

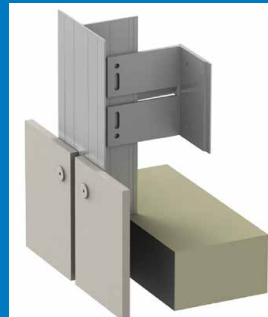
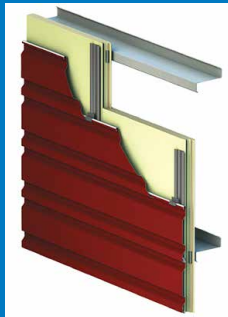
PRODUCT SELECTION GUIDE

Fasteners • Sealants • Tools • Accessories



Applications:

WALL PANELS AND FRAMING



Full Line of Fasteners to Attach Most Major Brands of Wall Panel Systems

Metal

- ATAS
- Centria
- DMI
- Drexel
- MBCI
- McElroy Metals
- Metal Sales
- Pac-Clad

IMP

- AWIP
- Centria
- Falk
- Kingspan
- Metlspan
- Trucore

ACM

- Alpolc
- Alucabond
- Laminators
- MaxMetal
- Piedmont Plastics
- Reynobond

Fiber Cement / Cement

- Allura
- Armorwall
- James Hardie
- Nichiha
- ProGUARD
- Swiss Pearl
- Trespa

AND MANY MORE!

- Better Connections Since 1977-



www.trianglefastener.com

MD378.0622

800.486.1832



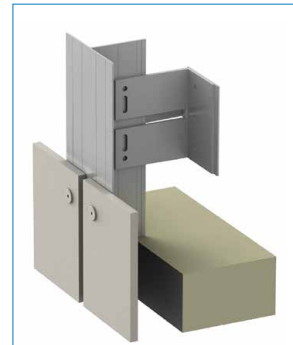
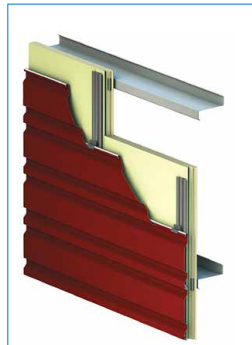
Fasteners & Sealants for the Exterior Wall Systems

This catalog highlights the specific products use by installers of exterior wall systems and includes technical information to assist you in selecting the proper fastener for the connection

Full line of fasteners to attach a variety of wall cladding brands and types!

Metal

- ATAS
- Centria
- DMI
- Drexel
- MBCI
- McElroy Metals
- Metal Sales
- Pac-Clad



IMP

- AWIP
- Centria
- Falk
- Kingspan
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ACM

- Alpolic
- Alucabond
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- MaxMetal
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- Reynobond



Fiber Cement

- Allura
- Armorwall
- James Hardie
- Nichiha
- ProGUARD
- Swiss Pearl
- Trespa

And Many More!!!!



Engineering Assistance

We can assist you in using the best product for your application.

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. 03.21-1



Our inventory management programs are designed to reduce lead times and reduce your inventory investment. You can complete your project fast with the best quality products and services.

Choose the best inventory program that best fits your needs.

NEED-IT-NOW! Product Program



We will inventory the products you need and ship them fast!

- Use this selection guide to help you use the best products for your application.
- We will develop a stocking program based on your needs to assure we have what you need.
- We can develop your own Product Guide with your specific items that can assist you in bidding a job.

Our local branch will help you to determine the products you need, and we will stock them so you have them...*when you NEED-IT-NOW!*

PAK-ONE Job Pack Program



We will pack and ship products for your specific job.

Purchase only what you need for the job...

- You reduce your inventory investment.
 - Improve your cash flow.
 - Eliminate dead inventory.
 - Reduce "hidden" warehouse and procurement costs.
1. We can develop a list of items that meet your requirements.
 2. You select specific items for a particular job and develop a "cut-list" for your project.
 3. We consolidate and ship the fasteners, sealants, flashings, tools, and accessories needed for the job.

NEED-IT-NOW! CABINET INVENTORY PROGRAM



Stock your critical items in a secured storage cabinet for fast access

- Select from a wide variety of commercial grade products.
- We supply a FREE heavy duty, locking storage cabinet.
- We will organize the items you selected and setup the cabinet in your shop.
- You can return any unused items and replace them with new ones.

WOOD OR THIN METAL

Piercing Capacity: CS & 410SS <=20 ga

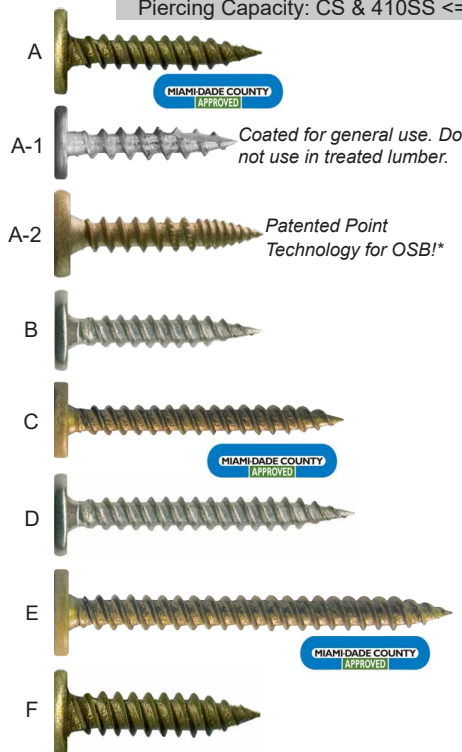
#10, #12, & 1/4" PIERCING POINTS AND DRILL POINTS

CONCEALOR® low profile head fasteners are engineered to perform in a variety of applications. They are specified in many metal roofing systems to attached SSR clips to metal or wood. They are easy to install and provides optimal strength.

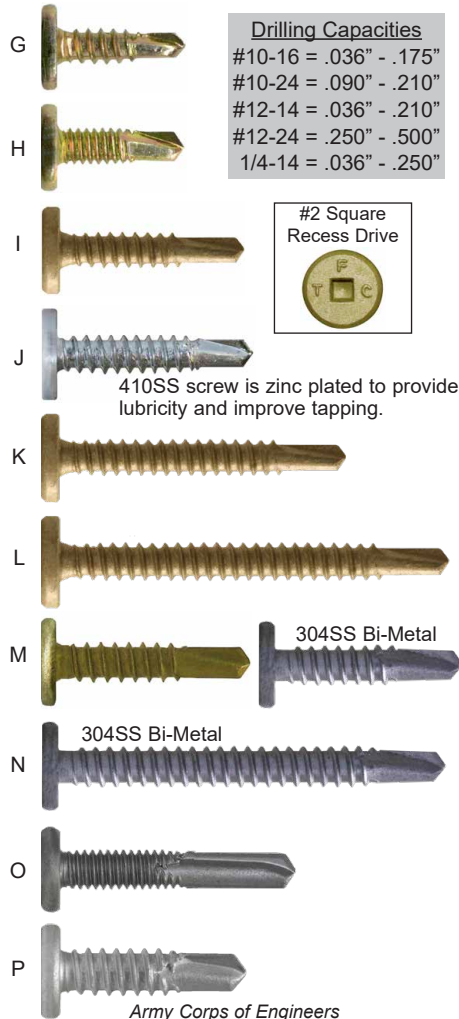
Bagged 250 pcs. per bag

SIZES

MEETS FLORIDA BUILDING CODE 1506.6 & R904.5.2 (TRI-SEAL® & SS ONLY)



METAL SUBSTRATES



	Description	Load Bearing Length (Max)	Part Number	Box Quantity	WT Per Box
A	#10-13 X 1" GP Long-life TRI-SEAL® coated	*Note	10100SPCGCSTS	5,000 pcs	36.0 lbs.
A-1	#10-9 X 1" Type 17 Coated for general use	*Note	10100SPC17CSCZ	5,000 pcs	36.0 lbs.
A-2	#10-12 X 1" BURR BUSTER Long-life TRI-SEAL® coated	*Note	10100SPCGBBCSTS	5,000 pcs	36.0 lbs.
B	#10-13 X 1" GP 302 Stainless Steel	*Note	10100SPCGS3	5,000 pcs	39.0 lbs.
C	#10-13 X 1-1/2" GP Long-life TRI-SEAL® coated	*Note	10150SPCGCSTS	3,000 pcs	31.0 lbs.
D	#10-13 X 1-1/2" GP 302 Stainless Steel	*Note	10150SPCGS3	3,000 pcs	32 lbs.
E	#10-13 X 2" GP Long-life TRI-SEAL® coated	*Note	10200SPCGCSTS	1,500 pcs	19.0 lbs.
F	#12-11 X 1" GP Long-life TRI-SEAL® coated	*Note	12100SPCGCSTS	5,000 pcs	44.0 lbs.
G	#10-16 X 5/8" DP3 .0003" Zinc and Yellow	.125"	10062SPC3CS	5,000 pcs	27.0 lbs.
H	#10-24 X 5/8" DP3 .0003" Zinc and Yellow	.125"	10062SPC3CSYZ	5,000 pcs	27.0 lbs.
I	#10-16 X 1" DP3 Long-Life TRI-SEAL® coated	.500"	10100SPC3CSTS	5,000 pcs	37.0 lbs.
J	#10-16 X 1" DP3 410 Stainless Steel / ZP	.500"	10100SPC3S4	5,000 pcs	37.0 lbs.
K	#10-16 X 1-1/2" DP3 Long-Life TRI-SEAL® coated	1"	10150SPC3CSTS	3,000 pcs	32.0 lbs.
L	#10-16 x 2" DP3 Long-Life TRI-SEAL® coated	1.5"	10200SPC3CSTS	1,500 pcs	21.0 lbs.
M	#12-14 X 1" DP3 Long-Life TRI-SEAL® coated	.375"	12100SPC3CSTS	5,000 pcs	43.0 lbs.
	#12-14 X 1" DP3 304SS Bi-Metal	.375"	12100SPC3BM	5,000 pcs	43.0 lbs.
N	#12-14 X 2" DP3 304SS Bi-Metal	1.5"	12200SPC3BM	1,500 pcs	21.0 lbs.
O	#12-24 X 1-1/4" DP5 Long-Life TRI-SEAL® coated	.500"	12125SPC5CSTS	4,000 pcs	52.0 lbs.
	#12-24 X 1-1/2" DP5 Long-Life TRI-SEAL® coated	.625"	12150SPC5CSTS	4,000 pcs	43.8 lbs.
P	1/4-14 X 1" DP3 Long-Life TRI-SEAL® coated	.325"	14100SPC3CSTS	2,500 pcs	27.0 lbs.

* NOTE: For wood applications less than 1" thick, allow tip to extend beyond bottom of wood for optimal pullout strength. Screw length should be at least .3125" longer than the overall attachment length.

SPECIAL APPLICATIONS

Assemble CONCEALOR® with a bonded sealing washer that locks out weather!



We can color match to your exact requirements in three days or less!



Installation: Do NOT use impact drivers. Use 2,500 RPM max variable speed screw drivers with torque control or depth sensing nosepiece.

*Pat. No.: 11,105,362

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TFC VALUE PROPOSITION

Large Selection

Lengths to meet your application needs.

Best Quality

Assures low in-place cost.

Fast Delivery / Need-it-Now!

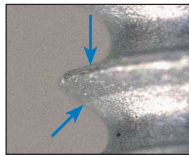
Reduces your inventory costs.

SS Denotes available sizes in stainless steel

Here is why we use a special thread...

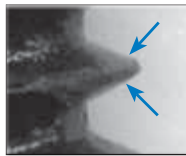
We use a buttress thread that provides exceptional clamping loads and is specified in many metal roofing systems to attached SSR clips over rigid insulation into metal deck.

CONCEALOR® with Buttress Thread



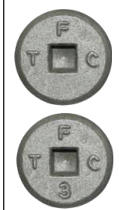
"Flat" thread keeps the joint tight

Ordinary Thread Form



A "Tapered" thread tends to cause the joint to loosen

#2 Square Recess Drive



- Attach to metal, wood, and concrete -

CARBON STEEL

- TRI-SEAL® coated provides over 10-times more corrosion resistance than black epoxy coated screws
- Drill and tap up to *16ga steel
- Can be used in concrete applications.

* The hardness of the steel can affect the drill and tap performance and may require predrilling. For concrete, predrill using a 3/16" masonry bit.

