

# PRODUCT SELECTION GUIDE

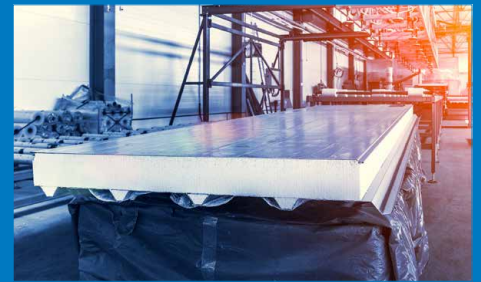
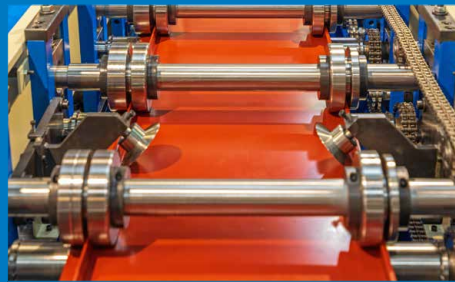
Fasteners • Sealants • Flashings • Technical Data



Applications:

## MANUFACTURERS OF ROOFING AND SIDING

- Metal Roofing & Siding
- PEMB / Steel Buildings
- Post Frame
- Misc. Cladding



- Better Connections Since 1977 -



800.486.1832

[www.trianglefastener.com](http://www.trianglefastener.com)

MD385 0223



## Fasteners & Sealants for the Manufacturers of Metal Roofs and Walls

This catalog highlights the specific products use by producers of metal roof and wall systems and miscellaneous cladding.

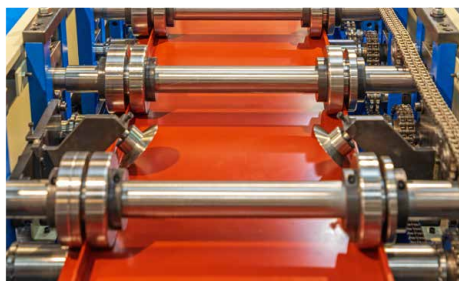
The products are designed to exceed industry standards for performance, reliability, and ease of installation.

### Fasteners and sealants for the installation of the following panel systems

#### EXPOSED FASTENER PANELS



#### CONCEALED FASTENER PANELS



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Our inventory management programs are design 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...

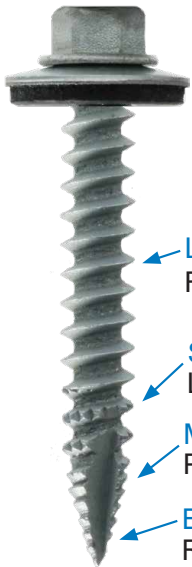
- You reduce your inventory investment.
  - Improve your cash flow.
  - Eliminate dead inventory.
  - Reduce "hidden" warehouse and procurement costs.
1. We can develop a list of items that meet your requirements.
  2. You select specific items for a particular job and develop a "cut-list" for your project.
  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.



Engineered to reduce burrs and provide more resistance to back-out!

**LOW ANGLE THREAD**  
Resists Loosening

**SAW TOOTH THREAD**  
Lower Tapping Torque

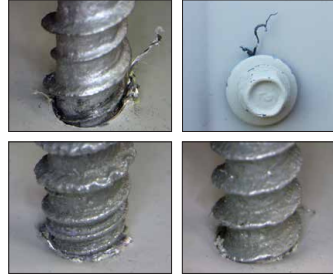
**MILLED SLOT**  
Penetrates Fast

**BURR BUSTER® POINT**  
Reduces Burrs and Chips  
Penetrates up to 20ga Steel



See how it performs compared to other types of screws.  
- Scan QR or Click Here -

## REDUCES BURRS



Patented Anti-burr Thread and Point Technology!\*

## Problem

Ordinary self-piercing screws produce burrs during installation that can damage the washer and corrode the panel!

## Solution

The BURR-BUSTER® point is designed to extrude the metal as it penetrates, minimizing burrs.

## RESISTS BACK-OUT

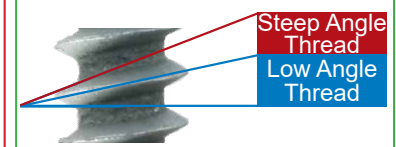
### Problem

Ordinary metal-to-wood screws have steep angled threads that are easily overdriven causing back-out.



### Solution

PANEL-TITE's low-angle thread helps keep the screw from loosening



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

All screws are plated with TRI-SEAL® M1 1,000-hrs salt spray coating for superior corrosion protection

## SIZES | BURR BUSTER® WITH TYPE 17 MILLED POINT

Can be painted with our Kalida-Kote paint finish to your exact color match.

Bagged 250pcs

### #10-12 | CARBON STEEL | 1/4" HWH

Washer: .500" Dia. BondSealer 26ga G90 to EPDM



### #12-12 | CARBON STEEL | 1/4" HWH

Washer: .562" Dia. BondSealer 26ga G90 to EPDM



### #14-12 | CARBON STEEL | 5/16" HWH

Washer: .590" Dia. BondSealer 26ga G90 to EPDM



Size	Part #	Box Qty
#10-12 x 1" Burr-Buster   CS / TS	10100HWBB17CSTSBW	4,000
#10-12 x 1-1/2" Burr-Buster   CS / TS	10150HWBB17CSTSBW	2,500
#10-12 x 2" Burr-Buster   CS / TS	10200HWBB17CSTSBW	2,000
#10-12 x 2-1/2" Burr-Buster   CS / TS	10250HWBB17CSTSBW	1,500
#10-12 x 3" Burr-Buster   CS / TS	10300HWBB17CSTSBW	1,000
#12-12 x 3/4" Burr-Buster   CS / TS	12075HWBB17CSTSBW	4,000
#12-12 x 1" Burr-Buster   CS / TS	12100HWBB17CSTSBW	4,000
#12-12 x 1-1/2" Burr-Buster   CS / TS	12150HWBB17CSTSBW	2,500
#12-12 x 2" Burr-Buster   CS / TS	12200HWBB17CSTSBW	2,000
#14-12 x 1" Burr-Buster   CS / TS	14100HWBB17CSTSBW	2,500
#14-12 x 1-1/2" Burr-Buster   CS / TS	14150HWBB17CSTSBW	2,000
#14-12 x 2" Burr-Buster   CS / TS	14200HWBB17CSTSBW	1,500
#14-12 x 2-1/2" Burr-Buster   CS / TS	14250HWBB17CSTSBW	1,000
#14-12 x 3" Burr-Buster   CS / TS	14300HWBB17CSTSBW	1,000

**TRI-SEAL® M1 1,000-hrs Salt Spray - No Red Rust**

## INSTALLATION

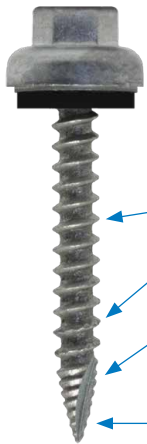
Use a 2,500 RPM screw-gun with torque control or depth sensing feature. Impact tools are not recommended.

\*Pat. No.: 11,105,362

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### FOR WARRANTED SYSTEMS & LONG-LIFE PERFORMANCE



**PANEL-TITE® BURR BUSTER ZAC**  
Zinc Die Cast Head

- Use on 20yr warranty roof systems.
- Carbon steel shank with TRI-SEAL® M1 plating
- Provides outstanding corrosion protection.

← **LOW ANGLE THREAD**  
Resists Loosening

← **SAW TOOTH THREAD**  
Lower Tapping Torque

← **MILLED SLOT**  
Penetrates Fast

← **BURR BUSTER® POINT**  
Reduces Burrs and Chips

Penetrates up to 20ga Steel

**Also Available**  
Stainless Cap Head  
with Flange Sealer



**PANEL-TITE® BURR BUSTER SS**  
304 Stainless Steel

- 304 SS BOND-SEALER washer
- Used in aluminum applications.
- Preferred screw for treated lumber.

Penetrates Steel up to 20 ga.

Patented Anti-burr Thread and Point Technology!\*

Bagged 250pcs

#### #10-12 ZAC ZINC CAP HEAD | 5/16" HWH

Washer: .565" Dia. / Aluminum to EPDM



ZAC Zn/AL alloy head provides the best protection against galvanic corrosion. Preferred screw for used on Galvalume and Zinalume coated panels.



#### ZAC® ZINC CAP HEAD | TRI-SEAL® M1 COATED SHANK

Size	Part #	Box Qty	List Price
#10-12 x 1" Burr Buster	10100HWBB17CSTSZH	4,000	
#10-12 x 1-1/2" Burr-Buster	10150HWBB17CSTSZH	2,500	
#10-12 x 2" Burr Buster	10200HWBB17CSTSZH	2,000	
#10-12 x 2-1/2" Burr Buster	10250HWBB17CSTSZH	1,500	
#10-12 x 3" Burr Buster	10300HWBB17CSTSZH	1,000	

#### #10-12 SSC STAINLESS CAP HEAD | 1/4" HWH

Washer: .500" Dia. Undercut / EPDM Washer



#### #12-14 HIGH LOW TYPE 17 STAINLESS CAP HEAD | 5/16" HWH

Washer: .570" Dia. Undercut / EPDM Washer



#### #14-10 STAINLESS CAP HEAD | 5/16" HWH

Washer: .570" Dia. Undercut / EPDM Washer



Attach metal panels with a 1-1/2" - 2" high rib height. Great for replacing screws that are stripped!

#### #10-12 304 STAINLESS STEEL

Washer: Stainless Steel



Diameter & Point: #10-12  
Material: 304 Stainless Steel  
Plating: Passivated & TRI-SEAL®  
Head Style: 1/4" HWH  
Thread: #10-12 Single Lead

#### STAINLESS STEEL CAP HEAD | TRI-SEAL® M1 COATED SHANK

Size	Part #	Box Qty	List Price
#10-12 x 1" Burr Buster	10100HWBB17CSTSSC	4,000	
#10-12 x 1-1/2" Burr-Buster	10150HWBB17CSTSSC	2,500	
#10-12 x 2" Burr Buster	10200HWBB17CSTSSC	2,000	
#10-12 x 2-1/2" Burr Buster	10250HWBB17CSTSSC	1,000	
#10-12 x 3" Burr Buster	10300HWBB17CSTSSC	1,000	
#12-14 x 1-1/2" Type 17	12150HW17CSTSSC	1,500	
#14-10 x 3-1/2" Type 17	14350HW17CSTSSC	1,000	

All ZAC and SSC screws are plated with TRI-SEAL® M1 1,000-hrs salt spray coating for superior corrosion protection

(Note: #14-10 x 3-1/2" Type 17 is coated with standard TRI-SEAL®)

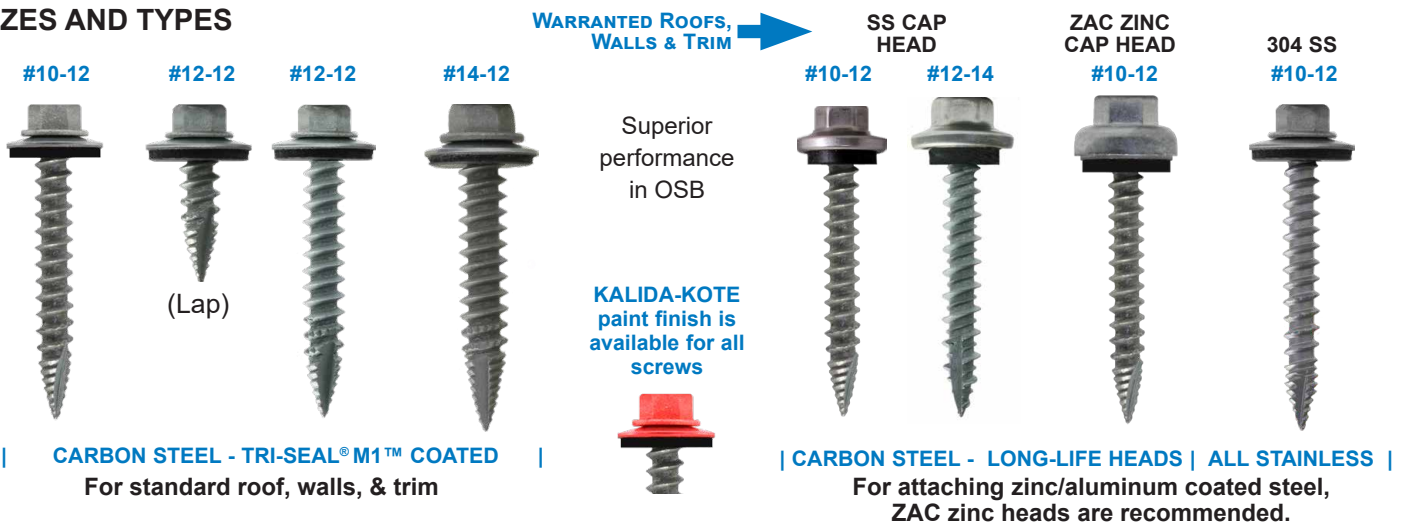
#### 304 STAINLESS STEEL | PASSIVATED & TRI-SEAL® COATED

Size	Part #	Box Qty	List Price
#10-12 x 1" Burr Buster	10100HWBB17S34BW	3,000	
#10-12 x 1-1/2" Burr Buster	10150HWBB17S34BW	2,500	
#10-12 x 2" Burr Buster	10200HWBB17S34BW	2,000	
#10-12 x 2-1/2" Burr Buster	10250HWBB17S34BW	1,500	
#10-12 x 3" Burr Buster	10300HWBB17S34BW	1,000	

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**\*Pat. No.: 11,105,362**

### SIZES AND TYPES



### GENERAL SPECIFICATIONS

**Strengths (Carbon Steel = CS and Stainless Steel = SS)**

Size	Thread Major Dia.	Tensile (lbs. min)	Shear (avg. lbs. ult.)	Torsional (min. in. lbs.)
#10-12 304 SS BB	.190	1,950	1270	60
#10-12 CS BB	.190	1,850	1,216	65
#12-14 CS HL	.216	2,183	1,946	80
#12-12 CS BB	.216	2,183	1,946	80
#14-12 CS BB	.235	3,150	2,150	125

#### Hex Sizes

#10, #12 = 1/4" HWH  
#14 = 5/16" HWH

#### Washer Diameters

#10 = 12.8mm OD  
#12 = 14mm OD  
#14 = 15mm OD

#### Patented Anti-burr Thread and Point Technology!\*

\*Pat. No.: 11,105,362

ZAC Zinc Heads: Zamac 5  
SS Heads : 304 SS

### PERFORMANCE SPECIFICATIONS

**Pullout Values in Wood (Carbon Steel or Stainless Steel)**  
Ultimate Average Load in Pounds Force



Fastener Dia. & Point	Wood Type							
	PLYWOOD-CDX				OSB			SYP
	11/32" 3/8" NOM	15/32" 1/2" NOM	19/32" 5/8" NOM	23/32" 3/4" NOM	7/16"	19/32"	23/32"	2 x 4
#10-12 BURR BUSTER		349	450	706	258	381	484	1059 1445*
#12-12 BURR BUSTER <sup>1</sup>	249	418	467	608	218	383	573	1241 1491*
#12-8 Type 17 High Low		296	445	552	139	445	538	748
#14-12 BURR BUSTER <sup>1</sup>	337		539	676	258	404		1169*

Report #T279-10 | Farabaugh Engineering and Testing | 9.30.2010

<sup>1</sup>Report #T213-20 | Farabaugh Engineering and Testing | 05.01.2020

#10-12 and #12-12 BB SYP tested in TFC Tech Center | 04.12.22

REV: JK0422

#### PULLOUT TEST SETUP - EMBEDMENT

2 x 4 = 1" embedment. \* Denotes 1-1/2" penetration (Full Threads.)  
All other tests full thread embedment.

Note: The specific gravity and variations in grain should be considered and affects the pullout. A minimum safety factor of 4 should be used.

### MATERIAL SPECIFICATIONS

**Material:** Carbon Steel

**Finish:** TRI-SEAL® M1™ Long-life Plating  
(ACQ Compatible for use in treated lumber)

**Material:** 304 Stainless Steel

**Finish:** Passivated & TRI-SEAL®  
(Preferred for use in treated lumber)

**Paint:** Kalida-Kote Polyurethane with UV stabilizer.

#### Washer Types

Stainless Steel Screws

304SS vulcanized to non-conductive EPDM.

