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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-22/0002 of 2022/01/24

General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: ETA-Danmark A/S

Trade name of the construction product:	Rotho Blaas Connector Nails LBA
Product family to which the above construction product belongs:	Nails and screws for use in nailing plates in timber structures
Manufacturer:	Rotho Blaas s.r.l Via dell'Adige 2/1 IT-39040 Cortaccia (BZ) Tel. + 39 0471 818400 Fax + 39 0471 818484 Internet www.rothoblaas.com
Manufacturing plant:	Rotho Blaas s.r.l Manufacturing plant N1
This European Technical Assessment contains:	10 pages including 2 annexes which form an integral part of the document
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:	European Assessment Document (EAD) no EAD 130033-00-0603 "Nails and screws for use in nailing plates in timber structures"
This version replaces:	

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II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of product and intended use

Technical description of the product

Rotho Blaas Connector Nails “LBA” are made from cold formed carbon or stainless steel thread. The shank is cylindrical and made with annular rings on part of the shank.

The nails shall be produced from carbon or stainless steel wire. Where corrosion protection is required, the material or coating shall be declared in accordance with the relevant specification given in Annex A of EN 14592. See Annex A for drawing including material and dimensions of the nails covered by this ETA.

Geometry
The range covers nails with 2 different diameters: 4,0 mm and 6,0 mm. For nails with a diameter of 4 mm the length varies from 40 mm to 100 mm. For nails with a diameter of 6 mm the length varies from 60 mm to 100 mm. These nails are all ringed shank nails. Other dimensions appear from Annex A.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The nails are used for steel and aluminium nailing plates and three-dimensional steel and aluminium nailing plates up to 12 mm thick for connections in load bearing timber structures with members of for example solid timber, glued laminated timber, cross laminated timber and similar glued members of wood-based structural members.

Steel plates shall only be located on the side of the nail head. The following wood-based panels may be used for Rotho Blaas Connector Nails LBA:

- Solid wood panels according to EN 13353 and EN 13986 and cross laminated timber according to ETA
- Laminated Veneer Lumber according to EN 14374 or ETA

The nails shall be driven into the wood without pre-drilling.

The design of the connections shall be based on the characteristic load-carrying capacities of the nails. The design capacities shall be derived from the characteristic capacities in accordance with Eurocode 5 or an appropriate national code.

The nails are intended for use for connections subject to static or quasi static loading.

The scope of the nails regarding resistance to corrosion shall be defined according to national provisions that apply at the installation site considering environmental conditions. Section 3.6 of this ETA contains the corrosion protection for Rotho Blaas Connector Nails “LBA” made from carbon or stainless steel.

The provisions made in this European Technical Assessment are based on an assumed intended working life of the Rotho Blaas Connector Nails “LBA” of 50 years.

The indications given on the working life cannot be interpreted as a guarantee given by the producer or Assessment Body but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

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)	
Withdrawal and lateral load-carrying capacity	See Annex B
Tensile capacity	Characteristic value $f_{tens,k}$: Rotho Blaas Connector nail “LBA” d = 4,0 mm: $f_{tens,k}$ = 6.5 kN Rotho Blaas Connector nail “LBA” d = 6,0 mm: $f_{tens,k}$ = 17.0 kN
Corrosion	See section 3.6
3.2 Safety in case of fire (BWR2)	
Reaction to fire	The nails are made from steel classified as Euroclass A1 in accordance with EN 13501-1 and Commission Delegated Regulation 2016/364
3.3 Hygiene, health and the environment (BWR3)	
Influence on air quality	The product does not contain/release dangerous substances**)
3.4 General aspects related to the performance of the product	The nails have been assessed as having satisfactory durability and serviceability when used in timber structures using the timber species described in Eurocode 5 and subject to the conditions defined by service class 1, 2 and 3

*) See additional information in section 3.5 – 3.7.
**) In addition to the specific clauses relating to dangerous substances contained in this European Technical Assessment, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Regulation, these requirements need also to be complied with, when and where they apply.

