

# S-MP 53 S 6.5×L / S-MP 63 S 6.5×L / S-MP 73 S 6.5×L self-tapping screw

## Product data

### General information

**Material specification:** made from A2 (AISI 304) stainless steel, with fitted EPDM sealing washer  $\varnothing$  16, 19 or 22 mm.  
**Fastening tools:** Drilling tool: Hilti UD30  
 Screwdriver: Hilti ST1800  
 Depth gauge set: Item no. 304611  
 Nut set driver S-NSD  $3/8''$ : Item no. 308905  
 HSS drill bit

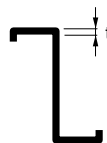
Coloured screws available on request.

Approvals:



Recommended pre-drilled hole diameter in  $t_{II}$ :

t/mm	0.63	0.75	0.88	1.25	1.50	3.00
Pre-drilled $\varnothing$ mm	3.50	4.00	4.50	4.50	5.00	5.00
Pre-drilled $\varnothing$ in timber	4.50 mm					



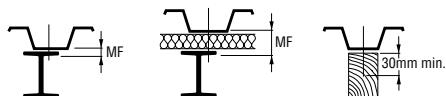
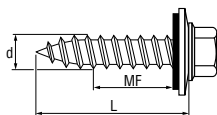
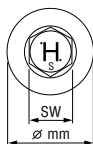
### Dimensions

Uses:

Fastening aluminium or steel sheet to thin steel or aluminium members or to timber framing.

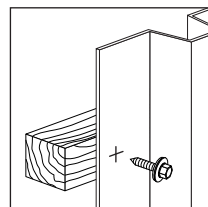
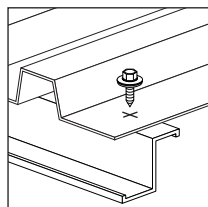
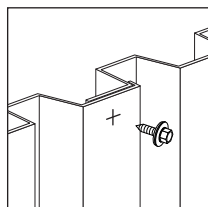
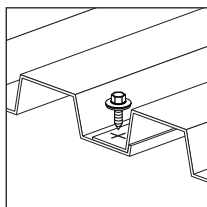
Steel framing: Member thickness max. 3 mm

Timber framing: Depth of engagement min. 30 mm



### Applications

Examples



**Load data**
**Design data**
**Screw in end-stop oriented**

<b>Component II steel with <math>t_{II}</math> [mm]</b> S235J according to DIN EN 10025-2 S280GD or S320GD (DIN EN 10326)									
	<b>0.63</b>	<b>0.75</b>	<b>0.88</b>	<b>1.00</b>	<b>1.13</b>	<b>1.25</b>	<b>1.50</b>	<b>2.00</b>	<b>3.00</b>
<b>Pre-drill (<math>\varnothing</math> mm)</b>	4.0	4.0	4.5	4.5	4.5	4.5	5.0	5.0	5.0
<b>Tightening torque</b>									
Recommendation (Nm)	3	3	3	3	3	3	5	5	5

