







# SPAX QUICK REFERENCE LOAD TABLES

Australia  
New Zealand

A large, light green watermark of the SPAX logo is centered on the page. The logo features the word "SPAX" in a bold, sans-serif font, with a registered trademark symbol (®) to its upper right. The watermark is set against a background of technical drawings, including a large gear-like shape with a central circular hole and various lines and symbols.




## High Carbon Steel

## DELTA® - SEAL

Washer head Outer diameter 6/8/10mm		3
Countersunk head with partial thread Outer diameter 6/10mm		4
Countersunk head with partial thread Outer diameter 12mm		5
Cylinder head with full thread Outer diameter 6/8mm		6
Countersunk head with full thread Outer diameter 8/10mm		7
Countersunk head with full thread Outer diameter 12mm		8

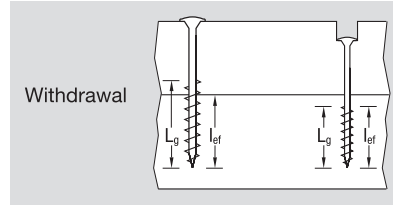
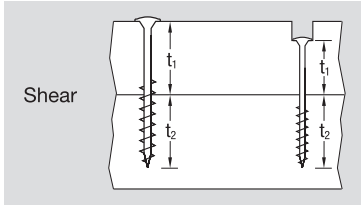
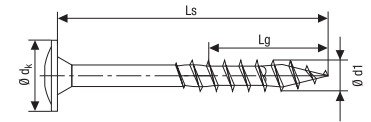
## Stainless Steel



Washer head Outer diameter 6/8mm		9
Countersunk head with partial thread Outer diameter 8/10mm		10
Countersunk head with full thread Outer diameter 10/12mm		11

# SPAX Washer Head

- High Carbon Steel



Failure Mode  
  Head pull-through  
  Thread pull-out

## Characteristic Loads According to SPAX ETA and EC5

Product			Wood - Wood, $\alpha = 90^\circ$							Steel - Wood, $\alpha = 90^\circ$					
Dimensions (mm)			Shear			Withdrawal				Shear			Withdrawal		
Thread Diam.	Screw Length	Thread Length	$t_1$	$t_2$	$F_{v,Rk}$	$t_1$	$l_{ef}$	Thread Withdrawal	Head Pull-through	$t_1$	$t_2$	$F_{v,Rk}$	$t_1$	$l_{ef}$	$F_{ax,Rk}$
$d_1$	$L_s$	$L_g$	(mm)	(mm)	(kN)	(mm)	(mm)	$F_{ax,Rk}$ (kN)	$F_{ax,Rk}$ (kN)	(mm)	(mm)	(kN)	(mm)	(mm)	(kN)
6	60	56	24	36	1.92	24	36	2.88	3.17	6	54	3.48	6	54	4.24
	80	61	32	48	2.28	24	56	4.48	3.17	6	74	3.62	6	61	4.89
	100	61	40	60	2.49	41	59	4.72	4.12	6	94	3.62	6	61	4.89
	120	68	50	70	2.73	52	68	5.45	4.12	6	114	3.76	6	68	5.45
	140	68	70	70	2.73	72	68	5.45	4.12	6	134	3.76	6	68	5.45
	160	65	90	70	2.73	95	65	5.21	4.12	6	154	3.70	6	65	5.21
	180	65	110	70	2.73	115	65	5.21	4.12	6	174	3.70	6	65	5.21
8	80	70	30	50	3.19	30	50	5.34	5.78	6	74	4.60	6	70	7.47
	100	80	40	60	3.27	40	60	6.40	5.78	10	90	6.00	10	80	8.54
	120	80	50	70	4.60	50	70	7.47	5.78	10	110	6.00	10	80	8.54
	140	80	60	80	4.86	60	80	8.54	7.52	10	130	6.00	10	80	8.54
	160	80	80	80	4.86	80	80	8.54	7.52	10	150	6.00	10	80	8.54
	180	80	100	80	4.86	100	80	8.54	7.52	10	170	6.00	10	80	8.54
	200	80	120	80	4.86	120	80	8.54	7.52	10	190	6.00	10	80	8.54
	220	80	140	80	4.86	140	80	8.54	7.52	10	210	6.00	10	80	8.54
	240	80	160	80	4.86	160	80	8.54	7.52	10	230	6.00	10	80	8.54
	260	80	180	80	4.86	180	80	8.54	7.52	10	250	6.00	10	80	8.54
	280	80	200	80	4.86	200	80	8.54	7.52	10	270	6.00	10	80	8.54
	300	80	220	80	4.86	220	80	8.54	7.52	10	290	6.00	10	80	8.54
320-450	80	240-370	80	4.86	240-370	80	8.54	7.52	10	310-440	6.00	10	80	8.54	
10	80	70	40	40	4.00	30	50	6.40	8.00	10	70	6.18	6	70	8.96
	100	80	40	60	4.64	40	60	7.68	8.00	10	90	6.50	10	80	10.24
	120	80	40	80	4.64	40	80	10.24	8.00	10	110	6.50	10	80	10.24
	140	80	60	80	5.94	60	80	10.24	8.00	10	130	6.50	10	80	10.24
	160	80	80	80	6.50	80	80	10.24	10.40	10	150	6.50	10	80	10.24
	180	80	100	80	6.50	100	80	10.24	10.40	10	170	6.50	10	80	10.24
	200	80	120	80	6.50	120	80	10.24	10.40	10	190	6.50	10	80	10.24
	220	80	140	80	6.50	140	80	10.24	10.40	10	210	6.50	10	80	10.24
	240	80	160	80	6.50	160	80	10.24	10.40	10	230	6.50	10	80	10.24
	260	80	180	80	6.50	180	80	10.24	10.40	10	250	6.50	10	80	10.24
	280	80	200	80	6.50	200	80	10.24	10.40	10	270	6.50	10	80	10.24
	300	80	220	80	6.50	220	80	10.24	10.40	10	290	6.50	10	80	10.24
	320 - 450	80	240-370	80	6.50	240-370	80	10.24	10.40	10	310-440	6.50	10	80	10.24