Carbon Steel Screws

G90 20ga Galvanized Steel vulcanized to non-conductive EPDM.

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

Miami Dade Approved for < 1,000 hrs

### Corrosion Test Results TRI-SEAL® M1 COATING

Testing Method	*Results
SO <sub>2</sub> Test Per ASTM G87	20 Cycles (2 liters)
Salt Spray Per ASTM B117	1,000 hours

\*0% Red Rust

Exceeds ASTM B633 Salt Spray requirements.

### Pullover Strength in Pounds

Grade 50 per ASTM A1011 60Ksi Min. Steel

Washer Size	26ga (.019")	24ga (.023")	22ga (.031")	20ga (.035")	18ga (.049")
1/2" O.D.	810	1080	1350	1620	2160
9/16" O.D.	912	1216	1520	1824	2432
15mm O.D.	955	1274	1593	1912	2548

Calculated per AISI S100

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## Painted

We have a large selection of painted fasteners in-stock and ready for immediate shipment.

*C-1022 Carbon Steel | Assembled with BONDED-SEAL*

*Non-Conducted EPDM Sealing Washer*

*All screws are TRI-SEAL® Long-Life Coated with EPDM sealing washer for exceptional weatherability!*

#10-12 x 1", 1-1/2", 2" BURR-BUSTER | TYPE 17 Milled Point



**Sizes Available**

### Colors Available in Stock



\*NOTE: The actual colors will vary from these swatches due to variations in monitors and printers. Contact TFC for actual color samples.

X DENOTES IN STOCK

TFC COLOR NAME	TFC PAINT CODE #	Panel Color Match	Length		
			1"	1-1/2"	2"
Ash Grey	ms25	Ash Grey #25 Metal Sales	X	X	X
Barn Red	ms24	Red #24 Metal Sales	X	X	X
Black	ms06	Black #06 Metal Sales		X	
Brown	ms12	Brown #12 Metal Sales		X	
Burgundy	ms15	Burgundy #15 Metal Sales		X	
Burnished Slate	ms49	Burnished Slate #49 Metal Sales		X	
Charcoal Grey	uc101	Steel Grey Union Corrugated	X	X	X
Crimson Red	mb34	Crimson Red MB34 MBCI		X	
Desert Sand	mb48	Desert Sand MB48 MBCI		X	
Emerald Green	ms66	Classic Green #66 Metal Sales	X	X	X
Fern Green	mb29	Fern Green MB29 MBCI		X	
Forest Green	ms26	Forrest Green #26 Metal Sales		X	
Gallery Blue	mb27	Cobalt Blue MB27 MBCI		X	
Hawaiian Blue	ms70	Hawaiian Blue #70 Metal Sales		X	
Ivory	ms28	Ivory #98 Metal Sales		X	
Light Stone	ms63	Light Stone #63 Metal Sales	X	X	X
Marine Green	ms69	Marine Green #69 Metal Sales		X	
New Ivory	mpiv	New Ivory Metal Panels Inc.		X	
Olde Towne Grey	ww950	Old Towne Grey Whirlwind		X	
Patina Green	ms58	Patina Green #58 Metal Sales		X	
Patriot Red	MS73	Patriot Red #73 Metal Sales		X	
Polar White	ms80	Polar White #80 Metal Sales	X	X	X
Sahara Tan	ms22	Mocha Tan #22 Metal Sales	X	X	X
Terra Cotta	pc39	Terra Cotta PC39 Peterson		X	

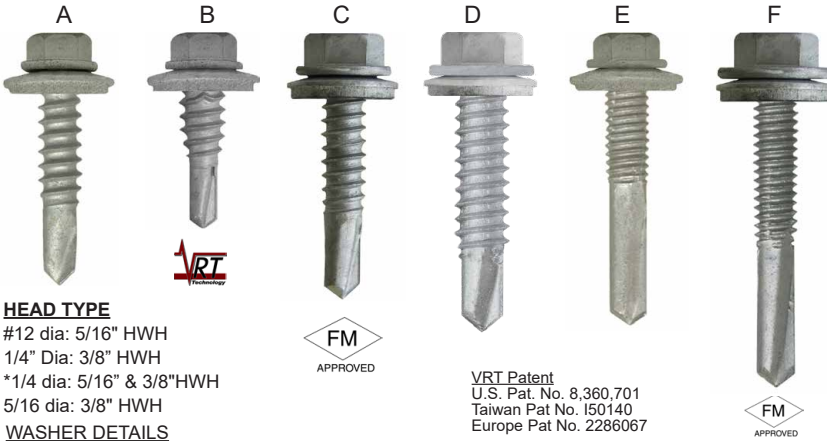
**Don't see the color or size you need?**

**We can match your specific color in 5 days or less!**



### BOND-SEAL SEALING WASHER

- The BOND-SEALER<sup>™</sup> sealing washer is EPDM vulcanized to a 20 Gauge galvanized backing.
- TRI-SEAL<sup>®</sup> long life coated for superior corrosion protection.



#### HEAD TYPE

#12 dia: 5/16" HWH

1/4" Dia: 3/8" HWH

\*1/4 dia: 5/16" & 3/8" HWH

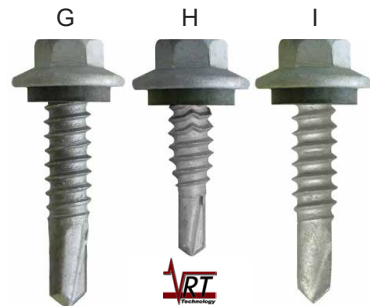
5/16 dia: 3/8" HWH

#### WASHER DETAILS

20 ga G-90 Galvanized Steel | Vulcanized to .062" thick non-conductive EPDM | 15MM OD Washer  
Special sizes available upon request.

VRT Patent  
U.S. Pat. No. 8,360,701  
Taiwan Pat No. 150140  
Europe Pat No. 2286067

### FLANGE-SEAL HEAD with EPDM WASHER



- FLANGE-SEAL<sup>™</sup> self-sealing fastener has a deep undercut head that entraps the EPDM sealing washer to assure a leak free seal.
- TRI-SEAL<sup>®</sup> long-life coated for superior corrosion protection.

#### WASHER DETAILS

.125" Thick EPDM  
Non-conductive

#### HEAD TYPE

5/16" HWH with Flange  
Undercut

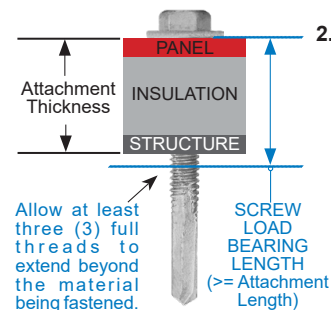
### Drill Point and Length Selection

#### 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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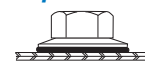
### SIZES \*\*Blue colored sizes denotes popular DC items\*\*

Item	SIZE	Point Type	LENGTH	Load Bearing Length (Max)	Box Qty
A	#12-14	DP2	3/4"	.125"	5M
			1"	.250"	3.5M
			1-1/4"	.625"	3M
			1-1/2"	.750"	2M
			2"	1.25"	2M
			2-1/2"	1.75"	1M
B	1/4-14	DP1-VRT	*7/8" VRT	.325"	2.5M
C	1/4-14	DP3	3/4"	.125"	2.5M
			*1"	.250"	2.5M
			*1-1/4"	.625"	2M
			1-1/2"	.875"	2M
			2"	1"	1.5M
			2-1/2"	1.50"	1M
			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"	250
D	5/16-12	DP3	1"	.250"	1.5M
			1-1/2"	.875"	1M
			2"	1.25"	1M
			3"	2.25"	750
			4"	3.25"	500
			6"	2.50 - 5"	500
E	#12-24	DP5	1-1/4"	.500"	3M
			1-1/2"	.625"	2M
			2"	.750"	3M
F	1/4-20	DP5	1-1/2"	.500"	2M
			2-1/4"	1.250"	1M
			3-1/8"	2-1/8"	1M
			4"	3"	250
			5"	4"	250
			6"	2.50" - 5"	250
			8"	4.25" - 7"	150

### FLANGE-SEAL HEAD

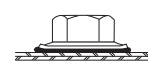
G	#12-14	DP3	1"	.250"	3.5M
			1-1/4"	.625"	3M
			1-1/2"	.750"	2M
			2"	1.250"	2M
			2-1/2"	1.5"	1.5M
H	1/4-14	DP1-VRT	7/8" VRT	.325"	2.5M
I	1/4-14	DP3	1"	.250"	2.5M
			1-1/4"	.625"	2.5M
			1-1/2"	.875"	2M
			2"	1"	1.5M

### Proper Fastener Installation



#### CORRECT

Slight circle of sealant extrudes to outer edge.



#### TOO TIGHT!

Metal backing begins to turn up.



#### TOO LOOSE

Sealant not compressed, can't form a seal.

To assure a proper seal, torque the fastener until the EPDM sealant extrudes to the outer edge of the backing material.

### 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	

LP denotes long-pilot design for metal roofing and siding

#### 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.**



## BACK-OUT RESISTANT SCREWS



U.S. Pat. No. 8,360,701  
Taiwan Pat No. 150140  
Europe Pat No. 2286067

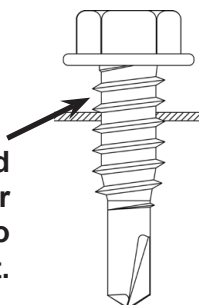
Our Vibration Resistant Thread (VRT®) is designed to significantly increase back-out torque and reduce the potential for leaks. VRT® keeps the fastener tighter in applications where expansion, contraction and vibration are a concern. Independent tests verify that VRT® produces 3-1/2 times more back-out resistance than a standard thread.

### PROBLEM



Screws with standard threads can back-out easily with little force. This can cause joint failure resulting in leaks.

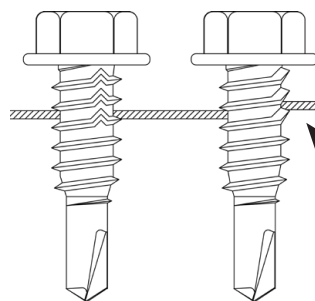
Notice how standard screw threads offer little resistance to back-out.



### SOLUTION



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



Innovative patented VRT® thread increases friction as the screw loosens.

### Why VRT™?

You can see how the shape of VRT® is designed to increase the resistance to back-out compared to a standard thread. VRT® keeps the fastener tighter in applications where expansion, contraction and vibration are a concern.

VRT Thread

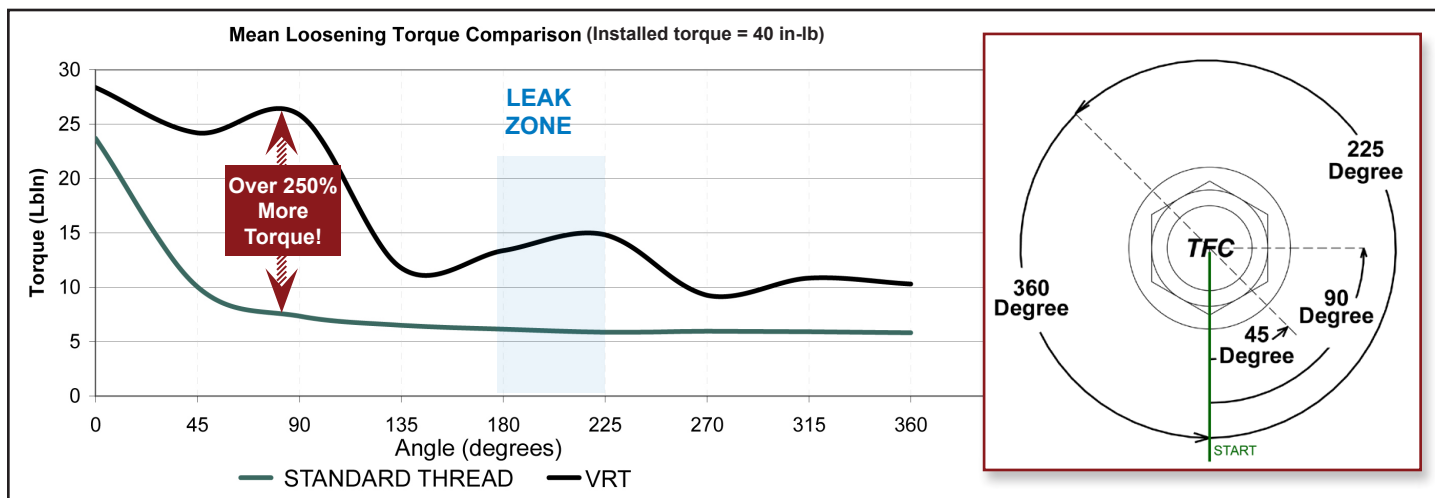


Standard Thread



### Test Results

Independent tests verify that VRT produces over 3-1/2 times more back-out resistance than standard threads due to its innovative thread design that increases friction.



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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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## Painted

We have a large selection of painted fasteners in-stock and ready for immediate shipment.

### Sizes Available

#12-14 x 1-1/4", 1-1/2", 2"  
DP2



1/4-14 x 7/8"  
DP1/Lap VRT



### Head Styles

Flange Seal Head



Stainless Cap Head



### Colors Available in Stock

- C-1022 Carbon Steel
- FLANGE-SEAL Head with Non-conductive EPDM Sealing Washer
- Stainless Cap Head with EPDM Sealing Washer.

*\*All screws are TRI-SEAL® Long-life coated with EPDM sealing washer for exceptional weatherability!*

*\*NOTE: The actual colors will vary from these swatches due to variations in monitors and printers. Contact TFC for actual color samples.*



MB48  
Desert Sand



MB58  
Light Stone



MS22  
Sahara Tan



MS21  
Ash Grey



MB30  
Charcoal Grey



MS49  
Burnish Slate



MB40  
Rustic Red



MS70  
Hawaiian Blue



MS80  
Polar White

*Don't see the color or size you need?*

*We can match your specific color in 5 days or less!*

#### DIAMETERS

FS = Flange-Seal Head  
SC = Stainless Cap Head

TFC COLOR NAME	TFC PAINT CODE #	Panel Color Match	DIAMETERS			
			1/4-14		#12-14	
			Length	Length	Length	Length
			7/8" DP1 VRT	1-1/4" DP2	1-1/2" DP2	2" DP3
Sahara Tan	ms22	Mocha Tan #22 Metal Sales	FS, SC	FS, SC		
Polar White	ms80	Polar White #80 Metal Sales	FS, SC	FS, SC	FS	FS
Burnished Slate	ms49	Burnished Slate #49 Metal Sales	FS	FS	FS	FS
Ash Grey	ms25	Ash Grey #25 Metal Sales	FS	FS	FS	FS
Hawaiian Blue	ms70	Hawaiian Blue #70 Metal Sales	FS	FS		
Desert Sand	mb48	Desert Sand MB48 MBCI	FS	FS		
Light Stone	mb58	Light Stone MB58 MBCI	FS, SC	FS, SC	FS	FS
Charcoal Grey	mb30	Charcoal Grey MB30 MBCI	FS	FS		
Rustic Red	mb40	Rustic Red MB40 MBCI	FS	FS		

CW032717



### Specifically Formulated for Fasteners, Rivets, & Metal Closures

Triangle Fastener offers Kalida-Kote painting process, producing perfect color matched fasteners, rivets, and metal closure. We start by using a special formula polyurethane enamel with UV protection that is expertly color matched.

After spraying, we cure the finish by baking to produce a tough chip resistant finish assuring long-life. Kalida-Kote is compatible with Kynar paint finishes.

### Specifications

Finish: Gloss Enamel 85 units minimum at 60 degrees  
Exterior Catalyst

Thickness: 1.6 - 2.0 mils

Adhesion: ASTM D 3359 - Excellent  
No peeling or removal

Impact Resistance: ASTM D 2794 Good: > 10 in.lbs.