304 STAINLESS STEEL

- 304 Stainless Steel Bi-Metal provides superior corrosion resistance
- Drill and tap up to *18ga steel
- TRI-SEAL® coated provides lubricity that minimizes thread roll-over

SIZES

* Denotes 4-1/2" Thread Length

Description	Load Bearing Length	Part Number	Carton Quantity	Wt Per Carton	PRICE
#14-13 x 3/4" DP1	.125"	14075SPC1CSTS	3,000 pcs	21 lbs	
#14-13 x 1-1/2" DP1	.750"	CS: 14150SPC1CSTS 304SS: 14150SPC1BM	2,500 pcs	34 lbs	
#14-13 x 2" DP1	1.250"	CS: 14200SPC1CSTS 304SS: 14200SPC1BM	1,000 pcs	18 lbs	
#14-13 x 3" DP1	.125" - 2.250"	CS: 14300SPC1CSTS 304SS: 14300SPC1BM	1,000 pcs	24 lbs	
#14-13 x 4" DP1	.125" - 3.250"	14400SPC1CSTS	500 pcs	16 lbs	
#14-13 x 4-1/2" DP1	.625" - 3.375"	14450SPC1CSTS	500 pcs	17 lbs	
#14-13 x 5" DP1*	1.250" - 4.250"	14500SPC1CSTS	500 pcs	19 lbs	
#14-13 x 6" DP1*	2.125" - 5.250"	14600SPC1CSTS	500 pcs	23 lbs	
#14-13 x 7" DP1*	3.875" - 6.250"	CS: 14700SPC1CSTS 304SS: 14700SPC1BM	500 pcs	28 lbs	
#14-13 x 8" DP1*	4.875" - 7.250"	14800SPC1CSTS	250 pcs	17 lbs	
#14-13 x 9" DP1*	5.875" - 8.250"	14900SPC1CSTS	250 pcs	19 lbs	

Installation: DO NOT USE IMPACT DRIVERS!

Use 2,500 RPM max variable speed screw drivers with torque control or depth sensing nosepiece.

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MEETS FLORIDA BUILDING
CODE 1506.6 & R904.5.2
(TRI-SEAL® & SS ONLY)

Technical Info

Refer to page MD28 for complete technical data.

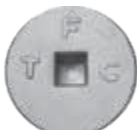


1/4-14 DP3 - DRILL AND TAP UP TO 1/4" THICK STEEL

#14 DP3 CONCEALOR® pancake head screws are designed for heavy gauge applications and can drill and tap up to 1/4" steel. The 1/4-14 thread produces greater strength and resists bending compared to smaller diameter screws. Originally designed for IMP!

These screws are coated with TRI-SEAL™ long-life coating that exceeds ASTM B633 specifications providing 1,000-hours salt spray performance, and FM4470 per ASTM G87 Sulfur Dioxide Test.

SPECIAL HEAD DESIGN



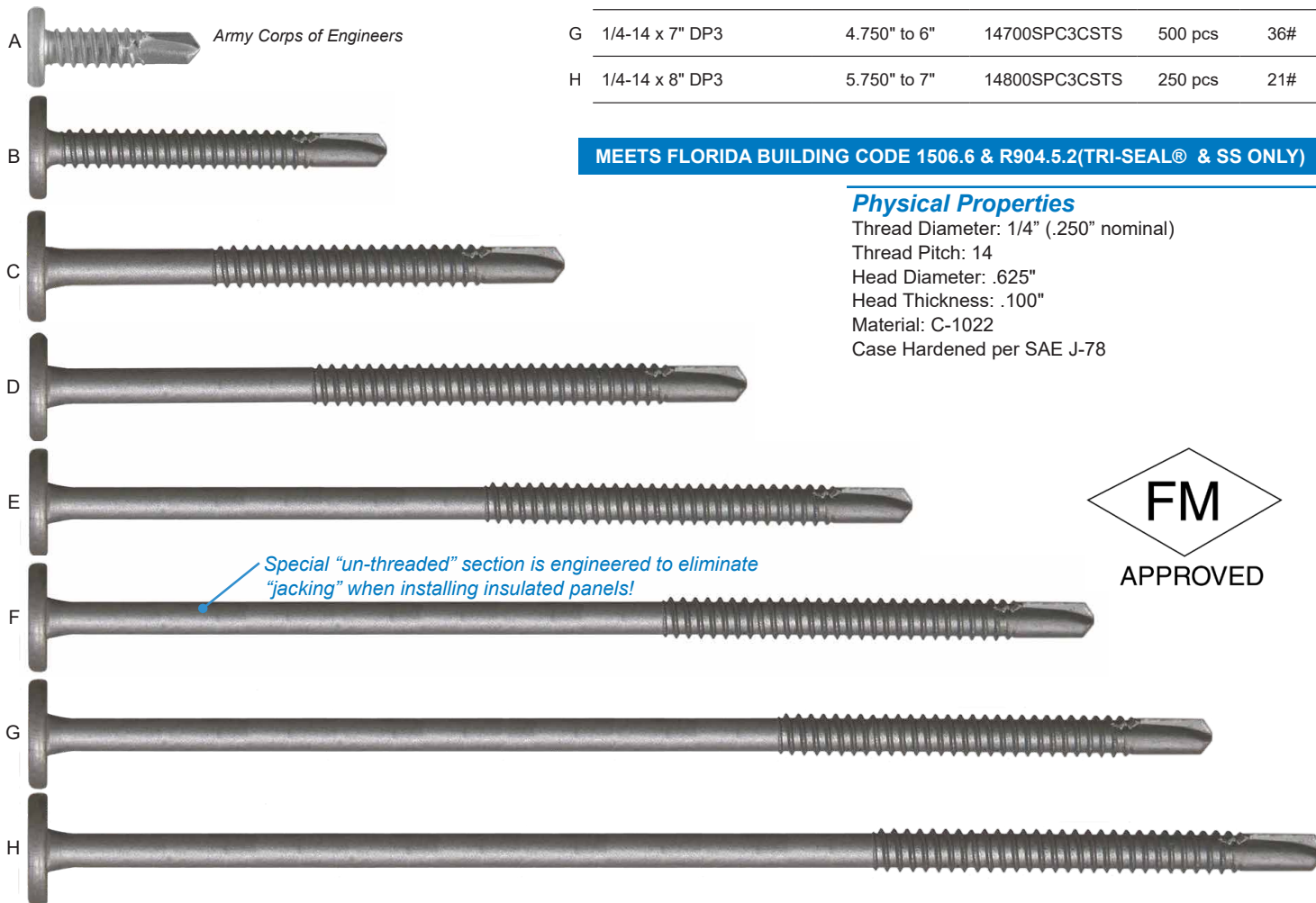
- 5/8" diameter head increases pullover strength and minimizes dimpling.
- #3 square recess drive provides stability during installation.

	Description	Load Bearing Length (MAX)	Part Number	Carton Quantity	Wt Per Carton
A	1/4-14 X 1" DP3	.325"	14100SPC3CS	2,500 pcs	27#
B	1/4-14 x 2" DP3	1.000"	14200SPC3CSTS	1,000 pcs	23#
C	1/4-14 x 3" DP3	1.375" to 2"	14300SPC3CSTS	1,000 pcs	33#
D	1/4-14 x 4" DP3	1.625" to 3"	14400SPC3CSTS	500 pcs	21#
E	1/4-14 x 5" DP3	2.750" to 4"	14500SPC3CSTS	500 pcs	25#
F	1/4-14 x 6" DP3	3.750" to 5"	14600SPC3CSTS	500 pcs	30#
G	1/4-14 x 7" DP3	4.750" to 6"	14700SPC3CSTS	500 pcs	36#
H	1/4-14 x 8" DP3	5.750" to 7"	14800SPC3CSTS	250 pcs	21#

MEETS FLORIDA BUILDING CODE 1506.6 & R904.5.2(TRI-SEAL® & SS ONLY)

Physical Properties

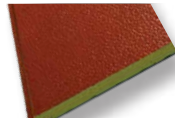
Thread Diameter: 1/4" (.250" nominal)
Thread Pitch: 14
Head Diameter: .625"
Head Thickness: .100"
Material: C-1022
Case Hardened per SAE J-78



SPECIAL APPLICATIONS

Use to attach a variety of material to steel up to 1/4" thick!

ARCHITECTURAL
INSULATED PANELS



STRUCTURAL
INSULATED PANELS



NAIL
BASE



METAL ROOF
CLIPS



TOOLING: Install using a 2,000 RPM screw-gun with torque control. (DeWalt DW267)
Do not use impact tools.

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Pullout In Steel - Average Ultimate (lbs) (Carbon and Stainless Steel Screws)

Fastener Information (Drill Points)		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")
#10-16	.190"	174	203	233	291	349	504	630	787	1102	1312				
#10-24	.190"								787	1102	1312				
#12-14	.216"	198	231	264	330	397	573	716	895	1253	1492	1611			
#12-24	.216"									1492	1611	2984	*4475	*5967	
#14-13	.235"	216	252	288	360	431	623	779							
1/4-14	.250"							829	1036	1450	1727	1865	3453	*5180	*6906

Tested values are available upon request.
Revised: 0220AR

NOTE: * exceeds tensile strength of the screw.



PULLOVER

Screw	Tee Clip 24 ga. (Ave. Ultimate)	Zee Clip 24 ga. (Ave. Ultimate)
#10	415 lbs.	510 lbs.
#12	430 lbs.	692 lbs.
#14 DP1	407 lbs.	677 lbs.

* Berridge Clips
REV.JES082712

APPROVALS

Factory Mutual: 1/4-14 DP3 CONCEALOR.
FM Approval Standard 4481 Class 1 - Wall Fastener
Miami Date: #10 GP CONCEALOR

MEETS FLORIDA BUILDING CODE 1506.6
& R904.5.2 (TRI-SEAL® & SS ONLY)

Pullout In Wood - Average Ultimate (lbs)

Screw Size and Point type	PLYWOOD - CDX			OSB			SYP
	15/32" (1/2" Nom)	19/32" (5/8" Nom)	23/32" (3/4" Nom)	7/16"	19/32"	23/32"	
#10-9 GP	383	395	574	136	256	514	813
#10-12 BB *		450	706	258	381		648*
#10-13 GP	375	505	654	166	357	442	737
#12-11 GP	418	455	624	*164	379	573	918
#14-13 DP1	434	475	626	153	327	457	991

Farabaugh Engineering Test: Project No. T279-10 & * T282-15 REV JS042220



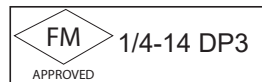
Decking fasteners tested with full thread embedment. 2 x 4 SYP with 1" embedment in side

* Test Report # T279-17 & T299-17 | Farabaugh Engineering.
NOTE: * 1" embedment into face of 2x. Deeper embedment will increase pullout.

Pullout In Concrete - Average Ultimate (lbs)

Fastener Dia. & Point	3,000 psi Concrete
	1" Embedment
#14-13 DP1	740 lbs.

TF Test: 10.15.09
Drill Bit Size: 3/16" Masonry Bit. Depth of hole > 2".
(Screw should not exceed 1" embedment.) REV JS1218



SALT SPRAY

The chart below provides general corrosion information about various plating and coatings. Contact TFC for detailed information.

SALT SPRAY Per ASTM F1941 & B117 (0% red rust) Rev. 120313

Coating	Salt Spray
.0002" min. (6um) zinc plating with clear chromate	24hrs
.0002" Zinc Plating / Coated	60hrs
.0005" min. (12 um) zinc plating with clear chromate	72hrs
.0003" min. (8 um) zinc plating with yellow dichromate	120hrs
.0002" Zinc Plated 410 Stainless Steel	450hrs
Passivated Coated 410 Stainless Steel	500hrs
TRI-SEAL™ Long-life coating	1,000hrs
Passivated 302 & 304 SS	>2,000hrs

NOTE: 304SS and 410SS screws are zinc plated or TRI-SEAL® coated to provide lubricity and improve tapping performance.

TOOLING | Do not use impact tools!

Screw-gun RPM

Carbon Steel & 410SS Screws: 2,500 RPM Max.
DP5, 1/4" & 5/16" DP3: 2,000 RPM Max.
302 & 304 Stainless Steel Tapping Screws: 1,000 RPM Max.
For optimal performance, use screw-guns with torque control feature.

DO NOT OVER-TORQUE FASTENERS.

Fastening Tips

- A minimum of 3 factors of safety should be used for most self-drilling or self-tapping fasteners in metal | 5-6 for wood. Consult a design professional for appropriate values.
- Install fastener perpendicular to the work surface and tighten to no more than approximately 70% of the torsional strength.
- Allow at least three full threads to extend beyond the material. For wood applications, allow 1" minimum embedment or full thread embedment in plywood and OSB for optimal pullout resistance.