**NOTES:**

Load at an angle of  $90^\circ$  between load direction and grain direction.

The above characteristic loads relate to high carbon steel screws. Values for stainless steel may vary.

They are for Radiata Pine timber with a characteristic density of  $400 \text{ kg/m}^3$  (design density of  $550 \text{ kg/m}^3$ ).

Minimum edge distance and spacing must comply with local standards or the SPAX Design Guide.

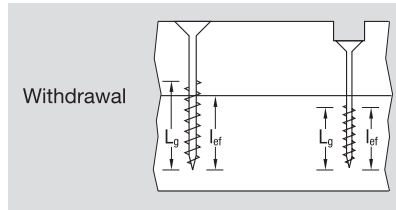
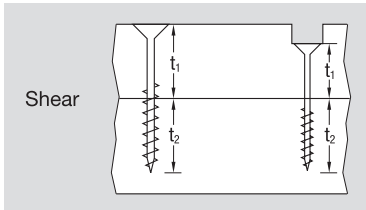
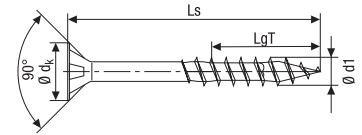
The specified characteristic values must be lowered by safety factor coefficients to the design values for load-carrying capacity.

The safety factor coefficients depend on the environmental conditions ( $k_{mod}$ ) and the load effect duration class ( $\gamma_m$ )

Refer to the SPAX Design Guide and ETA 12/0114 for more detailed design.

# SPAX Countersunk Head Partial Thread

- High Carbon Steel



Failure Mode  
 Head pull-through  
 Thread pull-out

## Characteristic Loads According to SPAX ETA and EC5

Product			Wood - Wood, $\alpha = 90^\circ$						Steel - Wood, $\alpha = 90^\circ$						
Dimensions (mm)			Shear			Withdrawal			Shear			Withdrawal			
Thread Diam. $d_1$	Screw Length $L_s$	Length Partial Thread $L_g$	$t_1$ (mm)	$t_2$ (mm)	$F_{v,Rk}$ (kN)	$t_1$ (mm)	$l_{ef}$ (mm)	Thread Withdrawal $F_{ax,Rk}$ (kN)	Head Pull-through $F_{ax,Rk}$ (kN)	$t_1$ (mm)	$t_2$ (mm)	$F_{v,Rk}$ (kN)	$t_1$ (mm)	$l_{ef}$ (mm)	$F_{ax,Rk}$ (kN)
8	80	47	30	50	2.49	30	47	5.02	3.01	6	70	5.12	6	47	5.02
	100	57	40	60	3.07	40	57	6.08	3.01	10	90	5.38	10	57	6.08
	120	70	50	70	3.71	50	70	7.47	3.92	10	110	5.73	10	70	7.47
	140	80	60	80	3.71	60	80	8.54	3.92	10	130	6.00	10	80	8.54
	160	80	80	80	3.71	80	80	8.54	3.92	10	150	6.00	10	80	8.54
	180	80	100	80	3.71	100	80	8.54	3.92	10	170	6.00	10	80	8.54
	200	80	120	80	3.71	120	80	8.54	3.92	10	190	6.00	10	80	8.54
	220	80	140	80	3.71	140	80	8.54	3.92	10	210	6.00	10	80	8.54
	240	80	160	80	3.71	160	80	8.54	3.92	10	230	6.00	10	80	8.54
	260	80	180	80	3.71	180	80	8.54	3.92	10	250	6.00	10	80	8.54
	280	80	200	80	3.71	200	80	8.54	3.92	10	270	6.00	10	80	8.54
300	80	220	80	3.71	220	80	8.54	3.92	10	290	6.00	10	80	8.54	
320-450	80	240-370	80	3.71	240-370	80	8.54	3.92	10	310-440	6.00	10	80	8.54	
10	80	50	40	40	3.73	30	50	6.40	4.03	10	70	5.54	10	50	6.4
	100	60	40	60	4.17	40	60	7.68	4.03	10	90	5.86	10	60	7.68
	120	80	50	70	4.59	50	70	8.96	4.03	10	110	6.50	10	80	10.24
	140	80	60	80	5.25	60	80	10.24	5.24	10	130	6.50	10	80	10.24
	160	80	80	80	5.25	80	80	10.24	5.24	10	150	6.50	10	80	10.24
	180	80	100	80	5.25	100	80	10.24	5.24	10	170	6.50	10	80	10.24
	200	80	120	80	5.25	120	80	10.24	5.24	10	190	6.50	10	80	10.24
	220	80	140	80	5.25	140	80	10.24	5.24	10	210	6.50	10	80	10.24
	240	80	160	80	5.25	160	80	10.24	5.24	10	230	6.50	10	80	10.24
	260	80	180	80	5.25	180	80	10.24	5.24	10	250	6.50	10	80	10.24
	280	80	200	80	5.25	200	80	10.24	5.24	10	270	6.50	10	80	10.24
300	80	220	80	5.25	220	80	10.24	5.24	10	290	6.50	10	80	10.24	
320 - 450	80	240-370	80	5.25	240-370	80	10.24	5.24	10	310-440	6.50	10	80	10.24	

