

# S-MD 51 Z 4.8×L carbon steel self-drilling screw for sheet overlaps

## Product data

### General information

#### Material specification:

Carbon steel: case-hardened  
 Zinc coating:  $\geq 8 \mu\text{m}$  galvanized  
 with reduced-diameter drill point and fitted EPDM sealing washer,  $\varnothing 16 \text{ mm}$ .  
 Self-drilling screws with coloured head and sealing washer; other special colours available on request.

#### Fastening tools

Screwdriver: Hilti ST2500,  
 Hilti ST1800  
 Drive using depth gauge set: Item no. 304611  
 Nut set driver S-NSD 8: Item no. 308901

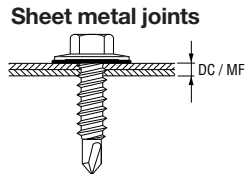
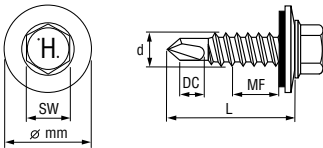
#### Approvals



### Dimensions

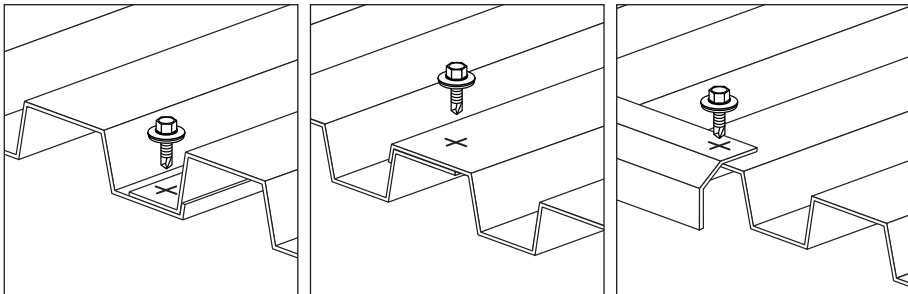
#### Uses:

Fastening sheet metal to sheet metal



### Applications

#### Examples



## Load data

### Design data

#### Drilling capacity $\Sigma t$

max. 2.75 mm

#### Tightening torque (recommendation)

Screw in end-stop oriented

Total thickness $\Sigma t$ :	up to 1.25 mm	up to 2.75 mm
Tightening torque:	2 Nm	5 Nm

#### Component II steel with $t_{II}$ [mm]

S235J according to DIN EN 10025-2

S280GD or S320GD (DIN EN 10326)

**0.63 0.75 0.88 1.00 1.13 1.25 1.50 2.00**

#### Component I

steel with  $t_I$  [mm]

S280GD or S320GD

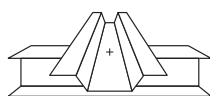
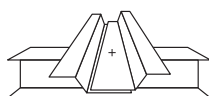
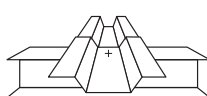
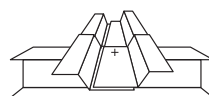
(DIN EN 10326)

#### Shear force $V_{R,k}$ [kN]

<b>0.63</b>	1.30	1.80	2.30	2.90	2.90	2.90ac	2.90ac	2.90ac
<b>0.75</b>	1.30	1.80	2.30	2.90	3.51	3.70ac	3.70ac	3.70a
<b>0.88</b>	1.30	1.80	2.30	2.90	3.51	4.10	4.80*	–
<b>1.00</b>	1.30	1.80	2.30	2.90	3.51	4.10	5.60	–
<b>1.13</b>	1.30	1.80	2.30	2.90	3.51	4.10	5.60	–
<b>1.25</b>	1.30	1.80	2.30	2.90	3.51	4.10	5.60	–
<b>1.50</b>	1.30	1.90	2.70	3.60	4.70	5.90	–	–

#### Tension force $N_{R,k}$ [kN]

<b>0.50</b>	0.43	0.54	0.70	0.81	0.97ac	1.13ac	1.40ac	1.40ac
<b>0.55</b>	0.55	0.68	0.89	1.02	1.23ac	1.43ac	1.77ac	1.77ac
<b>0.63</b>	0.80	1.00	1.30	1.50	1.80ac	2.10ac	2.60ac	2.60ac
<b>0.75</b>	0.80	1.00	1.30	1.50	1.80	2.10ac	2.70ac	2.70a
<b>0.88</b>	0.80	1.00	1.30	1.50	1.80	2.10	2.70*	–
<b>1.00</b>	0.80	1.00	1.30	1.50	1.80	2.10	2.70	–
<b>1.13</b>	0.80	1.00	1.30	1.50	1.80	2.10	2.70	–
<b>1.25</b>	0.80	1.00	1.30	1.50	1.80	2.10	2.70	–
<b>1.50</b>	0.80	1.00	1.30	1.50	1.80	2.10	2.70	–

(a)  
single(b)  
side lap(c)  
end overlap(d)  
side lap and end overlap

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

	Tension	Shear
<b>Partial safety concept</b>		
Partial safety factor	$\gamma_M = 1.33$	$\gamma_M = 1.33$
Influence of cyclic loading	$\alpha_{\text{cyclic}} = 1.0$	- / -
Design load	$N_{Rd} = 1.0 \cdot N_{Rk} / 1.33$	$V_{Rd} = V_{Rk} / 1.33$
<b>Global safety concept</b>		
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	Head size AF	RAL colour	Package contents	Ordering designation	Item no.
1.2-2.75	5.5	4.8x19	16	8		500	S-MD51Z 4.8x19	219032

RAL colours available immediately from stock

1.2-2.75	5.5	4.8x19	16	8	1015 light ivory	500	S-MD51Z 4.8x19 PB15	224616
1.2-2.75	5.5	4.8x19	16	8	5008 grey blue	500	S-MD51Z 4.8x19 PF08	231397
1.2-2.75	5.5	4.8x19	16	8	7022 umbra grey	500	S-MD51Z 4.8x19 PH22	224617
1.2-2.75	5.5	4.8x19	16	8	8012 red brown	500	S-MD51Z 4.8x19 PK12	235208
1.2-2.75	5.5	4.8x19	16	8	9002 grey white	500	S-MD51Z 4.8x19 PL02	224615
1.2-2.75	5.5	4.8x19	16	8	9006 white aluminium	500	S-MD51Z 4.8x19 PL06	224614
1.2-2.75	5.5	4.8x19	16	8	9010 pure white	500	S-MD51Z 4.8x19 PL10	224613