3.5 Mechanical resistance and stability

The load-carrying capacities for Rotho Blaas Connector Nails “LBA” are applicable to the wood-based materials mentioned in paragraph 2 even though the term timber has been used in the following.

The characteristic lateral load-carrying capacities and the characteristic axial withdrawal capacities of Rotho Blaas Connector Nails “LBA” should be used for designs in accordance with Eurocode 5 or an appropriate national code. The formulas for the load-carrying capacities are restricted to characteristic densities of the non-predrilled wood-based materials up to 500 kg/m³. Even though the non-predrilled wood-based material may have a larger density, this must not be used in the formulas.

The capacities stated below are applicable to connections with metal plates.

The diameter of the nails shall be greater than the maximum width of the gaps in the layers of the cross laminated timber.

ETAs for structural members or wood-based panels must be considered where applicable.

Withdrawal capacity
The characteristic withdrawal capacity, $F_{ax,Rk}$, of a Rotho Blaas Connector Nail “LBA” in non-predrilled members shall be calculated from:

$$F_{ax,Rk} = f_{ax,k} \cdot d \cdot \ell_{ef} \cdot \left(\frac{\rho_k}{350}\right)^{0,8} \quad [N]$$

Where:
$f_{ax,k}$ is the characteristic withdrawal parameter in N/mm², see Table 1

Table 1: Characteristic withdrawal parameters in N/mm² for Rotho Blaas Connector Nails “LBA”

Nail dxL	EP	HDG	SS
4x40	5,96	4,48	6,11
4x50	6,25	4,71	6,42
4x60	6,43	4,84	6,60
4x75	6,60	4,96	6,77
4x100	6,73	5,06	6,90
6x60	7,87	-	7,87
6x80	8,37	-	8,37
6x100	8,58	-	8,58
EP: Carbon steel electro-plated HDG: Carbon steel hot-dip galvanised SS: Stainless steel			

d is the nominal diameter of the nail in mm,
ℓ_{ef} is the penetration length of the threaded part, including the point length, in the point side member in mm,
ρ_k is the characteristic timber density, $\rho_k \le 500$ kg/m³. For nails in the wide face of CLT penetrating more than one layer, the characteristic density may be assumed as for homogeneous glued laminated timber produced from boards with the lowest characteristic density of a board layer.

Lateral capacity
The characteristic lateral load-carrying capacity of a Rotho Blaas Connector Nail “LBA” in a metal plate shall be calculated from:

$$F_{v,Rk} = \min\begin{cases} 0,4 \cdot f_{h,k} \cdot t_1 \cdot d \\ 1,15 \cdot \sqrt{2 \cdot M_{y,Rk} \cdot f_{h,k} \cdot d} + \mu \cdot F_{ax,Rk} \end{cases} \quad [N]$$

for thin metal plates, and

$$F_{v,Rk} = \min\begin{cases} f_{h,k} \cdot t_1 \cdot d \\ f_{h,k} \cdot t_1 \cdot d\left[\sqrt{2 + \frac{4 \cdot M_{y,Rk}}{f_{h,k} \cdot d \cdot t_1^2}} - 1\right] + \mu \cdot F_{ax,Rk} \\ 2,3 \cdot \sqrt{M_{y,Rk} \cdot f_{h,k} \cdot d} + \mu \cdot F_{ax,Rk} \end{cases} \quad [N]$$

for thick metal plates.

Where
$f_{h,k}$ is the characteristic embedding strength [N/mm²] of the timber or wood-based panel according to EN 1995-1-1; for nails in the wide face of CLT penetrating more than one layer, the characteristic density may be assumed as for homogeneous glued laminated timber produced from boards with the lowest characteristic density of a board layer.
t_1 is the minimum of the nail penetration length including the tip or the timber thickness [mm];
d is the nominal nail diameter [mm];
$M_{y,Rk}$ is the characteristic nail yield moment [Nmm];
μ is a factor for the rope effect:
μ = 0,8 for nails d = 4,0 mm
μ = 0,6 for nails d = 6,0 mm.