**Component I**

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

	<b>Shear force <math>V_{R,k}</math> [kN]</b>								
<b>0.63</b>	1.30	1.50	1.80	2.00 <sub>ac</sub>	2.30 <sub>ac</sub>	2.50 <sub>ac</sub>	2.90 <sub>ac</sub>	2.90 <sub>ac</sub>	2.90 <sub>ac</sub>
<b>0.75</b>	1.40	1.60	1.90	2.20 <sub>ac</sub>	2.50 <sub>ac</sub>	2.60 <sub>ac</sub>	3.10 <sub>ac</sub>	3.50 <sub>ac</sub>	3.50 <sub>ac</sub>
<b>0.88</b>	1.50	1.70	2.00	2.30 <sub>ac</sub>	2.60 <sub>ac</sub>	2.80 <sub>ac</sub>	3.20 <sub>ac</sub>	3.70 <sub>ac</sub>	3.70 <sub>ac</sub>
<b>1.00</b>	1.50	1.80	2.10	2.50	2.80	3.10	3.60	3.90 <sub>ac</sub>	3.90 <sub>ac</sub>
<b>1.13</b>	1.60	1.80	2.20	2.60	2.90	3.20	3.80	4.00 <sub>ac</sub>	4.00 <sub>ac</sub>
<b>1.25</b>	1.60	1.90	2.30	2.70	3.00	3.30	4.00	4.10 <sub>ac</sub>	4.10 <sub>ac</sub>
<b>1.50</b>	1.60	1.90	2.40	2.80	3.20	3.50	4.00	4.30	4.30
<b>1.75</b>	1.60	1.90	2.40	2.80	3.20	3.50	4.00	4.30	4.30
<b>2.00</b>	1.60	1.90	2.40	2.80	3.20	3.50	4.00	4.30	4.30
	<b>Tension force <math>N_{R,k}</math> [kN]</b>								
<b>0.50</b>	0.49	0.59	0.70	0.76 <sub>ac</sub>	0.86 <sub>ac</sub>	0.97 <sub>ac</sub>	1.13 <sub>ac</sub>	1.19 <sub>ac</sub>	1.19 <sub>ac</sub>
<b>0.55</b>	0.61	0.75	0.89	0.95 <sub>ac</sub>	1.09 <sub>ac</sub>	1.23 <sub>ac</sub>	1.43 <sub>ac</sub>	1.50 <sub>ac</sub>	1.50 <sub>ac</sub>
<b>0.63</b>	0.90	1.10	1.30	1.40 <sub>ac</sub>	1.60 <sub>ac</sub>	1.80 <sub>ac</sub>	2.10 <sub>ac</sub>	2.20 <sub>ac</sub>	2.20 <sub>ac</sub>
<b>0.75</b>	0.90	1.10	1.30	1.40 <sub>ac</sub>	1.60 <sub>ac</sub>	1.80 <sub>ac</sub>	2.10 <sub>ac</sub>	2.80 <sub>ac</sub>	2.80 <sub>ac</sub>
<b>0.88</b>	0.90	1.10	1.30	1.40 <sub>ac</sub>	1.60 <sub>ac</sub>	1.80 <sub>ac</sub>	2.10 <sub>ac</sub>	3.50 <sub>ac</sub>	3.50 <sub>ac</sub>
<b>1.00</b>	0.90	1.10	1.30	1.40	1.60	1.80	2.20	3.60 <sub>ac</sub>	3.60 <sub>ac</sub>
<b>1.13</b>	1.00	1.20	1.40	1.50	1.70	1.90	2.30	3.60 <sub>ac</sub>	3.60 <sub>ac</sub>
<b>1.25</b>	1.00	1.20	1.40	1.50	1.70	1.90	2.30	3.60 <sub>ac</sub>	3.60 <sub>ac</sub>
<b>1.50</b>	1.00	1.20	1.40	1.50	1.70	1.90	2.30	3.60	3.60
<b>1.75</b>	1.00	1.20	1.40	1.50	1.70	1.90	2.30	3.60	3.60
<b>2.00</b>	1.00	1.20	1.40	1.50	1.70	1.90	2.30	3.60	3.60

### Component II aus Holz

Solid timber S10/C24 with  $e \geq 26$  mm  
Screw in end-stop oriented

### Component I

steel with  $t_f$  [mm]  
S280GD or S350GD  
(DIN EN 10326

**0.63 0.75 0.88 1.00 1.13 1.25 1.50 2.00 3.00**

Failure of

component I

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

(bearing stress)

**2.90 3.50 3.70 3.90 4.00 4.10 4.30 4.30 4.30**

Failure of

component I

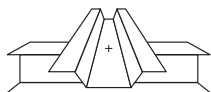
**Tension force  $N_{R,k}$  [kN]**

(pull-over)

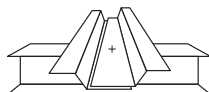
**2.00 2.80 3.50 3.60 3.60 3.60 3.60 3.60 3.60**

Addition provisions:

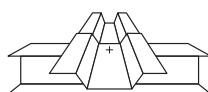
Calculating the resistance of the screw in timber (Component II) according to timber standard's.