FASTENER MATERIAL SELECTION BASED ON THE GALVANIC SERIES OF METALS

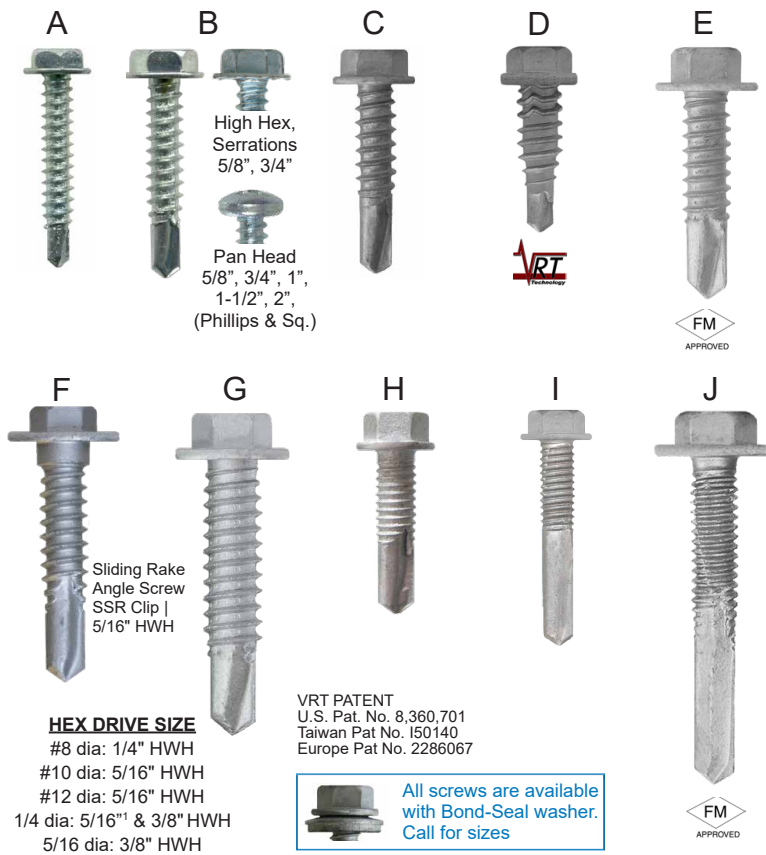
BASE METAL	FASTENER MATERIAL			
	STEEL Zinc Plated	STAINLESS STEEL Type 410	STAINLESS STEEL Type 302, 304, 316	ALUMINUM
Zinc Galvanized ZN/Al Coated Steel	A	C	C	B
Aluminum	A	Not Recommended	B	A
Steel / Cast Iron	A,D	C	B	A
Brass, Copper, Bronze	A,D,E	A	B	A,E
Stainless Steel 300 Series	A,D,E	A	A	A,E

Key

- The corrosion of the base metal is not increased by the fastener.
- The corrosion of the base metal is slightly increased by the fastener.
- The corrosion of the base metal may be considerably increased by the fastener material.
- The plating on the fastener is rapidly consumed.
- The corrosion of the fastener is increased by the base metal.

*NOTE: Marine environments can cause galvanic corrosion. Consult panel manufacture for compatible fasteners to minimize galvanic corrosion.

- The hex washer head is the most popular drive system and provides the best stability during installation.
- Available with TRI-SEAL® long life coating for the ultimate corrosion protection...1,000 hrs salt spray with no red rust!



SIZES

****Blue colored sizes denotes popular DC items****

ITEM	SIZE	Point Type	LENGTHS	Load Bearing Length (MAX)	Box Qty
A	#8-18	DP2	1/2"	.100"	10M
			5/8"	.125"	10M
			3/4"	.250"	10M
			1"	.500"	7.5M
			1-1/4"	.750"	5M
			1-1/2"	1"	5M
B	#10-16	DP3	2"	1.5"	1.5M
			1/2"	.100"	10M
			5/8"	.125"	5M
			3/4"	.250"	5M
			3/4" HH/SERR	.250"	5M
			1"	.500"	5M
C	#12-14	DP3	1-1/2"	1"	3.5M
			2"	1.500"	2M
			3"	2.500"	1M
			3/4"	.125"	5M
			1"	.250"	3.5M
			1-1/4"	.625"	3M
D	1/4-14 ¹ VRT	DP1	1-1/2"	.750"	2M
			2"	1.25"	2M
			2-1/2"	1.75"	1M
			3"	2.25"	1M
			4"	3.75"	500
			7/8" VRT	.325"	2.5M
E	1/4-14	DP3	3/4"	.125"	2.5M
			1"	.250"	2.5M
			1-1/4" ¹	.625"	2M
			1-1/2" ¹	.875"	2M
			2"	1"	1.5M
			2-1/2"	1.50"	1M
F	1/4-14 SHLDR	DP3	3"	1.25" - 2.25"	1M
			4"	1.73" - 3.25"	500
			5"	2.6" - 4.25"	500
			6"	3.6" - 5.25"	250
			8"	5.6" - 7.25"	250
			10"	7.6" - 9.25"	500
G	5/16-12	DP3	1-1/4"	.625"	3.5M
			1"	.250"	1.5M
			1-1/2"	.875"	1M
			2"	1.25"	1M
			3"	2.25"	750
			4"	3.25"	500
H	#12-24	DP4	5"	1.38 - 4.25"	500
			6"	2.50 - 5"	500
			8"	4.25" - 7"	200
			7/8"	.325"	5M
			1-1/4"	.500"	2.5M
			1-1/2"	.625"	1.5M
I	#12-24	DP5	2"	.750"	1.5M
			1-1/2"	.500"	2M
			2-1/4"	1.250"	1M
			2-1/2"	1.500"	1M
			3-1/8"	2.125"	1M
			4"	3"	250
J	5/8" OD washer face	DP5	5"	4"	250
			6"	2.50" - 5"	250
			7"	3.38" - 6"	500
			8"	4.25" - 7"	500
			1-1/2"	.500"	2M
			2-1/4"	1.250"	1M

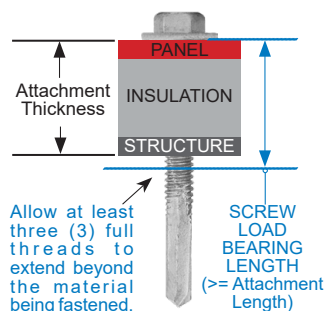
Drill Point and Length Selection

1. Determine the Screw Drill Point Type

- Add up the total thickness that will be drilled by the screw.
- Select the desired drill point (DP) type and screw size located on the size chart below.



Drilling and Tapping Thickness													
Gauge	24	20	18	16	14	12	10						
Inch	.024	.036	.048	.060	.075	.100	.105	.135	.175	.210	.250	.375	.500
1/4-14 DP1	.024" - .072"												
#8-18 DP2	.024" - .100"												
#10-16 DP3	.024" - .175"												
#10-24 DP3	.048" - .210"												
#12-14 DP3	.024" - .210"												
1/4-14 DP3	.035" - .250"												
5/16-12 DP3	.048" - .175"												
#12-24 DP4	.175" - .375"												
#12-24 DP5	.175" - .500"												
1/4-20 DP5	.175" - .500"												



2. Determine Screw Length

- Measure from the top surface of the material being fastened to the underside of the metal that will be drilled and tapped. Be sure to allow for any void or insulation. This is called the attachment thickness.
- Select a screw length where the attachment thickness is less than or equal to the Load Bearing Length listed on the chart to the right.

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BLAZER® STAINLESS CAP HEAD WITH EPDM SEALING WASHER

- 304 stainless steel cap head for exceptional corrosion resistance.
- TRI-SEAL® long life coated shank for superior corrosion protection.

Specifications
Washer
.100" Thick EPDM. Non-conductive
Head Type: 5/16" HWH
Material
HEAD - 304 Stainless Steel
BODY - Carbon Steel

Plating
HEAD - Passivated
BODY - TRI-SEAL® Long-life Coating

Corrosion
HEAD - >2,000hrs Salt Spray
BODY - 1,000hrs Salt Spray

U.S. Pat. No. 8,360,701
Taiwan Pat No. I50140
Europe Pat No. 2286067

SIZES AND PERFORMANCE SPECIFICATIONS

DIAMETER AND POINT		LENGTH	Load Bearing Length (Max)	Box Qty	LIST PRICE
A	#12-14 BLAZER-2/3 LP	x 1"	.250"	3.5M	
		x 1-1/4"	.625"	2M	
		x 1-1/2"	.750"	1.5M	
		x 2"	1.25"	1.5M	
		x 3"	2.25"	2.5M	
B	1/4-14 BLAZER-1 VRT	x *7/8" VRT	.325"	2M	
		x 1-1/8" VRT	.750"	2M	
C	1/4-14 BLAZER-3	x *1-1/4"	.625"	2M	
		x 3"	2"	1M	
		x 4"	3"	500	
D	#17-14 x 1" TYPE AB W/VRT	x 1"	.750"	2.5M	
E	#12-24 BLAZER-5	x 1-1/4"	.500"	2.5M	
		x 1-1/2"	.625"	2.5M	
		x 2"	.750"	3M	
F	#12-14 1/4-14 BLAZER-3	x 1-7/8"	.875" - 1.125"	2M	
		x 2-3/8"	1.250" - 1.625"	1M	
		x 3-1/4"	1.750" - 2.437"	1m	
		x 4"	2.500" - 3.1875"	500	

LP denotes long-pilot design for metal roofing and siding

SCREW AND POINT	DRILL AND TAP CAPACITIES					
	.036"	.100"	.175"	.210"	.250"	.375"
#8-18 BLAZER-2						
#10-16 BLAZER-3						
#12-14 BLAZER-3						
#12-24 BLAZER-4						
#12-24 BLAZER-5						
1/4-14 BLAZER-1 VRT						
5/16-12 BLAZER-3						
1/4-14 BLAZER-3						
1/4-20 BLAZER-5						

BLAZER® ZINC CAP HEAD WITH EPDM SEALING WASHER

- ZAMAC 5 zinc alloy cap head for premium corrosion resistance WILL NOT RED RUST!
- TRI-SEAL® long life coated shank for superior corrosion protection.

HEAD TYPE
5/16" HWH

WASHER DETAILS
.125" Thick EPDM.
Non-conductive

SIZES AND PERFORMANCE SPECIFICATIONS

DIAMETER AND POINT		LENGTH	Load Bearing Length (Max)	Box Qty	LIST PRICE
G	#12-14 BLAZER-2/3 LP	x 1"	.250"	3.5M	
		x 1-1/4"	.625"	2.5M	
		x 1-1/2"	.750"	2.5M	
		x 2"	1.25"	2M	
		x 2-1/2"	1.5"	1M	
H	1/4-14 BLAZER-1 VRT	x *7/8" VRT	.325"	2.5M	
		x 1-1/8" VRT	.750"	2M	
i	1/4-14 BLAZER-3	x *1-1/4"	.625"	2M	
		x 1-1/2"	.750"	2m	
		x 2"	1"	2m	
		x 3"	2"	1M	
J	#12-24 BLAZER-5	x 3"	2"	1M	
		x 4"	3"	500	
		x 1-1/4"	.500"	2.5M	
J	#12-24 BLAZER-5	x 1-1/2"	.625"	2.5M	
		x 2"	.750"	3M	
K	#17-14 x 1" TYPE AB W/VRT	x 1"	.750"	2.5M	
L	#12-14 1/4-14 BLAZER-3	x 1-7/8"	.875" - 1.125"	2M	
		x 2-3/8"	1.250" - 1.625"	1M	
		x 3-1/4"	1.750" - 2.437"	1m	
		x 4"	2.500" - 3.1875"	500	

Specifications

Material: HEAD - Zamac 5 Zinc Alloy; THREAD - Carbon Steel

Plating: BODY - TRI-SEAL® Long-life Coating.

Corrosion Resistance: HEAD - No Red Rust; BODY - 1,000hrs Salt Spray

Need a 3/8" Hex Washer Head? Contact us for available sizes.



Our Vibration Resistant Thread (VRT®) is designed to significantly increase back-out torque and reduce the potential for leaks.

VRT® keeps the fastener tighter in applications where expansion, contraction and vibration are a concern.

Independent tests verify that VRT® produces 3 -1/2 times more back-out resistance than a standard thread.



