

DGZ

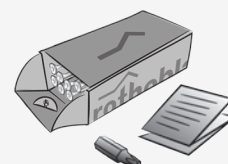
Double thread connector for insulation

Carbon steel with white galvanic zinc coating



PACKAGING

Box + CE paper + BIT



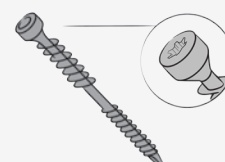
CONSULTING

Free myProject software and personalised consultations to optimise fastenings



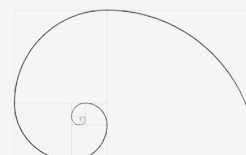
CYLINDRICAL HEAD

Cylindrical head hidden in the batten



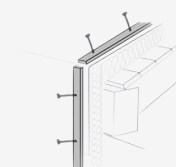
DIAMETERS Ø7 and Ø9

Optimise the dimensions of the battens to be fastened



FIELDS OF USE

Fastening of continuous insulation in the roof and façade; can be used for both soft and hard insulation. Service classes 1 and 2





HARD INSULATION

Fastening of hard insulation is done using screws placed in a single direction at a 60° angle with respect to the layer



SOFT INSULATION

Fastening of soft insulation is done using screws placed in two directions at a 60° angle with respect to the layer



FACADE INSULATION

The exterior insulation is connected to the structure through battens fastened with screws

Applications

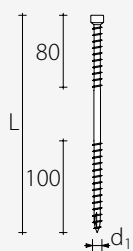
 Fastening of hard insulation on a flat roof

 Use with VENTILO batten and the "Securotho" system

 Use with VENTILO batten and the "Securotho" system



Codes and dimensions



d ₁ [mm]	code	L [mm]	pcs/pkg
7 TX30	DGZ7220	220	50
	DGZ7260	260	
	DGZ7300	300	
	DGZ7340	340	
9 TX40	DGZ9240	240	50
	DGZ9280	280	
	DGZ9320	320	
	DGZ9360	360	
	DGZ9400	400	
	DGZ9450	450	
	DGZ9500	500	

Connector selection

MINIMUM CONNECTOR LENGTH DGZ Ø7

Insulation + wooden planking thickness [mm]	Batten thickness [mm]*										VENTILO batten thickness [mm]	
	s = 30		s = 40		s = 50		s = 60		s = 80		s = 63	
	A DGZ a 60° L _{min} [mm]	B DGZ a 90° L _{min} [mm]	A DGZ a 60° L _{min} [mm]	B DGZ a 90° L _{min} [mm]	A DGZ a 60° L _{min} [mm]	B DGZ a 90° L _{min} [mm]	A DGZ a 60° L _{min} [mm]	B DGZ a 90° L _{min} [mm]	A DGZ a 60° L _{min} [mm]	B DGZ a 90° L _{min} [mm]	A DGZ a 60° L _{min} [mm]	B DGZ a 90° L _{min} [mm]
60	220	220	220	220	220	220	220	220	220	220	220	220
80	220	220	220	220	220	220	220	220	260	220	220	220
100	220	220	220	220	220	220	260	220	260	220	260	220
120	220	220	260	220	260	220	260	220	300	260	260	260
140	260	220	260	220	260	260	300	260	300	260	300	260
160	260	260	300	260	300	260	300	260	340	300	300	300
180	300	260	300	260	340	300	340	300	-	300	340	300
200	340	300	340	300	340	300	-	300	-	340	-	340
220	340	300	-	300	-	340	-	340	-	340	-	340
240	-	340	-	340	-	340	-	340	-	-	-	-
260	-	340	-	340	-	-	-	-	-	-	-	-
280	-	-	-	-	-	-	-	-	-	-	-	-
300	-	-	-	-	-	-	-	-	-	-	-	-