### NOTES:

Load at an angle of  $90^\circ$  between load direction and grain direction.

The above characteristic loads relate to high carbon steel screws. Values for stainless steel may vary.

They are for Radiata Pine timber with a characteristic density of  $400 \text{ kg/m}^3$  (design density of  $550 \text{ kg/m}^3$ ).

Minimum edge distance and spacing must comply with local standards or the SPAX Design Guide.

The specified characteristic values must be lowered by safety factor coefficients to the design values for load-carrying capacity.

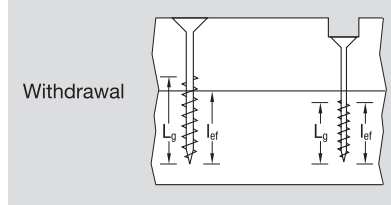
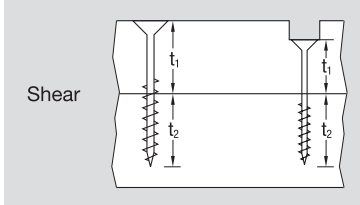
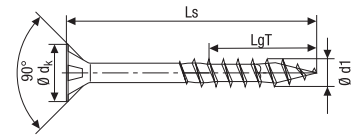
The safety factor coefficients depend on the environmental conditions ( $k_{mod}$ ) and the load effect duration class ( $\gamma_m$ ).

Refer to the SPAX Design Guide and ETA 12/0114 for more detailed design.

**MADE IN  
GERMANY**

# SPAX Countersunk Head Partial Thread (12mm)

- High Carbon Steel



Failure Mode  
 Head pull-through  
 Thread pull-out

## Characteristic Loads According to SPAX ETA and EC5

Product			Wood - Wood, $\alpha = 90^\circ$						Steel - Wood, $\alpha = 90^\circ$						
Dimensions (mm)			Shear			Withdrawal			Shear			Withdrawal			
Thread Diam. $d_1$	Screw Length $L_s$	Length Partial Thread $L_g$	$t_1$ (mm)	$t_2$ (mm)	$F_{v,Rk}$ (kN)	$t_1$ (mm)	$l_{ef}$ (mm)	Thread Withdrawal $F_{ax,Rk}$ (kN)	Head Pull-through $F_{ax,Rk}$ (kN)	$t_1$ (mm)	$t_2$ (mm)	$F_{v,Rk}$ (kN)	$t_1$ (mm)	$l_{ef}$ (mm)	$F_{ax,Rk}$ (kN)
12	100	60	40	60	5.33	40	60	8.81	5.50	12	88	7.53	12	60	8.81
	120	80	50	70	5.76	40	80	11.75	5.50	12	108	8.26	12	80	11.75
	140	80	60	80	6.25	60	80	11.75	5.50	12	128	8.26	12	80	11.75
	160	100	60	100	6.25	60	100	14.69	5.50	12	148	9.00	12	100	14.69
	180	100	80	100	7.12	80	100	14.69	7.15	12	168	9.00	12	100	14.69
	200	100	100	100	7.12	100	100	14.69	7.15	12	188	9.00	12	100	14.69
	220	100	120	100	7.12	120	100	14.69	7.15	12	208	9.00	12	100	14.69
	240	100	140	100	7.12	140	100	14.69	7.15	12	228	9.00	12	100	14.69
	260	100	160	100	7.12	160	100	14.69	7.15	12	248	9.00	12	100	14.69
	280	100	180	100	7.12	180	100	14.69	7.15	12	268	9.00	12	100	14.69
	300	100	200	100	7.12	200	100	14.69	7.15	12	288	9.00	12	100	14.69
350-600	100	250-500	100	7.12	250-500	100	14.69	7.15	12	338-588	9.00	12	100	14.69	

**NOTES:**

Load at an angle of  $90^\circ$  between load direction and grain direction.