Yield moment
The characteristic yield moment $M_{y,Rk}$, of a Rotho Blaas Connector Nail “LBA”is stated in Table B.4 in Annex B depending on the nail diameter.

Thick metal plates may be assumed for the following plate thicknesses for nails in wood-based materials with a characteristic density up to 500 kg/m³:

Rotho Blaas Connector Nail “LBA” ∅ 4,0 mm: $t_{thick} \ge 1,5$ mm

Rotho Blaas Connector Nail “LBA” ∅ 6,0 mm: $t_{thick} \ge 2,0$ mm

The following plate thicknesses apply for thin metal plates for nails in wood-based materials with a characteristic density up to 500 kg/m³:

Rotho Blaas Connector Nail "LBA" ∅ 4,0 mm: $t_{thin} \geq 0,9$ mm

Rotho Blaas Connector Nail "LBA" ∅ 6,0 mm: $t_{thin} \geq 1,5$ mm

Minimum metal plate thicknesses are:
Rotho Blaas Connector Nail "LBA" ∅ 4,0 mm:

$$t_{min} = \max\left\{0,9\text{ mm}; \frac{F_{v,Rk}}{2 \cdot d \cdot f_{u,k}}\right\}$$

Rotho Blaas Connector Nail "LBA" ∅ 6,0 mm:

$$t_{min} = \max\left\{1,5\text{ mm}; \frac{F_{v,Rk}}{2 \cdot d \cdot f_{u,k}}\right\}$$

Where
$f_{u,k}$ is the characteristic tensile strength [MPa] of the metal plate.

For plate thicknesses between minimum thickness t_{min} and the thickness t_{thick} linear interpolation may be used.

Combined laterally and axially loaded nails
For nailed connections subjected to a combination of axial and lateral load, the following expression should be satisfied:

$$\left(\frac{F_{ax,Ed}}{F_{ax,Rd}}\right)^2 + \left(\frac{F_{v,Ed}}{F_{v,Rd}}\right)^2 \leq 1$$

where
$F_{ax,Ed}$ axial design load of the nail
$F_{v,Ed}$ lateral design load of the nail
$F_{ax,Rd}$ design load-carrying capacity of an axially loaded nail
$F_{v,Rd}$ design load-carrying capacity of a laterally loaded nail

3.6 Aspects related to the performance of the product

3.10.1 Corrosion protection in service class 1, 2 and 3.
The nails are produced from carbon or stainless steel wire. Carbon steel nails are hot-dip galvanised or electroplated. The minimum thickness of the zinc coating for electro-plated nails is 7µm, for hot-dip galvanised nails 50µm.

3.7 General aspects related to the fitness for use of the product

The nails 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.

The installation shall be carried out in accordance with Eurocode 5 or an appropriate national code unless otherwise is defined in the following. Instructions from Rotho Blaas GmbH should be considered for installation.

For structural members according to ETAs the terms of the ETAs must be considered.

4 Assessment and verification of constancy of performance (AVCP)

4.1 AVCP system

According to the decision 97/638/EC of the European Commission, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) is 2+.

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

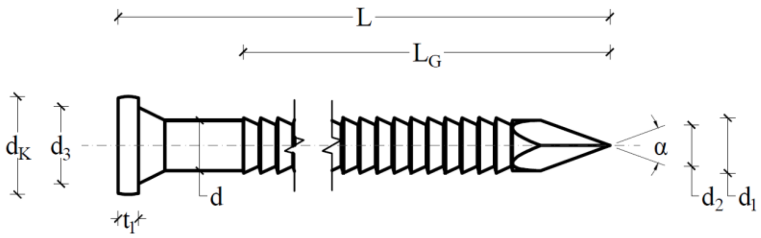
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at ETA-Danmark prior to CE marking.

