

Overview Taptite®-screws

Casehardened self-tapping screws for metal, M-thread.

The Taptite screw roll forms its own mating threads at a torque which is much lower than the tightening torque.

The Taptite II thread is designed to make the torque even lower than previous Taptite screws.

Screws with the Taptite II thread are usually casehardened but are also available in tempered so-called Corflex®.

However, the casehardening causes the screw to have less elasticity than a tempered 8.8, and should therefore not be used in high-tensile joints or when loads are dynamic. In high-tensile joints, it is recommended to use Taptite II in Corflex® performance.

Casehardened screws with Taptite II thread can form threads in sheet metal and profile made of:

- Steel with a hardness up to 250 HB.
- Aluminium and copper and their alloys.
- Castings made of iron, steel, aluminium, zinc, magnesium and copper alloys.

Table 69 Thread diameters Taptite®

Screw size mm	Thread			
	D		C	
	max.	min.	max.	min.
M2,5	2,48	2,39	2,57	2,48
M3	2,95	2,87	3,05	2,97
M4	3,95	3,85	4,07	3,99
M5	4,92	4,84	5,08	5,00
M6	5,90	5,80	6,10	6,00
M8	7,88	7,78	8,13	8,03
M10	9,85	9,75	10,15	10,05
M12	11,83	11,73	12,18	12,08

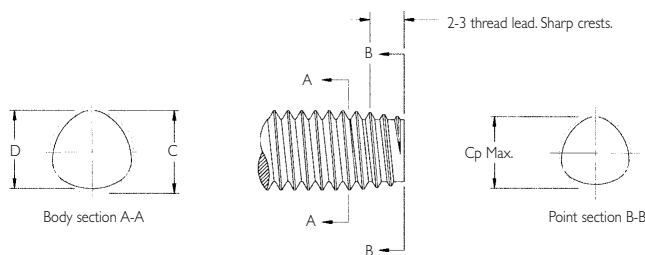


Table 69.I Thread diameters Taptite II®

Screw size mm	Thread				Point
	C		D		C _p max.
	max.	min.	max.	min.	
M1.6 × 0.35	1.66	1.58	1.59	1.51	1.31
M2 × 0.40	2.06	1.98	1.98	1.90	1.67
M2.5 × 0.45	2.57	2.48	2.48	2.39	2.13
M3 × 0.50	3.07	2.98	2.97	2.88	2.58
M3.5 × 0.60	3.58	3.48	3.46	3.36	3.00
M4 × 0.70	4.08	3.98	3.94	3.84	3.40
M4.5 × 0.75	4.59	4.48	4.44	4.33	3.85
M5 × 0.80	5.09	4.98	4.93	4.82	4.31
M6 × 1.00	6.10	5.97	5.90	5.77	5.13
M7 × 1.00	7.10	6.97	6.90	6.77	6.13
M8 × 1.25	8.13	7.97	7.88	7.72	6.91
M10 × 1.50	10.15	9.97	9.85	9.67	8.69
M12 × 1.75	12.18	11.97	11.83	11.62	10.47
M14 × 2.00	14.20	13.97	13.80	13.57	12.25
M16 × 2.00	16.20	15.97	15.80	15.57	14.25

Two performances

Corflex is available in two different hardening performances.

Corflex N - toughened to property class 10.9. Performance N is capable of rolling threads in plastic metals, whose hardness do not exceed HB 100.

Corflex I - toughened to property class 10.9 and with induction hardened point. The point's hardness in this performance is at least HRC 45, i.e. as hard as case-hardened Taptite, which gives equally good thread rolling characteristics.

DUO-Taptite® - this thread is a further development of the Taptite-thread. The improved functionality is gained by giving the bolt tap and thread different triangular-cylindricity. The non-cylindricity has been decreased on the thread, which gives better interaction between screw and goods material and better joint strength - especially at short grip lengths.

