26
		0.75	1.15	1.26	1.35	1.35	1.35	1.35	1.35	1.35
		0.88	1.15	1.26	1.35	1.47	1.47	1.47	1.47	1.47
		1.00	1.15	1.26	1.35	1.47	1.58	1.58	1.58	1.58
		1.25	1.15	1.26	1.35	1.47	1.58	1.58	1.58	1.58
		1.50	1.15	1.26	1.35	1.47	1.58	1.58	1.58	1.58
		≥ 2.00	1.15	1.26	1.35	1.47	1.58	1.58	1.58	1.58
	$N_{R,k}$ [kN]	0.50	0.30	0.41	0.51	0.71	0.89	1.10	1.31	1.31
		0.63	0.30	0.41	0.51	0.71	0.89	1.10	1.31	1.31
		0.75	0.30	0.41	0.51	0.71	0.89	1.10	1.31	1.31
		0.88	0.30	0.41	0.51	0.71	0.89	1.10	1.31	1.31
		1.00	0.30	0.41	0.51	0.71	0.89	1.10	1.31	1.31
		1.25	0.30	0.41	0.51	0.71	0.89	1.10	1.31	1.31
		1.50	0.30	0.41	0.51	0.71	0.89	1.10	1.31	1.31
		≥ 2.00	0.30	0.41	0.51	0.71	0.89	1.10	1.31	1.31

The values were determined with an edge distance of component II of 15,0 mm.

Blind rivet

Blind rivet ECORIV Al/E 5.0xL K14/K16
Blind rivet ECORIV Al/V 5.0xL K14/K16

Annex 6



Materials:

sleeve:	Aluminium EN AW 5754 - EN 485-2:2016
mandrel:	Stainless steel A2 – EN 3506-1 carbon steel
Component I:	Aluminium EN AW-3103 with Rm ≥ 130 N/mm²
Component II:	S280GD to S550GD – EN 10346 S235 to S355 – EN 10025-1

Pre-drill-diameter component I: Ø 5.1 mm
Pre-drill-diameter component II: Ø 5.1 mm

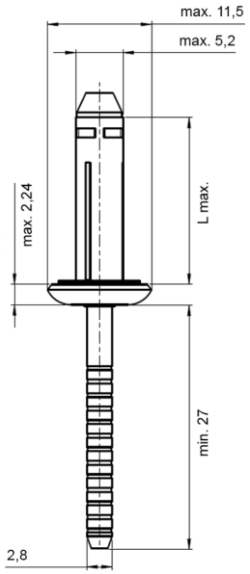
nominal thickness of component I t_I [mm]		nominal thickness of component II t_{II} [mm]								
		0.50	0.55	0.63	0.75	0.88	1.00	1.25	1.50	≥ 2.00
$V_{R,k}$ [kN]	0.55	-		-	-	-	-	-	-	-
	0.60	-		-	-	-	-	-	-	-
	0.70	-		-	-	-	-	-	-	-
	0.80	-		-	-	-	-	-	-	-
	1.00	-		-	-	-	-	-	-	-
	1.20	-		-	-	-	-	-	-	-
	1.50	-		-	-	-	-	-	-	-
	≥ 2.00	0.99	1.10	1.28	1.28	1.28	1.28	1.28	1.28	1.28
$N_{R,k}$ [kN]	0.50	-		-	-	-	-	-	-	-
	0.60	-		-	-	-	-	-	-	-
	0.70	-		-	-	-	-	-	-	-
	0.80	-		-	-	-	-	-	-	-
	1.00	-		-	-	-	-	-	-	-
	1.20	-		-	-	-	-	-	-	-
	1.50	-		-	-	-	-	-	-	-
	≥ 2.00	0.30	0.34	0.41	0.51	0.71	0.89	1.10	1.31	1.31

The values were determined with an edge distance of component II of 15,0 mm.