The above characteristic loads relate to high carbon steel screws. Values for stainless steel may vary.

They are for Radiata Pine timber with a characteristic density of  $400 \text{ kg/m}^3$  (design density of  $550 \text{ kg/m}^3$ ).

Minimum edge distance and spacing must comply with local standards or the SPAX Design Guide.

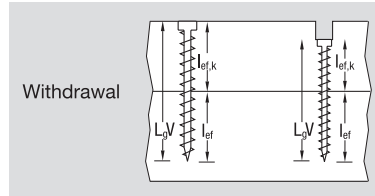
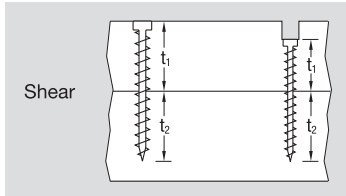
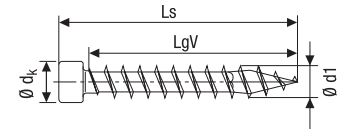
The specified characteristic values must be lowered by safety factor coefficients to the design values for load-carrying capacity.

The safety factor coefficients depend on the environmental conditions ( $k_{mod}$ ) and the load effect duration class ( $\gamma_m$ )

Refer to the SPAX Design Guide and ETA 12/0114 for more detailed design.

# SPAX Cylinder Head Full Thread

- High Carbon Steel



## Characteristic Loads According to SPAX ETA and EC5

Product			Wood - Wood, $\alpha = 90^\circ$					
Dimensions (mm)			Shear			Withdrawal		
Thread Diam. $d_1$	Screw Length $L_s$	Length Partial Thread $L_g$	$t_1$ (mm)	$t_2$ (mm)	$F_{v,Rk}$ (kN)	$t_1$ (mm)	$l_{ef}$ (mm)	$F_{ax,Rk}$ (kN)
6	80	Thread close to head	40	40	2.50	40	40	3.20
	100		50	50	2.70	50	50	4.01
	120		60	60	2.90	60	60	4.81
	140		70	70	3.10	70	70	5.61
	160		80	80	3.30	80	80	6.41
	180		90	90	3.40	90	90	7.21
8	200	Thread close to head	100	100	5.40	100	100	10.68
	220		110	110	5.46	110	110	11.75
	240		120	120	5.46	120	120	12.82
	260		130	130	5.46	130	130	13.89
	280		140	140	5.46	140	140	14.96
	300		150	150	5.46	150	150	16.02
	350		175	175	5.46	175	175	17.00
	400		200	200	5.46	200	200	17.00
450	225	225	5.46	225	225	17.00		

### NOTES:

Load at an angle of  $90^\circ$  between load direction and grain direction.

The above characteristic loads relate to high carbon steel screws. Cylinder head screws are not available in stainless steel

They are for Radiata Pine timber with a characteristic density of  $400 \text{ kg/m}^3$  (design density of  $550 \text{ kg/m}^3$ ).

Minimum edge distance and spacing must comply with local standards or the SPAX Design Guide.

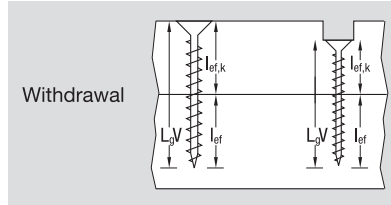
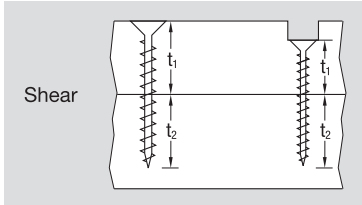
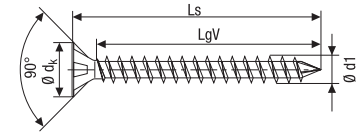
The specified characteristic values must be lowered by safety factor coefficients to the design values for load-carrying capacity.

The safety factor coefficients depend on the environmental conditions ( $k_{mod}$ ) and the load effect duration class ( $\gamma_m$ )

Refer to the SPAX Design Guide and ETA 12/0114 for more detailed design.

