6

06 CONNECTORS (OTHER)

CONNECTORS (OTHER)

PROFILE ANCHOR

GH profile anchors are for fixing timber beams, rafters, purlins etc. on profile rails (e.g. Halfen rails).

Basics of statics **from page 208** / Products & statics **from page 210**

T-BAR ANCHORS

GH T-bar anchors are The GH T-bar anchors should always be attached on both sides or diagonally in order to absorb the forces to be connected evenly and ensure a secure connection.

Basics of statics **from page 212** / Products & statics **from page 214**

FLAT CONNECTORS

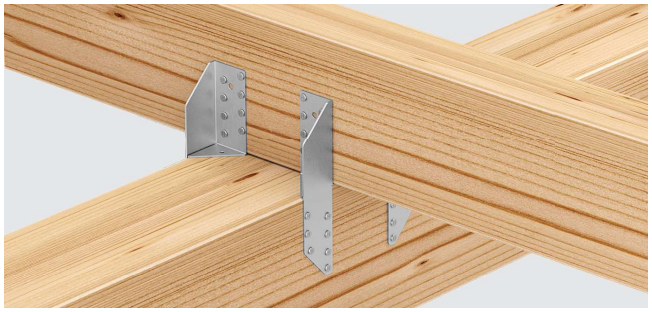
GH flat connectors are simple connecting elements for fixing narrow timber parts. They are alternatives to GH nail plate strips and can also be fixed to concrete with spreader dowels, adhesive dowels, etc. This gives you good stability for various types of construction. Flat connectors are used when wind forces, for example, have to be channelled into roof constructions.

With our lightweight and heavy version, various loads can be transferred. Thanks to the different widths, both narrow and large-area connections can be produced with a high degree of stability. Flat connectors are also used for carpentry connections between posts and studs.

Basics of statics **from page 216** / Products & statics **from page 218**

UNIVERSAL CONNECTORS

GH universal connectors are strong connecting elements that are particularly suitable for securing rafters against lifting loads and for wall transom connections.



Products **from page 218**

CONNECTORS (OTHER)

ASSORTMENT

								Basics Statics from page	Products & Statics from page
PROFILE ANCHOR		CE	250 GD Z275	NKL 2				208	210
T-BAR ANCHORS		CE	250 GD Z275	NKL 2				212	214
LIGHT FLAT CONNECTORS		CE	250 GD Z275	NKL 2				216	218
HEAVY FLAT CONNECTORS		CE	250 GD Z275	NKL 2				216	218
UNIVERSAL CONNECTORS			250 GD Z275	NKL 2					218
PRESS-FIT DOWELS		CE	250 GD Z275	NKL 2					220
GEKA CONNECTOR			GJMB Temperguss verzinkt	NKL 2					221
RING-WEDGE-DOWEL, TWO-SIDED ALU			Al Aluminium	NKL 2					220
ANCHOR DOWELS, ONE-SIDED ALU			Al Aluminium	NKL 2					221

6

CE symbol

Steel with indication of the steel quality and zinc coating

Aluminium

Timber/timber connection

Timber/concrete-connection

Timber/metal-connection

NKL 1

Usage class 1
Moisture content in the building materials that corresponds to a temperature of 20° C and a relative humidity of the ambient air that only exceeds a value of 65% for a few weeks per year, e.g. in the case of buildings that are closed on all sides and heated.
Comment: In UC 1, the average moisture content of most softwoods does not exceed 12 %.

NKL 2

Usage class 2
Moisture content in the building materials that corresponds to a temperature of 20° C and a relative humidity of the ambient air that only exceeds a value of 85% for a few weeks per year, e.g. in the case of open buildings covered by a roof.
Comment: In UC 2, the average moisture content of most softwoods does not exceed 20 %.

NKL 3

Usage class 3
Includes climatic conditions that lead to higher moisture contents than in UC 2, e.g. structures that are exposed to the weather without protection. Eurocode 5 / DIN EN 1995-1-1 section 2.3.1.3

FLAT CONNECTORS

TECHNICAL FEATURES

Geometry

L	Length [mm]
W(B)	Width [mm]
T(S)	Material thickness [mm]

Tables

n_a	Number of connecting elements per connector
NB	Nail pattern
VM	Connecting element Ø x length [mm]
Voll	Maximum number of connecting elements
Teil	Minimum number of connecting elements

Load directions

$F_{1,T,Rk}$ ↑ Characteristic load capacity [kN]

Steel with indication of the steel quality and zinc coating

Timber/timber connection

Timber/concrete-connection

Usage class 1
Moisture content in the building materials that corresponds to a temperature of 20° C and a relative humidity of the ambient air that only exceeds a value of 65% for a few weeks per year, e.g. in the case of buildings that are closed on all sides and heated.
Comment: In UC 1, the average moisture content of most softwoods does not exceed 12 %.

Usage class 2
Moisture content in the building materials that corresponds to a temperature of 20° C and a relative humidity of the ambient air that only exceeds a value of 85% for a few weeks per year, e.g. in the case of open buildings covered by a roof.
Comment: In UC 2, the average moisture content of most softwoods does not exceed 20 %.