Blind rivet

Blind rivet ECORIV Al/E 5.0xL K14/K16
Blind rivet ECORIV Al/V 5.0xL K14/K16

Annex 7



Materials:

sleeve: Aluminium EN AW 5754 – EN 485-2:2016

mandrel: Aluminium EN AW-7010 – EN 485-2:2016

Component I: S280GD to S550GD – EN 10346

Component II: S280GD to S550GD – EN 10346
S235 to S355 – EN 10025-1

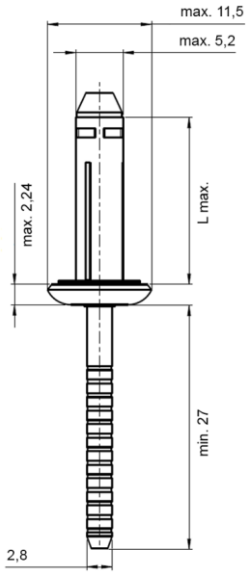
Pre-drill-diameter component I: Ø 5.3 mm
Pre-drill-diameter component II: Ø 5.3 mm

			nominal thickness of component II t_{II} [mm]							
			0.50	0.63	0.75	0.88	1.00	1.25	1.50	≥ 2.00
nominal thickness of component I t_I [mm]	$V_{R,k}$ [kN]	0.50	-	-	-	1.24	1.24	1.24	1.24	1.24
		0.63	-	-	1.60	1.60	1.60	1.60	1.60	1.60
		0.75	-	1.60	1.93	1.93	1.93	1.93	1.93	1.93
		0.88	1.24	1.60	1.93	2.13	2.13	2.13	2.13	2.13
		1.00	1.24	1.60	1.93	2.13	2.31	2.31	2.31	2.31
		1.25	1.24	1.60	1.93	2.13	2.31	2.31	2.31	2.31
		1.50	1.24	1.60	1.93	2.13	2.31	2.31	2.31	2.31
		≥ 2.00	1.24	1.60	1.93	2.13	2.31	2.31	2.31	2.31
	$N_{R,k}$ [kN]	0.50	-	-	-	0.97	0.99	0.99	0.99	0.99
		0.63	-	-	0.95	0.97	0.99	0.99	0.99	0.99
		0.75	-	0.84	0.95	0.97	0.99	0.99	0.99	0.99
		0.88	0.71	0.84	0.95	0.97	0.99	0.99	0.99	0.99
		1.00	0.71	0.84	0.95	0.97	0.99	0.99	0.99	0.99
		1.25	0.71	0.84	0.95	0.97	0.99	0.99	0.99	0.99
		1.50	0.71	0.84	0.95	0.97	0.99	0.99	0.99	0.99
		≥ 2.00	0.71	0.84	0.95	0.97	0.99	0.99	0.99	0.99

Blind rivet

Folding blind rivet ECORIV Alu 5.2xL

Annex 8



Materials:

sleeve: Aluminium EN AW 5754 – EN 485-2:2016

mandrel: Aluminium EN AW-7010 – EN 485-2:2016

Component I: Aluminum alloy – EN 573 with $R_m \geq 165$ N/mm²

Component II: Aluminum alloy – EN 573 with $R_m \geq 165$ N/mm²

Pre-drill-diameter component I: Ø 5.3 mm
Pre-drill-diameter component II: Ø 5.3 mm

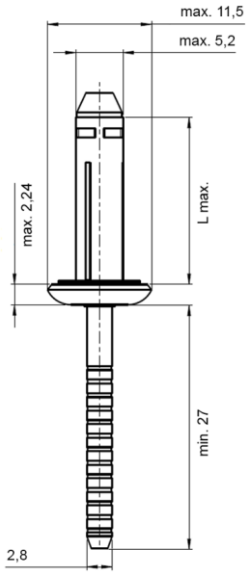
Aluminum alloy with $R_m \geq 165$ N/mm²			nominal thickness of component II t_{II} [mm]							
			0.50	0.60	0.70	0.80	1.00	1.20	1.50	≥ 2.00
nominal thickness of component I t_I [mm]	$V_{R,k}$ [kN]	0.50	-	-	-	0.66	0.66	0.66	0.66	0.66
		0.60	-	-	0.66	0.78	0.78	0.78	0.78	0.78
		0.70	-	0.66	0.66	0.89	0.89	0.89	0.89	0.89
		0.80	0.66	0.78	0.89	1.01	1.01	1.01	1.01	1.01
		1.00	0.66	0.78	0.89	1.01	1.20	1.20	1.20	1.20
		1.20	0.66	0.78	0.89	1.01	1.20	1.20	1.20	1.20
		1.50	0.66	0.78	0.89	1.01	1.20	1.20	1.20	1.20
		≥ 2.00	0.66	0.78	0.89	1.01	1.20	1.20	1.20	1.20
	$N_{R,II,k}$ [kN]		0.45	0.46	0.47	0.48	0.56	0.61	0.68	0.69