# SPAX Countersunk Head Full Thread

- High Carbon Steel



Characteristic Loads According to SPAX ETA and EC5

Product			Wood - Wood, $\alpha = 90^\circ$						Steel - Wood, $\alpha = 90^\circ$					
Dimensions (mm)			Shear			Withdrawal			Shear			Withdrawal		
Thread Diam. $d_1$	Screw Length $L_s$	Length Partial Thread $L_g$	$t_1$ (mm)	$t_2$ (mm)	$F_{v,Rk}$ (kN)	$t_1$ (mm)	$l_{ef}$ (mm)	$F_{ax,Rk}$ (kN)	$t_1$ (mm)	$t_2$ (mm)	$F_{v,Rk}$ (kN)	$t_1$ (mm)	$l_{ef}$ (mm)	$F_{ax,Rk}$ (kN)
8	160	Thread close to head	80	80	4.87	80	80	8.55	10	150	7.63	10	150	16.02
	180		90	90	5.13	90	90	9.61	10	170	7.63	10	170	17.00
	200		100	100	5.40	100	100	10.68	10	190	7.63	10	190	17.00
	220		110	110	5.46	110	110	11.75	10	210	7.63	10	210	17.00
	240		120	120	5.46	120	120	12.82	10	230	7.63	10	230	17.00
	260		130	130	5.46	130	130	13.89	10	250	7.63	10	250	17.00
	280		140	140	5.46	140	140	14.96	10	270	7.63	10	270	17.00
	300		150	150	5.46	150	150	16.02	10	290	7.63	10	290	17.00
	350		175	175	5.46	175	175	17.00	10	340	7.63	10	340	17.00
	400		200	200	5.46	200	200	17.00	10	390	7.63	10	390	17.00
	450		225	225	5.46	225	225	17.00	10	440	7.63	10	440	17.00
	500		250	250	5.46	250	250	17.00	10	490	7.63	10	490	17.00
550	275	275	5.46	275	275	17.00	10	540	7.63	10	540	17.00		
600	300	300	5.46	300	300	17.00	10	590	7.63	10	590	17.00		
10	200	Thread close to head	100	100	7.15	100	100	12.8	10	190	11.02	10	190	23.57
	220		110	110	7.47	110	110	14.08	10	210	11.02	10	210	26.08
	240		120	120	7.79	120	120	15.36	10	230	11.02	10	230	28.00
	260		130	130	7.89	130	130	16.64	10	250	11.02	10	250	28.00
	280		140	140	7.89	140	140	17.92	10	270	11.02	10	270	28.00
	300		150	150	7.89	150	150	19.19	10	290	11.02	10	290	28.00
	350		175	175	7.89	175	175	22.39	10	340	11.02	10	340	28.00
	400		200	200	7.89	200	200	25.59	10	390	11.02	10	390	28.00
	450		225	225	7.89	225	225	28.00	10	440	11.02	10	440	28.00
	500		250	250	7.89	250	250	28.00	10	490	11.02	10	490	28.00
	550		275	275	7.89	275	275	28.00	10	540	11.02	10	540	28.00
	600		300	300	7.89	300	300	28.00	10	590	11.02	10	590	28.00
800	400	400	7.89	400	400	28.00	10	790	11.02	10	790	28.00		

**NOTES:**

Load at an angle of  $90^\circ$  between load direction and grain direction.

The above characteristic loads relate to high carbon steel screws. Values for stainless steel may vary.

They are for Radiata Pine timber with a characteristic density of  $400 \text{ kg/m}^3$  (design density of  $550 \text{ kg/m}^3$ ).

Minimum edge distance and spacing must comply with local standards or the SPAX Design Guide.

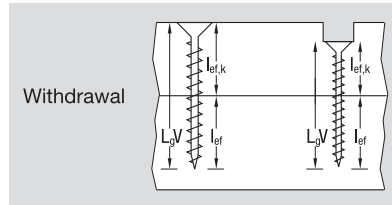
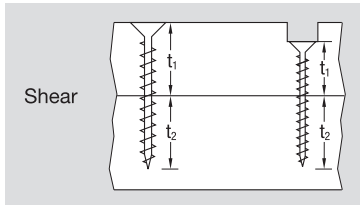
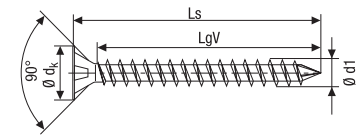
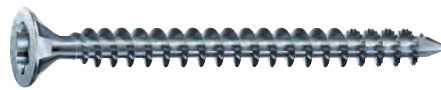
The specified characteristic values must be lowered by safety factor coefficients to the design values for load-carrying capacity.

The safety factor coefficients depend on the environmental conditions ( $k_{mod}$ ) and the load effect duration class ( $\gamma_m$ ).

Refer to the SPAX Design Guide and ETA 12/0114 for more detailed design.