Usage class 3
Includes climatic conditions that lead to higher moisture contents than in UC 2, e.g. structures that are exposed to the weather without protection. Eurocode 5 / DIN EN 1995-1-1 section 2.3.1.3

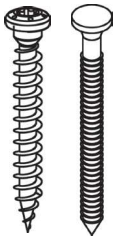
FLAT CONNECTORS

APPLICATIONS

Application:
Absorption of tensile loads e.g. on a rafter or
End grain connection

Materials: 250 GD Z275

Material thickness:
2.0 to 3.0 mm



Connecting element:
GH threaded nails 4.0 x 35 / 40 / 50 / 60 / 75 / 100 mm
GH screws 5.0 x 25 / 35 / 40 / 50 / 60 / 70 mm
Bolt, dowel or concrete anchor M10 or M12

Connecting elements from page 274

For use in usage classes

NKL 1 NKL 2

Load directions
F_1

Minimum and edge spacing
The minimum spacing of the fastening element and edge spacing must be observed in accordance with EC 5.

		GH threaded nails Ø 4 mm	GH screws Ø 5 mm
$a_{3,t}$	End grain with stress	60 mm	75 mm
$a_{3,c}$	End grain without stress	40 mm	50 mm
$a_{4,t}$	Loaded edge	28 mm	50 mm
$a_{4,c}$	Unloaded edge	20 mm	25 mm

Minimum spacing according to EN 1996-1-1, without pilot drilling $\rho_k \leq 420$ kg/m³

Connection to timber
For the nail or screw arrangement, make sure that the load does not take effect eccentrically For a tensile connection ($a_{3,t}$ = 60 mm) there are a range of possibilities for arranging the connecting elements. Connections over intermediate layers are possible.

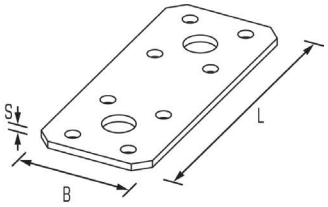
Connection to concrete/ steel
The proof of load-bearing capacity for fixing in concrete must be verified separately in accordance with the requirements of the selected dowel.

Design tables
The tables contain characteristic load capacities in kN. The number of fastening elements are for a connector with characteristic raw density of timber: ρk = 350 kg/m³ (C24). he load capacities have been determined on the basis of ETA-13/0523 for GH connecting elements.

The load-bearing capacity of the connection transverse to the grain must be determined in accordance with EN 1995-1-1 8.1.4. Steel failure is not decisive.

FLAT CONNECTOR

LIGHT



EN 14545

NKL 2

250 GD Z275

Art. No.	Dimensions [mm]					nN	nBo	EAN	Weight	Pallet	PU		
	L	x	W(B)	x	T(S)	Ø 5	Ø 11	4019346	kg				
104	95	x	40	x	2,5	8	2	130025	0.065	12150	150	■	■
145	135	x	55	x	2,0	16	2	130032	0.102	4200	100	■	■
184	175	x	40	x	3,0	16	4	130049	0.144	4000	100	■	■

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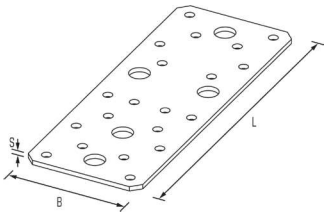
FLAT CONNECTOR

HEAVY



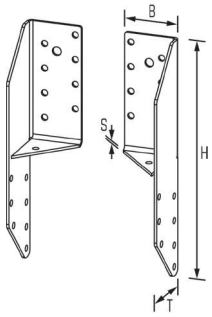
EN 14545

NKL 2

250 GD Z275

Art. No.	Dimensions [mm]					nN	nN	nBo	nBo	EAN	Weight	Pallet	PU		
	L	x	W(B)	x	T(S)	Ø 5	Ø 7	Ø 11	Ø 13	4019346	kg				
1865	170	x	65	x	2,5	20	-	5	-	130100	0.190	3500	50	■	■
2190	190	x	90	x	3,0	28	-	6	2	130117	0.352	2400	50	■	■

UNIVERSAL CONNECTORS



NKL 2

250 GD Z275

Art. No.	Dimensions [mm]					nN	nN	EAN	Weight	Pallet	PU		
	L	x	W(B)	x	T(S)	Ø 5	Ø 7	4019346	kg				
20601	190	x	45	x	2,0	16	1	180006	0.170	1000	50	■	

STATICS

LIGHT

Timber / Concrete

Art. No.	L	W(B)	T(S)	n_a	NB	$F_{1,T,Rk}$ 4.0 x 40	$F_{1,T,Rk}$ 4.0 x 50	$F_{1,T,Rk}$ 4.0 x 60
104	95	40	2,5	-	Full	-	-	-
				2	Partial	3,70	4,43	4,73
184	175	40	3,0	4	Full	7,41	8,86	9,46
				2	Partial	3,70	4,43	4,73
145	135	55	2,0	5	Full	9,39	11,10	11,80
				4	Partial	7,41	8,86	9,46

The maximum number of connecting elements and the resulting static values were determined taking into account the required minimum spacing.

6

HEAVY

Timber / Concrete

Art. No.	L	W(B)	T(S)	n_a	NB	$F_{1,T,Rk}$ 4.0 x 40	$F_{1,T,Rk}$ 4.0 x 50	$F_{1,T,Rk}$ 4.0 x 60
1865	170	65	2,5	2	Full	3,75	4,43	4,73
				-	Partial	-	-	-
2190	190	90	3,0	4	Full	7,51	8,86	9,46
				2	Partial	3,75	4,43	4,73

The maximum number of connecting elements and the resulting static values were determined taking into account the required minimum spacing.