* Minimum batten thicknesses: DGZ Ø7 mm: base/height = 50/30 mm

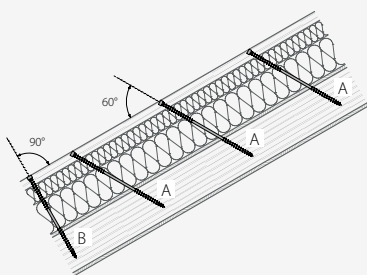
MINIMUM CONNECTOR LENGTH DGZ Ø9

Insulation + wooden planking thickness [mm]	Batten thickness [mm]*										VENTILO batten thickness [mm]	
	s = 30		s = 40		s = 50		s = 60		s = 80		s = 63	
	A DGZ a 60° L _{min} [mm]	B DGZ a 90° L _{min} [mm]	A DGZ a 60° L _{min} [mm]	B DGZ a 90° L _{min} [mm]	A DGZ a 60° L _{min} [mm]	B DGZ a 90° L _{min} [mm]	A DGZ a 60° L _{min} [mm]	B DGZ a 90° L _{min} [mm]	A DGZ a 60° L _{min} [mm]	B DGZ a 90° L _{min} [mm]	A DGZ a 60° L _{min} [mm]	B DGZ a 90° L _{min} [mm]
60	-	-	240	240	240	240	240	240	240	240	240	240
80	-	-	240	240	240	240	240	240	240	240	240	240
100	-	-	240	240	240	240	240	240	280	240	240	240
120	-	-	240	240	240	240	280	240	280	240	280	240
140	-	-	280	240	280	240	280	240	320	280	280	280
160	-	-	280	240	320	280	320	280	320	280	320	280
180	-	-	320	280	320	280	320	280	360	320	360	320
200	-	-	320	280	360	320	360	320	400	320	360	320
220	-	-	360	320	360	320	400	320	400	360	400	360
240	-	-	400	320	400	360	400	360	450	360	400	360
260	-	-	400	360	400	360	450	360	450	400	450	400
280	-	-	450	360	450	400	450	400	500	400	450	400
300	-	-	450	400	450	400	500	400	500	450	500	450

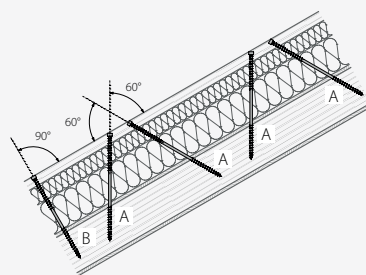
* Minimum batten thicknesses: DGZ Ø9 mm: base/height = 60/40 mm

Check that the connector tip does not stick out from the rafter

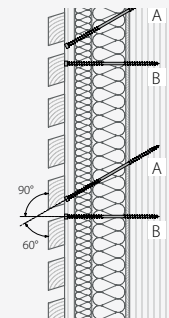
POSSIBLE CONFIGURATIONS



RIGID ROOF INSULATION
 $\sigma_{(10\%)} \geq 50 \text{ kPa (EN826)}$



SOFT ROOF INSULATION
 $\sigma_{(10\%)} < 50 \text{ kPa (EN826)}$



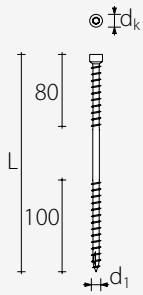
FACADE INSULATION

For sizing, see pg. 96 (intro).

The number and placement of the fastenings depends on the geometry of the surfaces, the type of insulation and the loads acting on them.

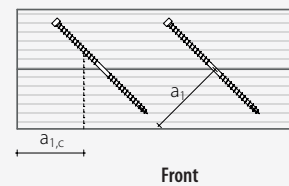
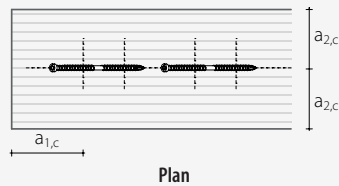
Geometry and minimum distances

GEOMETRY AND MECHANICAL CHARACTERISTICS



DGZ CONNECTOR			
Nominal diameter	d_1 [mm]	7	9
Head diameter	d_k [mm]	9,50	11,50
Tip diameter	d_2 [mm]	4,60	5,90
Shank diameter	d_s [mm]	5,00	6,50
Characteristic yield moment	$M_{y,k}$ [Nmm]	14174,2	27244,1
Characteristic extraction-resistance parameter	$f_{ax,k}$ [N/mm ²]	11,7	11,7
Characteristic tensile strength	$f_{tens,k}$ [kN]	15,4	25,4