Abrasion Resistance: ASTM D 4060 Good

Corrosion Resistance: Salt Spray - 1,000 hrs  
(< 5% red rust) Kesternich - 30 cycles

Abrasion & ME Abuse	Excellent	Acids	Excellent
Alkalies	Excellent	Color & Glass Retention	Excellent
Humidity	Excellent	Salts	Excellent
Solvents	Very Good	Weather	Excellent

**KALIDA-KOTE™ is compatible with Kynar® paint finishes.**



- Polyurethane enamel can be matched to any color and is UV resistant!
- Baked on finish provides a tough, chip resistant finish.
- Customized painting of metal closure and gutter straps.
- Special colors in 3 days or less!!

### Our 4-step process assures a perfect color match and durable finish!

#### STEP 1

##### Color Matching

We color match using a spectrophotometer that provides consistent color matching.

#### STEP 2

##### Priming

Special etching primer provides a superior base for the application of the paint.

#### STEP 3

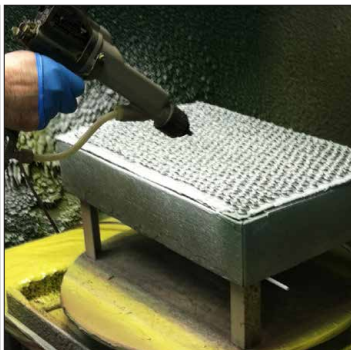
##### Spraying

Polyurethane enamel is applied uniformly to provide superior coverage.

#### STEP 4

##### CURING

We cure the paint to produce a tough chip resistant finish.



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# FIND YOUR COLOR...AND ALL THE MATCHING TFC PRODUCTS!

MFG COLOR	MFG	TFC RIVET COLOR	TFC SEALANT COLOR	BLAZER® COLOR	PANEL-TITE® COLOR	TFC RIVET SIZE / P.N.
ALMOND	MBCI	ALMOND S0330				FBF43AL FBF44AL
ASCOT WHITE	ATAS	STONE WHITE S0348				FBF44SWH
ASH GRAY	MBCI	ASH GRAY S0850	ALUMINUM GRAY	ASH GRAY	ASH GRAY	FBF43AGY
BONE WHITE	MBCI	BONE WHITE	ANTIQUE WHITE			FBF43BNWH FBF44BWH
BRITE RED	MBCI	CRIMSON RED S1232	REGAL RED		CRIMSON RED	FBF43CRD
BROWNSTONE	MBCI	BROWNSTONE S0360	SIERRA TAN			FBF43BST
BURNISHED SLATE	MBCI	BURNISHED SLATE S0742	MEDIUM BRONZE (APS) DARK BRONZE (ULTRA)	BURNISHED SLATE	BURNISHED SLATE	FBF43BSL
CHAMPAGNE	DMI	CHAMPAGNE S1160				FBF43CPGE
CHARCOAL	METAL SALES	CHARCOAL GRAY S1151		CHARCOAL GRAY	CHARCOAL GRAY	FBF43CGY FBF44CHGY
CITYSCAPE	PAC CLAD	CITYSCAPE S0302	GRAY (APS) GUTTER GRAY (ULTRA)		OLD TOWN GRAY	FBF43CS
CLASSIC GREEN	MBCI	CLASSIC GREEN S0925		EMERALD GREEN	EMERALD GREEN	FBF43CGR FBF44CGR
COAL BLACK	MBCI	COAL BLACK S0423			BLACK	FBF43CLBLK
COBALT BLUE	MBCI	GALLERY BLUE S0545			GALLERY BLUE	FBF43GBL
COLONIAL RED	MBCI	COLONIAL RED S0847	COLONIAL RED (APS) RED (ULTRA)			FBF43CLRD FBF44CRD
COLONY GREEN	MBCI	COLONY GREEN S1047	PATINA GREEN	COLONY GREEN	PATINA GREEN	FBF43COGR
DARK BRONZE/ MIDNIGHT BRONZE	METAL SALES/ MBCI	DARK BRONZE S0324			MIDNIGHT BRONZE	FBF43DBZ FBF44DBZ
EVERGREEN	DMI	EVERGREEN S0487				FBF43EVGR
FERN GREEN	MBCI	FERN GREEN, HARTFORD GREEN S0798			FERN GREEN	FBF43FGR FBF44HGR
HARBOR BLUE	MBCI	HARBOR BLUE, ROYAL BLUE S0843	REGAL BLUE			FBF43HRBL FBF44RBL
HAWAIIAN BLUE	MBCI	HAWAIIAN BLUE S0112		HAWAIIAN BLUE	HAWAIIAN BLUE	FBF43HBL
KOKO BROWN	MBCI	KOKO BROWN, MANSARD BROWN S0110	REDWOOD		BROWN	FBF43KBRN FBF44MBRN
LIGHT STONE	MBCI	LIGHT STONE S0248	TAN	LIGHT STONE	LIGHT STONE	FBF43LST
MATTE BLACK	METAL SALES	MATTE BLACK S0507				FBF44MBLK
MEDIUM BRONZE	MBCI	MEDIUM BRONZE S0526				FBF43MBZ FBF44MBZ
SILVER METALLIC	MBCI	METALLIC SILVER S1161				FBF43MSL FBF44MS
POLAR WHITE	MBCI	POLAR WHITE S0001		POLAR WHITE	POLAR WHITE	FBF43PWH
RUSTIC RED	MBCI	RUSTIC RED S0890	TERRA COTTA		BARN RED	FBF43RRD
SADDLE TAN	MBCI	SAHARA /SADDLE S0320		SAHARA TAN		FBF43STN
SANDSTONE	DMI/ METAL SALES	SANDSTONE S0330	ALMOND			FBF43SDST FBF44SST
SIERRA TAN	PACCLAD/ METAL SALES	SIERRA TAN S0629			SAHARA TAN	FBF43SITN FBF44STN
SLATE GRAY	MBCI	SLATE GRAY S0275	SLATE GRAY			FBF43S6Y FBF44SGY
SNOW WHITE	MBCI	SNOW WHITE, SNOW DRIFT WHITE S0348				FBF43SWH FBF44SDWH
STONE/ DESERT SAND	DMI/ MBCI	DESERT SAND S0109	STONE	DESERT SAND	DESERT SAND	FBF43DS
TERRA COTTA	DMI	TERRA COTTA S1389			TERRA COTTA	FBF44TC
TUNDRA	MBCI	DOVE GRAY S0302				FBF44DGY
WEATHERED ZINC	PAC CLAD	WEATHERED ZINC S1483				FBF43WZ
WHITE	DMI	WHITE S0214	WHITE			FBF44WH

### WOOD OR THIN METAL

Piercing Capacity: CS & 410SS <=20 ga

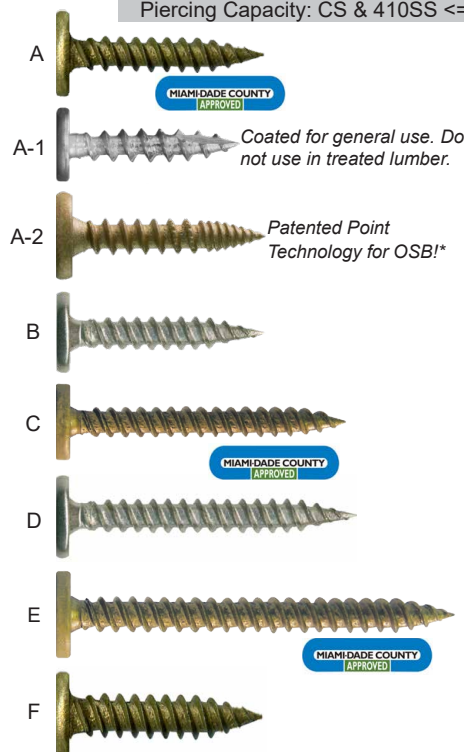
### #10, #12, & 1/4" PIERCING POINTS AND DRILL POINTS

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.

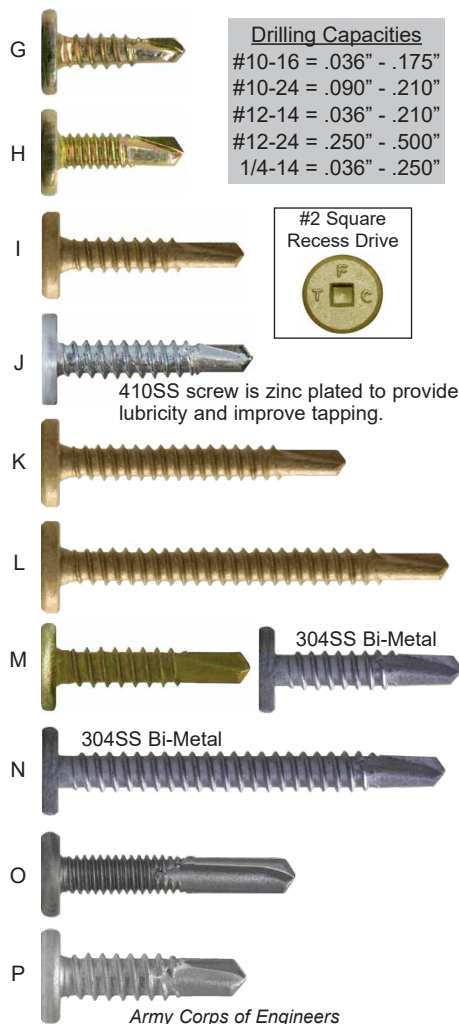
Bagged 250 pcs. per bag

### 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!

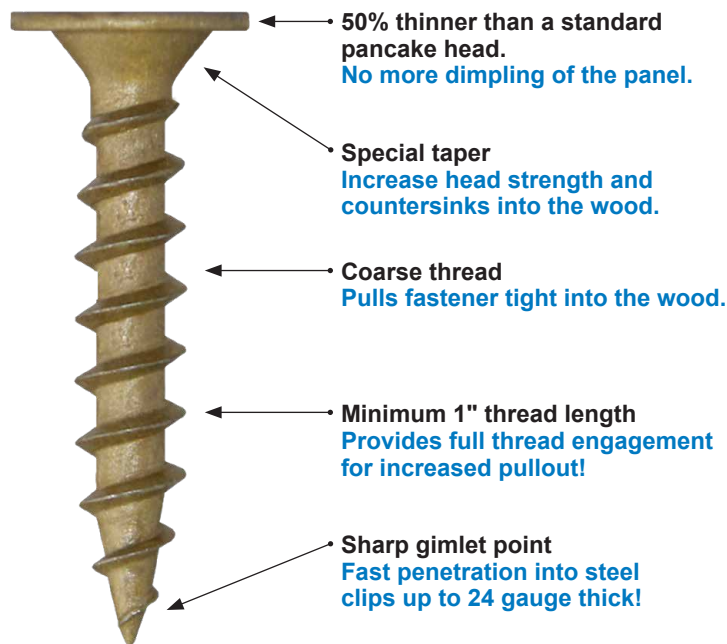


**Installation:** Do NOT use impact drivers. Use 2,500 RPM max variable speed screw drivers with torque control or depth sensing nosepiece.

\*Pat. No.: 11,105,362

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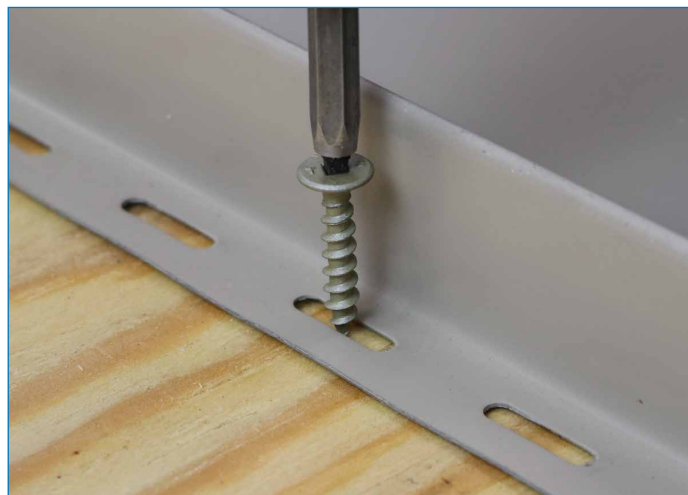
## Need it Ultra Low?



Available in lengths up to 2-1/8"!

## Trust the original Ultra Low Profile Screw!

The CONCEALOR® ULP screws are engineered to attach standing seam roof clips to wood. They are the preferred screw for attaching clip-less nail hem metal roof panels, are easy to install, and provide optimal strength. ULP's are supplied with TRI-SEAL® 1,000-hours salt spray coating which can be used in treated and fire treated lumber.



Bagged 250 pcs. per bag for your convenience!

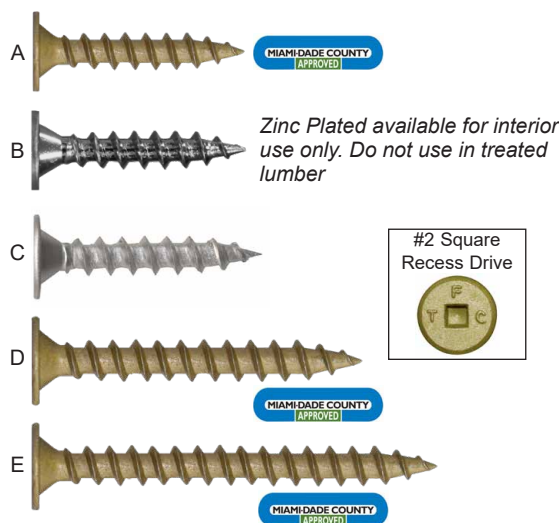
MEETS FLORIDA BUILDING CODE 1506.6 & R904.5.2(TRI-SEAL® & SS ONLY)

### Sizes

Pierce up to 20 ga steel

	Description	Part Number	Box Quantity	WT Per Box	Price
A	#10-9 X 1-1/8" ULP (CS) Long-life TRI-SEAL™ coated	10112SPCUGCSTS	5,000	31.0 lbs	
B	#10-9 X 1-1/8" ULP (CS) Zinc Plated Interior Use Only	10112SPCUGCSZP	5,000	31.0 lbs	
C	#10-9 X 1-1/8" ULP (410 SS) Passivated	101125SPCUGS4	5,000	32.0 lbs.	
D	#10-9 X 1-5/8" ULP (CS) Long-life TRI-SEAL™ coated	1062SPCUGCSTS	3,000	34.0 lbs.	
E	#10-9 X 2-1/8" ULP(CS) Long-life TRI-SEAL™ coated	10212SPCUGCSTS	1,500	17.0 lbs.	

CS = Carbon Steel - C1018 / C1022  
410 SS = 410 Stainless Steel



### TECHNICAL INFORMATION

Description: #10-9 Gimlet Point self-tapping screw  
Head Style: Ultra low pancake head with taper.  
Drive System: #2 square recess  
Head Thickness: .040"  
Material: C1022 carbon steel  
410 Stainless steel  
(Copper Roofing Compatible)  
Heat Treat: Case hardened to ANSI/ASME B18.6.4 specification  
Finish  
Carbon Steel: TRI-SEAL™ long-life coating (1,000hrs. salt spray)  
Stainless Steel: Passivated (48hrs. salt spray)

#### Thread Detail

Major Diameter: .195"  
Minor Diameter: .125"  
Stress Area: .01267 in²

### Pullout - Average Ultimate in Pounds

Fastener Dia. & Point	Wood Type						
	1/2" Plywood	5/8" Plywood	3/4" Plywood	7/16" OSB	19/32" OSB	23/32" OSB	2 x 4 SYP
#10-9 GP	383	395	574	136	356	514	813

Farabaugh Engineering Test: Project No. T279-10

Rev 040711

### Fastener Strength

Torsional	60 lb-in
Tensile	1,520 lbs. min.
Shear	1,150 lbs. min.

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

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)





## Specifically designed for use in oriented strand board

**BURR BUSTER® Thread and Point produces 80% more pullout load compared to low root threads!**

← **Low Angle Thread**  
Reduces over-driving, stripping, and increases resistance to loosening.

← **Saw Cut Thread**  
“Cuts” the OSB layers that enhances tapping of the thread.

← **BURR-BUSTER Point**  
Compresses the OSB layers during penetration to minimize delamination.

The CONCEALOR® screws with our patented BURR-BUSTER® point and thread technology are engineered for superior performance in OSB.

Supplied with TRI-SEAL® 1,000-hours salt spray coating for exceptional corrosion resistance.