The bolt tap has on the other hand been given a larger non-cylindricity and also stabilizing threads. Therefore the screw will be straightened in the hole at the same time as the rolling of threads starts more easily and demands a lower torque, despite of that there is needed less axial force. The bolt tap reaches full diameter after 3-4 pitches of thread.

Taptite® in Stainless steel are designated for montage in soft materials, for example light metals with a rigidity that does not exceed HV 115.

Thread cross section

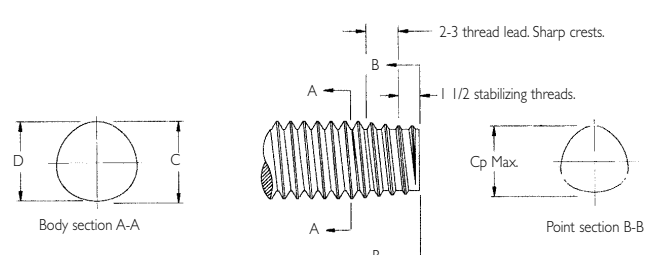
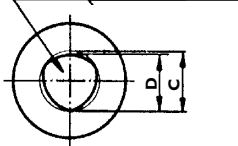


Table 139 Thread diameters DUO-Taptite®

Screw size mm	Thread				Point
	C		D		C _p max.
	max.	min.	max.	min.	
M2.5 × 0.45	2.57	2.48	2.52	2.44	2.22
M3 × 0.50	3.07	2.98	3.02	2.93	2.69
M3.5 × 0.60	3.58	3.48	3.52	3.42	3.13
M4 × 0.70	4.08	3.98	4.01	3.91	3.57
M4.5 × 0.75	4.59	4.48	4.51	4.41	4.04
M5 × 0.80	5.09	4.98	5.01	4.90	4.51
M6 × 1.00	6.10	5.97	6.00	5.87	5.38
M7 × 1.00	7.10	6.97	7.00	6.87	6.38
M8 × 1.25	8.13	7.97	8.00	7.85	7.23
M10 × 1.50	10.15	9.97	10.00	9.82	9.07
M12 × 1.75	12.18	11.97	12.00	11.80	10.92
M14 × 2.00	14.20	13.97	14.00	13.77	12.77
M16 × 2.00	16.20	15.97	16.00	15.77	14.77

Table 227 Thread diameters Taptite 2000®

(Is yet a further development of the Taptite thread.)

Screw size mm	Thread		Point C _p max.
	C nominal	D nominal	
M1.6 × 0.35	1.60	1.56	1.40
M2 × 0.40	2.00	1.96	1.77
M2.5 × 0.45	2.50	2.45	2.25
M3 × 0.5	3.00	2.95	2.71
M3.5 × 0.6	3.50	3.44	3.17
M4 × 0.7	4.00	3.93	3.60
M5 × 0.8	5.00	4.92	4.55
M6 × 1.0	6.00	5.90	5.38
M8 × 1.25	8.00	7.87	7.23
M10 × 1.5	10.00	9.85	9.08
M12 × 1.75	12.00	11.82	10.92
M14 × 2.0	14.00	13.80	12.77
M16 × 2.0	16.00	15.80	14.76

Assembly and resistance

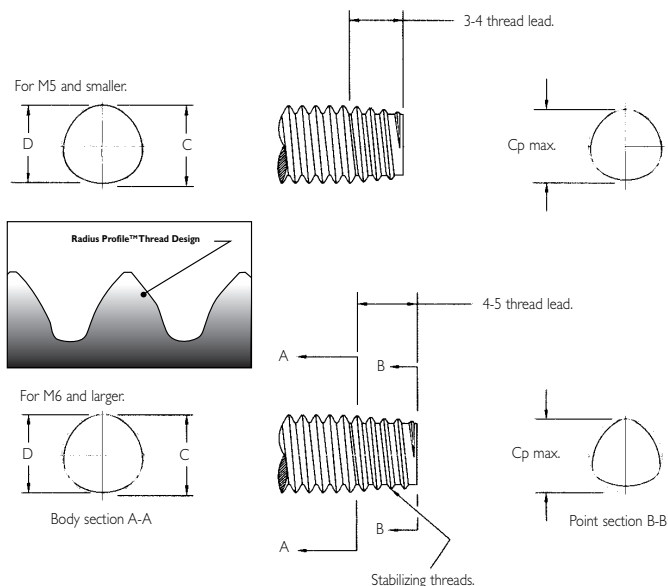
Taptite-screws are best assembled using screwdrivers with good moment thoroughness (capability >2).