MINIMUM DISTANCES FOR AXIAL STRESSES ⁽¹⁾



SCREWS INSERTED WITHOUT PRE-BORED HOLES				SCREWS INSERTED WITH PRE-BORED HOLES			
		7	9			7	9
a_1	[mm]	35	45			35	45
a_2	[mm]	35	45			35	45
$a_{1,c}$	[mm]	70	90			70	90
$a_{2,c}$	[mm]	28	36			21	27

NOTE

⁽¹⁾ The minimum distances for connectors stressed axially are independent of the insertion angle of the connector and the angle of the force with respect to the grain, in accordance with ETA-11/0030

Calculation example: fastening of continuous insulation with DGZ



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PROJECT DATA

Roof loads

Permanent load	g_k	0,45 kN/m ²
Snow load	s	1,70 kN/m ²
Positive wind pressure	w_e	0,30 kN/m ²
Negative wind pressure	w_e	-0,30 kN/m ²
Ridge piece height	z	8,00 m

Building dimensions

Building length	L	11,50 m
Building width	B	8,00 m

Roof geometry

Layer slope	α	30% = 16,7°
Ridge piece position	L_1	5,00 m



INSULATION PACKAGE FIGURES

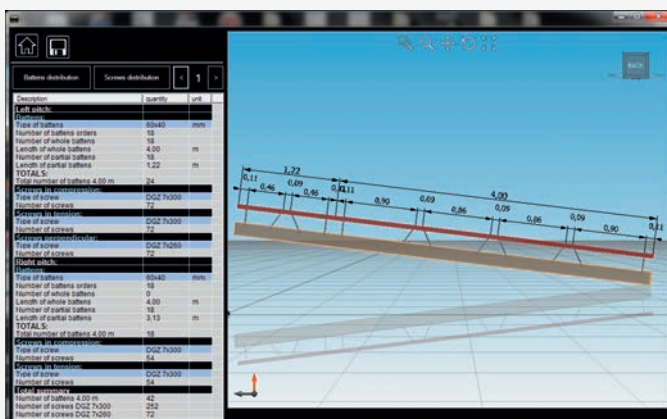
Rafters	$b_r \times h_r$	120 x 160 mm	GL24h	Centre distance	i	0,70 m
Wooden planking	S_1	20,00 mm				
Tile support battens	e_b	0,33 m				
Insulation	S_2	160,00 mm	Wood grain (soft)	$\sigma_{(10\%)}$		0,03 N/mm ²
Battens	$b_l \times h_l$	60 x 40 mm	C24	Commercial length	L_L	4,00 m

CONNECTOR SELECTION - OPTION 1 - DGZ Ø7

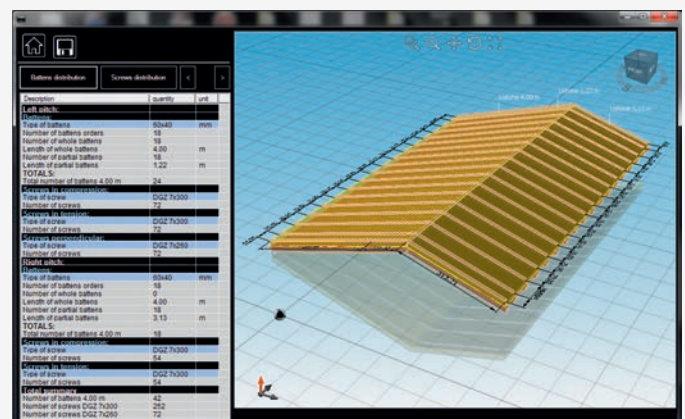
Screw under traction	DGZ	7 x 300 mm	Angle 60°	→	126 pcs
Compressed screw	DGZ	7 x 300 mm	Angle 60°	→	126 pcs
Perpendicular screw	DGZ	7 x 260 mm	Angle 90°	→	72 pcs

CONNECTOR SELECTION - OPTION 2 - DGZ Ø9

Screw under traction	DGZ	9 x 320 mm	Angle 60°	→	108 pcs
Compressed screw	DGZ	9 x 320 mm	Angle 60°	→	108 pcs
Perpendicular screw	DGZ	9 x 280 mm	Angle 90°	→	36 pcs



Connector placement diagram



Roof batten calculation