Aluminum alloy with $R_m \geq 215$ N/mm²			nominal thickness of component II t_{II} [mm]							
			0.50	0.60	0.70	0.80	1.00	1.20	1.50	≥ 2.00
nominal thickness of component I t_I [mm]	$V_{R,k}$ [kN]	0.50	-	-	-	0.86	0.86	0.86	0.86	0.86
		0.60	-	-	0.86	1.01	1.01	1.01	1.01	1.01
		0.70	-	0.86	0.86	1.17	1.17	1.17	1.17	1.17
		0.80	0.86	1.01	1.17	1.32	1.32	1.32	1.32	1.32
		1.00	0.86	1.01	1.17	1.32	1.57	1.57	1.57	1.57
		1.20	0.86	1.01	1.17	1.32	1.57	1.57	1.57	1.57
		1.50	0.86	1.01	1.17	1.32	1.57	1.57	1.57	1.57
		≥ 2.00	0.86	1.01	1.17	1.32	1.57	1.57	1.57	1.57
	$N_{R,II,k}$ [kN]		0.46	0.51	0.57	0.62	0.73	0.79	0,89	0.90

Blind rivet

Folding blind rivet ECORIV Alu 5.2xL

Annex 9



Materials:

sleeve: Aluminium EN AW 5754 – EN 485-2:2016

mandrel: Aluminium EN AW-7010 – EN 485-2:2016

Component I: Aluminum alloy – EN 573 with $R_m \geq 165$ N/mm²

Component II: S280GD to S550GD – EN 10346
S235 to S355 – EN 10025-1

Pre-drill-diameter component I: Ø 5.3 mm
Pre-drill-diameter component II: Ø 5.3 mm

Aluminum alloy with $R_m \geq 165$ N/mm²			nominal thickness of component II t_{II} [mm]							
			0,50	0,63	0,75	0,88	1,00	1,25	1,50	≥ 2,00
nominal thickness of component I t_I [mm]	$V_{R,k}$ [kN]	0.50	-	-	-	0.66	0.66	0.66	0.66	0.66
		0.60	-	-	0.66	0.78	0.78	0.78	0.78	0.78
		0.70	-	0.66	0.66	0.89	0.89	0.89	0.89	0.89
		0.80	0.66	0.78	0.89	1.01	1.01	1.01	1.01	1.01
		1.00	0.66	0.78	0.89	1.01	1.20	1.20	1.20	1.20
		1.20	0.66	0.78	0.89	1.01	1.20	1.20	1.20	1.20
		1.50	0.66	0.78	0.89	1.01	1.20	1.20	1.20	1.20
		≥ 2.00	0.66	0.78	0.89	1.01	1.20	1.20	1.20	1.20
	$N_{R,II,k}$ [kN]		0,71	0,84	0,95	0,97	0,99	0,99	0,99	0,99

Aluminum alloy with $R_m \geq 215$ N/mm²			nominal thickness of component II t_{II} [mm]							
			0,50	0,63	0,75	0,88	1,00	1,25	1,50	≥ 2,00
nominal thickness of component I t_I [mm]	$V_{R,k}$ [kN]	0.50	-	-	-	0.86	0.86	0.86	0.86	0.86
		0.60	-	-	0.86	1.01	1.01	1.01	1.01	1.01
		0.70	-	0.86	0.86	1.17	1.17	1.17	1.17	1.17
		0.80	0.86	1.01	1.17	1.32	1.32	1.32	1.32	1.32
		1.00	0.86	1.01	1.17	1.32	1.57	1.57	1.57	1.57
		1.20	0.86	1.01	1.17	1.32	1.57	1.57	1.57	1.57
		1.50	0.86	1.01	1.17	1.32	1.57	1.57	1.57	1.57
		≥ 2.00	0.86	1.01	1.17	1.32	1.57	1.57	1.57	1.57
	$N_{R,II,k}$ [kN]		0,71	0,84	0,95	0,97	0,99	0,99	0,99	0,99

Blind rivet

Folding blind rivet ECORIV Alu 5.2xL

Annex 10