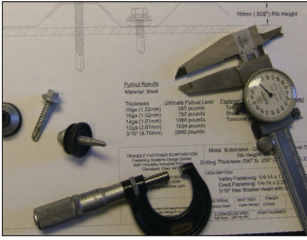


### BLAZER® ENGINEERING DATA



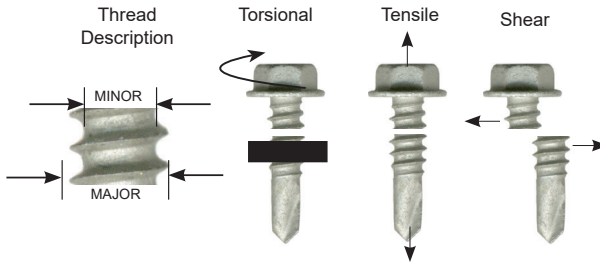
The following information is compiled to assist the design professional in selecting the appropriate fastener for the application. This data is compiled from fastener standards and independent tests. An engineering professional should be consulted to determine expected loads on the connection, environmental effects, and any other conditions that could effect the performance of the fastener. Selecting a fastener is the responsibility of the engineer and changes to a fastener should not be made without approval. Using the wrong fastener can lead to failure.

TFC WILL NOT WARRANTY, EITHER EXPRESSED OR IMPLIED, THE USE OF THIS INFORMATION.

### TECHNICAL DATA



BLAZER® self-drilling fasteners are produced and perform to SAEJ78, ASME B18.6.4 and AISI TS-4-02 specifications. Conforms to ICCES AC118 acceptance criteria for tapping screw fasteners.



Gauge Thickness	Decimal	Metric
29 GA	.013"	.33mm
28 GA	.015"	.38mm
26 GA	.018"	.46mm
24 GA	.024"	.61mm
22 GA	.030"	.76mm
20 GA	.036"	.91mm
18 GA	.048"	1.22mm
16 GA	.060"	1.52mm
14 GA	.075"	1.91mm
12 GA	.105"	2.67mm
1/8"	.125"	3.18mm
10 GA	.135"	3.43mm
1/4"	.250"	6.35mm
5/16"	.312"	7.92mm
3/8"	.375"	9.53mm
1/2"	.500"	12.7mm

### Physical Properties

Fastener Diameter	Nominal Screw Diameter	Major Diameter (inch)		Minor Diameter (inch)		Area Of Minor Dia. (sq in.)	Torsional (Lb-In.)	Tensile (Pounds)	Shear (Pounds)
		Max	Min	Max	Min				
#6-20	0.138	0.139	0.135	0.104	0.099	0.0077	24	1,125	750
#8-18	0.164	0.166	0.161	0.122	0.116	0.0106	42	1,575	1,000
#10-16	0.190	0.189	0.183	0.141	0.135	0.0143	61	2,100	1,400
#10-24	0.190	0.190	0.182	0.144	0.137	0.0147	65	3,400	2,275
#12-14	0.216	0.215	0.209	0.164	0.157	0.0194	92	2,778	2,000
#12-24	0.216	0.216	0.209	0.189	0.185	0.0269	100	3,188	2,100
1/4-14	0.250	0.246	0.240	0.192	0.185	0.0269	150	3,850	2,600
1/4-20	0.250	0.250	0.242	0.218	0.214	0.0360	156	4,275	2,700
#18-9	0.306	0.306	0.300	0.217	0.209	0.0343	196	4,550	2,576
5/16-12	0.313	0.315	0.306	0.244	0.236	0.0702	290	5,439	3,264

Material: C1018-C1022 / 410 SS  
 Heat Treatment: Case Harden  
 Case Hardness: 52-58 Rockwell C  
 Case Depth:  
 #6 Dia = .002" - .007"  
 #8, #10, #12 Dia = .004" - .009"  
 1/4" = .005" - .011"  
 Core Hardness  
 Carbon Steel: 32-40 Rockwell C  
 410 Stainless: 42-48 Rockwell C

Ductility: 5 Degree minimum bend

English to Metric      Formula to Use

Inch to Millimeter      Decimal x 25.4

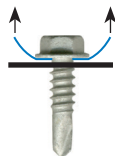
PSI to Newton / Millimeters<sup>2</sup>      PSI x .007

Pounds Force to Newtons      Pounds Force x 4.448

FM APPROVED	1/4 -14 DP3
	1/4 -14 DP1 VRT
sdi	1/4 -20 DP5
	#10-16 DP3
	#12-14 DP3
	#12-24 DP5
	1/4-14 DP3
	1/4-20 DP5

### PULLOVER TEST RESULTS

These pullover results are for self-sealing fasteners listed in this catalog.



Note: Estimated pullover for fasteners without sealing washers can be calculated using the following formula per AISI S100.

### Pounds - Ultimate Average

Steel Thickness	BOND-SEALER		FLANGE SEALER	ZINC CAP HEAD	STAINLESS CAP HEAD
	12.7MM OD	15MM OD			
22 ga	945	1,249	1,298	1,647	1,298
24 ga	704	1,056	1,102	1,310	1,102
26 ga	519	654	692	794	692

Pullover force = 1.5 -x- Thickness of the member in contact with the screw head -x- Larger of the screw head diameter or washer diameter. -x- Tensile strength of the member in contact with the screw head.

### PULLOUT TEST RESULTS

\* Denotes load exceeds tensile strength of screw.

Fastener Information		PULLOUT   ULTIMATE LOAD IN POUNDS Calculated Values In Accordance to AISI S100   Section E4													
Screw Size	Nom Dia. (in.)	Grade 50 per ASTM A1011 60Ksi Min. Steel					Grade 50 per ASTM A792/A653/A572/A529 65Ksi Min. Steel								
		26 Ga. (.018")	25 Ga. (.021")	24 Ga. (.024")	22 Ga. (.030")	20 Ga. (.036")	18 Ga. (.048")	16 Ga. (.060")	14 Ga. (.075")	12 Ga. (.105")	1/8" (.125")	10 ga (.135")	1/4" (.250")	3/8" (.375")	1/2" (.500")
#8-18	.164"	151	177	202	252	303	435	543							
#10-16	.190"	174	203	233	291	349	504	627	786	1,101	1,311				
#10-24	.190"						504	627	786	1,101	1,311				
#12-14	.216"	198	231	264	330	397	573	716	895	1,253	1,492	1,611			
#12-24	.216"										1,492	1,611	2,984	*4,475	*5,967
1/4-14	.250"	230	268	306	383	459	633	829	1,036	1,450	1,727	1,865	3,453		
1/4-20	.250"										1,727	1,865	3,453	*5,180	*6,906
5/16-12	.3125"						829	1,036	1,295	1,813	2,158	2,331			

### Pullout Loads for Carbon Steel, 304 Stainless Steel & 410 Stainless Steel Screws

The tensile strength of the substrate that is used in the chart below is typical for metal building and roofing applications. Contact TFC if other substrate tensile strengths are required.

For allowable loads, please apply an appropriate Factor of Safety as required by local and national code requirements.

AISI S100 Section E4 recommends a Factor of Safety of 3 for allowable loads.

DISCLAIMER: All information is non-binding and without guarantee. Before using the products, all specifications and calculations must be checked by a suitably qualified person and local regulations must be observed. This document is subject to revision. We reserve the right to make technical changes. (0321-1)