

# S-MD 01 Z, S-MD 01 Y carbon steel self-drilling screw

## Product data

### General information

#### Material specification:

Carbon steel: case-hardened

S-MD01Z: Zinc coating:  $\geq 8 \mu\text{m}$  galvanized

S-MD01Y: Zinc coating:  $\geq 8 \mu\text{m}$  galvanized and yellow chromated

Stand-up tool with screwdriver

Hilti SDT 30, ST 1800

Torque settings:

$\varnothing 4.8 = 3-5$   
 $\varnothing 5.5 = 6-8$

Drive without depth gauge.

Cut-out controlled by torque clutch

Bit holder S-BH 435DT: Item no. 304415

S-NS D8 nut set driver: Item no. 304413

#### Fastening tools

Screwdriver: Hilti ST 1800

Torque settings  
 $\varnothing 4.2 = 1-3$   
 $\varnothing 4.8 = 3-5$   
 $\varnothing 5.5 = 6-8$   
 $\varnothing 6.3 = 8-10$

Drive without depth gauge.

Cut-out controlled by torque clutch

Nut set driver:

S-MD01Z 4.2xL S-NSD7  
Item no. 308900

S-MD01Z 4.8x19 S-NSD8  
Item no. 308901

S-MD01Z 6.3x19 S-NSD $\frac{3}{8}$ "  
Item no. 308905

#### Approvals:

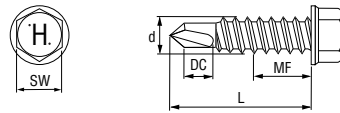


### Dimensions

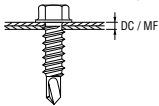
#### Uses:

Overlap joints in load-bearing (decking) sheets not exposed to the weather.

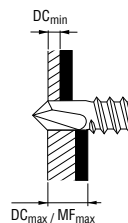
Fastening liner trays, web joints.



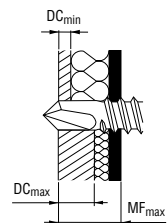
### Sheet metal joints



#### without insulation

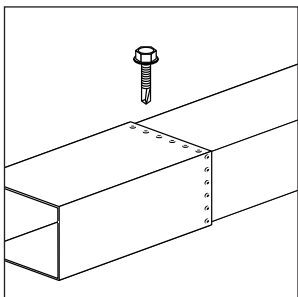
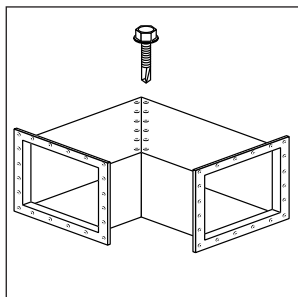
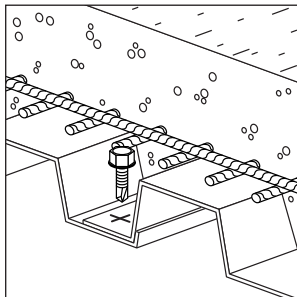
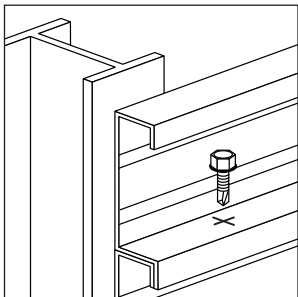
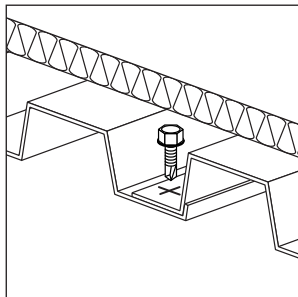


#### with insulation



## Applications

### Examples



**Load data**

**Design data**

**Drilling capacity  $\Sigma t$**

max. 2.5 mm

**Tightening torque** (recommendation)

Screw in end-stop oriented

Total thickness $\Sigma t$ :	up to 1.25 mm	up to 2.50 mm
Tightening torque:	2 Nm	4 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**

**Component I**

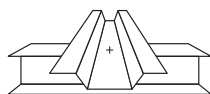
steel with  $t_I$  [mm]  
 S280GD or S320GD  
 (DIN EN 10326)

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

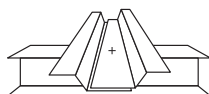
<b>0.63</b>	1.50	2.00	2.50	2.60	2.60 ac	2.60 ac	2.60 a
<b>0.75</b>	1.70	2.10	2.60	3.00	3.60	4.00	4.00
<b>0.88</b>	1.80	2.20	2.80	3.30	4.00	4.50	4.50
<b>1.00</b>	1.90	2.40	3.00	3.60	4.30	5.00	5.00
<b>1.13</b>	1.90	2.40	3.00	3.60	4.30	5.00	–
<b>1.25</b>	1.90	2.40	3.00	3.60	4.30	5.00	–
<b>1.50</b>	1.90	2.40	3.00	3.60	–	–	–

