

# PLASTITE® 48 THREAD-FORMING FASTENER

The Plastite® 48 fastener combines a unique tri-lobular body with a 48° thread profile to **maximize performance and reliability**. Two thread-forming styles are available to meet the specific requirements of a wide range of thermoplastics.



## SPECIFICATIONS

Sizes • #00 – 5/16"; other sizes may be available upon request

Head Styles • Can be used with any external or internal head designs; pan, hex washer, and flat styles standard

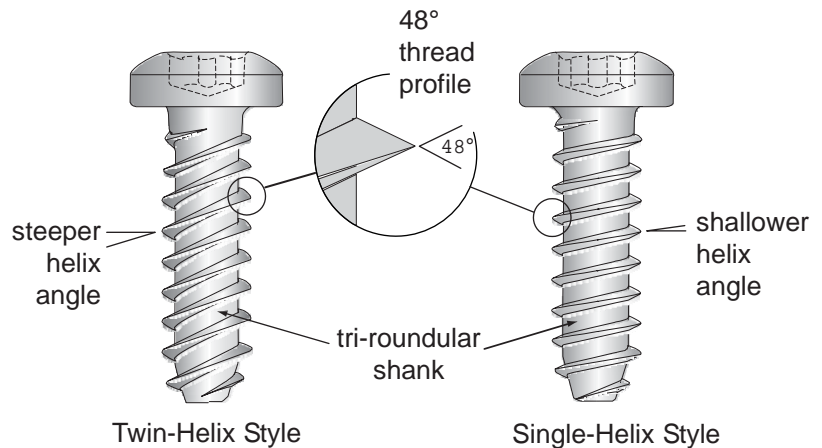
Drive System • Can use any system, including TORX PLUS Drive

Finish • As required

## APPLICATIONS

Twin Helix Style • Thermoplastics with a flexural modulus up to 850,000 p.s.i.

Single Helix Style • Thermoplastics with a flexural modulus between 850,000 p.s.i. and 1,400,000 p.s.i.



Plastite 48 Fasteners

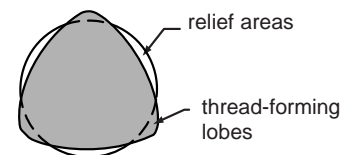
## KEY ADVANTAGES

- Reduces possibility of boss failure
- Increases product reliability
- Eliminates need for inserts and lock washers

## FEATURES & BENEFITS

Tri-roundular configuration allows displaced material to cold flow back into relief areas

- Minimizes radial stress
- Reduces possibility of boss failure
- Eliminates need for inserts and lock washers
- Allows design of thinner bosses



48° thread profile allows threads to penetrate deeply into plastic material

- Generates strong mating threads
- Resists vibration loosening
- Reduces probability of strip-out and pull-out

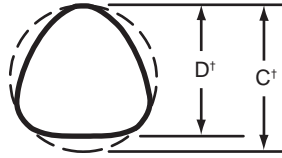
Twin lead design and steep helix angle provides greater shear area in softer plastics (with a flexural modulus up to 850,000 p.s.i.)

- Increases holding power
- Allows faster seating of fastener

Single lead design and narrow helix angle lowers drive torque and failure torque in stiffer thermoplastics (with flexural modulus between 850,000 and 1,300,000 p.s.i.)

- Creates less stress on the boss

# PLASTITE® 48 THREAD-FORMING FASTENER



† C dimension measured with Tri-Flute Micrometer  
D diameter measured with Standard Micrometer

## DIMENSIONAL DATA – INCH SIZES

Nom. Size	Thread Pitch (per inch)	C Dimension max-min (in)	D Dimension max-min (in)	Screw Length Tolerance (in)	Screw Length Tolerance (in)
				under 3/4"	over 3/4"
#00	51	.0496 - .0466	.0475 - .0445	±.015	±.015
#0	42	.0665 - .0635	.0635 - .0605	±.015	±.015
#1	32	.081 - .078	.078 - .075	±.030	±.030
#2	28	.092 - .086	.089 - .083	±.030	±.030
#3	24	.110 - .104	.106 - .100	±.030	±.030
#4	20	.127 - .121	.123 - .117	±.030	±.050
#6	19	.147 - .141	.143 - .137	±.030	±.050
#7	18	.166 - .160	.160 - .154	±.030	±.050
#8	16	.185 - .179	.179 - .173	±.030	±.050
#9	15	.199 - .193	.193 - .187	±.030	±.050
#10	14	.212 - .206	.208 - .202	±.030	±.050
#12	14	.232 - .226	.226 - .220	±.030	±.050
1/4"	10	.276 - .270	.268 - .262	±.050	±.050
5/16"	9	.345 - .335	.335 - .325	±.050	±.050