U.S. Pat. No. 8,360,701
Taiwan Pat No. I502140
Europe Pat No. 2286067

BACK-OUT RESISTANT SCREWS

Sizes and Technical Data Sheet

Light Gauge Applications

Maximum Drilling Thickness: .090"

	Description	Part Number	Carton Quantity	WT Per M Pcs
	1/4" -14 X 7/8" DP1/LAP w/VRT® CONCEALOR® Pancake Head w/Bonded Sealing Washer TRI-SEAL™ Coated 1,000Hrs Salt Spray	14087C1TSVBW	2,500 pcs 250/Bag	13.5#
	1/4" -14 X 7/8" DP1/LAP w/VRT® BLAZER® Flange Head w/Sealing Washer TRI-SEAL™ Coated 1,000Hrs Salt Spray	14087HW1CSTSVW	2,500 pcs 250/Bag	13.5#
	1/4" -14 X 7/8" DP1/LAP w/VRT® BLAZER® TRI-SEAL™ Coated 1,000Hrs Salt Spray	14087HW1CSTSV	2,500 pcs 250/Bag	10.2#
	1/4" -14 X 7/8" DP1/LAP w/VRT® BLAZER® w/Bonded Sealing Washer TRI-SEAL™ Coated 1,000Hrs Salt Spray	14087HW1CSTSVBW	2,500 pcs 250/Bag	13.5#
	1/4" -14 X 7/8" DP1/LAP w/VRT® BLAZER® Stainless Cap Head w/Sealing Washer TRI-SEAL™ Coated 1,000Hrs Salt Spray	14087HW1CSTSVWSC	2,500 pcs 250/Bag	13.5#
	1/4" -14 X 7/8" DP1/LAP w/VRT® BLAZER® Zinc Cap Head w/Sealing Washer TRI-SEAL™ Coated 1,000Hrs Salt Spray	14087HW1CSTSVWZC	2,000 pcs 250/Bag	13.5#
	1/4" -14 X 1-1/8" DP1/LAP w/VRT® BLAZER® Stainless Cap Head w/Sealing Washer TRI-SEAL™ Coated 1,000Hrs Salt Spray	14112HW1CSTSVWSC	2,000 pcs 250/Bag	19.3#
	#17-14 X 1" TYPE AB w/VRT® TAPPER w/Bonded Sealing Washer (3/4"OD) TRI-SEAL™ Coated 1,000Hrs Salt Spray	17100HWABCSTSVBW	2,000 pcs 250/Bag	20#

Technical Data

Specifications

BLAZER Drill Screws conforms to SAE J-78 for self-drilling tapping screws.

#17 TAPPER conforms to ANSI/ASME B18.6.4 for tapping screws.

Material

Carbon Steel: C1022
Stainless Cap: 304 SS
Zinc Cap: Zamac 5

Tensile Strength

1/4-14: 4,275 lbs.
#17-14: 5,200 lbs.

Torsional Strength

1/4-14: 150 lbs-inch
#17-14: 175 lbs-inch

Corrosion Resistance

TRI-SEAL®
Salt Spray: 1,000 hrs minimum.

Sealing Washers

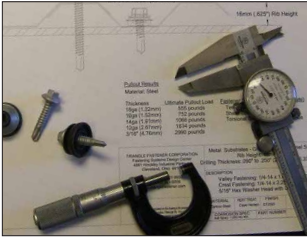
Flange Head:
EPDM Cut Tubular

Bonded Washer

EPDM Vulcanized to G-90 Galvanized Steel.
(15MM O.D.).

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BLAZER® ENGINEERING DATA



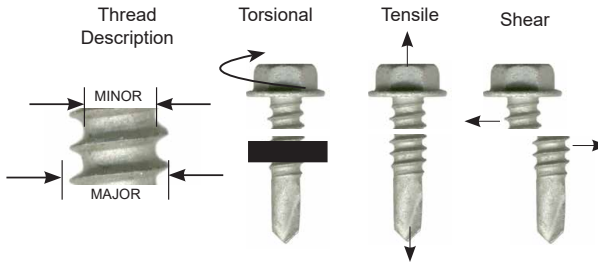
The following information is compiled to assist the design professional in selecting the appropriate fastener for the application. This data is compiled from fastener standards and independent tests. An engineering professional should be consulted to determine expected loads on the connection, environmental 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

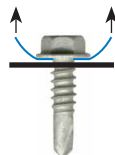
Inch to Millimeter Decimal x 25.4
PSI to Newton / Millimeters² PSI x .007
Pounds Force to Newtons Pounds Force x 4.448

FM APPROVED	1/4-14 DP3 1/4-20 DP5
sdi	#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													
		Grade 50 per ASTM A1011 60Ksi Min. Steel					Grade 50 per ASTM A792/A653/A572/A529 65Ksi Min. Steel								
Screw Size	Nom Dia. (in.)	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.

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The largest selection of 304 stainless steel bi-metal self-drilling screws
The head and threads are made of 304 stainless steel, providing exceptional corrosion protection and ductility. The drill point is made of hardened carbon steel welded to the body. Sizes that will drill and tap steel up to 1/2" thick!

Sizes • Specifications • Part Numbers

Head Style	Description	Drilling Thickness	Load Bearing Length W/W	Part Number	
				No Washer	With Washer
5/16" AF HWH	A #12-14 x 1" DP1	.090" max	.470"		12100HWT1S3BMBW
	#12-14 x 1" DP3	.059" - .236"	.350"	12100HWT3S3BMBW	12100HWT3S3BMBW
	#12-14 x 1-1/4" DP3		.550"	12125HWT3S3BMBW	12125HWT3S3BMBW
	#12-14 x 1-3/8" DP3		.750"	12137HWT3S3BMBW	12137HWT3S3BMBW
	#12-14 x 2" DP3		1.375"	12200HWT3S3BMBW	12200HWT3S3BMBW
	#12-14 x 1-1/2" DP5	.157" - .472"	.500"	12150HWT5S3BMBW	12150HWT5S3BMBW
	#12-14 x 2-1/4" DP5		1.220"	12225HWT5S3BMBW	12225HWT5S3BMBW
	1/4-14 x 1" DP2	.047" - .118" (AL = .125")	.468"	14100HWT2S3BMBW	14100HWT2S3BMBW
	1/4-14 x 1-1/2" DP2		.970"	14150HWT2S3BMBW	14150HWT2S3BMBW
	1/4-14 x 2" DP2		1.4327"	14200HWT2S3BMBW	14200HWT2S3BMBW
3/8" AF HWH	1/4-20 x 1-1/8" DP4	.100" - .312"	.375"	14112HWT4S3BMBW	14112HWT4S3BMBW
	1/4-20 x 1-1/2" DP4		.718"	14150HWT4S3BMBW	14150HWT4S3BMBW
	1/4-20 x 2" DP4	.125" - .500"	1.203"	14200HWT4S3BMBW	14200HWT4S3BMBW
	1/4-20 x 2" DP5		.937"	14200HWT5S3BMBW	14200HWT5S3BMBW
	1/4-20 x 4" DP5		1.3968"	14400HWT5S3BMBW	14400HWT5S3BMBW
T25 TORX	G #12-14 x 1" DP2	.047" - .118"	.340" (n/w)	12100TPCULT2S3BM	
	H #12-14 x 1" DP3	.059" - .210"	.375"	12100SPC3BM	
	I #12-14 x 2" DP3		1.750"	12200SPC3BM	
T-25 TORX	J #12-14 x 1" DP1	.090" max	.475"		12100TBT1S3BMBW
	#12-14 x 2" DP2	.059" - .118"	1.475"	12200TBT2S3BMBW	12200TBT2S3BMBW
	K #12-14 x 1" DP3	.059" - .236"	.350"	12100TBT3S3BMBW	12100TBT3S3BMBW
	#12-14 x 1-3/8" DP3		.750"	12137TBT3S3BMBW	12137TBT3S3BMBW
	L #12-14 x 1-1/2" DP5	.157" - .472"	.510"	12150TBT5S3BMBW	12150TBT5S3BMBW
M	T-25 TORX WEDGE BIT			Part Number: TB25W	

Notes

1. Add .125" to bearing length for no washer.
2. TORX Recess: Must use a T25W Torx Wedge bit.



MATERIAL

Body: 304 Stainless Steel
Drill Tip: Carbon Steel

PLATING

#12 Dia.: Zinc and Wax
1/4" Dia.: Zinc with TRI-SEAL Topcoat

SEALING WASHERS (BOND-SEAL)

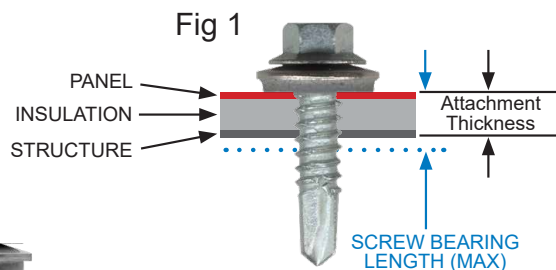
15MM OD. 304SS Stainless Steel
Backing to Non-conductive EPDM

Installation Information

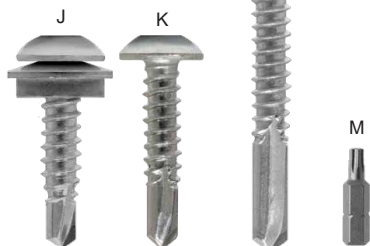
Use a 2,000 rpm max screw-gun with torque control or depth sensing.

Screw Length Selection

The attachment thickness should not exceed the load bearing length of the screw. Refer to fig 1 below.



NEW!
#12 Pancake with
#2 Sq Drive
TRI-SEAL® Coated



MANY MORE SIZES AVAILABLE!
Checkout our CONCEALOR® pancake line of screws!

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PANEL ATTACHMENT SCREWS

Install HPL, ACM, and Fiber Cement Panels



#10-12 Self-tapping Screw | Dome Head T-20 Recess Drive | 304 & *316 Stainless Steel Wood Substrate

Features

- 304 and 316 Stainless Steel
- Large diameter head
- Kalida-Kote paint color matched to the panel.

Drive: T20W Six-Lobbed

Head: 0.473" O.D. Dome Head

Thread Type: #10-12 Type A

Major Dia: 0.191" Minor Dia: 0.132"

Screw Strength	
Tensile	1592 lbs.
Shear	1214 lbs.
Torsional	60 lbf-in

SFS P.N.	Length	Thread Length	Carton Wt. (lbs.)	Carton Qty.
902988	1"	0.59"	2.2	250
986742	1-3/16"	0.78"	2.4	250
625848 - *914772	* 1-1/2"	1.09"	2.7	250
698813	1-3/4"	1.34"	2.9	250
55443	2-3/8"	1.97"	3.7	250

NOTE: Use of T20W (Wedge) drive bit is required.
Install screws with 0–2000 RPM screw gun equipped with depth sensing nose piece.

Pullout Loads

Plywood		OSB		SYP Lumber	
Thickness	Pullout (Ult)	Thickness	Pullout (Ult)	Thickness	Pullout (Ult)
3/4"	578 lbs.	23/32"	449 lbs.	1" Penetration	481 lbs
5/8"	438 lbs.	19/32"	412 lbs.		
1/2"	348 lbs.	7/16"	228 lbs.		



#12-11 DP2 Bi-Metal Drill Screw - Dome Head T25 Recess | 304 Stainless Steel Steel or Aluminum Substrate

Features

- 304 Stainless Steel
- Large diameter head
- Kalida-Kote paint color matched to the panel.

Drive: T25W Six-Lobbed

Head: 0.630" O.D. Dome Head

Thread & Point: #12-14 DP2

Major Dia: 0.209" | Minor Dia: 0.158"

Drill Capacity

Steel: 0.060" to 0.118"

Aluminum: Up to 0.125"

Screw Strength	
Tensile	2442 lbs.
Shear	1620 lbs.
Torsional	80 lbf-in

SFS P.N.	Length	Load Bearing Length	Carton Wt. (lbs.)	Carton Qty.
12701006	1-3/16"	0.68"	3.0	250

Pullout Loads

Steel	
Thickness	Pullout
12 Ga	1715 lbf
14 Ga	1032 lbf
16 Ga	696 lbf

Aluminum	
Thickness	Pullout
0.087"	672 lbs
0.094"	590 lbs.
0.098"	800 lbs.
1/8"	1183 lbs.

NOTE: Use of T25W (Wedge) drive bit is required.
Install screws with 0–2000 RPM screw gun equipped with depth sensing nose piece.



#12-11 DP2 Bi-Metal Drill Screw - Dome Head T25 Recess | 304 & *316 Stainless Steel Steel or Aluminum Substrate

Features

- 316 or 304 Stainless Steel
- Kalida-Kote paint color matched to the panel.