Issued in Copenhagen on 2022-01-24 by

Thomas Bruun
Managing Director, ETA-Danmark

Annex A
Drawing of Rotho Blaas Connector Nails "LBA"

rothoblaas



Geometry

d	**4.00** ±0.20	**4.00** ±0.20	**4.00** ±0.20
d_1	**4.40** ±0.20	**4.40** ±0.20	**4.40** ±0.20
d_2	**3.40** ±0.30	**3.40** ±0.30	**3.40** ±0.30
d_3	**5.50** ±0.50	**5.50** ±0.50	**5.50** ±0.50
d_K	**7.80** ±0.50	**7.80** ±0.50	**7.80** ±0.50
t_1	**1.50** ±0.30	**1.50** ±0.30	**1.50** ±0.30
α	**40.0°** ±5.0°	**40.0°** ±5.0°	**40.0°** ±5.0°
Type	**EP** *Carbon steel electro-plated*	**HDG** *Carbon steel hot-dip galvanised*	**SS** *Stainless steel*

Geometry

d	**6.00** ±0.20	**6.00** ±0.20
d_1	**6.60** ±0.20	**6.60** ±0.20
d_2	**5.50** ±0.30	**5.50** ±0.30
d_3	**7.50** ±0.50	**7.50** ±0.50
d_K	**12.25** ±0.50	**12.25** ±0.50
t_1	**2.00** ±0.30	**2.00** ±0.30
α	**55.0°** ±5.0°	**55.0°** ±5.0°
Type	**EP** *Carbon steel electro-plated*	**SS** *Stainless steel*

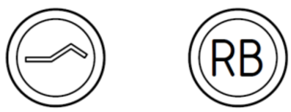
Lenghts and Thread Lenghts

d	**L**	**L_G**
4.00	40.0	30.0
4.00	50.0	40.0
4.00	60.0	50.0
4.00	75.0	65.0
4.00	100.0	85.0

Lenghts and Thread Lenghts

d	**L**	**L_G**
6.00	60.0	50.0
6.00	80.0	70.0
6.00	100.0	85.0

Headstamps



Other headstamps possible
Headstamp (supplier head mark) optional

Tolerance (L and L_G): ±2.00
Intermediate lengths (L) are possible.
Intermediate thread lengths (L_G) are possible.

All dimensions in [mm].

Annex B

Characteristic capacities for Rotho Blaas Connector Nails „LBA“

Characteristic capacities for a characteristic density of the members of solid timber, glued laminated timber, cross laminated timber, similar glued members and of wood-based structural members as indicated in Tables B.1, B.2 and B.3. The nail shall be driven without predrilling completely into the wood or wood-based material, which shall have a thickness of at least the length of the nail. The values given in Tables B.1, B.2 and B.3 presuppose that the threaded part of the nail is completely embedded in the wood or wood-based material.

Table B.1 Characteristic capacities for electro-plated Rotho Blaas Connector Nails „LBA - EP“

Nail	ρ_k = 290 kg/m³			ρ_k = 320 kg/m³			ρ_k = 350 kg/m³			ρ_k = 380 kg/m³			ρ_k = 385 kg/m³		
	$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N]		$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N]		$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N]		$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N]		$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N]	
		thin	thick		thin	thick		thin	thick		thin	thick		thin	thick
4,0 x 40	615	982	1730	665	1083	1874	715	1185	2018	763	1286	2161	771	1303	2185
4,0 x 50	861	1233	2140	931	1360	2309	1001	1488	2436	1069	1615	2559	1080	1636	2580
4,0 x 60	1107	1484	2375	1197	1637	2522	1286	1790	2665	1374	1944	2804	1388	1970	2826
4,0 x 75	1476	1860	2670	1596	2053	2841	1715	2245	3008	1832	2437	3170	1851	2469	3197
4,0 x 100	1967	2488	3063	2129	2745	3267	2287	2986	3465	2442	3159	3659	2468	3188	3690
6,0 x 60	2032	1950	3698	2198	2152	4006	2362	2354	4313	2522	2556	4617	2549	2589	4668
6,0 x 80	3023	2617	4798	3271	2888	5097	3514	3159	5387	3753	3430	5668	3792	3475	5714
6,0 x 100	3766	3284	5244	4075	3624	5580	4378	3964	5905	4676	4303	6222	4725	4360	6274

