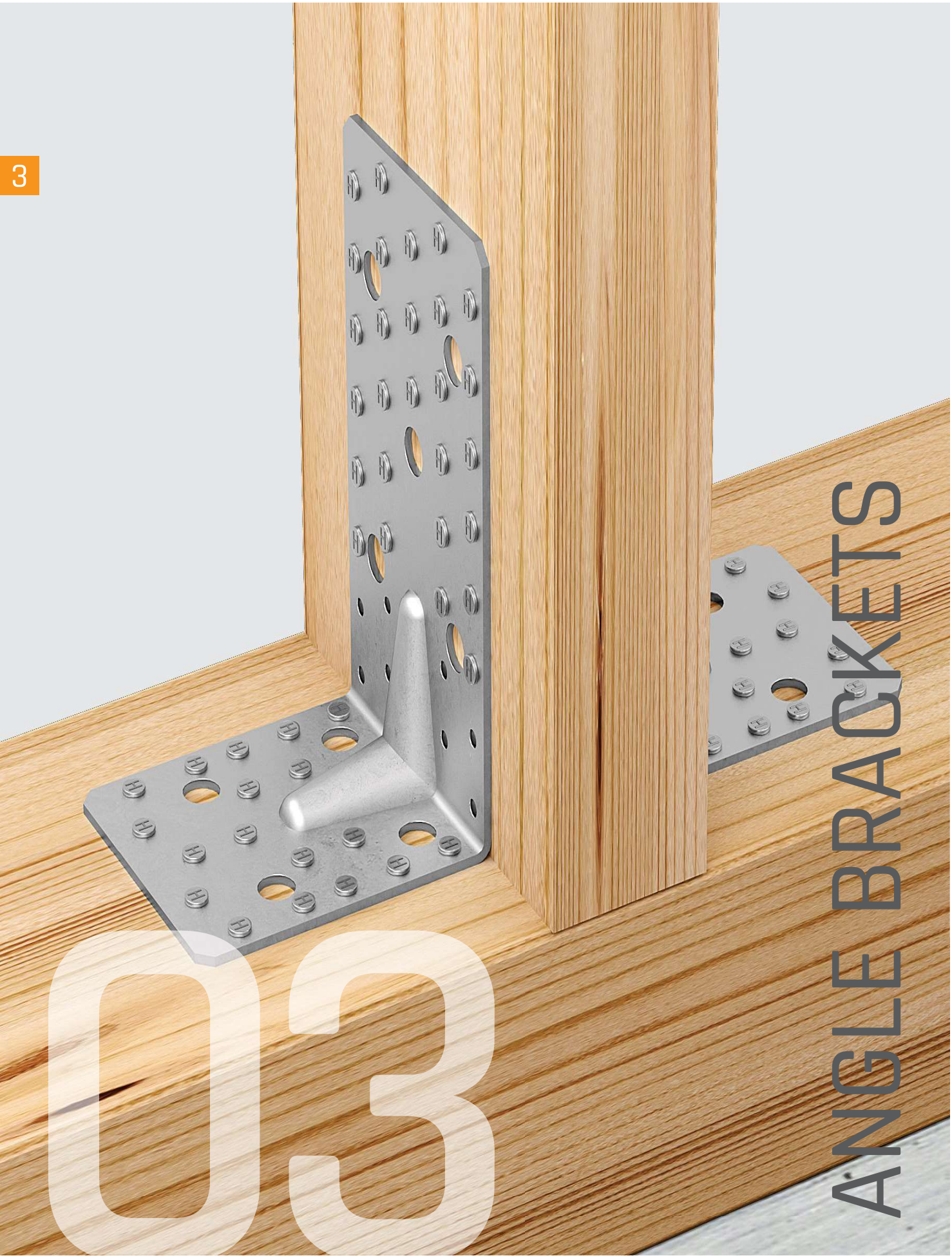


03 ANGLE BRACKETS

GREENLINE TOPLINE

ANGLE BRACKETS

ANGLE BRACKETS TOP 80 / TOP 120

Advantages

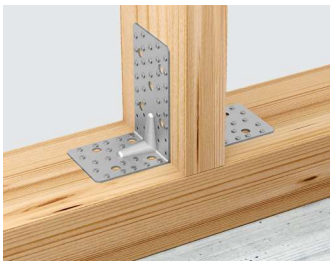
- No bothersome centre rib during processing
- Optimised hole pattern
- Full nail fitting always possible
- High stability due to special, discreet corrugation
- Type 80 as an alternative to the "size 90 bracket"
- **GREEN**LINE = resource-saving manufacturing