# SPAX Countersunk Head Full Thread (12mm)

- High Carbon Steel



## Characteristic Loads According to SPAX ETA and EC5

Product			Wood - Wood, $\alpha = 90^\circ$						Steel - Wood, $\alpha = 90^\circ$					
Dimensions (mm)			Shear			Withdrawal			Shear			Withdrawal		
Thread Diam. $d_1$	Screw Length $L_s$	Length Partial Thread $L_g$	$t_1$ (mm)	$t_2$ (mm)	$F_{v,Rk}$ (kN)	$t_1$ (mm)	$l_{ef}$ (mm)	$F_{ax,Rk}$ (kN)	$t_1$ (mm)	$t_2$ (mm)	$F_{v,Rk}$ (kN)	$t_1$ (mm)	$l_{ef}$ (mm)	$F_{ax,Rk}$ (kN)
12	200	Thread close to head	100	100	<b>9.00</b>	100	100	<b>14.69</b>	10	190	<b>14.21</b>	10	190	<b>27.06</b>
	220		110	110	<b>9.37</b>	110	110	<b>16.16</b>	10	210	<b>14.89</b>	10	210	<b>29.93</b>
	240		120	120	<b>9.74</b>	120	120	<b>17.63</b>	10	230	<b>14.89</b>	10	230	<b>32.81</b>
	260		130	130	<b>10.11</b>	130	130	<b>19.09</b>	10	250	<b>14.89</b>	10	250	<b>35.69</b>
	280		140	140	<b>10.47</b>	140	140	<b>20.56</b>	10	270	<b>14.89</b>	10	270	<b>38.00</b>
	300		150	150	<b>10.66</b>	150	150	<b>20.03</b>	10	290	<b>14.89</b>	10	290	<b>38.00</b>
	350		175	175	<b>10.66</b>	175	175	<b>25.70</b>	10	340	<b>14.89</b>	10	340	<b>38.00</b>
	400		200	200	<b>10.66</b>	200	200	<b>29.38</b>	10	390	<b>14.89</b>	10	390	<b>38.00</b>
	450		225	225	<b>10.66</b>	225	225	<b>33.05</b>	10	440	<b>14.89</b>	10	440	<b>38.00</b>
	500		250	250	<b>10.66</b>	250	250	<b>36.72</b>	10	490	<b>14.89</b>	10	490	<b>38.00</b>
	550		275	275	<b>10.66</b>	275	275	<b>38.00</b>	10	540	<b>14.89</b>	10	540	<b>38.00</b>
600	300	300	<b>10.66</b>	300	300	<b>38.00</b>	10	590	<b>14.89</b>	10	590	<b>38.00</b>		

### NOTES:

Load at an angle of  $90^\circ$  between load direction and grain direction.

The above characteristic loads relate to the failure mode with the lowest value, using high-carbon steel screws. Maximum characteristic tensile strength for stainless steel is 28.00 kN.

They are for Radiata Pine timber with a characteristic density of  $400 \text{ kg/m}^3$  (design density of  $550 \text{ kg/m}^3$ ).

Minimum edge distance and spacing must comply with local standards or the SPAX Design Guide.

The specified characteristic values must be lowered by safety factor coefficients to the design values for load-carrying capacity.

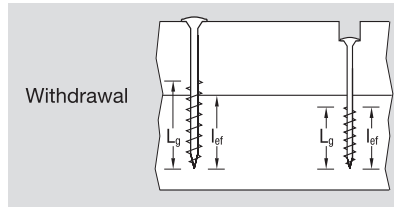
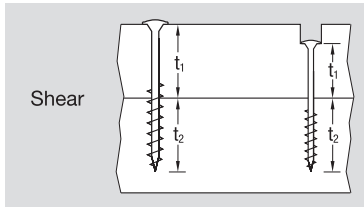
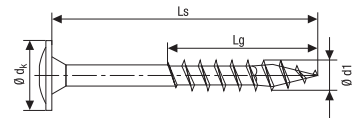
The safety factor coefficients depend on the environmental conditions ( $k_{mod}$ ) and the load effect duration class ( $\gamma_m$ )

Refer to the SPAX Design Guide and ETA 12/0114 for more detailed design.



