

Table 8-1

Diameters and Areas of
Coarse-Pitch and Fine-
Pitch Metric Threads.
(All Dimensions in
Millimeters)*

Nominal Major Diameter d	Coarse-Pitch Series			Fine-Pitch Series		
	Pitch p	Tensile- Stress Area A_t	Minor- Diameter Area A_r	Pitch p	Tensile- Stress Area A_t	Minor- Diameter Area A_r
1.6	0.35	1.27	1.07			
2	0.40	2.07	1.79			
2.5	0.45	3.39	2.98			
3	0.5	5.03	4.47			
3.5	0.6	6.78	6.00			
4	0.7	8.78	7.75			
5	0.8	14.2	12.7			
6	1	20.1	17.9			
8	1.25	36.6	32.8	1	39.2	36.0
10	1.5	58.0	52.3	1.25	61.2	56.3
12	1.75	84.3	76.3	1.25	92.1	86.0
14	2	115	104	1.5	125	116
16	2	157	144	1.5	167	157
20	2.5	245	225	1.5	272	259
24	3	353	324	2	384	365
30	3.5	561	519	2	621	596
36	4	817	759	2	915	884
42	4.5	1120	1050	2	1260	1230
48	5	1470	1380	2	1670	1630
56	5.5	2030	1910	2	2300	2250
64	6	2680	2520	2	3030	2980
72	6	3460	3280	2	3860	3800
80	6	4340	4140	1.5	4850	4800
90	6	5590	5360	2	6100	6020
100	6	6990	6740	2	7560	7470
110				2	9180	9080

*The equations and data used to develop this table have been obtained from ANSI B1.1-1974 and B18.3.1-1978. The minor diameter was from the equation $d_r = d - 1.226869p$, and the pitch diameter from $d_m = d - 0.649519p$. The mean of the pitch diameter and the minor diameter was used to compute the tensile-stress area.

Square and Acme threads, shown in Fig. 8-3a and b, respectively, are used for screws when power is to be transmitted. Table 8-3 lists the preferred pitches for series Acme threads. However, other pitches can be and often are used, since the standard for such threads is not great.

Modifications are frequently made to both Acme and square threads. For instance, the square thread is sometimes modified by cutting the space between the teeth so as to have an included thread angle of 10 to 15°. This is not difficult, since these threads are usually cut with a single-point tool anyhow; the modification retains most of the efficiency inherent in square threads and makes the cutting simpler. Acme threads