Introduction to statics **from page 110** / Products & statics **from page 120**

ANGLE BRACKET 110/170 S

Advantages

- Universal use for higher loads
- 9 bolt holes Ø 13 mm
- Perfectly suited to take loads F_2 and F_3



Introduction to statics **from page 110** / Products & statics **from page 132**

ANGLE BRACKET TOP KR 90E (EXTRA)

Advantages

- 40 % lighter in comparison to 90 x 90 x 65 x 2.5 mm
- High stability due to raised edge on both sides
- Versatile in use
- Alternative to different brackets such as 70 x 70 x 55 mm and 90 x 90 x 65 mm (for use under consideration of the necessary loads)
- Very good for loads due to the outer rib F_2/F_3 and F_1 suitable

Introduction to statics **from page 110** / Products & statics **from page 124**

ANGLE BRACKETS KR

Advantages

- For connections between timber/timber; timber/concrete For use on timber/masonry etc.
- Due to the ribs in the bending radius, KR angle brackets are very sturdy, economical and affordable in use for extreme loads
- By making use of the Greenline series, you receive products with resource-saving manufacturing. This gives you an ecologically and economic advantage

Introduction to statics **from page 110** / Products & statics **from page 134**

ANGLE BRACKETS

ASSORTMENT

3

	Height [mm]	Length [mm]	Width [mm]	Basics Statik & Diagramme from page	Products & Statik from page	Products Made of V4A from page
ANGLE BRACKET TOP 80/120	80-120	60	55	110	120	
ANGLE BRACKET 70X70X2.0	70	70	55	110	122	293
ANGLE BRACKET 70X70 GREENLINE	70	70	55	110	122	
ANGLE BRACKET TOP KR90E	95	85	65	110	124	
ANGLE BRACKET 90X90X2.5	90	90	65	110	128	293
ANGLE BRACKET 90X90 GREENLINE	90	90	65	110	126	
ANGLE BRACKET 100X100X3.0	100	100	90	110	130	293
ANGLE BRACKET 100X100 GREENLINE	105	105	90	110	130	
STRUT CONNECTOR 135 DEGREES	90-100	90-100	65-90		132	
ANGLE BRACKET TYPE 110/170L	170	110	95	110	132	
ANGLE BRACKET KR 3 MM	95-285	88	65	110	134	
ANGLE BRACKET KR 4 MM	95-285	88	65	110	134	
ANGLE BRACKET TYPE 50/80	90	50	50-80	110	138	
ANGLE BRACKET TYPE 110	90	50	110	110	138	
ANGLE BRACKET TYPE 55/80	80	60	55	110	140	
ANGLE BRACKET TYPE 60/100	100	60	60	110	140	
CONSOLE ANGLE	120-200	54	60	110	142	
ANGLE BRACKET TYPE 40/45	50-90	50-90	40-45	110	144	
ANGLE BRACKET TYPE 40/90	90	90	40	110	146	294
ANGLE BRACKET TYPE 40/120	120	95	40	110	146	
ANGLE BRACKET TYPE 692	65	65	90	110	146	

ANGLE BRACKETS

ASSORTMENT

	Height	Length	Width	Basics Statics & Diagrams from page	Products & Statics from page	Products Made of V4A from page
NAIL PLATE BRACKET	40-200	40-100	20-100		148	294
EXTRA THICK 4 MM	130-160	70	80-100	110	150	
MOUNTING BRACKET	90	60	60	110	152	
ENTRANCE DOOR BRACKET	70	30	60		158	
Z-CONNECTOR	40	75	30		158	
CHAIR BRACKET	25-120	25-120	15-20		159	
ANGLE BRACKET THICK 3-5 MM	40-180	40-180	20		159	
CONCRETE BRACKET	75-150	75	60		156	
CORNER ANGLE BRACKET	40	40	100-250		158	

