

S-MD 31 PS 5.5 stainless steel self-drilling screw

Product data

General information

Material specification:

made from A2 (AISI 304) material,
with hardened carbon steel drill point and
thread start, with reduced drill point
= greater pull-out value, with fitted EPDM
sealing washer $\varnothing$ 12 mm.
Coloured screws available on request.

Fastening tools:

Screwdriver:

Hilti ST 1800

Hilti ST2500

Drive using depth gauge set:

Item no. 304611

Bit S-B TX25W:

Item no. 237296

Approvals:

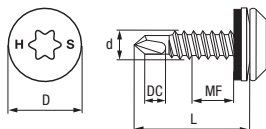


Dimensions

Uses:

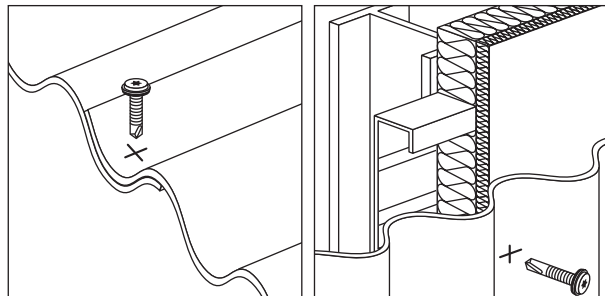
Fastening profiled corrugated sheet metal with profiled corrugate sheet metal with or without intermediate insulation layers.

For corrosion-resistant and watertight joints.



Applications

Examples



Load data
Design data
Drilling capacity Σt

max. 3.0 mm

Screw in end-stop oriented

Component II steel with t_{II} [mm] S235 (DIN EN 10025-1) S280GD up to S350GD (DIN EN 10326)								
0.63	0.75	0.88	1.00	1.13	1.25	1.50	1.75	

Component I

steel with t_I [mm]

S280GD up to S350GD

(DIN EN 10326)

Shear force $V_{R,k}$ [kN]								
0.63	1.13	1.38	1.38	1.38	1.38	1.38	1.38	1.38
0.75	1.21	1.74	1.74	1.74	1.74	1.74	1.74	1.74
0.88	1.21	1.74	2.19	2.19	2.19	2.19	2.19	2.19
1.00	1.21	1.74	2.19	2.63	2.63	2.63	2.63	2.63
1.13	1.21	1.74	2.19	2.63	2.63	2.63	2.63	2.63
1.25	1.21	1.74	2.19	2.63	2.63	2.63	2.63	2.63
1.50	1.21	1.74	2.19	2.63	2.63	2.63	2.63	–
1.75	1.21	1.74	2.19	2.63	2.63	2.63	–	–
2.00	1.21	1.74	2.19	2.63	–	–	–	–
Tension force $N_{R,k}$ [kN]								
0.63	0.66	0.89	1.14	1.39	1.68	1.91	1.91	1.91
0.75	0.66	0.89	1.14	1.39	1.68	1.91	1.91	1.91
0.88	0.66	0.89	1.14	1.39	1.68	1.91	1.91	1.91
1.00	0.66	0.89	1.14	1.39	1.68	1.91	1.91	1.91
1.13	0.66	0.89	1.14	1.39	1.68	1.91	1.91	1.91
1.25	0.66	0.89	1.14	1.39	1.68	1.91	1.91	1.91
1.50	0.66	0.89	1.14	1.39	1.68	1.91	1.91	1.91
1.75	0.66	0.89	1.14	1.39	1.68	1.91	1.91	1.91
2.00	0.66	0.89	1.14	1.39	1.68	1.91	1.91	1.91

Screw in end-stop oriented

Component II steel with t_{II} [mm] S235 (DIN EN 10025-1) S280GD up to S350GD (DIN EN 10326)					
0.63	0.75	0.88	1.00	1.13	

Component I steel with t_I [mm] S280GD up to S350GD (DIN EN 10326)					
	Shear force $V_{R,k}$ [kN]				
0.63 × 2	2.04	2.04	2.04	2.04	2.04
0.75 × 2	2.04	2.41	2.41	2.41	–
0.88 × 2	2.04	2.41	2.41	2.41	–
1.00 × 2	2.04	2.41	2.41	3.07	–
1.13 × 2	2.04	2.41	2.41	–	–
1.25 × 2	2.04	2.41	–	–	–
	Tension force $N_{R,k}$ [kN]				
0.63 × 2	1.37	2.15	2.34	2.34	2.34
0.75 × 2	1.37	2.15	2.34	2.34	2.34
0.88 × 2	1.37	2.15	2.34	2.34	2.34
1.00 × 2	1.37	2.15	2.34	2.34	2.34
1.13 × 2	1.37	2.15	2.34	–	–
1.25 × 2	1.37	2.15	–	–	–
1.50 × 2	1.37	–	–	–	–

Screw in end-stop oriented

Component II aluminium t_{II} [mm] Profil sheeting with $R_m \geq 185 \text{ N/mm}^2$ according to DIN EN 485-2:2004-09 or substructure according to DIN 4113-1/A1:2002-09 with $\beta_z 185 \text{ N/mm}^2$								
0.50	0.60	0.70	0.80	0.90	1.00	1.50	2.00	