Drive: T25W Six-Lobbed

Head: 0.472" O.D. Dome Head

Thread & Point: #12-11 DP2

Major Dia: 0.209" | Minor Dia: 0.158"

Drill Capacity

Steel: 0.060" to 0.118"

Aluminum: Up to 0.125"

Screw Strength	
Tensile	2442 lbs.
Shear	1620 lbs.
Torsional	80 lbf-in

SFS P.N.	Length	Load Bearing Length	Carton Weight	Box Qty
1354227 - *1625830	1-3/16"	0.680"	3 lbs	250
1751074	1-5/8"	1.06"	3 lbs	250
141901	2-1/8"	1.62"	3 lbs	250

Pullout Loads

Steel	
Thickness	Pullout
12 Ga	1715 lbf
14 Ga	1032 lbf
16 Ga	696 lbf

Aluminum	
Thickness	Pullout
0.087"	672 lbs
0.094"	590 lbs.
0.098"	800 lbs.
1/8"	1183 lbs.

NOTE: Use of T25W (Wedge) drive bit is required.
Install screws with 0–2000 RPM screw gun equipped with depth sensing nose piece.



#12-20 GP Type A Screw - Dome Head T25 Recess | 304 Stainless Steel Steel & Aluminum Substrate

Features

- 304 Stainless Steel
- Large diameter head
- Kalida-Kote paint color matched to the panel.

Drive: T25W Six-Lobbed

Head: 0.630" O.D. Dome Head

Thread & Point: #12-20

Major Dia: 0.209" | Minor Dia: 0.158"

Screw Strength	
Tensile	3883 lbs.
Shear	2670 lbs.
Torsional	140 lbf-in

SFS P.N.	Length	Load Bearing Length	Thread Length	Carton Wt. (lbs.)	Carton Qty.
1629268	1"	0.500"	.920"	3.25	250
1572881	1-1/8"	0.625"	.925	3.75	250

Pullout Loads

Steel	
Thickness	Pullout
12 Ga	1625 lbs.
14 Ga	1126 lbs.
16 Ga	623 lbs.
18 Ga	623 lbs.

Aluminum	
Thickness	Pullout
0.087"	590 lbs
0.094"	584 lbs.
0.098"	915 lbs.
1/8"	1035 lbs.
1/4"	2307 lbs.

Pre-Drill Required	
Material Thickness	Drill Bit
<= 1/8" AL	4.8mm
<= 12 ga Steel	
1/4" AL	5.1 mm

NOTE: Use of T25W (Wedge) drive bit is required.
Install fasteners with 0–2000 RPM screw gun equipped with depth sensing nose piece.

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A member of **SFS**



DRIL-FLEX® Self-Drilling Structural Screws

PRODUCT DESCRIPTION

Dril-Flex Structural Drill Screws are dual heat treated self-drilling tapping screws provide the strength, ductility and resistance to embrittlement.

GENERAL APPLICATIONS AND USES

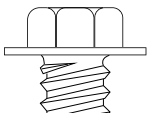
- Steel-to-steel connections • Aluminum-to-steel connections
- Aluminum-to-aluminum connections • Wood-to-steel connections

FEATURES AND BENEFITS

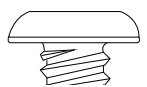
Stalgard® SUB: No red rust after 2000 hours of salt spray per ASTM B117

Stalgard® : No red rust after 1000 hours of salt spray exposure per ASTM B117

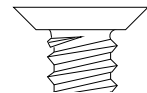
Head Styles



HWH



Pan
Head



Undercut
Flat

Cat. No.	Description	Point Type	Finish	Maximum Load-Bearing Length ¹ (in.)	Minimum Protrusion Length ²	Nominal Head Diameter ³ (in.)	Nominal Head Height ⁴ (in.)	Qty / Carton
#10 Diameter, 5/16" Hex Washer Head								
EA430	#10 - 16 x 3/4"	#3	Stalgard SUB	0.250	1/2"	0.400	0.14	6,000
EA460	#10 - 16 x 1-1/2"	#3	Stalgard SUB	1.000	1/2"	0.400	0.14	2,500
EA470	#10 - 16 x 2"	#3	Stalgard SUB	1.500	1/2"	0.415	0.17	2,000
EA480	#10 - 16 x 2-1/2"	#3	Stalgard SUB	2.000	1/2"	0.400	0.14	1,500
#10 Diameter, #2 Phillips Pan Head								
EdX445	#10 - 16 x 3/4"	#2	Stalgard	0.344	13/32"	0.365	0.13	6,000
#10 Diameter, #2 Phillips Washer Head								
EBL530	#10 - 24 x 1-1/4"	#3	Stalgard	0.781	15/32"	0.470	0.05	5,000
#12 Diameter, 5/16" Hex Washer Head								
EA621 ^[7]	#12 - 14 x 7/8"	#3	Stalgard SUB	0.375	1/2"	0.415	0.18	5,000
EA641	#12 - 14 x 1"	#3	Stalgard SUB	0.500	1/2"	0.415	0.18	4,000
EA661	#12 - 14 x 1-1/4"	#3	Stalgard SUB	0.750	1/2"	0.415	0.18	2,500
EA681	#12 - 14 x 1-1/2"	#3	Stalgard SUB	1.000	1/2"	0.415	0.18	2,500
EA755	#12 - 24 x 1-3/4"	#5	Stalgard SUB	0.750	1"	0.415	0.18	2,500
EA690	#12 - 14 x 2"	#3	Stalgard SUB	1.500	1/2"	0.415	0.18	2,000
EA715	#12 - 14 x 3"	#2	Stalgard SUB	2.375	5/8"	0.500	0.19	1,000
#12 Diameter, #3 Phillips Undercut Flat Head								
EBL215 ^[6]	#12 - 14 x 1"	#3	Stalgard	0.500	1/2"	0.415	0.09	4,000
EBL220 ^[6]	#12 - 14 x 1-1/4"	#3	Stalgard	0.750	1/2"	0.415	0.09	3,000
EBL223 ^[6]	#12 - 14 x 1-1/2"	#3	Stalgard	1.000	1/2"	0.415	0.09	2,500
1/4" Diameter, 3/8" Hex Washer Head								
EA816	1/4" - 14 x 1"	#3	Stalgard SUB	0.438	9/16"	0.500	0.23	3,000
EA865	1/4" - 20 x 1-1/8"	#4	Stalgard SUB	0.313	13/16"	0.500	0.23	2,500
EA841	1/4" - 14 x 1-1/2"	#3	Stalgard SUB	0.938	9/16"	0.500	0.23	2,000
EA876	1/4" - 20 x 1-1/2"	#4	Stalgard SUB	0.688	13/16"	0.500	0.23	2,000
EA888	1/4" - 20 x 1-3/4"	#5	Stalgard SUB	0.750	1"	0.500	0.23	1,000
EA846	1/4" - 14 x 2"	#3	Stalgard SUB	1.438	9/16"	0.500	0.23	1,500
EA886	1/4" - 20 x 2"	#4	Stalgard SUB	1.188	13/16"	0.500	0.23	1,500
EA890	1/4" - 20 x 2-1/2"	#4	Stalgard SUB	1.688	13/16"	0.500	0.23	1,000
EA900 ^[5]	1/4" - 20 x 3-3/8"	#4	Stalgard SUB	2.563	13/16"	0.500	0.23	500
EA910 ^[5]	1/4" - 20 x 4"	#4	Stalgard SUB	3.188	13/16"	0.500	0.23	500
1/4" Diameter, #3 Phillips Undercut Flat Head								
EBL330 ^[5,6]	1/4" - 20 x 3"	#4	Stalgard	2.188	13/16"	0.460	0.10	500
EBL340 ^[5,6]	1/4" - 20 x 4"	#4	Stalgard	3.188	13/16"	0.460	0.10	500
5/16" Diameter, 3/8" Hex Washer Head								
EA940	5/16" - 18 x 1-1/2"	#3	Stalgard SUB	0.750	3/4"	0.600	0.27	1,000
EA960	5/16" - 24 x 1-1/2"	#4	Stalgard SUB	0.688	13/16"	0.600	0.27	1,000
EA970	5/16" - 24 x 2"	#4	Stalgard SUB	1.188	13/16"	0.600	0.27	1,000

1. The Maximum Load Bearing Length is calculated by subtracting the Minimum Protrusion Length from the Nominal Length of the fastener.
2. Minimum Protrusion Length is the length that allows the higher hardness tip and lead threads to protrude out of the back side of the supporting material.
3. Nominal head diameter is the diameter of the integral washer on hex washer head fasteners.
4. Nominal head height includes the thickness of the integral washer on hex washer head fasteners.
5. Partially Threaded Fastener with a thread length of 2.00".
6. Undercut Flat Head screws have an 82 degree head angle.
7. For aluminum applications only.

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DRIL-FLEX® Self-Drilling Structural Screws

PRODUCT DESCRIPTION

Dril-Flex Structural Drill Screws are dual heat treated self-drilling tapping screws provide the strength, ductility and resistance to embrittlement.

Technical Information

Fastener Strengths 23AAS7

Description	Tension (lbf)			Shear (lbf)			Minimum Torsional Strength (in-lbs)
	Ultimate	ASD	LRFD	Ultimate	ASD	LRFD	
#10-16	2,275	760	1,140	1,460	485	730	61
#10-24	2,610	870	1,305	1,080	360	540	65
#12-14	3,215	1,070	1,610	1,990	665	995	92
#12-14 (PUFH)	2,150	715	1,075	1,980	660	990	92
#12-24	3,255	1,085	1,625	1,935	645	965	100
1/4"-14	4,360	1,455	2,180	2,690	895	1,345	150
1/4"-20	4,360	1,455	2,180	2,615	870	1,310	156
5/16"-18	7,220	2,405	3,610	4,565	1,520	2,285	425
5/16"-24	8,755	2,920	4,380	4,960	1,655	2,480	425

1. Ultimate strengths are based on laboratory tests.
2. Allowable (ASd) strengths are based on a safety factor, Ω , of 3.0 in accordance with ICC-ES AC118 and AISI S100-16.
3. design (LRFD) strengths are based on a resistance factor, ϕ , of 0.50 in accordance with ICC-ES AC118 and AISI S100-16.
4. For ASd tension connections, the lower of the ASd tension strength, ASd pull-out strength and ASd pull-over strength must be used for design.
5. For LRFD tension connections, the lower of the LRFD tension strength, LRFD pull-out strength and LRFD pull-over strength must be used for design.
6. For ASd shear connections, the lower of the ASd Shear (Bearing) Capacity and the ASd Fastener Shear Strength must be used for design.
7. For LRFD shear connections, the lower of the LRFD Shear (Bearing) Capacity and the LRFD Fastener Shear Strength must be used for design.



Code Listings

ICCES

ESR 3332 Steel to steel

ESR 4367 Wood to steel

ESR 4374 Aluminum

Ultimate Tension Pull-Out Capacity of Screw Connections in Aluminum, lbf¹

Screw Size	Point Type	6063-T5 (Fy = 16 ksi, Fu = 22 ksi)					6063-T6 (Fy = 25 ksi, Fu = 30 ksi)					6061-T6 (Fy = 35 ksi, Fu = 38 ksi)				
		1/16"	1/8"	3/16"	1/4"	5/16"	1/16"	1/8"	3/16"	1/4"	5/16"	1/16"	1/8"	3/16"	1/4"	5/16"
#10-16	#2	235	600	-	-	-	355	895	-	-	-	460	1,175	-	-	-
#10-16	#3	230	540	-	-	-	300	830	-	-	-	395	1,145	-	-	-
#10-24	#3	245	580	-	-	-	300	850	-	-	-	325	1,085	-	-	-
#12 - 14	#2	310	680	-	-	-	340	985	-	-	-	440	1,245	-	-	-
#12 - 14	#3	310	650	1,260	-	-	340	950	1,775	-	-	435	1,210	2,110	-	-
#12 - 24	#5	-	550	1,075	1,230	1,345	-	785	1,460	1,990	1,990	-	965	1,625	2,435	2,435
1/4" - 14	#3	255	725	1,310	-	-	370	1,040	1,930	-	-	430	1,285	2,495	-	-
1/4" - 20	#4	-	700	1,340	1,765	1,925	-	1,010	1,850	2,540	2,930	-	1,250	2,125	3,340	3,585
1/4" - 20	#5	-	670	1,310	1,790	1,800	-	1,000	1,865	2,525	2,645	-	1,300	2,255	3,225	3,400
5/16"-18	#3	-	920	-	2,435	-	-	1,120	-	2,965	-	-	1,120	-	2,965	-
5/16"-24	#4	-	855	-	2,105	-	-	1,045	-	2,565	-	-	1,045	-	2,565	-

1. Ultimate strengths are based on laboratory tests.
2. Ultimate load capacities must be reduced by a minimum safety factor to determine allowable loads (ASd) or by a load resistance factor to determine strength design capacities (LRFD).