CE symbol

Steel with indication of the steel quality and galvanisation

Stainless steel with material number

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

ANGLE BRACKETS

APPLICATIONS

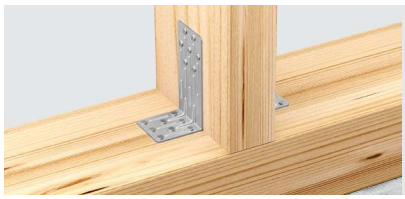
3

Application:
Timber/timber; timber/concrete, steel connections

Materials:

350 GD Z275 | 250 GD Z275 | 235 JR feuerverzinkt | A4 1.4571

Material thicknesses:
1.5 / 2.0 / 2.5 / 3.0 / 4.0 / 6.0 / 8.0 mm
More on request.



Sleeper **Style**

Sleeper **Style**

Sleeper **Concrete**

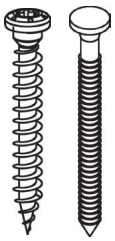
Cross

Sleeper **Concrete**

BSH **Concrete**

For use in usage classes

NKL 1 | NKL 2 | NKL 3

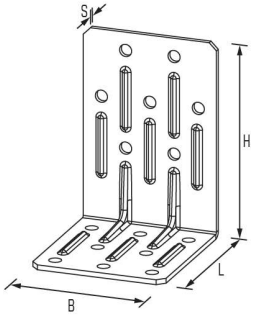


Connecting element:

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, M12

Connecting elements from page 274



TOPLINE GREENLINE ETA-09 0322

NKL 2 250 GD Z275

ANGLE BRACKETS

TOP 80 / TOP 120

3

Art. No.	Dimensions [mm]							nN	EAN	Weight	Pallet	PU		
	H	x	L	x	W(B)	x	T(S)	Ø 5	4019346	kg				
110805	80	x	60	x	55	x	2,0	15	110805	0.106	7200	100	■	
110812	120	x	60	x	55	x	2,0	15	110812	0.136	6000	100	■	

The TOP 80 and TOP 120 angle brackets are characterised by their high stability, which is achieved by the special ribs that do not interfere with processing. Full nail fitting is always possible due to the optimised hole pattern.

Assembly

- Short leg on the continuous timber
- From a timber width of 80 mm.
- To timber/timber, timber/board materials

TOP 80 / TOP 120

Timber / Timber

Art. No.	Dimensions [mm]				n_a	NB	VM	$F_{1,T,Rk}$	$F_{1,s,Rk}$	$F_{2/3,T,Rk}$	$F_{4,T,Rk}$	$F_{4,S,RK}$	$F_{5,T,Rk}$	$F_{5,S,Rk}$	$*F_{4/5,T,Rk}$	$*F_{4/5,S,Rk}$
	H	L	W(B)	T(S)												
110805	80	60	55	2,0	15	Full	4.0x40	1,35	1,71	4,46	0,84	0,66	1,46	1,07	2,69	3,42
							4.0x60	2,25	1,71	5,89	1,41	0,66	2,44	1,07	4,50	3,42
					-	Partial	4.0x40	-	-	-	-	-	-	-	-	-
							4.0x60	-	-	-	-	-	-	-	-	-
110812	120	60	55	2,0	15	Full	4.0x40	1,35	1,71	3,04	0,84	1,07	0,13	0,04	2,69	3,42
							4.0x60	2,25	1,71	4,12	1,41	1,07	0,21	0,04	4,50	3,42
					-	Partial	4.0x40	-	-	-	-	-	-	-	-	-
								-	-	-	-	-	-	-	-	-

Values are valid for 1 angle bracket (* 2 angle brackets opposite each other), GH nail, ρk = 350 kg/m³, f = 0 mm, e = 40 mm, b = 80 mm, unit of length in mm, unit for force in kN.
For 2 angle brackets opposite each other, the values $F_{1,T,Rk}$, $F_{1,S,Rk}$, $F_{2/3,T,Rk}$ can be doubled.