**Bagged 250 pcs. per bag!**

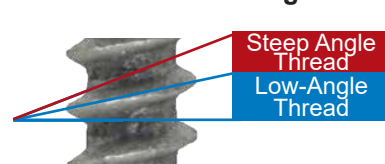
### SIZES

#10-12 x 1" with BURR-BUSTER Point.  
Carbon Steel | TRI-SEAL COATED  
Part Number: 10100SPCBBBCSTS

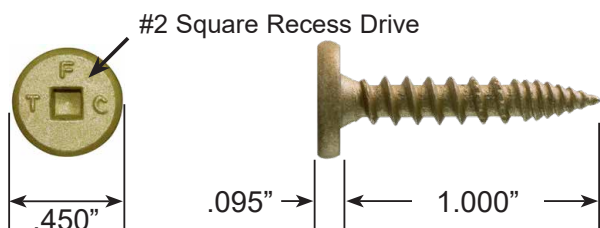
### Patented Anti-burr Thread and Point Technology!\*

Ordinary metal-to-wood screws have steep angled threads that are easily over-driven and can back-out.

**A low-angle thread helps keep the screw from loosening**



### TECHNICAL INFORMATION



### Pullout - Average Ultimate in Pounds

Fastener Dia. & Point	5/8" Ply	3/4" Ply	7/16" OSB	19/32" OSB	2x4 SYP
#10-12 Burr Buster	450	706	258	381	648*

Test Report # T279-17 & T299-17 | Farabaugh Engineering.

\*NOTE: 1" embedment into face of 2x. Deeper embedment will increase pullout.

### Fastener Strength

Size	Torsional (min. in-lbs)
#10-12	65

### Corrosion Protection

CORROSION TESTING	Results
SO <sub>2</sub> Test Per ASTM G87	20 Cycles
Salt Spray Per ASTM B117	1,000 hrs

TRI-SEAL® COATED | COMPATIBLE FOR USE IN TREATED LUMBER.

### 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**

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)

### TFC VALUE PROPOSITION

#### Large Selection

Lengths to meet your application needs.

#### Best Quality

Assures low in-place cost.

#### Fast Delivery / Need-it-Now!

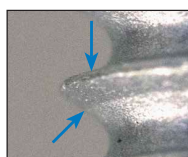
Reduces your inventory costs.

**SS** Denotes available sizes in stainless steel

### Here is why we use a special thread...

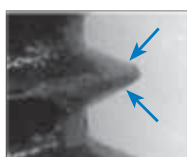
We use a buttress thread that provides exceptional clamping loads and is specified in many metal roofing systems to attached SSR clips over rigid insulation into metal deck.

#### CONCEALOR® with Buttress Thread

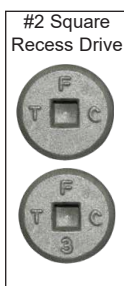


"Flat" thread keeps the joint tight

#### Ordinary Thread Form



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



### - 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

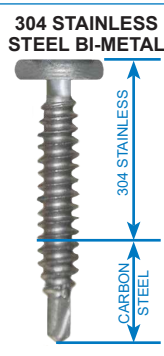
\* Denotes 4-1/2" Thread Length

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



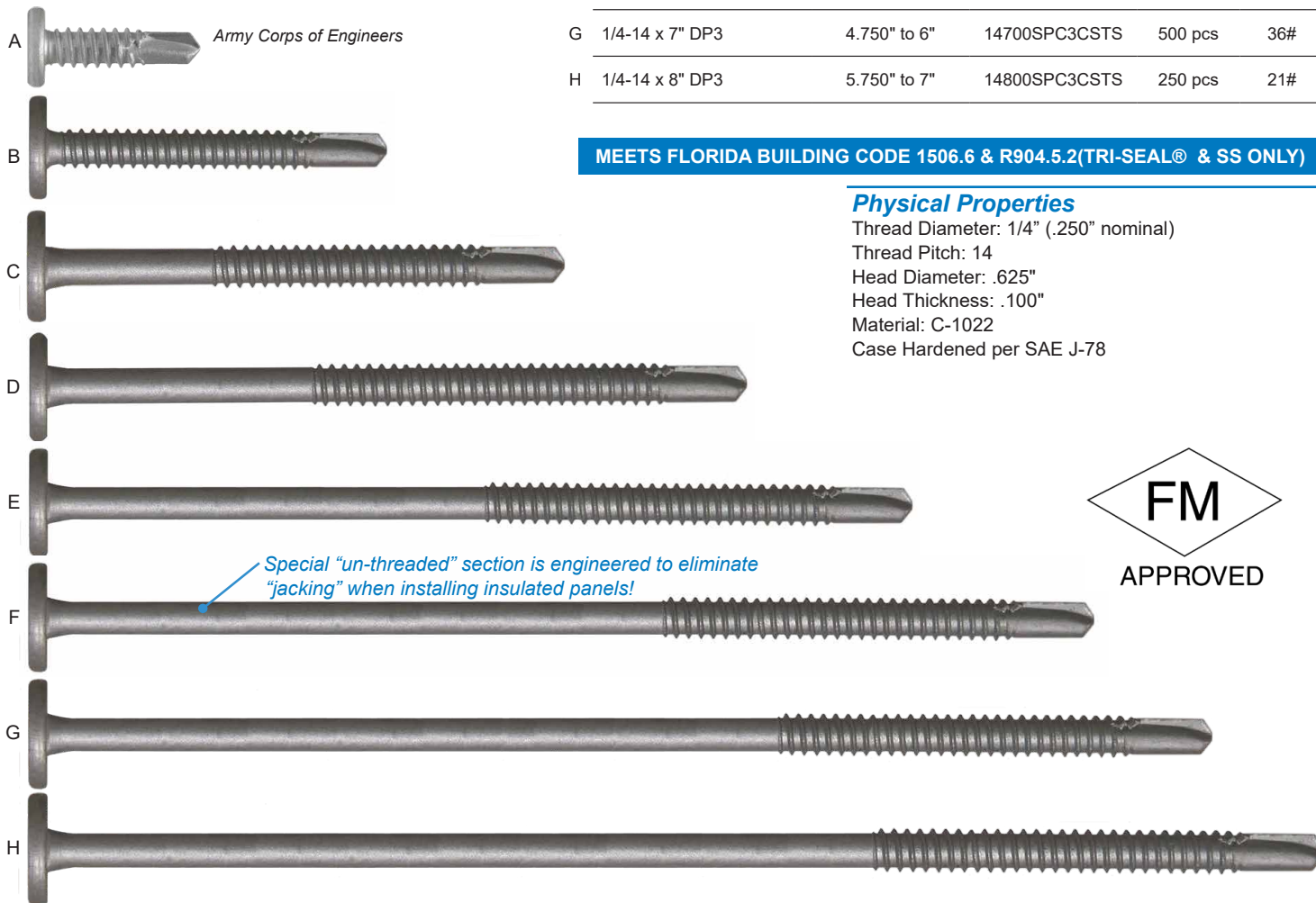
- 5/8" diameter head increases pullover strength and minimizes dimpling.
- #3 square recess drive provides stability during installation.

	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

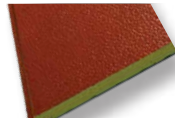
Thread Diameter: 1/4" (.250" nominal)  
 Thread Pitch: 14  
 Head Diameter: .625"  
 Head Thickness: .100"  
 Material: C-1022  
 Case Hardened per SAE J-78



#### 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.

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)



## 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



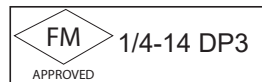
Decking fasteners tested with full thread embedment. 2 x 4 SYP with 1" embedment in side

\* 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.

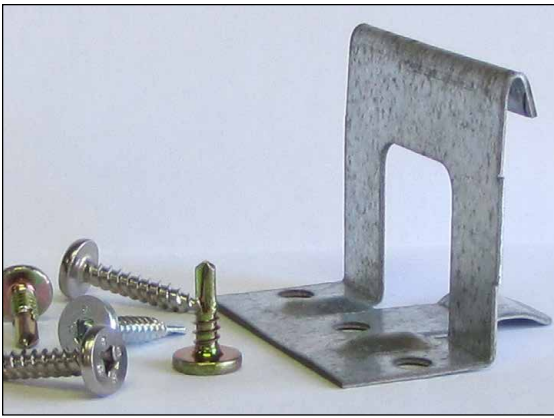
## FASTENER MATERIAL SELECTION BASED ON THE GALVANIC SERIES OF METALS

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.



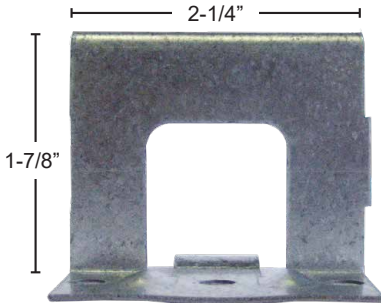
**Are you tired of having to calculate the uplift loads of SSR clips used in your metal roof assembly?**

**We have a solution...the SSR CLIP KIT!**

We provide a 1-7/8" tall fixed clip that is UL classified and has been independently tested to certify its ultimate uplift load capacity.

Clips are supplied with approved fasteners that meet your specific application requirement.

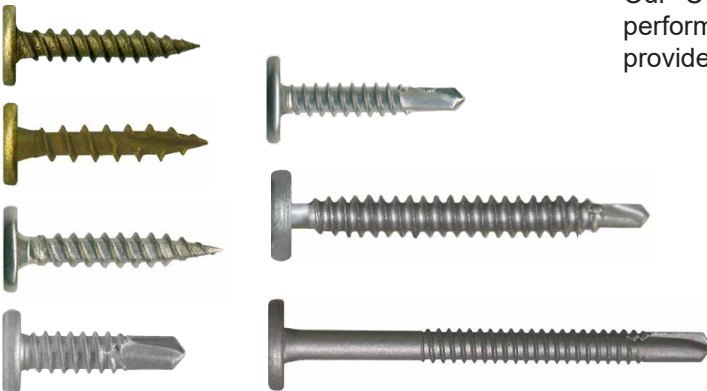
## CLIP DETAILS



Our SSR fixed clips are engineered to high standards. They are produced to tight tolerances so they install easily and perform with many different panel brands. Specifically designed for a Snap-Lock style SSR panel.

- Clip is high strength 18ga. galvanized steel for superior performance.
- 1-7/8" tall providing additional clearance between the panel and the decking for better air flow and energy efficiency.
- UL classified.
- Compatible for PAK-CLAD, Snap-Clad, and Fabral thin seam panels.

## FASTENER DETAILS



Our CONCEALOR® low profile head screws are engineered to perform in a variety of applications. They are easy to install and provide exceptional pullout.

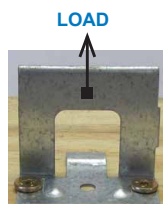
- High performance CONCEALOR® Low Profile Clip Screws for a variety of substrates.
- Carbon steel with TRI-SEAL™ long-life coating or stainless steel.
- Square recess drive for optimal installation stability.
- #10, #12, #14 diameters in lengths up to 9" long!

## TECHNICAL DATA

These loads are from tests conducted at an independent laboratory. They are values for the clip assembly; where the clip is attached to the substrate using two (2) screws.

A load was applied to the vertical leg of the clip until failure occurred.

Loads are ultimate for each clip and screw assembly.



## Upload Test Results - Clip and Screw Assembly - Average Ultimate

Screw Type	PLYWOOD			OSB			2X PINE	METAL (50KSI minimum)				
	1/2"	5/8"	3/4"	7/16"	19/32"	23/32"	1" EMBD	'22 ga	'20 ga	18 ga	16 ga	14 ga
#10-9 GP	486	598	834	217	491	538	978					
#12-14 GP	436	665	786	182	491	678	800					
#10 DP3										661	*1194	*1334
#12 DP3										706	*1088	*1296
#14-13 DP1	520	725	*1173	234	552	611	*1175	736	839			
1/4 DP3										683	*1047	*1325

\* Denotes clip failure | Tore Clip

Clip dimensions: 1-1/8" x 3 1/2" x 1 7/8" | 18 ga. Galvanized Steel | 1/2" Screw Offset

1. Denotes test set-up using two inches of foam insulation on top of deck. A 16-ga. bearing plate was between the clip and the insulation.

**NOTE:** To produce values listed in this chart, clip must be installed using CONCEALOR® pancake head screws only.

Load values are a result of tests conducted at Farabaugh Engineering Services, McKeesport PA. Report # XXXXX. Certified test report available.

## CONTACT TFC FOR SPECIFIC LENGTH

DISCLAIMER: ALL DATA AND SPECIFICATIONS ARE BASED ON LABORATORY TESTS. APPROPRIATE SAFETY FACTORS SHOULD BE USED BY THE USER OR SPECIFIER. DETERMINING THE PROPER FASTENER IS THE RESPONSIBILITY OF THE USER OR SPECIFIER. BECAUSE APPLICATION CONDITIONS VARY, WE ASSUME NO LIABILITY FOR THE USE OF THIS INFORMATION.

Report #JS031711

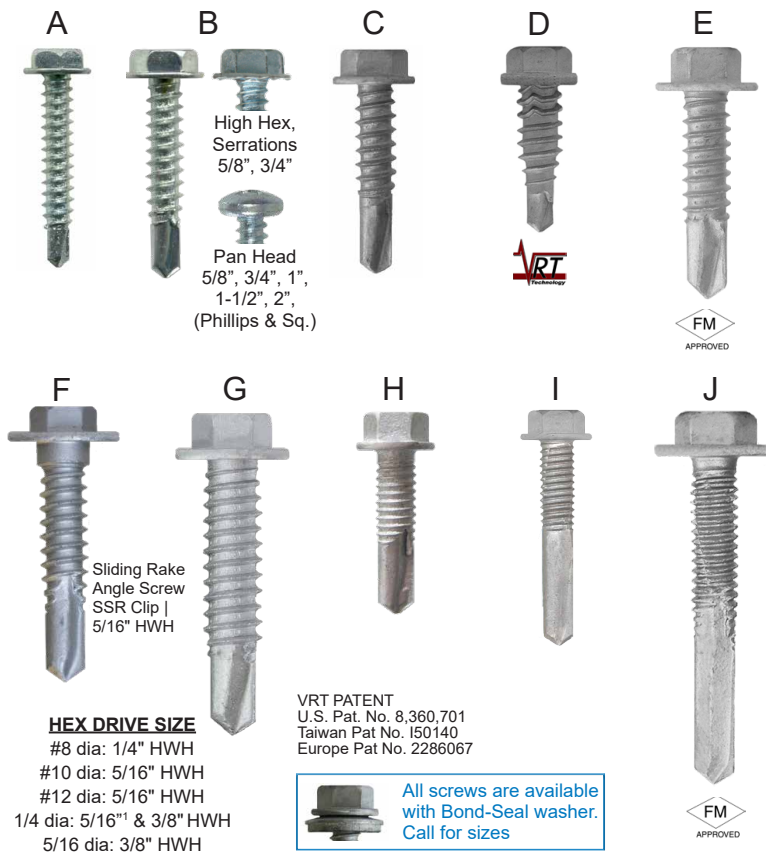
Concealor is a registered trademark of Triangle Fastener Corporation. Copyright 2011

- 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
			2"	1.5"	1.5M
B	#10-16	DP3	1/2"	.100"	10M
			5/8"	.125"	5M
			3/4"	.250"	5M
			3/4" HH/SERR	.250"	5M
			1"	.500"	5M
			1-1/2"	1"	3.5M
			2"	1.500"	2M
C	#12-14	DP3	3"	2.500"	1M
			3/4"	.125"	5M
			1"	.250"	3.5M
			1-1/4"	.625"	3M
			1-1/2"	.750"	2M
			2"	1.25"	2M
			2-1/2"	1.75"	1M
D	1/4-14 <sup>1</sup> VRT	DP1	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" <sup>1</sup>	.625"	2M
			1-1/2" <sup>1</sup>	.875"	2M
			2"	1"	1.5M
			2-1/2"	1.50"	1M
			3"	1.25" - 2.25"	1M
			4"	1.73" - 3.25"	500
			5"	2.6" - 4.25"	500
			6"	3.6" - 5.25"	250
F	1/4-14 SHLDR	DP3	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
			5"	1.38 - 4.25"	500
H	#12-24	DP4	6"	2.50 - 5"	500
			8"	4.25" - 7"	200
I	#12-24	DP5	7/8"	.325"	5M
			1-1/4"	.500"	2.5M
			1-1/2"	.625"	1.5M
J	5/8" OD washer face	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
			5"	4"	250
			6"	2.50" - 5"	250
			7"	3.38" - 6"	500
			8"	4.25" - 7"	500



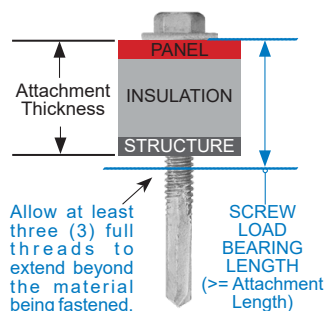
## Drill Point and Length Selection

### 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
Screw & Point	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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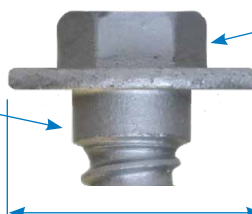
## Proprietary standoff screw designed to allow thermal expansion of the rake support angle

We designed a BLAZER® Drill Screw specifically for attaching a sliding rake plate used in metal roofing.