# SPAX Washer Head

- A2 Stainless Steel



Failure Mode  
  Head pull-through  
  Thread pull-out

## Characteristic Loads According to SPAX ETA and EC5

Product			Wood - Wood, $\alpha = 90^\circ$							Steel - Wood, $\alpha = 90^\circ$					
Dimensions (mm)			Shear			Withdrawal				Shear			Withdrawal		
Thread Diam. $d_1$	Screw Length $L_s$	Thread Length $L_g$	$t_1$ (mm)	$t_2$ (mm)	$F_{v,Rk}$ (kN)	$t_1$ (mm)	$l_{ef}$ (mm)	Thread Withdrawal $F_{ax,Rk}$ (kN)	Head Pull-through $F_{ax,Rk}$ (kN)	$t_1$ (mm)	$t_2$ (mm)	$F_{v,Rk}$ (kN)	$t_1$ (mm)	$l_{ef}$ (mm)	$F_{ax,Rk}$ (kN)
6	60	56	24	36	1.92	24	36	2.88	3.17	6	54	2.76	6	54	4.24
	80	61	32	48	2.17	24	56	4.48	3.17	6	74	3.18	6	61	4.89
	100	61	40	60	2.17	41	59	4.72	4.12	6	94	3.18	6	61	4.89
	120	68	50	70	2.41	52	68	5.45	4.12	6	114	3.32	6	68	5.45
	140	68	70	70	2.41	72	68	5.45	4.12	6	134	3.32	6	68	5.45
	160	65	90	70	2.41	95	65	5.21	4.12	6	154	3.32	6	65	5.21
8	80	70	30	50	3.19	30	50	5.34	5.78	6	74	5.02	6	70	7.47
	100	80	40	60	3.27	40	60	6.40	5.78	10	90	5.29	10	80	8.54
	120	80	50	70	4.60	50	70	7.47	5.78	10	110	5.29	10	80	8.54
	140	80	60	80	4.86	60	80	8.54	7.52	10	130	5.29	10	80	8.54
	160	80	80	80	4.86	80	80	8.54	7.52	10	150	5.29	10	80	8.54
	180	80	100	80	4.86	100	80	8.54	7.52	10	170	5.29	10	80	8.54
	200	80	120	80	4.86	120	80	8.54	7.52	10	190	5.29	10	80	8.54
	220	80	140	80	4.86	140	80	8.54	7.52	10	210	5.29	10	80	8.54
	240	80	160	80	4.86	160	80	8.54	7.52	10	230	5.29	10	80	8.54
	260	80	180	80	4.86	180	80	8.54	7.52	10	250	5.29	10	80	8.54
	280	80	200	80	4.86	200	80	8.54	7.52	10	270	5.29	10	80	8.54
	300	80	220	80	4.86	220	80	8.54	7.52	10	290	5.29	10	80	8.54

**NOTES:**

Load at an angle of  $90^\circ$  between load direction and grain direction.

The above characteristic loads relate to stainless steel screws.

They are for Radiata Pine timber with a characteristic density of  $400 \text{ kg/m}^3$  (design density of  $550 \text{ kg/m}^3$ ).

Minimum edge distance and spacing must comply with local standards or the SPAX Design Guide.

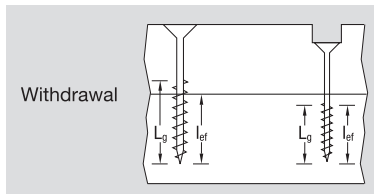
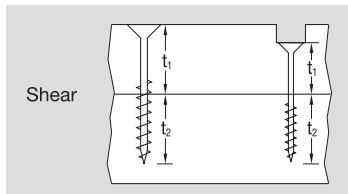
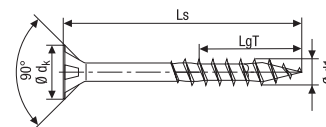
The specified characteristic values must be lowered by safety factor coefficients to the design values for load-carrying capacity.

The safety factor coefficients depend on the environmental conditions ( $k_{mod}$ ) and the load effect duration class ( $\gamma_m$ ).

Refer to the SPAX Design Guide and ETA 12/0114 for more detailed design.

# SPAX Countersunk Head Partial Thread

- A2 Stainless Steel



Failure Mode  
  Head pull-through  
  Thread pull-out

## Characteristic Loads According to SPAX ETA and EC5

Product			Wood - Wood, $\alpha = 90^\circ$							Steel - Wood, $\alpha = 90^\circ$					
Dimensions (mm)			Shear			Withdrawal				Shear			Withdrawal		
Thread Diam.	Screw Length	Length Partial Thread	$t_1$	$t_2$	$F_{v,Rk}$ (kN)	$t_1$	$l_{ef}$	Thread Withdrawal $F_{ax,Rk}$ (kN)	Head Pull-through $F_{ax,Rk}$ (kN)	$t_1$	$t_2$	$F_{v,Rk}$ (kN)	$t_1$	$l_{ef}$	$F_{ax,Rk}$ (kN)
$d_1$	$L_s$	$L_g$	(mm)	(mm)	(kN)	(mm)	(mm)	(kN)	(kN)	(mm)	(mm)	(kN)	(mm)	(mm)	(kN)
6	80	46	40	40	2.14	40	40	3.20	3.00	6	74	2.88	6	46	3.68
	100	61	40	60	2.14	40	57	4.80	3.00	6	94	3.18	6	61	4.89
	120	68	50	70	2.14	50	68	5.44	3.00	6	114	3.32	6	68	5.44
	140	68	60	80	2.14	60	68	5.44	3.00	6	134	3.32	6	68	5.44
	160	65	80	80	2.14	80	65	5.21	3.00	6	154	3.32	6	65	5.21
8	80	47	30	50	2.49	30	47	5.02	3.01	6	70	4.41	6	47	5.02
	100	57	40	60	3.07	40	57	6.08	3.01	10	90	4.68	10	57	6.08
	120	70	50	70	3.71	50	70	7.47	3.92	10	110	5.02	10	70	7.47
	140	80	60	80	3.71	60	80	8.54	3.92	10	130	5.29	10	80	8.54
	160	80	80	80	3.71	80	80	8.54	3.92	10	150	5.29	10	80	8.54
	180	80	100	80	3.71	100	80	8.54	3.92	10	170	5.29	10	80	8.54
	200	80	120	80	3.71	120	80	8.54	3.92	10	190	5.29	10	80	8.54
	220	80	140	80	3.71	140	80	8.54	3.92	10	210	5.29	10	80	8.54
	240	80	160	80	3.71	160	80	8.54	3.92	10	230	5.29	10	80	8.54
	260	80	180	80	3.71	180	80	8.54	3.92	10	250	5.29	10	80	8.54
	280	80	200	80	3.71	200	80	8.54	3.92	10	270	5.29	10	80	8.54
300	80	220	80	3.71	220	80	8.54	3.92	10	290	5.29	10	80	8.54	