Component I aluminium t_I [mm] Profil sheeting with R_m $\geq 185 \text{ N/mm}^2$ according to DIN EN 485-2:2004-09								
	Shear force $V_{R,k}$ [kN]							
0.50	0.35	0.48	0.60	0.60	0.60	0.60	0.60	0.60
0.60	0.37	0.48	0.60	0.60	0.60	0.60	0.60	0.60
0.70	0.39	0.50	0.60	0.60	0.60	0.60	0.60	0.60
0.80	0.39	0.50	0.60	0.60	0.60	0.60	0.60	0.60
0.90	0.39	0.50	0.60	0.60	0.60	0.60	0.60	0.60
1.00	0.39	0.50	0.60	0.60	1.00	1.20	1.20	1.20
1.10	0.39	0.50	0.60	0.60	1.00	1.20	1.20	–
1.20	0.39	0.50	0.60	0.60	1.00	1.20	1.20	–
1.30	0.39	0.50	0.60	0.60	1.00	1.20	1.20	–
1.40	0.39	0.50	0.60	0.60	1.00	1.20	1.20	–
1.50	0.39	0.50	0.60	0.60	1.00	1.20	1.20	–
	Tension force $N_{R,k}$ [kN]							
0.50	0.23	0.31	0.39	0.53	0.61	0.61	0.61	0.61
0.60	0.23	0.31	0.39	0.53	0.64	0.69	0.70	0.70
0.70	0.23	0.31	0.39	0.53	0.64	0.69	0.83	0.83
0.80	0.23	0.31	0.39	0.53	0.64	0.69	0.99	0.99
0.90	0.23	0.31	0.39	0.53	0.64	0.69	1.19	1.19
1.00	0.23	0.31	0.39	0.53	0.64	0.69	1.25	1.25
1.10	0.23	0.31	0.39	0.53	0.64	0.69	1.25	–
1.20	0.23	0.31	0.39	0.53	0.64	0.69	1.25	–
1.30	0.23	0.31	0.39	0.53	0.64	0.69	1.25	–
1.40	0.23	0.31	0.39	0.53	0.64	0.69	1.25	–
1.50	0.23	0.31	0.39	0.53	0.64	0.69	1.25	–

Screw in end-stop oriented

Component II steel t_{II} [mm] S235 according to DIN EN 10026-2 S280GD up to S350GD as per DIN EN 10326					
2 × 0.63	2 × 20.70	2 × 0.80	2 × 1.00	2 × 1.13	

Component I aluminium t_I [mm] Profil sheeting with R_m $\geq 185 \text{ N/mm}^2$ according to DIN EN 485-2:2004-09					
	Shear force $V_{R,k}$ [kN]				
0.50	0.94	0.94	0.94	0.94	0.94
0.60	0.94	0.94	0.94	0.94	0.94
0.70	0.94	1.21	1.21	1.21	1.21
0.80	0.94	1.21	1.21	1.21	–
0.90	0.94	1.21	1.21	1.21	–
1.00	0.94	1.21	1.21	1.21	–
1.10	0.94	1.21	1.21	–	–
1.20	0.94	1.21	1.21	–	–
1.30	0.94	1.21	–	–	–
1.40	0.94	1.21	–	–	–
1.50	0.94	1.21	–	–	–
	Tension force $N_{R,k}$ [kN]				
0.50	0.61	0.61	0.61	0.61	0.61
0.60	0.70	0.70	0.70	0.70	0.70
0.70	0.83	0.83	0.83	0.83	0.83
0.80	0.99	0.99	0.99	0.99	–
0.90	1.19	1.19	1.19	1.19	–
1.00	1.37	1.42	1.42	1.42	–
1.10	1.37	1.70	1.70	–	–
1.20	1.37	2.02	2.02	–	–
1.30	1.37	2.02	–	–	–
1.40	1.37	2.02	–	–	–
1.50	1.37	2.02	–	–	–

Addition provisions::

For asymmetric loading on profile sheeting with $t_I < 1.25 \text{ mm}$ or asymmetric seel profiles with $t_{II} < 5.0 \text{ mm}$ (load values have to be multiplied by a factor of 0.7).

Safety factors according to EN 1993-1-3 and CUAP 06.02/07

	Tension	Shear
Partial safety concept		
Partial safety factor	$\gamma_M = 1.33$	$\gamma_M = 1.33$
Influence of cyclic loading	$\alpha_{\text{cyclic}} = 1.0$	– / –
Design load	$N_{Rd} = 1.0 \cdot N_{Rk} / 1.33$	$V_{Rd} = V_{Rk} / 1.33$
Global safety concept		
Global safety factor *	$\gamma_{\text{GLOB}} = 2.0$	$\gamma_{\text{GLOB}} = 2.0$
Recommended load	$N_{\text{rec}} = 1.0 \cdot N_{Rk} / 2.0$	$V_{\text{rec}} = V_{Rk} / 2.0$

* Note: The global safety factor of 2.0 includes a partial safety factor of $\gamma_F = 1.5$ for wind load. For other loads safety factors should be applied in accordance with the appropriate standards.

Screw selection
Screw program

Drilling thickness DC mm	Fastening thickness MF max. mm	Dimensions (dxL) mm	Sealing washer $\varnothing$ mm	Drive dimensions	Package contents	Ordering designation	Item no.
1.0–3.00	7	5.5x22	12	TX 25	500	S-MD 31 PS 5.5x22	202423
1.0–3.00	13	5.5x28	12	TX 25	500	S-MD 31 PS 5.5x28	202424
1.0–3.00	23	5.5x38	12	TX 25	250	S-MD 31 PS 5.5x38	202425
1.0–3.00	35	5.5x50	12	TX 25	250	S-MD 31 PS 5.5x50	202426