The screw has an oversize washer face that provides more bearing surface between the fastener and the rake plate angle that allows superior movement capabilities.



Special shoulder keeps screw from "over-clamping" the rake support, allowing for thermal expansion.



5/16" hex drive is the same size as other standard metal roofing fasteners for easy installation.

Oversize washer face provides over 45% more surface area that is in contact with the rake support!

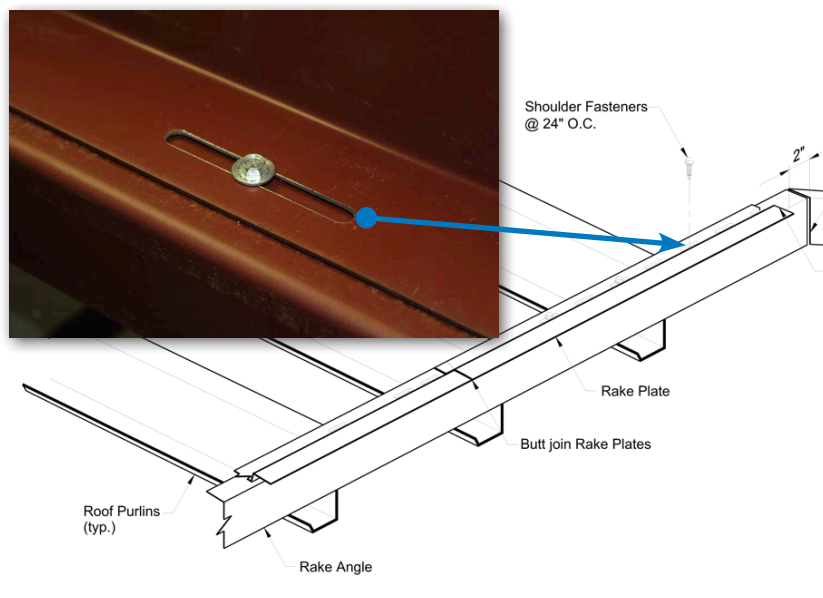
### SIZE

Size	Point Type	Head Size	Attachment Thickness	Box Quantity
1/4-14 x 1-1/4"	DP3	5/16" HWH	.150" standoff	2,500
<b>Part Number</b>		14125HW3CSTSFJ		



Finish: : TRI-SEAL® Coating (1,000hrs)  
Salt Spray - ASTM B117).  
Exceeds ASTM B633 and F1941 Standards

### TYPICAL APPLICATION



### TECHNICAL DATA

#### Pullout Test Results

Fastener Size	PULLOUT   ALLOWABLE   Grade 50/55 Steel 65Ksi Calculated Values In Accordance to AISI S100   Section E4 Applied Factor of Safety = 3						
	18 Ga. (.048")	16 Ga. (.060")	14 Ga. (.075")	12 Ga. (.105")	1/8" (.125")	10 ga (.135")	1/4" (.250")
1/4-14 BLAZER 3	221.0	276.2	345.3	483.4	575.5	621.6	1,151.0

#### Pullover Test Results

Size	GAGE THICKNESS & ULTIMATE PULLOVER IN POUNDS (55 KSI STEEL)				
	26 Ga. (.018")	24 GA. (.024")	22 Ga. (.030")	20 Ga. (.036")	18 Ga. (.046")
1/4-14 DP3	928	1,238	1,547	1,856	2,475

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

#### Physical Properties

Size	Nominal Screw Diameter	Major Diameter (In.)		Minor Diameter (In.)		Area of Minor Diameter (Sq. In.)
		Max	Min	Max	Min	
1/4-14 BLAZER 3	0.250	0.250	0.242	0.218	0.214	0.0360

#### Performance Specifications

Size	Torsional (lbs-Inch)	Tensile (Lbs.)	Shear (Lbs.)
1/4-14 DP3	150	4,275	2,600

DISCLAIMER: ALL TESTS RESULTS AND SPECIFICATIONS ARE A RESULT OF LABORATORY TESTS. APPROPRIATE SAFETY FACTORS SHOULD BE USED BY THE USER OR SPECIFIER. DETERMINING THE PROPER FASTENER IS THE RESPONSIBILITY OF THE USER OR SPECIFIER. SINCE APPLICATION CONDITIONS VARY AND ARE UNCONTROLLABLE BY TFC, WE ASSUME NO LIABILITY FOR THE USE OF THIS INFORMATION.

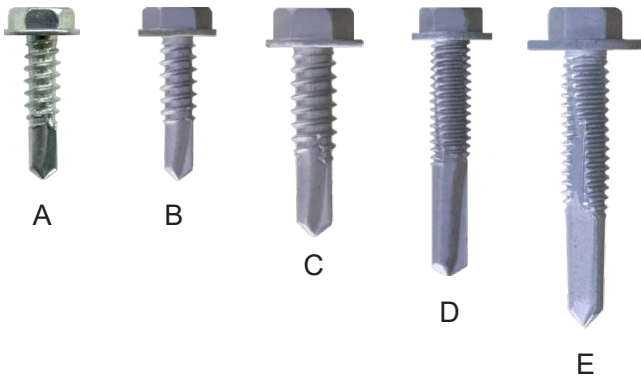


Our BLAZER® Drill Screws provide fast and consistent installation. They meet all the strength requirements as specified by the Steel Deck Institute in the Diaphragm Design Engineering Manual.



**APPROVED BY THE STEEL DECK INSTITUTE FOR THE ATTACHMENT OF FLOOR AND ROOF DECKING**

## SIZES



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

DIAMETER & LENGTH				POINT	Load Bearing Length (MAX)	Box Qty
A	#10-16	x	5/8"	BLAZER-3	.125"	5M
	#10-16	x	3/4"	BLAZER-3	.250"	5M
	#10-16	x	1"	BLAZER-3	.500"	5M
	#10-16	x	1-1/2"	BLAZER-3	1"	3.5M
B	#12-14	x	3/4"	BLAZER-3	.125"	5M
	#12-14	x	1"	BLAZER-3	.250"	3.5M
	#12-14	x	1-1/4"	BLAZER-3	.625"	3M
	#12-14	x	1-1/2"	BLAZER-3	.750"	2M
C	1/4-14	x	3/4"	BLAZER-3	.125"	2.5M
	1/4-14	x	1"	BLAZER-3	.250"	2.5M
	1/4-14	x	1-1/4"	BLAZER-3	.625"	2M
	1/4-14	x	1-1/2"	BLAZER-3	.875"	2M
D	#12-24	x	1-1/4"	BLAZER-5	.500"	3M
	#12-24	x	1-1/2"	BLAZER-5	.625"	2M
E	1/4-20	x	1-1/2"	BLAZER-5	.500"	2M

## FASTENER SPECIFICATIONS

### Physical Properties

Fastener Diameter	Nominal Screw Diameter	Washer Face Dia.	Torsional (Lb-In.)	Tensile (Pounds)	Shear (Pounds)
#10	0.190	.410"	61	2,500	1,400
#12	0.216	.425"	100	3,620	2,100
1/4-14	0.250	.520"	150	4,810	2,600
1/4-20	0.250	.625"	156	4,810	2,700

**MATERIAL:** C1022 Carbon Steel

**PLATING:** .0003" Minimum Zinc Plated (48 hrs salt-spray)

**Long-Life:** TRI-SEAL® Coating (1,000hrs Salt Spray - ASTM B117).

Exceeds ASTM B633 and F1941 Standards

**Dimensions:** Meets or exceeds SAE J78 Standards

Specific screw load tables can be found in the SDI Diaphragm Design Manual at [www.sdi.org](http://www.sdi.org)

### Pullout Strength

CALCULATED PER AISI S100 / ULTIMATE IN POUNDS				
Screw Size	Nom Dia. (in.)	STEEL: 45Ksi (Per SDI)		
		STEEL THICKNESS		
		.105"	.135"	.250"
#10	.190"	760	977	2067
#12	.216"	864	1111	2295
1/4"	.250"	1000	1286	2391

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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
	B	#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
	C	#12-14 x 1-1/2" DP5	.157" - .472"	.500"	12150HWT5S3BMBW	12150HWT5S3BMBW
		#12-14 x 2-1/4" DP5		1.220"	12225HWT5S3BMBW	12225HWT5S3BMBW
3/8" AF HWH	D	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
	E	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		1.203"	14200HWT4S3BMBW	14200HWT4S3BMBW
	F	1/4-20 x 2" DP5	.125" - .500"	.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	
#2 Square	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
	K	#12-14 x 2" DP2	.059" - .118"	1.475"	12200TBT2S3BM	12200TBT2S3BMBW
		#12-14 x 1" DP3		.350"	12100TBT3S3BM	12100TBT3S3BMBW
	L	#12-14 x 1-3/8" DP3	.059" - .236"	.750"	12137TBT3S3BM	12137TBT3S3BMBW
		#12-14 x 1-1/2" DP5		.157" - .472"	.510"	12150TBT5S3BM
	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)

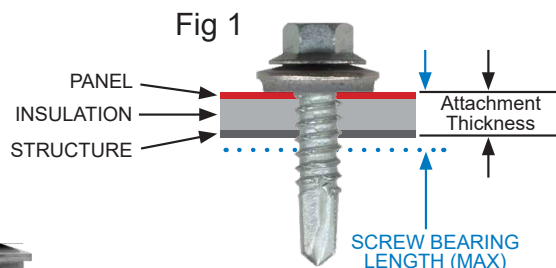
15MM OD. 304SS Stainless Steel  
Backing to Non-conductive EPDM

### Installation Information

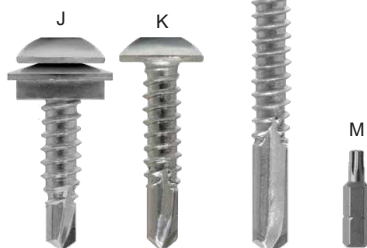
Use a 2,000 rpm max screw-gun with torque control or depth sensing.

### 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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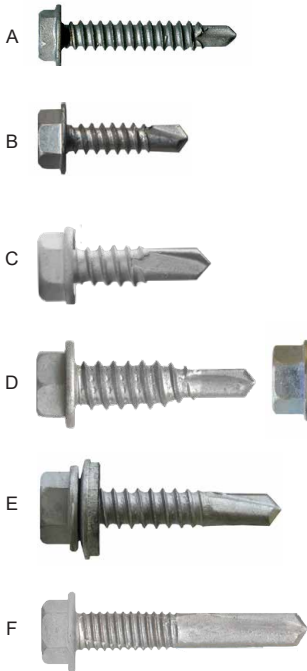


- Provides corrosion resistance in mild atmospheres.
- Plated to resist surface rust and to reduce tapping torque.
- Optional TRI-SEAL® 1,000 hrs salt spray long-life coated to reduce tapping torque and provide additional corrosion protection.

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**  
 #8  
 #10, #12, \*1/4"  
 1/4"  
**HEAD TYPE**  
 1/4" HWH  
 5/16" HWH  
 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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Security screws specifically designed for metal siding and roofing applications

## TORX® PIN-HEAD

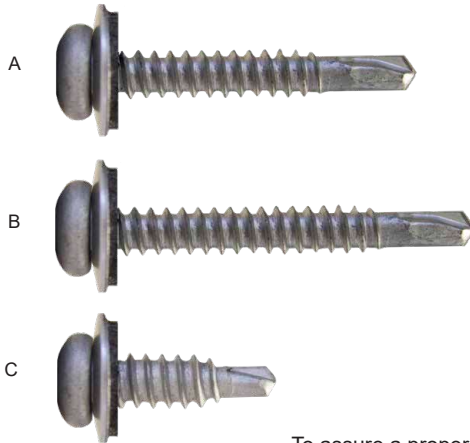
Maximum torque transfer and positive tool engagement means easier drive installation with less pressure and slippage. Torx® Pin Head offers a high degree of security and requires matching drive bit. Available in button head for neat appearance and TRI-SEAL™ 1,000 hours salt spray coating for additional corrosion protection.



T-27 Torx Pin  
Recess Drive

### Does your building need security?

- ▶ Mini Storage
- ▶ Prisons
- ▶ Government Buildings
- ▶ Banks
- ▶ Dealerships



Assembled with a BOND-SEALER™ sealing washer that has EPDM vulcanized to a 20 Gauge galvanized backing that will withstand harsh weather conditions.

Blue colored sizes denotes popular DC items

### SIZES AND PERFORMANCE SPECIFICATIONS

	Size	Point Type	Drilling Thickness	Load Bearing Length	Box Quantity
A	#12-14 x 1-1/2"	BLAZER 3	.036" - .210"	.625"	2.0M
B	#12-14 x 2"			.750"	2.0M
C	1/4-14 x 7/8"	BLAZER 1	.036" - .090"	.250"	2.5M

To assure a proper seal, torque the fastener until the EPDM sealant extrudes to the outer edge of the backing material.



We supply insert bits to make installation fast and easy!

**MATERIAL:** C1018-1022 Carbon Steel  
**PLATING:** .TRI-SEAL™ 1,000 hours salt spray coating

### INSTALLATION TIP

Screw gun: 2,000 RPM

**DO NOT USE IMPACT TOOLS**

### Pullout Test Result - Ultimate Average in Pounds

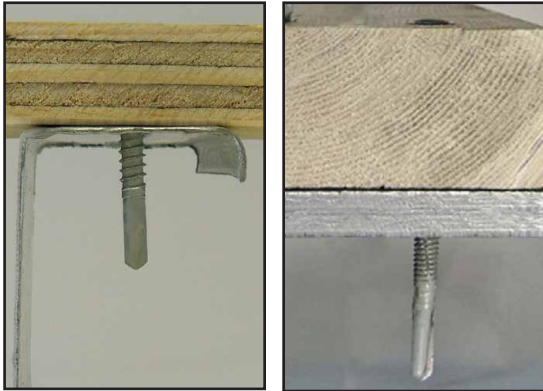
Fastener Information		PULLOUT   ULTIMATE LOAD IN POUNDS													
		Calculated Values In Accordance to AISI S100   Section E4													
		Grade 50 per ASTM A1011 60Ksi Min. Steel					Grade 50 per ASTM A792/A653/A572/A529 65Ksi Min. Steel								
Screw Size	Nom Dia. (in.)	26 Ga. (.018")	25 Ga. (.021")	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")
#12	.216"	198	231	264	330	397	573	716	895	1,253	1,492	1,611	2,984	*4,475	*5,967
1/4	.250"	230	268	306	383	459	633	829	1,036	1,450	1,727	1,865	3,453	*5,180	*6,906

The tensile strength of the substrate that is used in the chart is typical for metal building and roofing applications.

Contact TFC if other substrate tensile strengths are required.

Contact Triangle Fastener for additional sizes and types of security screws.

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We have the largest selection of wood-to-metal drill screws engineered to provide high performance and easy installation.

### Need to attach wood to metal thinner than 1/4"?

Our full line of sizes are designed to fasten to metal as thin as 18-gauge!