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

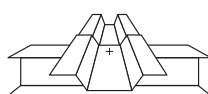
<b>0.63</b>	0.90	1.20	1.40	1.40	1.40 ac	1.40 ac	1.40 a
<b>0.75</b>	0.90	1.20	1.40	1.70	1.90	2.00	2.00
<b>0.88</b>	0.90	1.20	1.40	1.70	1.90	2.20	2.70
<b>1.00</b>	0.90	1.20	1.40	1.70	1.90	2.20	2.80
<b>1.13</b>	0.90	1.20	1.40	1.70	1.90	2.20	–
<b>1.25</b>	0.90	1.20	1.40	1.70	1.90	2.20	–
<b>1.50</b>	0.90	1.20	1.40	1.70	–	–	–



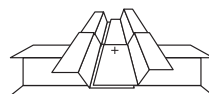
(a)  
single



(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	Head size AF	Package contents	Ordering designation	Item no.
1.2-2.50	4.5	4.2 x 13	7	1000	S-MD01 Z 4.2 x 13	224500
1.2-2.50	7.5	4.2 x 16	7	1000	S-MD01 Z 4.2 x 16	010405

**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

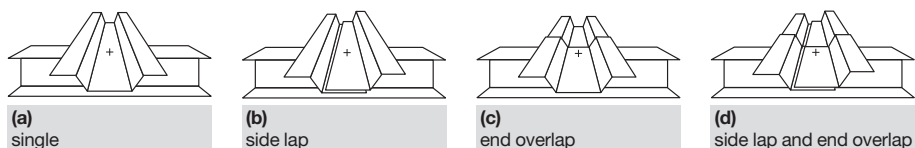
(DIN EN 10326)

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

<b>0.63</b>	1.40	1.80	2.10	2.40	2.70	3.00 ac	3.60 ac	3.60 ac
<b>0.75</b>	1.40	1.90	2.30	2.70	3.10	3.50	4.40	4.40 a
<b>0.88</b>	1.40	1.90	2.40	2.90	3.30	3.90	5.10	–
<b>1.00</b>	1.40	1.90	2.40	3.00	3.60	4.30	5.80	–
<b>1.13</b>	1.30	1.90	2.40	3.00	3.60	4.30	5.80	–
<b>1.25</b>	1.40	1.90	2.40	3.00	3.60	4.30	5.80	–
<b>1.50</b>	1.40	2.00	2.70	3.50	4.40	5.40	–	–

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

<b>0.63</b>	0.80	1.00	1.30	1.40	1.40	1.40 ac	1.40 ac	1.40 ac
<b>0.75</b>	0.80	1.00	1.30	1.50	1.80	2.00	2.00	2.00 a
<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	–	–


**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	$\alpha_{cyclic} = 1.0$	- / -
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 *	$\gamma_{GLOB} = 2.0$	$\gamma_{GLOB} = 2.0$
Recommended load	$N_{rec} = 1.0 \cdot N_{Rk} / 2.0$	$V_{rec} = V_{Rk} / 2.0$

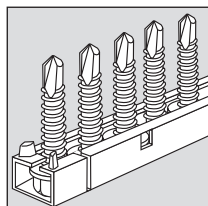
\* Note: The global safety factor of 2.0 includes a partial safety factor of  $\gamma_F = 1.5$  for wind load. For other loads safety factors should be applied in accordance with the appropriate standards.

**Screw selection**
**Screw program – for sheet overlaps (with reduced drill point diameter)**

Drilling thickness DC mm	Fastening thickness MF max. mm	Dimensions (dxL) mm	Head size AF	Package contents	Ordering designation	Item no.
1,2-2,75	8,5	4,8x19	8	500	S-MD01Z 4.8x19	219557

**Screw program – Mechanical and Electrical**

Drilling thickness DC mm	Fastening thickness MF max. mm	Dimensions (dxL) mm	Head size AF	Package contents	Ordering designation	Item no.
1,2-2,75	3,5	4,8x13	8	1000	S-MD01Z 4.8x13	224501
1,2-2,75	6,5	4,8x16	8	500	S-MD01Y 4.8x16	257732



Collated self-drilling screws can be driven using the SDT25 stand-up tool and ST1800 metal construction screwdriver.

**Screw program – for sheet overlaps (with reduced drill point diameter)**

Drilling thickness DC mm	Fastening thickness MF max. mm	Dimensions (dxL) mm	Head size AF	Package contents	Ordering designation	Item no.
1,2-2,75	8,5	4,8x19	8	250	S-MD01Z 4.8x19M	378978
1,2-2,75	7	4,8x22	8	250	S-MD01LZ 4.8x22M	284488

**Load data**

**Design data**

**Drilling capacity  $\Sigma t$**

max. 3.00 mm

**Tightening torque (recommendation)**

Screw in end-stop oriented

Total thickness  $\Sigma t_j$ : up to 1.25 mm up to 3.00 mm

Tightening torque: 3 Nm 6 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

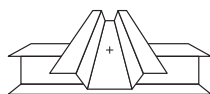
(DIN EN 10326)