Ultimate Tension Pull-Out Capacity of Screw Connections in Steel, lbf¹

Diameter	Point Type	Thickness of Steel Not in Contact with Screw Head						
		18 Ga.	16 Ga.	14 Ga.	12 Ga.	1/8"	3/16"	1/4"
#10-16	#2/#3	335	485	585	955	1,135	-	-
#10-24	#3	330	505	675	1,125	1,480	-	-
#12-14	#2/#3	335	510	655	790	1,380	1,795	-
#12-24	#5	-	-	605	1,030	1,370	2,410	2,760
1/4"-14	#3	340	515	630	825	1,515	2,430	-
1/4"-20	#4/#5	-	555	705	1,145	1,410	2,575	3,255
5/16"-18	#3	-	-	-	1,400	1,915	-	-
5/16"-24	#4	-	-	-	1,290	1,725	2,620	3,565

1. Ultimate strengths are based on laboratory tests.
2. Ultimate load capacities must be reduced by a minimum safety factor to determine allowable loads (ASd) or by a load resistance factor to determine strength design capacities (LRFD).

Dril-Flex is a registered trademark of Elco.

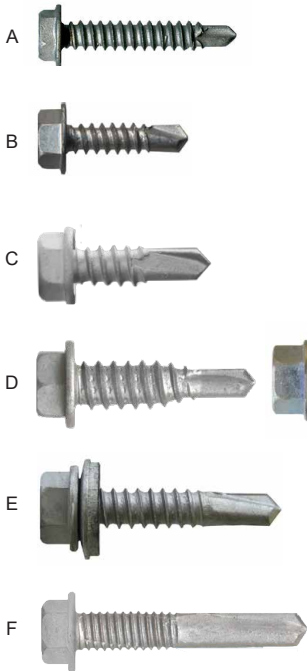
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- Provides corrosion resistance in mild atmospheres.
- Plated to resist surface rust and to reduce tapping torque.
- Optional TRI-SEAL® 1,000 hrs salt spray long-life coated to reduce tapping torque and provide additional corrosion protection.

Blue colored sizes denotes popular DC items

SIZES AND PERFORMANCE SPECIFICATIONS

DIAMETER & POINT	LENGTH	Load Bearing Length (MAX)	Box Qty	LIST PRICE
A #8-18 BLAZER-2	x	1/2"	.100"	10M
		3/4"	.125"	10M
B #10-16 BLAZER-3	x	3/4"	.250"	7.5M
		1"	.500"	5M
		1-1/2"	1"	5M
C #12-14 BLAZER-3	x	3/4"	.125"	5M
		1"	.250"	3.5M
		1-1/4" LP	.625"	3M
		1-1/2"	.750"	2M
		2"	1.250"	2M
		2-1/2"	1.750"	1.5M
D 1/4-14 BLAZER-1 VRT	x	7/8"	.325"	2.5M
		1-1/8"	.875"	2.0M
E 1/4-14 BLAZER-3	x	3/4"	.125"	2.5M
		1"	.250"	2.5M
		1-1/4"	.625"	2M
		1-1/2"	.575"	2M
		2"	1"	1.5M
		3"	2"	1.5M
		4"	3"	500
		5"	4"	500
F #12-24 BLAZER-5	x	1-1/4"	.500"	5M
		1-1/2"	.625"	3.5M
		2"	.875"	2m



All screws are available with Bonded Sealing Washers. Call for sizes

HEAD SIZE
SIZE **HEAD TYPE**
 #8 1/4" HWH
 #10, #12, *1/4" 5/16" HWH
 1/4" 3/8" HWH

BONDED WASHER
 #8, #10 = 1/2" o.d.
 #12, #14 = 15mm o.d.
MATERIAL
 304 Stainless Steel
 EPDM Sealant

SCREW AND POINT	DRILL AND TAP CAPACITIES						
	.036"	.100"	.175"	.210"	.250"	.375"	.500"
#8-18 BLAZER-2							
#10-16 BLAZER-3							
#12-14 BLAZER-3							
#12-24 BLAZER-4							
#12-24 BLAZER-5							
1/4-14 BLAZER-1 VRT							
5/16-12 BLAZER-3							
1/4-14 BLAZER-3							
1/4-20 BLAZER-5							

MATERIAL: 410 Stainless Steel

PLATING: Passivated (24hrs Salt Spray), Zinc Plated (48hrs Salt Spray), TRI-SEAL® Coated (1,000hrs Salt Spray). Call for sizes

Pullout Loads | Ultimate in Pounds Force

Carbon Steel and 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.

Fastener Information		PULLOUT ULTIMATE LOAD IN POUNDS													
		Calculated Values In Accordance to AISI S100 Section E4													
		Grade 50 per ASTM A1011 60Ksi Min. Steel							Grade 50 per ASTM A792/A653/A572/A529 65Ksi Min. Steel						
Screw Size	Nom Dia. (in.)	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				
#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		

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

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Self-Drilling Screw GYPSTERS Bugle Head

- Fasten wood, plywood and OSB panels to steel studs.
- #2 square drive bugle heads drive flush with work surface.
- Tapping screw threads, #3 drill points.
- Drilling thickness capacities: up to .083" (68 mils, 14 ga.) for #6, up to .142" (118 mils, 10 ga) for #8 and up to .177" for #10.

410 Stainless Steel

Size	Length	Carton Count	Item No.
#6	1-1/4"	100	F06T125BDC
#6	1-1/4"	1,000	F06T125BDM
#6	1-1/4"	5,000	F06T125BDB
#8	1-5/8"	100	F08T162BDC
#8	1-5/8"	1,000	F08T162BDM
#8	1-5/8"	3,000	F08T162BDB
#8	2"	100	F08T200BDC
#8	2"	1,000	F08T200BDM
#8	2"	2,500	F08T200BDB
#10	2-1/2"	100	F10T250BDC
#10	2-1/2"	1,000	F10T250BDM
#10	2-1/2"	2,000	F10T250BDB
#10	3"	100	F10T300BDC
#10	3"	1,500	F10T300BDB
#10	3-1/2"	100	F10T350BDC
#10	3-1/2"	1,000	F10T350BDB



Hand Drive Screws Fiber Cement Screws - Wood Stud

- #2 square drive, Coarse thread full length.
- Type-17 point for fast starts.
- Self-countersinking nibs under head insure seating of screw heads flush with work surface.
- Threaded to within 5/16" of head
- Use 1-1/4" screws to attach fiber cement siding to stress skin panels
- Use 1-5/8" screws to blind-fasten fiber cement lap siding to wood

316 Stainless Steel

Size	Length	Carton Count	Item No.
#8	1-1/4"	100	T08C125WQC
#8	1-1/4"	1,000	T08C125WQM
#8	1-5/8"	100	T08C162WQC
#8	1-5/8"	1,000	T08C162WQM
#8	2-1/4"	1,000	T08C225WQM
#8	2-1/4"	2,000	T08C225WQC

410 Stainless Steel

Size	Length	Carton Count	Item No.
#8	9-1/16"	100	F08T056KDC
#8	9-1/16"	1,000	F08T056KDM
#8	9-1/16"	8,000	F08T056KDB
#8	3/4"	100	F08T075KDC
#8	3/4"	1,000	F08T075KDM
#8	3/4"	6,000	F08T075KDB
#8	1-1/4"	100	F08T125KDC
#8	1-1/4"	1,000	F08T125KDM
#8	1-1/4"	4,000	F08T125KDB
#8	1-5/8"	100	F08T162KDC
#8	1-5/8"	1,000	F08T162KDM
#8	1-5/8"	3,000	F08T162KDB
#8	2"	100	F08T200KDC
#8	2"	1,000	F08T200KDM
#8	2"	2,500	F08T200KDB



Self-Drilling Screws K-Lath Modified Truss Head

- For attaching metal lath to 14- to 20-gauge steel studs.
- Tapping screw threads, #3 drill point.
- #2 Phillips drive.

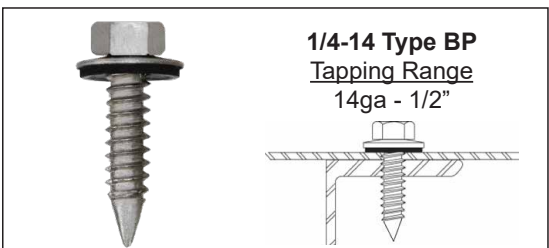
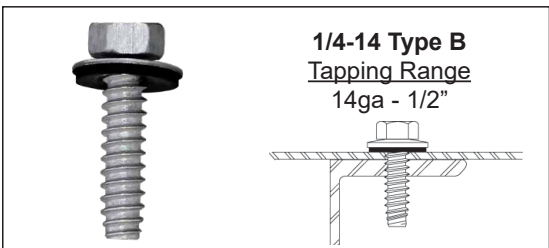
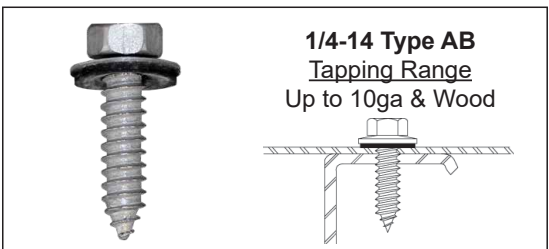
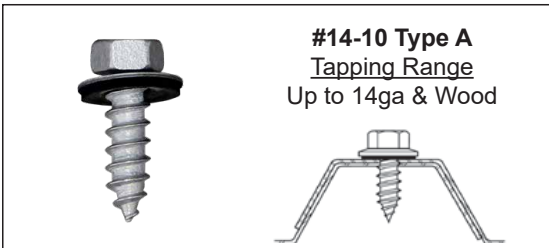


CARBON STEEL & 304 STAINLESS STEEL TYPE A, AB, B, BP SELF-TAPPING SCREWS

You want 'em... we got 'em!

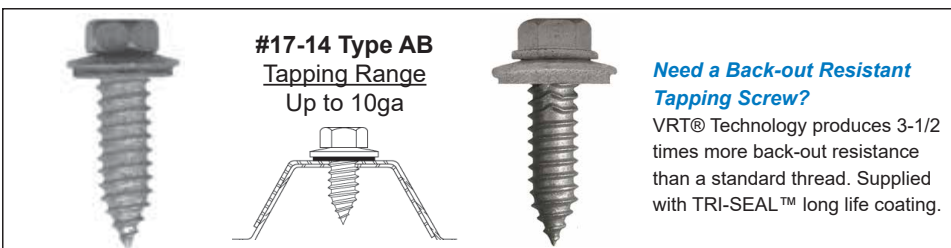
We stock the largest selection of carbon steel self-tapping "sheeting" screws in the USA!

- Select from carbon steel, 304 stainless steel, zinc cap head or stainless steel cap head.
- Available with and without BOND-SEAL sealing washers.
- Available with TRI-SEAL® long life coating providing over 1,000 hours salt spray resistance (ASTM B117).
- Lengths up to 8" long!
- Can be painted with our KALIDA-KOTE™ paint process to match your specific color.



Used for alignment into structure.

Oversize or special sealing washers available!



Need a Back-out Resistant Tapping Screw?

VRT® Technology produces 3-1/2 times more back-out resistance than a standard thread. Supplied with TRI-SEAL™ long life coating.

Sizes (X = Available)

Description	Point Type	Carbon Steel	304 SS	Stainless Cap Head	Zinc Cap Head	Box Qty.	Wgt. Per M
#14-10 x 3/4"	Type A	X	X			2,500	10.8
#14-10 x 1"		X	X		X	2,500	14.2
#14-10 x 1-1/2"		X	X		X	1,500	19.1
#14-10 x 2"		X	X			1,000	23.4
#14-10 x 2-1/2"		X	X			1,000	28.1
#14-10 x 3"		X	X			500	34.1
#14-10 x 4"		X	X			500	45.5
#14-10 x 5"		X	X			300	52.8
#14-10 x 6"		X				250	60.1
1/4-14 x 3/4"	Type AB	X	X	X	X	2,500	12.5
1/4-14 x 1"		X	X	X	X	2,500	14.9
1/4-14 x 1-1/2"		X	X			1,500	19.7
1/4-14 x 1-3/4"			X			2,000	23.4
1/4-14 x 2-1/2"	Type B		X			1,000	28.7
1/4-14 x 1"		X	X			2,500	14.1
1/4-14 x 1-1/2"		X	X			1,500	19.5
1/4-14 x 2"		X	X			1,000	23.1
1/4-14 x 2-1/2"		X	X			1,000	29.0
1/4-14 x 3"		X	X			500	33.3
1/4-14 x 4"		X	X			500	43.4
1/4-14 x 5"		X	X			300	53.5
1/4-14 x 6"			X			250	62.2
1/4-14 x 8"	Type BP					200	81.0
1/4-14 x 1"						2,000	17.0
1/4-14 x 1-3/4"	Type AB		X			2,000	23.4
*#17-14 x 1"		X	X	X	X	2,000	18.9
*#17-14 x 1-1/2"		X			X	1,500	28.4

*Available with VRT® technology.