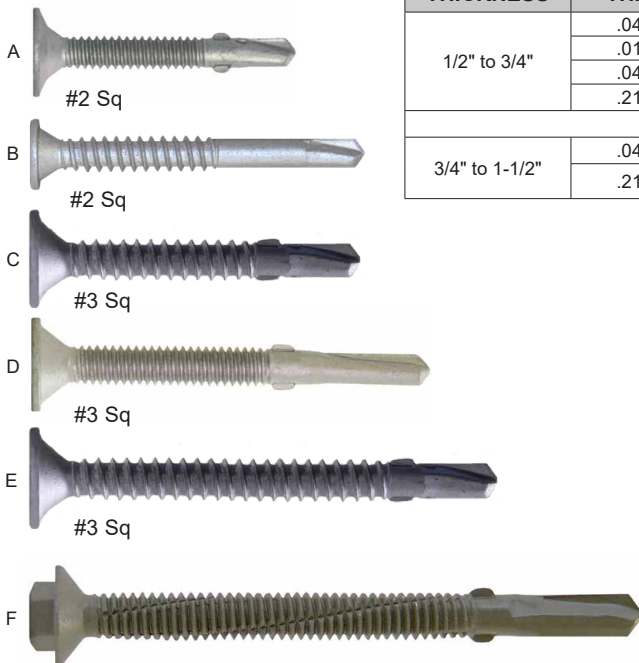
### Need to attach wood to steel that is 1/2" thick?

We offer the only wood-to-metal fastener that will drill and tap steel up to 1/2" thick. It has a special hex-countersunk head that provides optimal driving stability and can also be installed **flush** to the surface of the wood.



Square recess for superior stability during installation.

## SIZES



5/16 hex countersunk head provides exceptional stability during installation and can be installed **flush** to the wood surface.

WOOD THICKNESS	DRILLING THICKNESS	Screw	Diameter   Length   Point	Head Dia.	Box Qty
1/2" to 3/4"	.048" - .210"	A	#10-24 x 1-7/16" BLAZER-3 With Wings	.460"	4M
	.018" - .175"	B	#10-16 x 1-3/4" BLAZER-3 Long Pilot	.380"	2.5M
	.048" - .210"	C	#12-14 x 1-3/4" BLAZER-2 With Wings	.500"	2M
	.210" - .500"	D	*#12-24 x 2-1/8" BLAZER-5 With Wings	.500"	2M
3/4" to 1-1/2"	.048" - .210"	E	#12-14 x 2-1/2" BLAZER-2 With Wings	.500"	1M
	.210" - .500"	F	1/4-20 x 3-1/8" BLAZER-5 With Wings	.510"	1M

Select a screw based on the thickness of the wood and the thickness of the steel substrate.

#### Screw Recommendations

Steel ≤ .210" : Screw E  
Steel > .210" : Screw F

Screw Recommendations  
Steel ≤ .210" : Screw A, B, C  
Steel > .210" : Screw D

1/2" to 3/4" WOOD

1" to 1-5/8" WOOD

## TECHNICAL DATA

Recommended Screw Gun Speed: 2,000 RPM Max

Fastener Information		PULLOUT   ULTIMATE LOAD IN POUNDS													
		Calculated Values In Accordance to AISI S100   Section E4													
		Grade 50 per ASTM A1011 50Ksi 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")
#10	.190"	174	203	233	291	349	504	627	786	1,101	1,311				
#12	.216"	198	231	264	330	397	573	716	895	1,253	1,492	1,611	2,984	*4,475	*5,967
1/4	.250"	230	268	306	383	459	633	829	1,036	1,450	1,727	1,865	3,453	*5,180	*6,906

\* Denotes load exceeds tensile strength of screw.

#### Head Type

#10: #2 Sq - Wafer Countersunk  
#12: #3 Sq - Wafer Countersunk  
1/4": 5/16" Hex Countersunk  
Material: C-1022 Carbon steel  
Finish: TRI-SEAL® Long-life  
Salt Spray: 1,000hrs  
Compatible for use in ACQ and fire treated lumber.  
Produced to SAE J78 specifications.

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)





# 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.

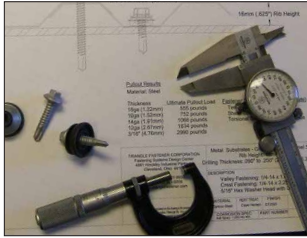
NOTE: Use of T25W (Wedge) drive bit is required.  
Install fasteners with 0–2000 RPM screw gun equipped with depth sensing nose piece.

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

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A member of **SFS**

### BLAZER® ENGINEERING DATA



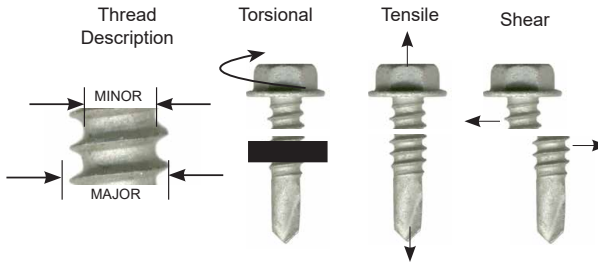
The following information is compiled to assist the design professional in selecting the appropriate fastener for the application. This data is compiled from fastener standards and independent tests. An engineering professional should be consulted to determine expected loads on the connection, environmental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

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 1/4-20 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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### 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 <sup>1</sup>	175 <sup>1</sup>	571 <sup>1</sup>	647 <sup>2</sup>	631 <sup>2</sup>

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 <sup>1</sup>	425 <sup>1</sup>	644 <sup>2</sup>

Farabaugh Report: T175-21

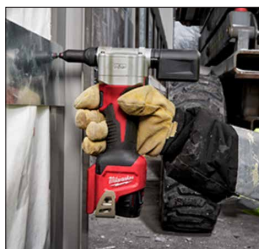
### Rivet Strengths

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.



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# FIND YOUR COLOR...SELECT THE RIVET!

COLOR	MFG	SIZE / P.N.	TFC COLOR	SWATCH
ALMOND	MBCI	FBF43AL FBF44AL	ALMOND S0330	
ASCOT WHITE	ATAS	FBF44SWH	STONE WHITE S0348	
ASH GRAY	MBCI	FBF43AGY	ASH GRAY S0850	
BONE WHITE	MBCI	FBF43BNWH FBF44BWH	BONE WHITE	
BRITE RED	MBCI	FBF43CRD	CRIMSON RED S1232	
BROWNSTONE	MBCI	FBF43BST	BROWNSTONE S0360	
BURNISHED SLATE	MBCI	FBF43BSL	BURNISHED SLATE S0742	
CHAMPAGNE	DMI	FBF43CPGE	CHAMPAGNE S1160	
CHARCOAL	METAL SALES	FBF43CGY FBF44CHGY	CHARCOAL GRAY S1151	
CITYSCAPE	PAC CLAD	FBF43CS	CITYSCAPE S0302	
CLASSIC GREEN	MBCI	FBF43CGR FBF44CGR	CLASSIC GREEN S0925	
COAL BLACK	MBCI	FBF43CLBLK	COAL BLACK S0423	
COBALT BLUE	MBCI	FBF43GBL	GALLERY BLUE S0545	
COLONIAL RED	MBCI	FBF43CLRD FBF44CRD	COLONIAL RED S0847	
COLONY GREEN	MBCI	FBF43COGR	COLONY GREEN S1047	
DARK BRONZE/ MIDNIGHT BRONZE	METAL SALES/ MBCI	FBF43DBZ FBF44DBZ	DARK BRONZE S0324	
DESERT SAND/ STONE	MBCI/ DMI	FBF43DS	DESERT SAND S0109	
EVERGREEN	DMI	FBF43EVGR	EVERGREEN S0487	
FERN GREEN	MBCI	FBF43FGR FBF44HGR	FERN GREEN HARTFORD GREEN S0798	

COLOR	MFG	SIZE / P.N.	TFC COLOR	SWATCH
HARBOR BLUE	MBCI	FBF43HRBL FBF44RBL	HARBOR BLUE ROYAL BLUE S0843	
HAWAIIAN BLUE	MBCI	FBF43HBL	HAWAIIAN BLUE S0112	
KOKO BROWN	MBCI	FBF43KBRN FBF44MBRN	KOKO BROWN MANSARD BROWN S0110	
LIGHT STONE	MBCI	FBF43LST	LIGHT STONE S0248	
MATTE BLACK	METAL SALES	FBF44MBLK	MATTE BLACK S0507	
MEDIUM BRONZE	MBCI	FBF43MBZ FBF44MBZ	MEDIUM BRONZE S0526	
SILVER METALLIC	MBCI	FBF43MSL FBF44MS	METALLIC SILVER S1161	
POLAR WHITE	MBCI	FBF43PWH	POLAR WHITE S0001	
RUSTIC RED	MBCI	FBF43RRD	RUSTIC RED S0890	
SADDLE TAN	MBCI	FBF43STN	SAHARA /SADDLE S0320	
SANDSTONE	DMI METAL SALES	FBF43SDST FBF44SST	SANDSTONE S0330	
SIERRA TAN	PACCLAD METAL SALES	FBF43SITN FBF44STN	SIERRA TAN S0629	
SLATE GRAY	MBCI	FBF43S6Y FBF44SGY	SLATE GRAY S0275	
SNOW WHITE	MBCI	FBF43SWH FBF44SDWH	SNOW WHITE SNOW DRIFT WHITE S0348	
TERRA COTTA	DMI	FBF44TC	TERRA COTTA S1389	
TUNDRA	MBCI	FBF44DGY	DOVE GRAY S0302	
WEATHERED ZINC	PAC CLAD	FBF43WZ	WEATHERED ZINC S1483	
WHITE	DMI	FBF44WH	WHITE S0214	

Can't find your color? Contact us! We may have what you need...or we can paint it in-house!

**NOTE: Colors swatches do not match the actual rivet due to printing variation. Contact TFC for samples.**



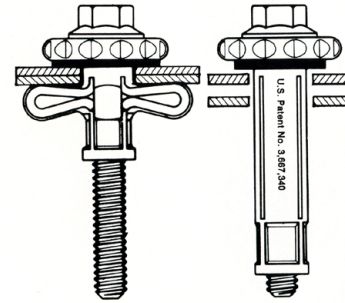
## We Stock a Full-Line for Immediate Shipping!

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.

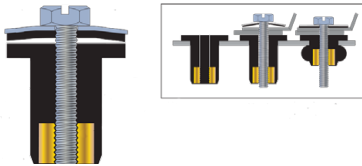
## Sizes and Specifications

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.

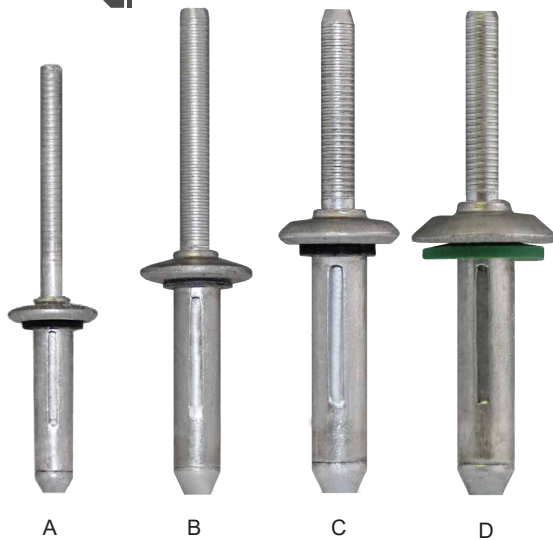
\*Also available in 316 stainless steel.

## 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!**

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)





## The first hillside washer that eliminated back-up plates!

The BRACER® with slip resistant knurls was designed to increase the load capacity of your bracing system by over three times more than a standard hillside washer.

Our patented slip resistance knurls minimizes slippage of the rod, keeping the bracing tight. It has been tested by an independent laboratory confirming that BRACER® achieves complete loading of the web and rod, eliminating backup plates and welding! This research provides the only certified load data by any supplier of hillside style washers.

## The elliptical Shape of the #1 BRACER® distributes stress into web for better load distribution!



US Patent # 6,217,270  
Statement of certification by Dr. Ralph Sinno Ph.D. Professor of Civil Engineering Mississippi State University.

"The #1 BRACER® ductile iron oval hillside washers for 1/2" - 5/8" rods surpass the design capacity of the rods and beam / column sections."

"Procedures and calculations in the literature for the design of x-bracing anchorage can be used with confidence when specifying and selecting ductile iron oval BRACER® hillside washers."

"The oval shape is better than rectangular mainly because of two reasons: The base area is almost the same and the oval shape eliminated stress concentrations at the 90-degree corners and reduces the cantilever distance (from the corner of the base to the center of the rod). In addition, your oval shape is properly stiffened on it's back. This latest oval shape is a winner with STRESS-LOK!"

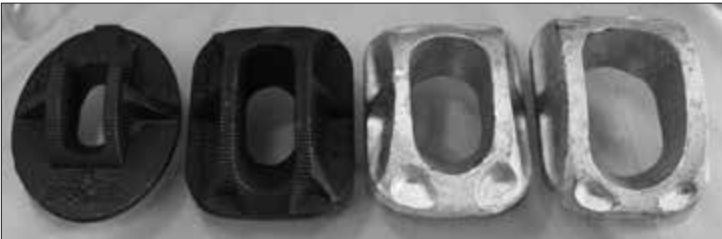
## WHY BRACER® ?



## Patented design provides optimal load transfer and easy installation.

- Patented knurls on the surface minimizes slippage of the rod.
- Eliminates back-up plates and welding.
- Special nipple is design to engage the web slot deeper, producing higher load capacity and easy installation!
- Made from high strength ductile iron to assure quality performance.
- Certified independent test data confirms load capacities.

## SIZES AND ROD CAPABILITY



#1 BRACER® Oval With Knurls (1/2" - 5/8" Rod)  
#2 BRACER® With Knurls (3/4" - 7/8" Rod)  
#3 BRACER® (1" - 1-1/4" Rod)  
#4 BRACER® (1-3/8" - 1-1/2" Rod)

Shown in standard red paint and optional HDG finish.

## MATERIAL PROPERTIES

### STANDARD MATERIAL (Import & Domestic)

Ductile Iron  
ASTM 536-84 Grade 65-45-12  
Ultimate Tensile Strength: 65,000 PSI

For load data,  
please refer to  
page 208.

### FINISH

Red Enamel: BRACER #1,2,3  
Gray Enamel: BRACER #4  
Type: gloss enamel, 85 units minimum at 60°.

Thickness: 1.6-2.0 mils

Adhesion: ASTM 2794 Excellent. No Peeling or removal

Impact Resistance: ASTM D 2794 Good > 10 in. lbs.

Abrasion Resistance: ASTM D 4060 Good

Corrosion Resistance: Salt Spray: 250 hrs. (<5% red rust)  
Kesternich: 5 cycles (<10% red rust)

### OPTIONAL FINISH

Hot Dip Galvanized Per ASTM 153 Class A

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## MADE IN USA AVAILABLE

### BRACER® Base Dimensions

Need a standard  
hillside?  
Call about information  
on our BRACER LITE!

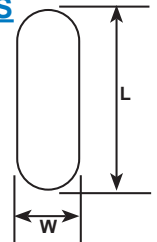
BRACER®	Rod	Base Dimension	
		Length	Width
#1 (Oval)	1/2" & 5/8"	4.000"	3.000"
#2	3/4" & 7/8"	4.000"	3.000"
#3	1" & 1-1/4"	4.000"	3.000"
#4	1-3/8" & 1-1/2"	4.250"	3.000"

## SLOT SIZES AND ROD ANGLES

### SLOT REQUIREMENTS - MINIMUM

Slots in the web must be sized to allow a rod angle of up to 52° and to allow the tab on the bottom of the BRACER® to engage the web.

\*Static load tests were conducted using the these dimensions.