Nail	ρ_k = 400 kg/m³			ρ_k = 425 kg/m³			ρ_k = 430 kg/m³			ρ_k = 460 kg/m³			ρ_k = 500 kg/m³		
	$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N]		$F_{ax,Rk}$ [N]	$F_{ax,Rk}$ [N]		$F_{v,Rk}$ [N]	$F_{ax,Rk}$ [N]		$F_{v,Rk}$ [N]	$F_{ax,Rk}$ [N]		$F_{v,Rk}$ [N]	$F_{ax,Rk}$ [N]	
		thin	thick		thin	thick		thin	thick		thin	thick		thin	thick
4,0 x 40	795	1354	2256	835	1438	2374	843	1455	2398	889	1557	2539	951	1692	2716
4,0 x 50	1113	1700	2640	1169	1806	2738	1180	1828	2757	1245	1955	2872	1331	2125	3020
4,0 x 60	1431	2046	2894	1503	2174	3005	1517	2200	3027	1601	2353	3156	1711	2558	3324
4,0 x 75	1909	2566	3276	2003	2726	3405	2022	2758	3431	2134	2950	3583	2282	3207	3781
4,0 x 100	2545	3272	3785	2671	3412	3940	2696	3439	3970	2846	3603	4152	3042	3816	4389
6,0 x 60	2628	2690	4819	2759	2858	5071	2785	2892	5121	2939	3094	5422	3142	3363	5804
6,0 x 80	3910	3610	5851	4104	3836	6076	4143	3881	6120	4373	4152	6382	4674	4513	6723
6,0 x 100	4872	4530	6428	5114	4813	6681	5162	4870	6731	5448	5209	7027	5824	5662	7413

Table B.2 Characteristic capacities for hot-dip galvanised Rotho Blaas Connector Nails „LBA - HDG“

Nail	ρ_k = 290 kg/m³			ρ_k = 320 kg/m³			ρ_k = 350 kg/m³			ρ_k = 380 kg/m³			ρ_k = 385 kg/m³		
	$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N]		$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N]		$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N]		$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N]		$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N]	
		thin	thick		thin	thick		thin	thick		thin	thick		thin	thick
4,0 x 40	463	982	1559	501	1083	1694	538	1185	1827	574	1286	1960	580	1303	1982
4,0 x 50	648	1233	1841	701	1360	1950	753	1488	2055	804	1615	2157	812	1636	2174
4,0 x 60	833	1484	1989	901	1637	2110	968	1790	2227	1034	1898	2341	1045	1913	2360
4,0 x 75	1110	1824	2211	1201	1943	2350	1291	2060	2486	1378	2173	2617	1393	2192	2638
4,0 x 100	1480	2120	2507	1602	2264	2671	1721	2404	2830	1838	2541	2984	1857	2563	3010

Nail	ρ_k = 400 kg/m³			ρ_k = 425 kg/m³			ρ_k = 430 kg/m³			ρ_k = 460 kg/m³			ρ_k = 500 kg/m³		
	$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N]		$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N]		$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N]		$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N]		$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N]	
		thin	thick		thin	thick		thin	thick		thin	thick		thin	thick
4,0 x 40	598	1354	2032	628	1438	2104	634	1455	2118	669	1557	2201	715	1692	2309
4,0 x 50	838	1700	2224	879	1806	2305	888	1828	2321	937	1927	2415	1001	2029	2538
4,0 x 60	1077	1960	2415	1131	2037	2506	1141	2052	2524	1204	2141	2629	1288	2258	2767
4,0 x 75	1436	2247	2702	1507	2338	2807	1522	2356	2828	1606	2463	2951	1717	2601	3110
4,0 x 100	1915	2630	3085	2010	2740	3209	2029	2762	3234	2141	2891	3379	2289	3059	3568

