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

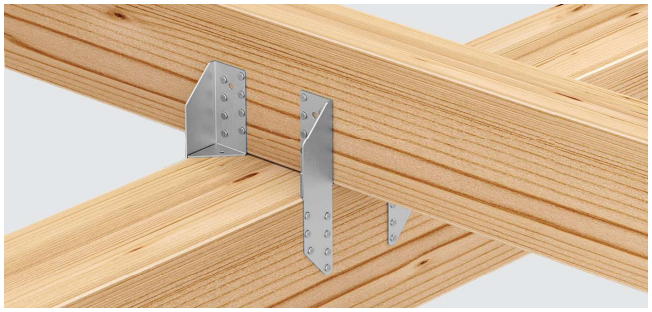
GH flat connectors are simple connecting elements for fixing narrow timber parts. They are alternatives to GH nail plate strips and can also be fixed to concrete with spreader dowels, adhesive dowels, etc. This gives you good stability for various types of construction. Flat connectors are used when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

PROFILE ANCHOR

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]
Partial	Minimum number of connecting elements

Load directions

$F_{1,T,Rk}$	Characteristic load, lifting, for 2 connectors [kN]
$F_{I,Rk,S}$	Characteristic load capacity for steel per 2 connectors [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

PROFILE ANCHOR

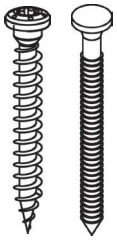
APPLICATIONS

Application:
To secure timber beams, rafters or purlins e.g. against lifting loads on profile rails. Suitable for profile rails Type 28/15 and 38/17 or 40/22.

Materials:

250 GD Z275

Material thickness:
3,0 mm



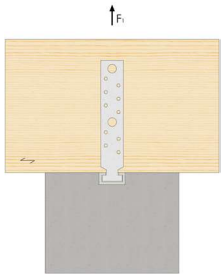
Connecting element:
GH threaded nails 4.0 x 35 / 40 / 50 / 60 / 75 / 100 mm
GH screws 5.0 x 25 / 35 / 40 / 50 / 60 / 70 mm
Connecting elements from page 274

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/m^3

General information

A connection should always consist of two connectors on both sides, otherwise the eccentricity of the connection must be taken into account.

The effects of the notches in the connector on the load-bearing capacity is not taken into account in the table value of the steel load-bearing capacity.

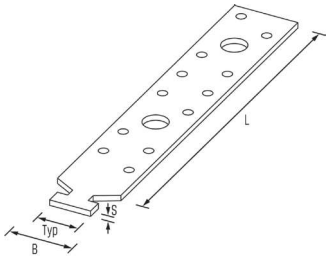
Connection to timber
For the nail or screw arrangement, make sure that the load does not take effect eccentrically.

Design table

The tables contain characteristic load capacities in kN for 2 connectors. The number of fastening elements are for a connector with characteristic raw density of timber: ρk = 350 kg/m^3 (C24).

The 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. The load capacity of the connection to hte anchor rail must be determined separately.

PROFILE ANCHORS



EN 14545

NKL 2

250 GD Z275

Art. No.	Dimensions [mm]					nN	nBo	Typ	EAN	Weight	Pallet	PU		
	L	x	W(B)	x	T(S)	Ø 5	Ø 13		4019346	kg				
281	100	x	34	x	3,0	6	-	1	165010	0.080	8100	100		■
286	140	x	34	x	3,0	10	1	1	165041	0.115	6000	100		■
287	160	x	34	x	3,0	10	2	1	165058	0.135	6000	100		■
285	180	x	34	x	3,0	12	2	1	165072	0.155	6000	100		■
282	140	x	34	x	3,0	10	1	2	165034	0.115	6000	100		■
283	160	x	34	x	3,0	10	2	2	165027	0.135	6000	100		■
284	180	x	34	x	3,0	12	2	2	165065	0.155	6000	100		■

STATICS

Timber | Concrete

Art. No.	L	W(B)	T(S)	n_a Ø 5	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	$F_{1,S,Rk}$
281	100	34	3,0	2	Partial	7,40	8,90	9,50	19,60
286	140	34	3,0	4	Partial	14,80	17,70	18,90	19,60
287	160	34	3,0	6	Partial	22,20	26,60	28,40	19,60
285	180	34	3,0	8	Partial	29,60	35,40	37,80	19,60
282	140	34	3,0	6	Partial	22,20	26,60	28,40	30,30
283	160	34	3,0	8	Partial	29,60	35,40	37,80	30,30
284	180	34	3,0	10	Partial	37,00	44,30	47,30	30,30

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

T-BAR ANCHORS

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]
Partial	Minimum number of connecting elements

Load directions

$F_{1,T,Rk}$ ↑	Characteristic load, lifting, for 2 connectors [kN]
$F_{I,Rk,S}$	Characteristic load capacity for steel per 2 connectors [kN]

Steel with indication of the steel quality and zinc coating

Timber/metal-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

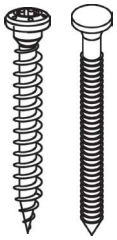
T-BAR ANCHORS

Applications

Application:
Absorption of tensile loads and to secure timber beams, rafters or purlins e.g. Against lifting loads on T-bars or double T-bars.

Materials: 250 GD Z275

Material thickness:
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

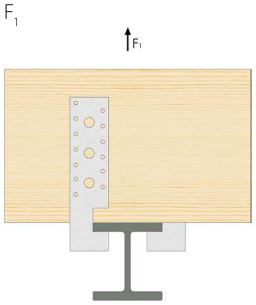
Connecting elements from page 274

For use in usage classes

NKL 1 NKL 2

Load directions

F_1



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Connection to timber
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Design tables
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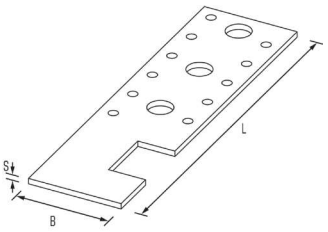
T-BAR ANCHORS



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 13	4019346	kg				
70501	160	x	50	x	3,0	9	2	160015	0.178	6000	100		■
70502	180	x	50	x	3,0	11	3	160022	0.202	4000	100		■
70503	200	x	50	x	3,0	13	3	160039	0.226	4000	100		■

STATICS

Art. No.	L	W(B)	T(S)	n_a Ø 5	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	$F_{1,S,Rk}$
						Timber	Timber	Timber	Metal
70501	160	50	3,0	6	Partial	9,15	10,90	11,70	6,87
70502	180	50	3,0	8	Partial	12,20	14,60	15,60	6,87
70503	200	50	3,0	10	Partial	15,30	18,20	19,50	6,87

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