ROD AND (BRACER SIZE)	ROD ANGLE (MAX)	FROM MSU TEST		SLOT WIDTH (W) MINIMUM DUCTILE IRON
		*SLOT LENGTH (L)	*SLOT WIDTH (W)	
1/2" Rod (#1 BRACER)	55°	2.125"	1.062"	.750"
5/8" Rod (#1 BRACER)	52°	2.125"	1.062"	.750"
3/4" Rod (#2 BRACER)	55°	2.125"	1.062"	1.000"
7/8" Rod (#2 BRACER)	52°	2.125"	1.062"	1.000"
1" Rod (#3 BRACER)	58°	2.625"	1.312"	1.250"
1-1/4" Rod (#3 BRACER)	56°	2.625"	1.312"	1.312"
1-3/8" Rod (#4 BRACER)	55°	3.500"	1.625"	1.425"
1-1/2" Rod (#4 BRACER)	52°	3.500"	1.625"	1.600"

**LOAD DATA**
**BRACER, BRACER LITE LOAD CHART**

REV 3 – 9.13.10

Tests were conducted at Mississippi State University by the direction of Professor R. Ralph Sinno Ph.D., P.E. in accordance to tests sponsored by the MBMA. "X-bracing Anchorage Connection," Journal of Structural Engineering, ASCE, Vol 119, No. 11, November 1993.  
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WEB THICKNESS	ROD DIAMETER	<sup>2</sup> ROD TENSILE STRENGTH (Min - lbs)	SLOT SIZE Width x Length	BRACER SIZE AND WASHER SL = StressLok FW = Flat washer	LOAD (lbs) ULTIMATE 30° & 45° rod angles	FAILURE MODE
1/8" (TB-2)	5/8"	16,700	1.062" x 2.125"	#1 BRACER & FW	20,750 (30°)	4
				#1 BRACER & FW	19,500 (45°)	1 & 4
				#1 BRACER & SL	18,000 (45°)	1 & 4
				#1 Oval BRACER & SL	17,000 (45°)	1 & 4
	3/4"	24,700	1.062" x 2.125"	#2 BRACER & FW	29,500 (30°)	1 & 4
10ga (TB-1)	1/2"	10,500	1.062" x 2.125"	#1 BRACER & FW	12,600 (30°)	1
				#1 BRACER & SL	10,580 (45°)	1
			.750" x 1.750"	1/2" BRACER LITE & SL	10,750 (45°)	1
	5/8"	16,700	.750" x 1.750"	5/8" BRACER LITE & SL	15,580 (45°)	1
	3/4"	24,700	1.062" x 2.125"	#2 BRACER & FW	29,100 (30°)	1 & 4
9ga (Corle)	7/8"	27,700	1.062" x 2.125"	#2 BRACER & FW	33,500 (30°)	1 & 4
	1"	36,400	1.062" x 2.125"	#3 BRACER & FW	36,350 (30°)	1 & 4
3/16 (TB-4)	1/2"	10,500	1.312" x 2.625"	#1 BRACER & FW	12,500 (30°)	1
				#1 BRACER & SL	16,600 (45°)	1
	5/8"	16,700	1.312" x 2.625"	#1 BRACER & FW	22,600 (30°)	1
				#1 BRACER & FW	19,760 (45°)	1
				#1 BRACER & SL	22,750 (45°)	1
			1.250" x 2.625"	#1 Oval BRACER & SL	18,250 (45°)	1
	3/4"	24,700	1.312" x 2.625"	#2 BRACER & FW	28,800 (30°)	1
				#2 BRACER & FW	26,200 (45°)	1
				#2 BRACER & SL	25,800 (45°)	1
				3/4" BRACER LITE & SL	23,250 (45°)	1
	7/8"	27,700	1.312" x 2.625"	#2 BRACER & FW	37,300 (30°)	1
					38,300 (45°)	4 & 7
1/4" (TB-7)	5/8"	16,700	1.312" x 2.625"	#1 BRACER & SL	18,400 (45°)	1
	3/4"	24,700	1.312" x 2.625"	#2 BRACER & FW	30,600 (30°)	1
				#2 BRACER & FW	29,300 (45°)	1
				#2 BRACER & SL	26,000 (45°)	1
				3/4" BRACER LITE & SL	26,000 (45°)	1
	7/8"	27,700	1.312" x 2.625"	#2 BRACER & FW	38,200 (30°)	1
					40,200 (45°)	1
	1"	36,400	1.312" x 2.625"	#3 BRACER & FW	39,500 (30°)	4
5/16"	1-1/4"	58,100	1.312" x 2.625"	#3 BRACER & FW	70,000 (30°)	1 & 4 & 5
					50,000 (45°)	1
	7/8"	27,700	1.625" x 3.500"	#3 BRACER & FW	40,500 (45°)	1
	1-1/4"	58,100	1.625" x 3.500"	#3 BRACER & FW	56,000 (45°)	7
					71,000 (30°)	3 & 4
					52,500 (45°)	2 & 7
5/16" web with 1/4" backup plate: 4.875" x 5.500"	1-1/2"	69,300	1.625" x 3.500"	#4 BRACER & FW	71,000 (30°)	4

**TEST PHOTOS**

**Rod Failure**
**Failure Modes**

- Mode 1: Tensile fracture of the bracing rod  
 Mode 2: Compression fracture of the BRACER  
 Mode 3: Punching shear fracture of the web plate beneath the BRACER washer.  
 Mode 4: Excessive flexure deflection of the web plate of the column section.  
 Mode 5: Failure of the fillet weld between the web plate and flange of the section adjacent the BRACER.  
 Mode 6: Nipple disengagement from the web slot.  
 Mode 7: Nipple shear fracture.

**Notes**

- The flange thickness was stiffened over previous tests with a 3/8" plate and welded to the outside of the existing flange.
- Minimum Rod Strength based on Grade 2 bolt per SAE J429.

Test at 45° rod angle – Report dated February 18, 2005

Test with STRESS-LOK and BRACER II at 45° rod angle – Report August 26, 2008 (SL = StressLok)

Test with OVAL BRACER II. STRESSLOK at 45 rod angle – Report September 13, 2010

"Procedures and calculations in the literature for the design of x-bracing anchorage can be used with confidence when specifying and selecting ductile iron oval BRACER hillside washers."  
 Statement by Dr. Ralph Sinno Ph.D.



# PIPE-MASTER PIPE FLASHING

## Standard Applications



- Flexible, weather resistant EPDM rubber or silicone.
- Aluminum base is flexible to conform to any panel profile
- Grey EPDM is ozone and ultraviolet resistant

### Fastening Recommendation



Corrosion resistant fasteners should be used around the base one every 1-1/2 inches as per the United Plumbing Code (UPC) recommendations. Refer to size chart for the quantity to use.

1/4-14 x 1-1/8" DP1 BLAZER Stainless Cap Head with VRT Technology

### Sealant Recommendation



Ultra 1000® or APS 500 sealant should be used under the base to assure a proper seal. If you prefer, additional sealant can be applied around base after installation.

## Material Specifications

	EPDM	Silicone
Advanced Ozone Resistance	70 hours @ 500 pphm	70 hours @ 500 pphm
High Temp Resistance		
Intermittent	+135° C (275° F)	+260° C (+500° F)
Continuous	+100° C (212° F)	+225° C (+437° F)
Low Temp Resistance	-55° C (65° F)	-74° C (-100° F)
Tensile Strength (min)	10 MPa (1450 psi)	5 MOPa (700 psi)
Compression Set (max)	25%	50%

Size#	mini	#1	#2	#3	#4	#5	#6	#7	#8	#9	#maxi
Box Qty (pcs)	30	15	15	15	10	10	10	10	5	5	5

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Pipe Size Outside Diameter	Flash Number	Flashing Details	TFC Part Number	Number of Fasteners
1/4" - 2 1/2" EPDM	#1	Top Opening Diameter: Closed Overall Height: 2.77" Base Diameter: 4.75"	001DEKR	10
1 3/4" - 3" EPDM	#2	Top Opening Diameter: 1.44" Overall Height: 3.53" Base Diameter: 6.21"	002DEKR	13
1/4" - 5" EPDM *Silicone	#3	Top Opening Diameter: Closed Overall Height: 3.64" Base Diameter: 7.74"	003DEKR 003DEKS	16 16
3" - 6 1/4" EPDM	#4	Top Opening Diameter: 2.38" Overall Height: 5.05" Base Diameter: 9.26"	004DEKR	19
4 1/4" - 7 3/4" EPDM *Silicone	#5	Top Opening Diameter: 3.50" Overall Height: 4.43" Base Diameter: 10.75"	005DEKR 005DEKS	22 22
5" - 9" EPDM	#6	Top Opening Diameter: 4.25" Overall Height: 5.60" Base Diameter: 12.50"	006DEKR	26
6" - 11" EPDM	#7	Top Opening Diameter: 4.90" Overall Height: 5.84" Base Diameter: 14.60"	007DEKR	30
7" - 13" EPDM *Silicone	#8	Top Opening Diameter: 5.80" Overall Height: 7.53" Base Diameter: 16.5"	008DEKR 008DEKS	35 35
9" - 19" EPDM *Silicone	#9	Top Opening Diameter: 7.45" Overall Height: 8.09" Base Diameter: 25.25"	009DEKR 009DEKS	54 54
15" - 24" EPDM	#10	Pipe Size: 15"-24" Diameter (Square Base only)	010DEKRSQ	148

Note: #1 and #3 are closed top. When flashing a steep pitch roof greater than 20° or a profile with a rib height of 1-1/2" or more, use the next larger flashing for increased flexibility.



## RETROFIT FLASHING

PIPE SIZE	US PART NUM	FLASHING DETAILS
#1 3/4"- 2-3/4"	Black RF 101 BS Gray RF 101 GS Silicone RF 102 RD	Opening diameter 3/4" Pipe size 3/4"- 2-3/4" Base dimensions 6 - 3/10"
#2 2"- 7-1/4"	Black RF 201 BS Gray RF 201 GS Silicone RF 202 RD	Opening diameter 2" Pipe size 2" - 7 -1/4" Base dimensions 10 - 3/4"
#3 3-1/4" - 10"	Black RF 301 BS Gray RF 301 GS Silicone RF 302 RD	Opening diameter 3 - 1/4" Pipe size 3 - 1/4" - 10" Base dimensions 14 - 1/2"

## Available COLORS



Available in 11 colors to match your roof!

#3 - Pipe diameter 1/4" to 4"

#5 - Pipe diameter 4 1/4" to 7 3/4"

Material: EPDM



### RETRO-FIT Two Flashings In One!

#### One Design • Multiple Functions Made of EPDM or High Temp Silicone

these flashings are compounded specifically for maximum resistance to weathering due to ozone and ultraviolet light.

#### Easy On-Site Customization

Fast, one piece construction allows for easy on-site installation.

#### Base Flexibility

The base is designed to form a seal on most panel configurations and roof pitches regardless of pipe location.



Name	Part #	Compound	Pipe Range	Base
#2	MF201BA-G	Black EPDM	Standard 5/8" - 4" (15 - 101mm)	6" (152mm)
	MF202GX-G	Gray Silicone	Retrofit 1-1/8" - 3-7/8" (28 - 98mm)	
#3	MF301BA-G	Black EPDM	Standard Closed - 5-3/4" (0-146mm)	8" (203mm)
	MF302GX-G	Gray Silicone	Retrofit 2" - 5" (50 - 127mm)	
#4	MF401BA-G	Black EPDM	Standard 2-3/4" - 7" (69 - 177mm)	10" (254mm)
	MF402GX-G	Gray Silicone	Retrofit 3" - 6-1/2" (76 - 165mm)	
#5	MF501BA-G	Black EPDM	Standard 4" - 8-1/4" (101 - 203mm)	11" (279mm)
	MF502GX-G	Gray Silicone	Retrofit 3-3/4" - 7" (95 - 177mm)	
#6	MF601BA-G	Black EPDM	Standard 4-3/4" - 10" (121 - 254mm)	12" (304mm)
	MF602GX-G	Gray Silicone	Retrofit 4-1/2" - 8-1/2" (114 - 215mm)	
#7	MF701BA-G	Black EPDM	Standard 6" - 11" (152 - 279mm)	14" (355mm)
	MF702GX-G	Gray Silicone	Retrofit 5-1/4" - 10" (133 - 254mm)	
#8	MF801BA-G	Black EPDM	Standard 6-3/4" - 12" (171 - 304mm)	17" (431mm)
	MF802GX-G	Gray Silicone	Retrofit 6-1/2" - 12-3/4" (165 - 323mm)	
#9	MF901BA-G	Black EPDM	Standard 9-1/2" - 20-1/2" (241 - 520mm)	25" (635mm)
	MF902GX-G	Gray Silicone	Retrofit 9-1/4" - 20-1/2" (234 - 520mm)	
Maxi	MF951BA-G	Black EPDM	Standard 12" - 28-1/2" (304 - 723mm)	34" (863mm)
	MF952GX-G	Gray Silicone	Retrofit 11" - 28" (279 - 711mm)	

### The only ICC listed flashing for the Metal Building Industry with a **35 Year Warranty**

ISO Quality, Price & Availability / Compound / 11 sizes

Advanced Ozone Resistance Tested to...	EPDM 70 Hour @ 500 pphm
High Temperature Resistance Tested to...	
Intermittent	+ 135° C (+275° F)
Continuous	+ 100° C (+212° F)
Low Temperature Resistance Tested to...	- 55° C (- 67° F)
Compression Set Minimum...	25%

\*Complete specification data and testing methods are available upon request.



- ✓ **Made of EPDM**, this flashing is designed for maximum resistance to all weather conditions.
- ✓ **Modification Made Simple**  
Pipe diameters can be seen clearly for proper pipe fitting.
- ✓ Designed for 1/8" to 28-1/2" (1.6 to 724mm) diameter pipes.
- ✓ **Adaptable Base**  
The base is designed to fit virtually all panel configurations and roof pitches regardless of pipe location. Flexibility absorbs vibration and pipe movement.



\*A Registered Trademark of Aztech Washer Company

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## Designed for Sidewall or Low Profile Applications

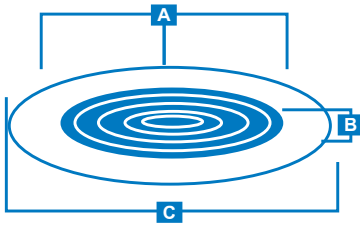
### Applications



Seals on a variety of substrates

- Wall and Roof Penetrations
- Drywall
- Stucco Wall
- Corrugated Metal Siding

### Sizes

SIZE PIPE RANGE	COMPOUND	PART#		FLASHING DETAILS	
<b>Low Profile</b> Fits up to 4" Pipes	Black EPDM	LP101BA		A- Top opening diameter	Closed 0" - 4"
	LT Grey EPDM	LP101GA		B- Overall Height	3/8"
	DRK Grey EPDM	LP101NG		C- Base dimensions	6-1/4"
	FDA White Silicone	LP102WT			

### Standard Materials



### Colors Available

- Black
- Bright Red
- Brown
- Copper
- Dark Blue
- Dark Green
- Dark Grey
- Light Blue
- Light Green
- Light Grey
- Tan
- Terra Cotta
- White

**\*Call TFC for your specific needs.**

### Material Properties | EPDM and Silicone

ADVANCED OZONE RESISTANCE tested to...		EPDM 70 hour @ 500 pphm	FDA WHITE SILICONE 70 hour @ 500 pphm
HIGH TEMPERATURE RESISTANCE			
Tested to	Intermittent	+138°C (+275°F)	+260°C (+500°F)
	Continuous	+100°C (+212°F)	+225°C (+437°F)
LOW TEMPERATURE RESISTANCE tested to...		-55°C (-67°F)	-74°C (-101°F)
COMPRESSION SET Maximum...		25%	50%

EPDM and Silicone provide exceptional weathering protection even in harsh environments.