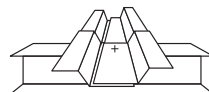
**(a)**  
single



**(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	$\alpha_{cyclic} = 1.0$	- / -
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**

Fastening thickness MF max. mm	Dimensions (dxL) mm	Sealing washer ∅ mm	Head size AF	Package contents	Ordering designation	Item no.
<b>8</b>	6.5x19	16	3/8"	500	S-MP 53 S 6.5 x 19	<b>080448</b>
<b>14</b>	6.5x25	16	3/8"	500	S-MP 53 S 6.5 x 25	<b>080362</b>
<b>21</b>	6.5x32	16	3/8"	250	S-MP 53 S 6.5 x 32	<b>080450</b>
<b>27</b>	6.5x38	16	3/8"	250	S-MP 53 S 6.5 x 38	<b>080451</b>
<b>39</b>	6.5x50	16	3/8"	250	S-MP 53 S 6.5 x 50	<b>080337</b>
<b>52</b>	6.5x63	16	3/8"	100	S-MP 53 S 6.5 x 63	<b>085332</b>
<b>64</b>	6.5x75	16	3/8"	100	S-MP 53 S 6.5 x 75	<b>224558</b>
<b>77</b>	6.5x88	16	3/8"	100	S-MP 53 S 6.5 x 88	<b>085334</b>
<b>89</b>	6.5x100	16	3/8"	100	S-MP 53 S 6.5 x 100	<b>085335</b>
<b>114</b>	6.5x125	16	3/8"	100	S-MP 53 S 6.5 x 125	<b>219093</b>
<b>139</b>	6.5x150	16	3/8"	100	S-MP 53 S 6.5 x 150	<b>219094</b>
<b>164</b>	6.5x175	16	3/8"	100	S-MP 53 S 6.5 x 175	<b>224559</b>
<b>8</b>	6.5x19	19	3/8"	500	S-MP 63 S 6.5 x 19	<b>285217</b>
<b>14</b>	6.5x25	19	3/8"	500	S-MP 63 S 6.5 x 25	<b>285218</b>
<b>21</b>	6.5x32	19	3/8"	250	S-MP 63 S 6.5 x 32	<b>285219</b>
<b>27</b>	6.5x38	19	3/8"	250	S-MP 63 S 6.5 x 38	<b>285220</b>
<b>39</b>	6.5x50	19	3/8"	250	S-MP 63 S 6.5 x 50	<b>285221</b>
<b>52</b>	6.5x63	19	3/8"	100	S-MP 63 S 6.5 x 63	<b>285222</b>
<b>64</b>	6.5x75	19	3/8"	100	S-MP 63 S 6.5 x 75	<b>285223</b>
<b>77</b>	6.5x88	19	3/8"	100	S-MP 63 S 6.5 x 88	<b>285224</b>
<b>89</b>	6.5x100	19	3/8"	100	S-MP 63 S 6.5 x 100	<b>285225</b>
<b>114</b>	6.5x125	19	3/8"	100	S-MP 63 S 6.5 x 125	<b>285226</b>
<b>139</b>	6.5x150	19	3/8"	100	S-MP 63 S 6.5 x 150	<b>285227</b>
<b>164</b>	6.5x175	19	3/8"	100	S-MP 63 S 6.5 x 175	<b>285228</b>
<b>8</b>	6.5x19	22	3/8"	500	S-MP 73 S 6.5 x 19	<b>285205</b>
<b>14</b>	6.5x25	22	3/8"	500	S-MP 73 S 6.5 x 25	<b>285206</b>
<b>21</b>	6.5x32	22	3/8"	250	S-MP 73 S 6.5 x 32	<b>285207</b>
<b>27</b>	6.5x38	22	3/8"	250	S-MP 73 S 6.5 x 38	<b>285208</b>
<b>39</b>	6.5x50	22	3/8"	250	S-MP 73 S 6.5 x 50	<b>285209</b>
<b>52</b>	6.5x63	22	3/8"	100	S-MP 73 S 6.5 x 63	<b>285210</b>
<b>64</b>	6.5x75	22	3/8"	100	S-MP 73 S 6.5 x 75	<b>285211</b>
<b>77</b>	6.5x88	22	3/8"	100	S-MP 73 S 6.5 x 88	<b>285212</b>
<b>89</b>	6.5x100	22	3/8"	100	S-MP 73 S 6.5 x 100	<b>285213</b>
<b>114</b>	6.5x125	22	3/8"	100	S-MP 73 S 6.5 x 125	<b>285214</b>
<b>139</b>	6.5x150	22	3/8"	100	S-MP 73 S 6.5 x 150	<b>285215</b>
<b>164</b>	6.5x175	22	3/8"	100	S-MP 73 S 6.5 x 175	<b>285216</b>