Rotation speed between 300 and 1500 r/m is appropriate depending on thread diameter; head shape and assembly conditions in general. The table can be used as a guideline when testing assembly moments.

Table 228 Assembly recommendations. Guideline values for commonly occurring applications.

Screw size mm	Plate thickness	Hole size	Thread forming torque	Rec. assembly torque	Failure torque
M3 × 0.5	1.0	2.70	0.30-0.45	1.0	1.5-2.0
	2.0	2.75	0.35-0.55	1.0	1.6-2.5
	3.0	2.75	0.50-0.80	1.6	2.5-3.5 *
M4 × 0.7	2.0	3.60	0.60-0.85	1.8	2.8-3.8
	3.0	3.65	0.90-1.3	3.3	5.5-7.5
	4.0	3.65	1.2-1.6	4.3	7.0-10.0 *
M5 × 0.8	2.5	4.55	1.3-2.0	2.8	5.3-8.0
	3.5	4.55	1.5-2.7	6.0	10-12
	5.0	4.60	2.0-3.0	7.0	11-14 *
M6 × 1.0	3.0	5.40	2.0-2.8	5.0	9-13
	4.5	5.50	3.2-4.5	10.0	16-21
	6.0	5.50	3.5-4.8	10.0	18-25 *
M8 × 1.25	4.0	7.30	4.8-7.0	20.0	33-42
	6.0	7.35	5.5-9.5	28.0	43-53
	8.0	7.35	7-12	30.0	55-65 *
M10 × 1.5	5.0	9.20	11-15	30.0	53-63
	8.0	9.20	14-19	45.0	80-92
	10.0	9.25	15-22	55.0	92-102 *
M12 × 1.75	6.0	11.00	23-29	60.0	108-130
	9.0	11.10	25-31	65.0	115-135
	12.0	11.10	30-38	100.0	175-200 *

* Indicates probability that screw will break.

**Table 140 Tensile strength and torque for Corflex®-screw**

Nominal thread diameter mm	Tensile breaking kN	Tightening torque ¹⁾
M5	14,2	7,2
M6	20,1	13
M8	36,6	30
M10	58	58
M12	84,3	100
M16	157	250

¹⁾ In through holes after the thread has been stamped.

Table 229 and 230 are taken from the ISO standard for Taptite, other information is taken from our manufacturers.

Table 229 Mechanical properties for Taptite®-screw acc. to ISO 7085

Nominal thread diameter mm	Breaking torque min. Nm	Tensile breaking ^a min. N
M2	0,5	1 940
M2,5	1,2	3 150
M3	2,1	4 680
M3,5	3,4	6 300
M4	4,9	8 170
M5	10,0	13 200
M6	17,0	18 700
M8	42,0	34 000
M10	85,0	53 900
M12	150,0	78 400

^a For information only.

The values mentioned above apply when assembling screw in test plate according to table 230.

Table 230 Test plate thickness and hole diameter

Nominal thread diameter	2	2,5	3	3,5	4	5	6	8	10	12
Plate thickness	2	2,5	3	3,5	4	5	6	8	10	12
Hole diam. max. min.	1,825 1,800	2,275 2,250	2,775 2,750	3,18 3,15	3,68 3,65	4,53 4,50	5,43 5,40	7,336 7,300	9,236 9,200	11,143 11,100

The test plate should be of steel and have a rigidity of 140-180 HV.