**NOTES:**

Load at an angle of  $90^\circ$  between load direction and grain direction.

The above characteristic loads relate to stainless steel screws.

They are for Radiata Pine timber with a characteristic density of  $400 \text{ kg/m}^3$  (design density of  $550 \text{ kg/m}^3$ ).

Minimum edge distance and spacing must comply with local standards or the SPAX Design Guide.

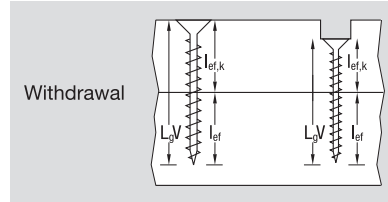
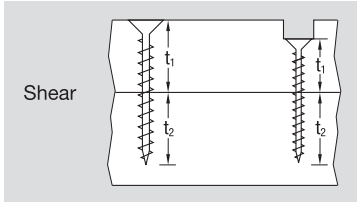
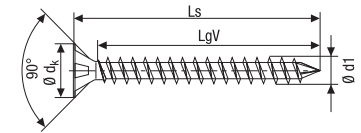
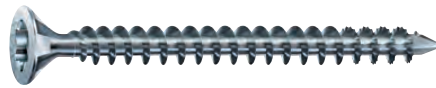
The specified characteristic values must be lowered by safety factor coefficients to the design values for load-carrying capacity.

The safety factor coefficients depend on the environmental conditions ( $k_{mod}$ ) and the load effect duration class ( $\gamma_m$ )

Refer to the SPAX Design Guide and ETA 12/0114 for more detailed design.

# SPAX Countersunk Head Full Thread

- A4 Stainless Steel



## Characteristic Loads According to SPAX ETA and EC5

Product			Wood - Wood, $\alpha = 90^\circ$						Steel - Wood, $\alpha = 90^\circ$					
Dimensions (mm)			Shear			Withdrawal			Shear			Withdrawal		
Thread Diam. $d_1$	Screw Length $L_s$	Length Partial Thread $L_g$	$t_1$ (mm)	$t_2$ (mm)	$F_{v,Rk}$ (kN)	$t_1$ (mm)	$l_{ef}$ (mm)	$F_{ax,Rk}$ (kN)	$t_1$ (mm)	$t_2$ (mm)	$F_{v,Rk}$ (kN)	$t_1$ (mm)	$l_{ef}$ (mm)	$F_{ax,Rk}$ (kN)
10	200	Thread close to head	100	100	6.42	100	100	12.80	10	190	9.12	10	190	20.00
	220		110	110	6.45	110	110	14.08	10	210	9.12	10	210	20.00
	240		120	120	6.45	120	120	15.36	10	230	9.12	10	230	20.00
	260		130	130	6.45	130	130	16.64	10	250	9.12	10	250	20.00
	280		140	140	6.45	140	140	17.92	10	270	9.12	10	270	20.00
	300		150	150	6.45	150	150	19.19	10	290	9.12	10	290	20.00
	350		175	175	6.45	175	175	20.00	10	340	9.12	10	340	20.00
	400		200	200	6.45	200	200	20.00	10	390	9.12	10	390	20.00
12	400		200	200	8.71	200	200	28.00	10	390	12.31	10	390	28.00
	450		225	225	8.71	225	225	28.00	10	440	12.31	10	440	28.00
	500		250	250	8.71	250	250	28.00	10	490	12.31	10	490	28.00
	550		275	275	8.71	275	275	28.00	10	540	12.31	10	540	28.00

### NOTES:

Load at an angle of  $90^\circ$  between load direction and grain direction.

The above characteristic loads relate to stainless steel screws.

They are for Radiata Pine timber with a characteristic density of  $400 \text{ kg/m}^3$  (design density of  $550 \text{ kg/m}^3$ ).

Minimum edge distance and spacing must comply with local standards or the SPAX Design Guide.

The specified characteristic values must be lowered by safety factor coefficients to the design values for load-carrying capacity.

The safety factor coefficients depend on the environmental conditions ( $k_{mod}$ ) and the load effect duration class ( $\gamma_m$ )

Refer to the SPAX Design Guide and ETA 12/0114 for more detailed design.

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