## DIMENSIONAL DATA – METRIC SIZES\*

\*soft converted metric sizes

Nom. Size	Thread Pitch	C Dimension max-min (mm)	D Dimension max-min (mm)	Screw Length Tolerance (mm)	Screw Length Tolerance (mm)
				under 19.05mm	over 19.05mm
1.12	0.50	1.26 - 1.18	1.21 - 1.13	±0.38	±0.38
1.59	0.60	1.69 - 1.61	1.61 - 1.54	±0.38	±0.38
1.91	0.79	2.06 - 1.98	1.98 - 1.91	±0.76	±0.76
2.26	0.91	2.34 - 2.18	2.26 - 2.11	±0.76	±0.76
2.63	1.06	2.79 - 2.64	2.69 - 2.54	±0.76	±0.76
3.12	1.27	3.23 - 3.07	3.12 - 2.97	±0.76	±1.27
3.63	1.34	3.73 - 3.58	3.63 - 3.48	±0.76	±1.27
4.06	1.41	4.22 - 4.06	4.06 - 3.91	±0.76	±1.27
4.55	1.59	4.70 - 4.55	4.55 - 4.39	±0.76	±1.27
4.90	1.69	5.05 - 4.90	4.90 - 4.75	±0.76	±1.27
5.28	1.81	5.38 - 5.23	5.28 - 5.13	±0.76	±1.27
5.74	1.81	5.89 - 5.74	5.74 - 5.59	±0.76	±1.27
6.81	2.54	7.01 - 6.86	6.81 - 6.65	±1.27	±1.27
8.51	2.82	8.76 - 8.51	8.51 - 8.26	±1.27	±1.27

\* Plastite 48 fasteners are not available in true metric sizes. The chart above provides nominal inch dimensions converted to millimeters.

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## HOLE SIZES PER PERCENTAGE OF THREAD ENGAGEMENT

Size	100%		90%		80%		70%		60%		50%		40%	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
#00-51	.0377	0.957	.0386	0.980	.0395	1.003	.0404	1.026	.0413	1.049	.0423	1.074	.0432	1.097
#0-42	.0498	1.265	.0510	1.295	.0523	1.328	.0535	1.359	.0548	1.392	.0560	1.422	.0573	1.455
#1-32	.0621	1.577	.0632	1.605	.0646	1.641	.0658	1.671	.0671	1.704	.0683	1.735	.0695	1.765
#2-28	.0743	1.887	.0757	1.923	.0771	1.958	.0785	1.994	.0799	2.029	.0813	2.065	.0827	2.101
#3-24	.0855	2.172	.0873	2.217	.0890	2.261	.0908	2.306	.0925	2.350	.0943	2.395	.0960	2.438
#4-20	.0970	2.464	.1000	2.540	.1020	2.591	.1050	2.667	.1070	2.718	.1100	2.794	.1130	2.870
#6-19	.1180	2.997	.1200	3.048	.1230	3.124	.1250	3.175	.1280	3.251	.1300	3.302	.1320	3.353
#7-18	.1370	3.480	.1390	3.531	.1420	3.607	.1440	3.657	.1460	3.708	.1490	3.785	.1510	3.835
#8-16	.1440	3.658	.1480	3.759	.1510	3.835	.1550	3.937	.1580	4.013	.1620	4.115	.1650	4.191
#9-15	.1570	3.988	.1590	4.039	.1610	4.089	.1640	4.166	.1660	4.216	.1680	4.267	.1700	4.318
#10-14	.1700	4.318	.1740	4.420	.1770	4.496	.1810	4.597	.1850	4.699	.1890	4.801	.1920	4.877
#12-14	.1880	4.775	.1920	4.877	.1960	4.978	.1990	5.055	.2030	5.156	.2070	5.258	.2110	5.359
1/4"-10	.2180	5.537	.2230	5.664	.2280	5.791	.2330	5.918	.2380	6.045	.2430	6.172	.2480	6.299
5/16"-9	.2840	7.214	.2910	7.391	.2980	7.569	.3050	7.747	.3110	7.899	.3180	8.077	.3250	8.255

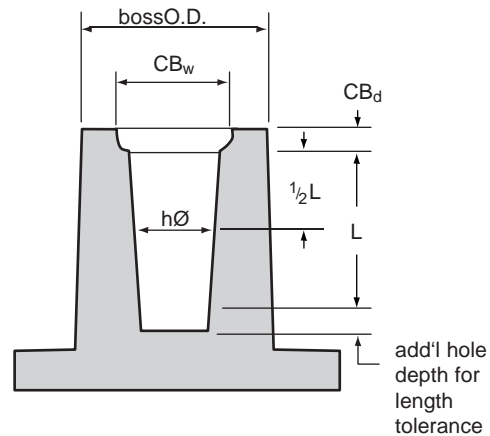
### BOSS DESIGN RECOMMENDATIONS

The length of engagement (L) should be 2 to 3 times the fastener's C dimension. Testing should be done to determine optimal thread engagement on any application with a lower length of engagement.

The nominal hole size ( $h\emptyset$ ) must be established based on the amount of thread engagement (see chart above). For optimum performance, the hole size should provide a minimum 70% thread engagement.

The outside diameter of the boss (boss O.D.) should be 2.5 to 3 times the nominal diameter of the screw (C dimension). The boss height should not exceed 2 times the boss O.D.

The counterbore width ( $CB_w$ ) should be slightly larger than the C dimension. Its depth ( $CB_d$ ) should be 1/4 to 1/2 the thread pitch.



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