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

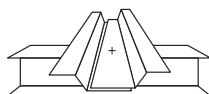
<b>0.63</b>	1.50	1.80	2.00	2.10	2.30	2.40	2.60 ac	2.60 ac
<b>0.75</b>	1.60	2.00	2.50	2.90	3.40	3.80	3.80 ac	3.80 a
<b>0.88</b>	1.70	2.10	2.60	3.00	3.50	4.00	4.50	5.10
<b>1.00</b>	1.90	2.30	2.80	3.20	3.70	4.20	5.20	5.20
<b>1.13</b>	2.70	3.10	3.60	3.90	4.40	5.10	5.90	–
<b>1.25</b>	3.50	3.90	4.30	4.60	5.00	6.00	6.60	–
<b>1.50</b>	3.50	3.90	4.30	4.60	5.60	6.00	6.60	–
<b>1.75</b>	3.50	3.90	4.30	4.60	–	–	–	–
<b>2.00</b>	3.50	3.90	4.30	4.60	–	–	–	–

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

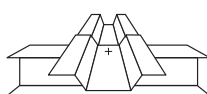
<b>0.63</b>	0.90	1.20	1.50	1.70	1.70	1.70	1.70 ac	1.70 ac
<b>0.75</b>	0.90	1.20	1.50	1.80	2.10	2.30	2.30 ac	2.30 a
<b>0.88</b>	0.90	1.20	1.50	1.80	2.10	2.40	2.90	2.90
<b>1.00</b>	0.90	1.20	1.50	1.80	2.10	2.40	3.10	3.50
<b>1.13</b>	0.90	1.20	1.50	1.80	2.10	2.40	3.10	–
<b>1.25</b>	0.90	1.20	1.50	1.80	2.10	2.40	3.10	–
<b>1.50</b>	0.90	1.20	1.50	1.80	2.10	2.40	3.10	–
<b>1.75</b>	0.90	1.20	1.50	1.80	–	–	–	–
<b>2.00</b>	0.90	1.20	1.50	1.80	–	–	–	–



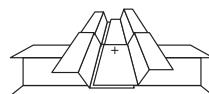
(a)  
single



(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	Head size AF	Package contents	Ordering designation	Item no.
1.2-3	7.5	5.5x19	8	500	S-MD01Z 5.5x19	219558



**Load data**

**Design data**

**Drilling capacity  $\Sigma t$**

max. 3.00 mm

**Tightening torque (recommendation)**

Screw in end-stop oriented

Total thickness  $\Sigma t_j$ : up to 1.25 mm up to 3.00 mm

Tightening torque: 3 Nm 6 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

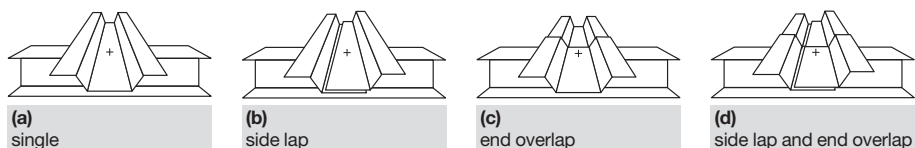
(DIN EN 10326)

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

<b>0.63</b>	1.50	2.00	2.50	2.90	3.50	3.70 ac	3.70 ac	3.70 ac
<b>0.75</b>	1.90	2.30	2.80	3.30	3.80	4.30	4.80 ac	4.80 ac
<b>0.88</b>	2.00	2.40	2.90	3.30	3.80	4.30	5.10	6.00 a
<b>1.00</b>	2.10	2.50	3.00	3.40	3.90	4.40	5.40	7.20
<b>1.13</b>	2.10	2.50	3.10	3.60	4.20	4.80	6.00	–
<b>1.25</b>	2.10	2.60	3.30	3.90	4.60	5.20	6.70	–
<b>1.50</b>	2.10	2.60	3.30	3.90	4.60	5.20	6.70	–
<b>1.75</b>	2.10	2.60	3.30	3.90	–	–	–	–
<b>2.00</b>	2.10	2.60	3.30	3.90	–	–	–	–

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

<b>0.63</b>	0.90	1.20	1.50	1.80	1.90	1.90 ac	1.90 ac	1.90 ac
<b>0.75</b>	0.90	1.20	1.50	1.80	2.10	2.40	2.40 ac	2.40 ac
<b>0.88</b>	0.90	1.20	1.50	1.80	2.10	2.40	3.10	3.40 a
<b>1.00</b>	0.90	1.20	1.50	1.80	2.10	2.40	3.10	4.30
<b>1.13</b>	0.90	1.20	1.50	1.80	2.10	2.40	3.10	–
<b>1.25</b>	0.90	1.20	1.50	1.80	2.10	2.40	3.10	–
<b>1.50</b>	0.90	1.20	1.50	1.80	2.10	2.40	3.10	–
<b>1.75</b>	0.90	1.20	1.50	1.80	–	–	–	–
<b>2.00</b>	0.90	1.20	1.50	1.80	–	–	–	–


**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	Head size AF	Package contents	Ordering designation	Item no.
1.2-3	7	6.3x19	3/8"	500	S-MD01Z 6.3x19	219559