Refer to the back for technical information and drill bit size.

Screwgun Speed: 1,000 rpm maximum

Available Head Styles



**3/8" Hex Head
(Standard)**



**3/8" Hex Washer Head
(#17-14 VRT® Only)**



3/8" Zinc Cap Head



5/16" Stainless Cap Head

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TFC PRODUCT QUICK FACTS

THREADED SCREWS

Most popular for a variety of applications.
Carbon Steel or Stainless Steel.

Diameters: 3/16", 1/4", 3/8", 1/2", 5/8", 3/4"

Lengths: Up to 6"

HAMMER-IN ANCHORS

ZAMAC or SPIKES
Zinc Alloy, Carbon Steel or Stainless Steel.

Diameters

ZAMAC: 1/4"

SPIKES: 1/4", 3/8", 1/2"

Lengths: Up to 14"

EXPANSION ANCHORS

Sleeve, Wedge, or Drop-in
Carbon Steel or Stainless Steel.

Diameters: 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1", 1-1/4"

Lengths: Up to 12"

CHEMICAL ANCHORS

RED HEAD EPCON Brand

Use in a variety of applications.

PINS, LOADS, TOOLS

RAMSET® Brand pins and loads.

Variety of powder actuated and gas charged pins, loads and tools.



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for the most up-to-date product
and technical information!

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CONCRETE ANCHORS

ATTACH TO CONCRETE, BRICK, OR BLOCK

THREADED CONCRETE SCREWS



HAMMER-IN ANCHORS



EXPANSION ANCHORS



CHEMICAL / EPOXY ANCHORS



POWDER AND GAS CHARGED CONCRETE PINS AND TOOLS



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Largest Selection of Painted Rivets...**IN STOCK!**

- #43 and #44 Stainless Steel
- Over 50 colors in-stock for same day ship!
- Chip resistant paint is formulated to resist fading caused by UV rays.
- 250 pieces per bag for easy handling.

WE'LL SHIP ONE BAG!

Popular Sizes and Technical Information

Body Dia.	Rivet #	Grip Range	Rivet Length	Head Dia.	Head Height	Drill Hole
1/8"	43	.126 - .187	.337	.250	.040	#30 (.129" - .133")
	44	.188 - .250	.400			
3/16"	63	.126 - .187	.337	.375	.060	#11 (.192" - .196")
	64	.188 - .250	.400			

BLIND RIVETS | DOMED HEAD
TFC standard rivets are
all stainless, all aluminum or all steel

Use the correct hole size to assure the rivet performs properly. Refer to size chart for hole size.

Drill Bit Type
High Speed / 135° Split Point

Pullout in Steel

1/8" BLIND RIVET (#42, #43, #44) STAINLESS STEEL					
	Steel Thickness and Tensile				
	0.021"	0.032"	0.047"	0.074"	
	49 ksi	44 ksi	112 ksi	63 ksi	66 ksi
PULLOUT (lbs)	106 ¹	175 ¹	571 ¹	647 ²	631 ²

Farabaugh Report: T311-16

Pullover in Steel

1/8" BLIND RIVET (#42, #43, #44) STAINLESS STEEL			
	Steel Thickness and Tensile		
	0.021"	0.032"	0.074"
	49 ksi	44 ksi	66 ksi
PULLOVER (lbs)	306 ¹	425 ¹	644 ²

Farabaugh Report: T175-21

Rivet Strengths

RIVET	Tensile	Shear
1/8" SS	600	520
1/8" AL	180	150
3/16" SS	1300	1150
3/16" AL	700	440

Country of Origin: USA

Tools

Milwaukee® M12™ Tool 12 Volt Cordless



Delivers fast, easy riveting while maintaining performance, durability, and consistency.

Model: M12 - 2550-22 Tool Kit

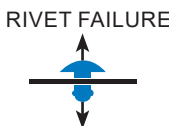
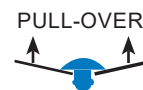
Capability | One full Charge
3/16" stainless steel rivets (250 rivets)
1/8" steel rivets (450 rivets)



Tool Kit includes battery, charger, bag.

Manual

The Rivet King model RK-65 hand rivet tool can set blind rivets up to 3/16" in diameter.



FAILURE MODES
1. Pullover or Pullout
2. Rivet

Pullout in Aluminum

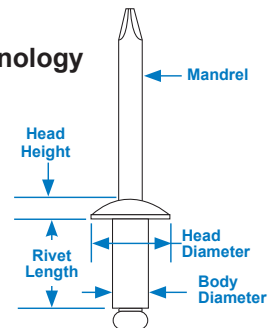
1/8" BLIND RIVET (#42, #43, #44)		
ALUMINIUM THICKNESS (6063 T5)	0.040"	0.125"
STAINLESS RIVET PULLOUT (lbs)	102 ¹	561 ¹
ALUMINUM RIVET PULLOUT (LBS)	103 ¹	194 ²

3/16" BLIND RIVET (#62, #63, #64)		
ALUMINIUM THICKNESS (6063 T5)	.040"	0.125"
STAINLESS RIVET PULLOUT (lbs)	124 ¹	1,082 ¹
ALUMINUM RIVET PULLOUT (lbs)	128 ¹	512 ²

Farabaugh Report: T220-16 & T305-20

All tests conducted at Farabaugh Engineering and Testing

Rivet Terminology



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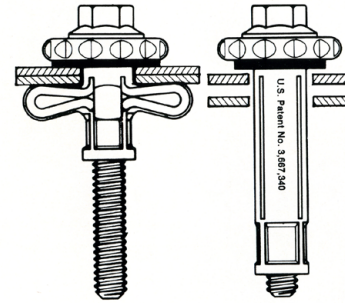
We Stock a Full-Line for Immediate Shipping!

FAB-LOK® fasteners were designed to maintain panel integrity in high-stress environments such as: high wind areas, expansion and contraction, severe vibration, racking and the repair of oversized holes.

Sizes

Material	Size	Penetrating Length	Grip Range	Wt. / M
Carbon Steel	FAS 10-4	1.373"	.062"-.250"	23
	FAS 10-8	1.612"	.250"-.500"	24
	FAS10-12	1.807"	.500"-.750"	28
H-3 (300 series) Stainless Steel	FAC10-4	1.373"	.062"-.250"	23
	FAC 10-8	1.612"	.250"-.500"	24
	FAC 10-12	1.807"	.500"-.750"	28

WEATH-R-SEAL Washers	
Part	Description
Aluminum Bonded Weath-R-Seal Washers	.729" O.D. - .040 Aluminum
	1" O.D. - .040" Aluminum
304 Stainless Steel Bonded Weath-R-Seal Washers	.729" O.D. 20 gauge 304 S/S
	1" O.D. 20 gauge 304 S/S



Vibration, either from inside or outside a building, can make ordinary fasteners loosen and back out.

FAB-LOK® fasteners combine a slotted aluminum sleeve and fastener to provide the simplicity and strength of both elements.

Installation

1. Pre-drill with a 5/16" diameter drill bit
2. Insert FABLOK into hole. Use the FABLOK holding sleeve with a DEWALT screw-gun (DW268 or DW267)

Holding Sleeve
p.n. : EZL900



Technical Information

Pull-out tests were performed on a Model L Dillon Dynamometer. FAB-LOK® fasteners were installed in single sheet and two sheets of metal and pulled over the tines of the FAB-LOK® to determine holding values.

Clamping Force

FAB-LOK® Type
Maximum 900 lbs.
Residual 860 lbs.

Comparison: FAB-LOK® & Sheet Metal SC

Sheet Material	FAB-LOK® FAS-10-4	#14 Sheet Metal Screw
Strip test in .032" Aluminum	75 inch-lbs.*	65 inch-lbs.*
Strip test in 26 ga. Steel	75 inch-lbs.*	45 inch-lbs.*
Strip test in 24 ga. Steel	75 inch-lbs.*	55 inch-lbs.*

Single Shear Strength

FAB-LOK® Type	FAC	FAS
Avg. shear	1885 lbs.	2400 lbs.

Hydrostatic Test

FAB-LOK® Type	H2O Pressure	Length of test	Result
FAC - 10-4	100 psi	5 days	No leaks

Type Fac - Single Sheet

Sheet Material	Sheet Thickness	Failure lbs.*	Type of Failure
Steel	24 ga.	833	Sheet Split
	20 ga.	858	Sheet Split
	18 ga.	1050	Sheet Split
	16 ga.	1293	Sheet Split
	14 ga.	1400	Fastener Broke

Fatigue Tests

Two thicknesses of 26 gauge metal fastened with FAB-LOK® and tested on 5000 lb. capacity machine at 1500 cycles per minute, sustained 1,775,500 cycles when failure of sheets occurred. Fastener did not fail.

FAB-LOK® fastening 1/8" aluminum plate to 3/16" steel of a railroad freight car, held without failure when the car was subjected to jarring vibration by a Hewitt-Robins Car Shaker at 900 cycles for ten minutes.

INFORMATION PROVIDED HERE IS BASED UPON TESTS BELIEVED TO BE RELIABLE. IN AS MUCH AS ELCO FASTENING SYSTEMS HAS NO CONTROL OVER THE EXACT MANNER IN WHICH OTHERS MAY USE THIS INFORMATION, IT DOES NOT GUARANTEE THE RESULTS TO BE OBTAINED NOR DOES THE COMPANY MAKE ANY EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE CONCERNING THE EFFECTS OR RESULTS OF SUCH USE.



Grommet Seal Fasteners are compression fasteners used in side-lap applications which utilize fiberglass, plastic or composite sheeting.

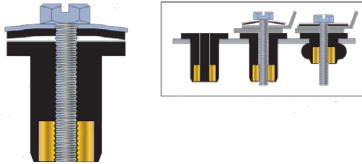
Sizes and Specifications

Grommet Size	1/4" x 1"	3/8" x 1"
Body Length	.948	.812
Nut Insert	6-32	10-32
Durometer (sleeve)	70	60
Ultimate Tensile	50 lbs.	80 lbs.

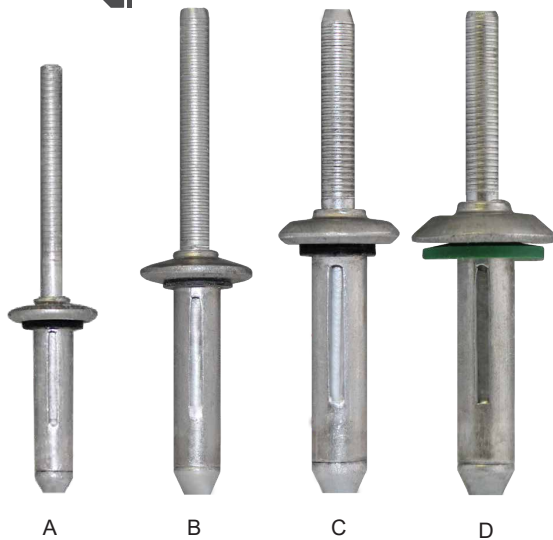
*Also available in 316 stainless steel.

Installation

The grommet is installed by placing it into a pre-drilled 1/4" or 3/8" hole and tightened using a screw gun with a standard 1/4" or 5/16" socket. The machine screw engages the nut insert, forcing the sleeve to expand against the inner wall of the materials. Grommets become an excellent sealant against air, moisture and vibration.



Machine Screw Size	6-32" x 1"	10-32" x 1"
Hex Size	1/4"	5/16"
Material	302 HQ	302 HQ
Bonded Washer	304 SS/EPDM	304 SS/EPDM
Sleeve	EPDM	EPDM
Nut Insert	Brass	Brass
Recommended		
Hole Size	.250	.375
Grip Range	.375-.607	.312-.450



More than forty years ago, the first Bulb-Tite® was developed to solve application requirements in the pre-engineered metal building, roofing and siding industry.

The Bulb-Tite® rivet body folds into three separate legs forming a large blind-side head. This large bearing head evenly distributes the Bulb-Tite® high clamp force in soft, thin or brittle materials while providing high pull through resistance. The Bulb-Tite® wide grip range enables a single Bulb-Tite® to work in a greater variation of thickness. Some versions of the Bulb-Tite® feature a special flush break mandrel that effectively seals the rivet bore and adds greater shear strength.

The standard Bulb-Tite® rivets are made of aluminum alloy, providing a durable non-rusting fastener that can withstand weather-related corrosion.