Table B.3 Characteristic capacities for stainless steel Rotho Blaas Connector Nails „LBA - SS“

Nail	ρ_k = 290 kg/m³			ρ_k = 320 kg/m³			ρ_k = 350 kg/m³			ρ_k = 380 kg/m³			ρ_k = 385 kg/m³		
	$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N] thin	thick	$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N] thin	thick	$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N] thin	thick	$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N] thin	thick	$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N] thin	thick
4,0 x 40	631	982	1760	683	1083	1905	733	1185	2050	783	1286	2194	791	1303	2218
4,0 x 50	883	1233	2172	956	1360	2361	1027	1488	2517	1096	1615	2644	1108	1636	2665
4,0 x 60	1136	1484	2452	1229	1637	2605	1320	1790	2752	1410	1944	2895	1425	1970	2918
4,0 x 75	1514	1860	2755	1638	2053	2932	1760	2245	3104	1880	2437	3271	1899	2469	3298
4,0 x 100	2019	2488	3159	2184	2745	3369	2347	3002	3573	2506	3255	3772	2532	3284	3805
6,0 x 60	2032	1950	3723	2198	2152	4031	2362	2354	4338	2522	2556	4643	2549	2589	4693
6,0 x 80	3023	2617	4878	3271	2888	5182	3514	3159	5475	3753	3430	5760	3792	3475	5806
6,0 x 100	3766	3284	5324	4075	3624	5664	4378	3964	5994	4676	4303	6313	4725	4360	6366

Nail	ρ_k = 400 kg/m³			ρ_k = 425 kg/m³			ρ_k = 430 kg/m³			ρ_k = 460 kg/m³			ρ_k = 500 kg/m³		
	$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N] thin	thick	$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N] thin	thick	$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N] thin	thick	$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N] thin	thick	$F_{ax,Rk}$ [N]	$F_{v,Rk}$ [N] thin	thick
4,0 x 40	816	1354	2290	857	1438	2409	865	1455	2433	912	1557	2575	975	1692	2764
4,0 x 50	1142	1700	2727	1199	1806	2828	1210	1828	2848	1277	1955	2966	1366	2125	3120
4,0 x 60	1469	2046	2988	1542	2174	3102	1556	2200	3125	1642	2353	3258	1756	2558	3432
4,0 x 75	1958	2566	3380	2056	2726	3514	2075	2758	3540	2190	2950	3696	2341	3207	3900
4,0 x 100	2611	3371	3902	2741	3514	4062	2767	3543	4093	2920	3711	4280	3121	3931	4524
6,0 x 60	2628	2690	4845	2759	2858	5096	2785	2892	5147	2939	3094	5447	3142	3363	5846
6,0 x 80	3910	3610	5945	4104	3836	6173	4143	3881	6217	4373	4152	6483	4674	4513	6829
6,0 x 100	4872	4530	6522	5114	4813	6778	5162	4870	6829	5448	5209	7128	5824	5662	7518

$F_{ax,Rk}$ Characteristic withdrawal (axial) capacity per nail
Values for other densities (ρ_k) up to 500 kg/m³ may be calculated by multiplying the values for ρ_k = 350 kg/m³ with $(\rho_k/350)^{0,8}$

$F_{v,Rk}$ Characteristic load-carrying capacity per shear plane per nail
Thin refers to a plate thickness = 0,9 mm for d = 4,0 mm and a plate thickness = 1,5 mm for d = 6,0 mm
Thick refers to a plate thickness = 1,5 mm for d = 4,0 mm and a plate thickness = 2,0 mm for d = 6,0 mm

Table B.4 Characteristic yield moments for Rotho Blaas Connector Nails „LBA“

Nail diameter [mm]		$M_{y,Rk}$ [Nmm]
4,0	EP	6680
4,0	HDG	5270
4,0	SS	7180
6,0	EP	20200
6,0	SS	21300

EP: Carbon steel electro-plated
HDG: Carbon steel hot-dip galvanised
SS: Stainless steel