Bulb-Tite® Rivets handle your attaching problems with ease providing greater pull-through.



Sizes

With Sealing washer

	DIAMETER	TFC Part Number	GRIP	HOLE SIZE	SHEAR	TENSILE
A	3/16"	RV6604-6-4W	.062" - .250"	.209" - .221" (#4)	675	450
B	1/4"	RV6604-8-6W	.062" - .250"	.250" - .263" (1/4")	1,100	675
C	9/32"	RV6603-9-6W	.032" - .375"	.308" - .327" (5/16")	1,500	1,100
D	9/32"	RV6605-9-6W	.042" - .375"	.308" - .327" (5/16")	1,500	1,100

TOOLS

Tools designed to install Bulb-Tite® Rivets in metal clad building application.



Contact TFC for availability!

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TFC PRODUCT QUICK FACTS

APS 500™

Advanced Polymer Sealant

- Weathering ability of silicone combined with paintability of polyurethane.
- Sticks to a variety of materials including: painted metal, Kynar & siliconized polyester.
- Available in smooth or textured finish.
- Supplied in plastic tubes.

ULTRA 1000™

Premium Silicone Sealant

Sticks to a variety of materials including: painted metal & Kynar & siliconized polyester.

- Use when long life performance is required.
- Supplied in plastic tubes.

TFC BUTYL™

Non-Skinning Butyl

- Use in panel laps and joints for superior adhesion and long life flexibility.
- Available in gray.

Firestop Sealant

- Seal around various penetrations to meet code requirements.
- Firestop fire prevention systems are designed to contain a fire to the smallest area without a secondary system.

SEALANTS

DESIGNED FOR LONG TERM DURABILITY AND PERFORMANCE

APS 500™ | Advanced Polymer Sealant



Smooth



Textured

ULTRA 1000™ | Premium Silicone Sealant



TFC BUTYL™ | Non-skinning



Elastomeric Firestop Sealant | ES100 & LCI300



ES100



LCI300

12 Volt Caulk Gun with 10 oz. Carriage



12 Volt Caulk Gun with 20 Oz. Sausage Carriage



COX Model 21001 (Wexford III)



Visit our website
for the most up-to-date product
and technical information!

www.trianglefastener.com

800.486.1832

TFC PRODUCT QUICK FACTS

BUTYL-TAPE SEAL™

Sticks to a variety of materials including: painted metal & Kynar & siliconized polyester.

SIZES: 3/32" x 3/8," 1/2", 1"

1/2" x 1"

3/16" x 7/8"

PIPEMASTER®

Flexible Pipe Flashing

- EPDM and Silicone material.
- Flash up to 24" diameter pipe.
- Available in colors.
- 35 year warranty.

Ridge Venting Material

Versa Vent ridge venting material design for R-Panel and M-Panels.

Underlayments

We can provide high performance name brand underlayments.

CLOSE- TITE®

Foam Closures

Available in wide variety of profiles to match your panel.

Expandable Edge Flashing

- EPDM material
- Widths of 7", 9", 12", and 18"

Universal Closure Seal

- Open cell foam impregnated with acrylic modified asphalt emulsion.
- Material expands to fill voids.

SIZES: 1/4" x 1/2", 1"

5/16" x 3/4"

1/2" x 1"

(Expands from 3/4" to 1-1/2" depending on original thickness).



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for the most up-to-date product
and technical information!

www.trianglefastener.com

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SEALANTS

DESIGNED FOR LONG TERM DURABILITY AND PERFORMANCE

BUTYL-TAPE SEAL™



PIPEMASTER® Pipe Flashing



Ridge Venting Material



Underlayments



Profile Vent Material



Expandable Edge Flashing



CLOSE-TITE™ Foam Closure



Universal Closure Seal





GALVANIC CORROSION - COMPATIBLE METALS CHARTS

To minimize galvanic corrosion, select fasteners based on their material compatibility with the substrates. The closer together the material are on the chart to the right, the less galvanic action will occur. Metals listed on the top of the chart (anodic) will corrode faster than the metals on the bottom of the chart (cathodic). Contact a corrosion specialist to determine the best material for your application.

Material	Anodic Index (Volts)
Graphite	+0.25
Type 316 Stainless Steel (Passive)	0.05
Type 304 Stainless Steel (Passive)	0.08
Monel 400	0.08
Silver	0.13
Type 410 Stainless Steel (Passive)	0.15
Type 316 Stainless Steel (Active)	0.18
Nickel	0.20
Type 430 Stainless Steel (Passive)	0.22
Copper Alloy 443 (Admiralty Brass)	0.29
G Bronze	0.31
Copper Alloy 687 (Aluminum Brass)	0.32
Copper	0.36
Type 410 Stainless Steel (Active)	0.52
Type 304 Stainless Steel (Active)	0.53
Carbon Steel	0.61
Cast Iron	0.61
Aluminum 3003-H	0.79
Zinc	1.03

Galvanic Compatibility

When design requires that dissimilar metals come in contact, galvanic compatibility can be managed by finishes and plating which protects the base materials from corrosion.

The chart to the left is Galvanic Series In Flowing Sea Water.

- Harsh environments, such as outdoors, high humidity, and salt environments. Typically there should be not more than 0.15 V difference in the "Anodic Index". For example; silver - nickel would have a difference of 0.17V being acceptable.
- Normal environments like non-temperature and humidity controlled environments. Typically there should not be more than 0.25 V difference in the "Anodic Index".
- Controlled environments, such that are temperature and humidity controlled, 0.50 V can be tolerated. Caution should be maintained when deciding for this application as humidity and temperature do vary from regions.

Active (Anodic) Most Likely To Corrode
Magnesium
Magnesium alloys
Zinc (hot-dip, die cast, or plated)
Aluminium 1100, 3003, 3004, 5052, 6053
Tin (plated)
Lead
Steel 1010
Iron (cast)
Stainless steel 410 (active)
Copper (plated, cast, or wrought)
Nickel (plated)
Chromium (Plated)
Stainless steel 301,304,310 (active)
Stainless steel 430 (active)
Tungsten
Brass
Nickel-silver (18% Ni)
Stainless steel 316L (active)
Bronze 220
Copper 110
Red Brass
Stainless steel 347 (active)
Copper-nickel 715
Admiralty brass
Stainless steel 202 (active)
Bronze, Phosphor
Monel 400
Stainless steel 201 (active)
Stainless steel 321 (active)
Stainless steel 316 (active)
Stainless steel 309 (active)
Stainless steel 17-7PH (passive)
Silicone Bronze 655
Stainless steel 301,304,321 (passive)
Stainless steel 201,286 (passive)
Stainless steel 316L (passive)
Stainless steel 202 (passive)
Titanium
Nobel (Cathodic) Least Likely To Corrode

Fastener Material Selection Based on the Galvanic Series of Metals

Table developed using information supplied by AISI Committee of Stainless Steel Producers.

Key

- The corrosion of the base metal is not increased by the fastener.
- The corrosion of the base metal is slightly increased by the fastener.
- The corrosion of the base metal may be considerably increased by the fastener material.
- The plating on the fastener is rapidly consumed.
- The corrosion of the fastener is increased by the base metal.

		FASTENER MATERIAL			
		STEEL Zinc Plated	STAINLESS STEEL Type 410	STAINLESS STEEL Type 302, 304, 316	ALUMINUM
BASE METAL	Zinc Galvanized ZN/Al Coated Steel	A	C	C	B
	Aluminum	A	Not Recommended	B	A
	Steel / Cast Iron	A,D	C	B	A
	Brass, Copper, Bronze	A,D,E	A	B	A,E
	Stainless Steel 300 Series	A,D,E	A	A	A,E

Footnotes

- Because aluminum can expand a large distance, the high hardness of 410 SS case harden screws may lead to screw to failure due to lack of ductility or stress corrosion cracking.

NOTE: Organic coating to the screw will improve the corrosion resistance. Environments can affect the rate of corrosion and change the activity of the metals.

Revised by TFC: 1221JS

Special Note: Preservative-Treated Lumber Applications

ACQ, Penta, CA or CBA preservative-treated lumber can be incompatible with certain types of fasteners. In those cases where any type of metal roof or wall cladding materials are being attached to preservative treated lumber, the following fasteners are not compatible: zinc plated screws, zinc-alloy headed screws, stainless capped screws, aluminum, copper and copper alloy. When attaching metal panels to those types of preservative-treated lumber, a moisture barrier should be used between the lumber and the panel material. Metal panel fasteners that are compatible with preservative-treated lumber are stainless steel fasteners, or hot dip galvanized nails manufactured to ASTM A153 class D or heavier. Other types of fasteners coated with proprietary anti-corrosive technologies are also available for use with preservative-treated lumber. In addition, zinc-plated screws can be used in CCA and MCQ pressure-treated lumber.

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FASTENER SELECTION GUIDE FOR EXPOSED METAL BUILDING AND ROOFING APPLICATIONS

Environments



Select a fastener based on the environment and the panel type.

To minimize galvanic corrosion, it is important that the fastener material is compatible with the roofing material. The following list of fasteners were selected based on specifications from various panel producers throughout the world. **Harsh environments can corrode metals quickly.** Contact the panel manufacturer for their specific recommendations.

NOTE: Electroplated zinc plated screws are not for use in exterior applications and will corrode quickly.



PANEL MATERIAL

Fasteners



- Galvanized
- Zinc/Aluminum
- Painted Metal



Note: 300 series stainless may corrode the base metal in severe marine environments. Consult the panel manufacturer for specific conditions

PANEL MATERIAL

Fasteners



Note: 300 series stainless may corrode the base metal in severe marine environments. Consult the panel manufacturer for specific conditions

PANEL MATERIAL

Fasteners



PANEL MATERIAL

Fasteners



For detailed product information, please view our product page located on our website or our PRODUCT QUICK FACTS sheet.



- TRI-SEAL® Coated | Carbon Steel
- Stainless Cap or Zinc Head
- 410 Stainless Steel



- TRI-SEAL® Coated | Carbon Steel
- Stainless Steel Cap Head Screws
- 304 Stainless Steel



- TRI-SEAL® Coated | Carbon Steel
- Stainless Steel Cap Head
- 304 Stainless Steel



- 304 Stainless Steel Bi-Metal Drill Screws

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We offer the following services at no charge to you!

- Product development
- Application testing
- Quality assurance

- Engineering support
- Product and application training
- Fastener recommendations

Do you need technical assistance?
Contact us and we are happy to help!



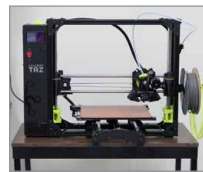
Tensile & Compression (10kips max)

We can conduct pullout, shear, and compression testing for fasteners.



Hardness Test (Rockwell Scales B & C)

The hardness of the substrate affects the pull-out and shear loads of the fastener. That is why we check the hardness of the steel and include that information with our results.



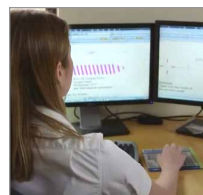
3D Printer

We use the most up-to-date tools to develop the newest innovations in fastening technologies.



Lath, Mill, Grinder, Brake, Shear, Table & Mitre Saw

We can fabricate samples to help in testing and product evaluation.



Product Conformance

We QC all of our products for dimensional, mechanical, and physical performance.



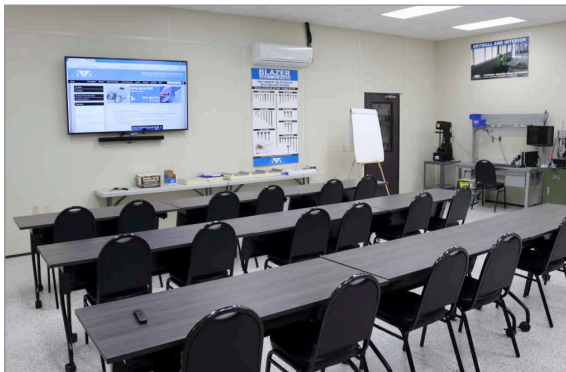
Drill / Pierce Test Machine

We test our fasteners to assure that they drill or pierce quickly and consistently.

Our specifications exceed industry standards, assuring the performance of our products.

Our state of the art drill test machine is capable of testing fasteners up to 8" long.

PRODUCT AND APPLICATION TRAINING



Training for up to 20 people

Our TECH CENTER is equipped to train you on fastener installation using a hands-on approach.

We can help you learn about the best product for your application, provide the best installation techniques and keep you informed on the latest tool technology.

We can simulate your specific application, and help you develop a fastener that meets your needs.

TFC TECH CENTER LOCATION

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25 LOCATIONS

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Ohio - Cleveland
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