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# CLOSE-TITE™ CLOSURE FOR METAL ROOF SYSTEMS

## CLOSURE PROFILES

Panel Profile Description	Pitch Of Corr.	Hgt. Of Corr.	Length Of Strip	Pcs. Per Ctn.	Ft. Per Ctn.
2.67" Corrugated	2.67"	1/2"	24"	100	200
Wheeling Channel Drain					
Inner	6"	1/2"	36"	100	300
Outer	6"	1/2"	36"	100	300
2.5" Corrugated	2.5"	9/16"	38-3/4"	100	323
Granite City Strong Panel II					
Inner	9"	5/8"	36"	100	300
Outer	9"	5/8"	36"	100	300
Metal Sales Pro Panel II					
Inner	9"	5/8"	36"	100	300
Outer	9"	5/8"	36"	100	300
3/4" Hi Rib*					
Inner	9"	3/4"	36"	100	300
Outer	9"	3/4"	36"	100	300
Delta Rib					
Inner	8"	3/4"	24"	100	200
Outer	8"	3/4"	24"	100	200
M/U Panel					
Inner	6"	3/4"	36"	100	300
Outer	6"	3/4"	36"	100	300
A-Panel					
Inner	12"	1-1/8"	36"	100	300
Outer	12"	1-1/8"	36"	100	300
Metal Sales Span Line 36 RW					
Inner	12"	1-1/8"	36"	100	300
Outer	12"	1-1/8"	36"	100	300
R-Panel					
Inner	12"	1-1/4"	36"	100	300
Outer	12"	1-1/4"	36"	100	300
McElroy Multi-Rib					
Inner	12"	1-1/4"	36"	100	300
Outer	12"	1-1/4"	36"	100	300

\* Matches: Grand Rib III, Max Rib, Imperial Rib, Classic Rib and Century Drain



Specially formulated closed-cell polyethylene foam. The unique fusing process results in a plywood-like lamination that offers exceptional strength and uniform compressibility. Many of the closure shapes shown here are available with a dovetail interlocking joint that speeds up the installation and eliminates gapping often found with flat end-to-end joints.

## Beveled Closure

With today's emphasis on the architectural aesthetics of metal roofing, unusual cut back angles and valleys result in challenging closure applications. Standard 90 degree closure will not provide an acceptable fit and seal. We can custom produce closure in bevel configurations which take into account the cut back angles and roof slope of each individual application. These parts are custom cut to your panel and specific order needs.



## Adhesive

Adhesive is a bead of glue that can be applied to either side of your closure configuration. It allows for secured placement of the closure strip prior to installation of the panel.

Typical Outside Closure



Typical Inside Closure



## CHEMICAL RESISTANCE

Reagent	Concentration	Dimensional Change* (% Volume)
Sulfuric Acid	30%	+0.4
Nitric Acid	10%	-0.7
Hydrochloric Acid	10%	+5.4
Carbolic Acid	5%	+5.0
Acetic Acid	5%	-0.6
Oleic Acid	--	-0.7
Citric Acid	10%	+6.5
Ethyl Alcohol	95%	+0.4
Carbon Tetrachloride	--	+18.0
Heptane	--	18.5
Ethylene Disulfide	--	+3.0
Toluene	--	+15.0
Distilled Water	--	0
Hydrogen Peroxide	3%	+1.7
Caustic Soda	10%	+0.9
Ammonia	10%	-5.8
Sodium Carbonate	2%	+7.4
Saline	10%	+4.0

\* Immersion for 7 days at 68° F.

## PERFORMANCE

	Units	Properties*
Bulk Density	pcf	2
Average Cell Size	mils.	10
Tensile Strength (ASTM D-1564)	psi	M 45-55 C 36-44
Elongation, 20° C (ASTM D-624)	% to break	M 124-152 C 100-122
Tear Resistance, 20° C (ASTM D-1564)	lb./in.	M 10-12 C 7-6
Compression Set, 22 hrs. 50% Compression, 24 hr. recovery (ASTM D-1056)	% of original thickness	16 Max.
Service Temperature	°F	-100 to +180
Thermal Conductivity	BTU-in./hr.-Ft. <sup>2</sup> -°F	0.25
Water Absorption (ASTM D-1667)	lbs./sq. ft. cut surface	Max. 0.04
Buoyancy	lbs./cu. ft.	55.0 Min.
Compression Strength	25% psi 50% 75%	4.9-6.1 12.7-15.5 38.8-47.4
Shore Hardness (ASTM D-2240)	AA Scale 00 Scale	7 51

\* M= Machine Direction

\* C= Cross-Machine Direction

\* Ozone & UV Test Results Available On Request.

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





# ULTRA1000®

## CLASS 35 | SILICONE SEALANT

Concerned about sealant failure caused by joint movement? Specify ULTRA1000™ Class 35 Silicone Sealant. It is formulated to withstand more joint movement than ordinary Class 25 sealants.

### Formulated for Superior Performance



- Silicone sealant provides exceptional weatherability
- Class 35 for superior movement capability
- Adheres to Kynar® and Galvalume® coated metals
- VOC compliant
- Mildew resistant
- "Guns" down to 0°F
- Service temperature -40°F to 350°F
- Tack free in 10 minutes
- 100% Silicone

### Bonds To



### Applications

- Flashing
- Trim
- Metal Sheeting
- Downspouts
- Gutters
- Roof Tile
- Flashings
- Adheres to Copper

		APPROXIMATE* LINEAR FEET/COVERAGE PER 10.1 FL. OZ. CARTRIDGE (298 ML)							
		WIDTH							
DEPTH	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	
	99	49	33	24	20	16	14	12	
	1/4"		24	20	12	10	8	7	6
	3/8"			11	8	6	5	5	4
1/2"					6	5	4	3	3

### Packaging

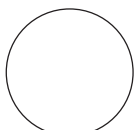


**Never misplace another nozzle!**  
Tubes are now packaged with nozzle.

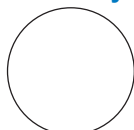
We've redesigned the packaging so that the plastic screw-on nozzles come pre-assembled on the tubes.



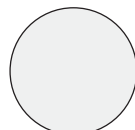
### 20 Colors! Call for availability. \*Denotes in stock colors



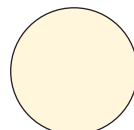
\*Translucent  
TR99



\*White  
WH100



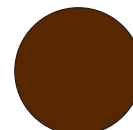
\*Antique White  
WH102



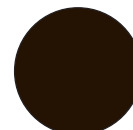
\*Off White  
WH104



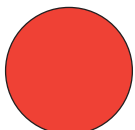
\*Black  
BLK110



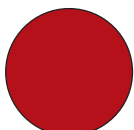
\*Brown  
BR121



\*Dark Bronze  
BZ131



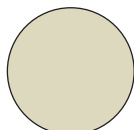
\*Red  
RD141



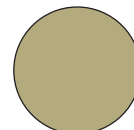
Regal Red  
RD143



\*Almond  
BG151



\*Sandstone  
BG152



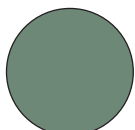
\*Sierra Tan  
BG154



\*Hartford Green  
GR160



\*Green  
GR164



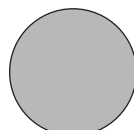
Hemlock Green  
GR161



\*Regal Blue  
BL181



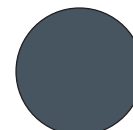
\*Electric Blue  
BL182



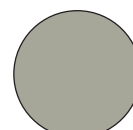
\*Light Gray  
GY190



\*Slate Gray  
GY192



\*Charcoal Gray  
GY195



\*Gutter Gray  
GY196

NOTE: Colors listed do not represent actual colors. Contact your local distributor for the ULTRA1000® color selector swatches for accurate color match.

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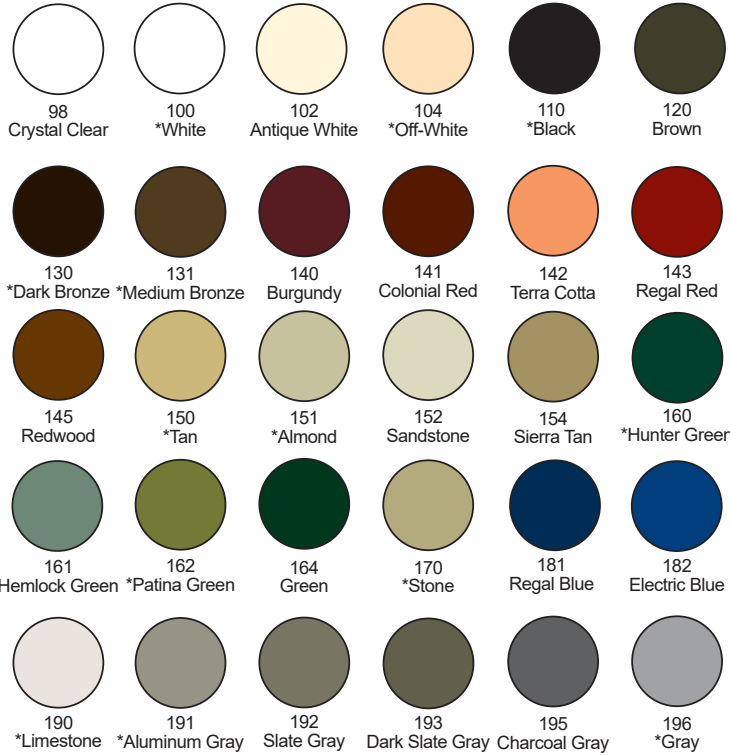
# APS 500®

## ADVANCED POLYMER SEALANT

APS 500® is formulated to provide superior adhesion, excellent resistance to weathering and is compatible for use with a variety of substrates. Supplied in plastic tubes with screw-on nozzles. Available in smooth or textured finish.

### Over 24 Colors Available!

\*Denotes standard colors.



### Applications

- Window Trim
- Doors & Skylights
- Siding
- Metal Architecture
- Curtain Walls & Joints
- Coated Metal Roofs

### Performance

- Paintable
- VOC Compliant
- Fast Curing
- Installs at -40 - 200°F
- Non-Yellowing
- UV Resistant

**Need a custom color?**  
**We can color match!**

		APPROXIMATE® LINEAR FEET/COVERAGE PER 10.1 FL. OZ. CARTRIDGE (298 ML)							
		WIDTH							
DEPTH	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	
	99	49	33	24	20	16	14	12	
	1/4"		24	20	12	10	8	7	6
	3/8"			11	8	6	5	5	4
	1/2"				6	5	4	3	3

Adheres to Kynar®, Galvanize, Galvalume®, Copper, Stainless Steel, Zinc

**NOTE: Colors listed do not represent actual colors. Contact your local distributor for the APS500® color selector swatches for accurate color match.**

### Product Specifications

Physical Property	Test Method	Typical Value
Tensile Strength	ASTM D412	205 psi
Elongation	ASTM D412	300%
Shore Hardness	ASTM C661	30 +/- 5
Service Temperature		-40°F to 200°F
Joint Sealant Designation	ASTM C920	Type S, Grade NS, Class 50, use T, NT, G, M
Adhesion and Cohesion	ASTM C719	Pass on glass, Aluminum and concrete for ± 50% movement
Adhesion-in-Peel, 2 inches/ minute @ 25°, N (lbf)	ASTM C794	Aluminum 37 pli
		Glass 35 pli
		Concrete 34 pli
Staining	ASTM D2203	None
Density	Industrial Method	1678 g/L
VOC	EPA Method 24	14 g/L
HAP	EPA Method 311	0.08 g/L (0.005% by weight)
Low Temp. Flexibility	ASTM C 711	Pass -10° F. 1/4 inch mandrel
High Temp. Flexibility	Industrial Method	Up to 200° F
Cure Rate	Industrial Method	48 hours
Skin Time Cure Time	Industrial Method	40° F at 40% humidity 40 minute 2-3 days
		75° F at 50% humidity 10 minute < 24 hours
		95° F at 95% humidity 5 minute

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### Bonds To



**Limited Warranty: Satisfaction guaranteed when handled and applied according to label.**

# TFC BUTYL

## NON-SKINNING TUBE SEALANT

Developed for the metal roofing industry  
and provides long-life performance!

TFC BUTYL™ is a single component, non-skinning butyl-based solvent release sealant. It is designed to deliver excellent adhesion to metal panels while remaining permanently pliable.

The product is the ideal choice in applications where the combination of moisture and cold temperatures would cause the break-down of other sealants.

### PERFORMANCE

- Non-Skinning
- Non-Staining
- Permanently Pliable
- Moisture Resistant
- Non-Paintable

### APPLICATIONS

- Metal Roofing
- Insulated Metal Panels
- Use on Painted Metal, Kynar®, Galvalume® & Galvanized Steel, Aluminum

SPECIFICATIONS: Meets or exceeds AAMA 809.2

COLORS: Gray (Item Number TFCNSBGY)

White (Item Number TFCNSBWH)

SURFACE PREPARATIONS: For best results, the substrate should be clean, dry, frost free, sound and free of any oils, greases or incompatible sealers, paints or coatings that may interfere with adhesion. Do not apply if surface is contaminated. It is recommended to test all substrates prior to applications.

INSTALLATION: Cut nozzle to desired bead size. Apply with caulking gun, forcing sealant onto the substrate, then tool if needed. Clean excess material with mineral spirits or similar solvent.

STORAGE: Material is to be stored under controlled dry environment (below 75° F). Use within 12 months from date of manufacture.

PACKAGING: 10.3 fl. oz. per tube | 24 tubes per carton

APPROXIMATE\* LINEAR FEET/COVERAGE  
PER 10.1 FL. OZ. CARTRIDGE (298 ML)

DEPTH	WIDTH							
	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"
1/8"	99	49	33	24	20	16	14	12
1/4"		24	20	12	10	8	7	6
3/8"			11	8	6	5	5	4
1/2"				6	5	4	3	3

### PROPERTIES

Total Solids (ASTM C 681) .....85%  
Volume Shrinkage (ASTM D 2453) ...<20%  
Wt/U.S. Gallon (ASTM D 1475) ...10.5 +/- 0.40lbs  
Staining (ASTM D 2202) .....None  
Blistering or Bleeding .....None  
UV Resistance .....Excellent  
Sag .....0.15" Max Full Button  
Service Temperature .....-40deg F to 250deg F  
Application Temp Range .....40deg F to 95deg F  
Extrudability (ASTM D 2452) .....40 seconds max  
Flexibility (ASTM C 711) .....No loss of adhesion at -60deg F  
Fungus/Mildew .....Resistant to growth  
Heat Aging ...No loss of surface tack or adhesion  
Weatherability (ASTM G 154) ...No cracking, bleeding, or loss of rubbery characteristics

Chemical Resistance .....Excellent to water, ozone, water vapor, alcohols. Fair to weak for acids and bases. Poor to organic solvents.  
Static Water Pressure Head Test ...Passes 6" of static water pressure head, no water leakage  
Air Leakage (ASTM E 1680) .....Infiltration @1.57psf 0.0510 cfm/sq ft and 0.0680 cfm/ft & Infiltration @ 6.24 psf 0.1024 cfm/sq ft and 0.1365 cfm/ft  
Water Penetration (ASTM E 1646) ...Passed, no leakage  
Wet Flammability (ASTM D 56) ...110deg F flash point  
Vehicle Bleedout (ASTM C 772) ...No visible exudation of vehicle from sealant after three weeks at 158deg F on painted or unpainted metal surface.  
Aged Tack (ASTM D 2377) .....Permanently Tacky  
Hardness (Shore OO Durometer) ...30 - 40

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BUTYL TAPE-SEAL™ was designed specifically for the metal building industry to provide optimal sealing in the harshest environments.

It adheres to most clean, dry metal surfaces and does not harden, bleed or stain. With pressure, it fills minor irregularities in the surface and seals the joints providing an effective barrier against water, moisture, dust, and dirt.

BUTYL TAPE-SEAL™ is an excellent choice for use around windows, doors, roof vents, stacks, access doors, and other penetration points.

### SIZES

Stocked sizes - Others available upon request

Size (T x W x L)	TFC P.N.	Rolls/ Ctns	Ctns/ Pallet
3/32" x 3/8" x 45'	0937BCT	48	30
3/32" x 1/2" x 50'	0950BCT	22	50
3/32" x 1" x 45'	0910BCT	24	30
1/8" x 1/2" x 50'	1250BCT50	13	48
1/8" x 1" x 50'	1210BCT50	8	48
3/16" x 1/4" x 40'	1825BCT	20	48
3/16" x 7/8" x 40' *DB	1887BCT	10	48
3/16" x 7/8" x 25' *TB	1887BCT25TRI	8	64
3/16" x 2-1/2" x 20' *TB	TC826W	6	60



\*DB denotes double bead

\*TB denotes triple bead

### PACKAGING

BUTYL TAPE-SEAL™ is extruded butyl material with a silicone backed release paper that is rolled and cut to specific lengths.

Our master cartons are constructed of 200 pound test material and the rolls are separated by silicone divider pads and protected by upright stacking cores.



### APPLICATION

For optimum sealing the surfaces should be free of oil, dust, dirt and moisture. Light films of lubricant on unpainted metals should not adversely affect performance. It can be applied in cold temperatures however, at temperatures below 40°F, any condensation or frost present should first be removed. Position product in desired location and press in place through the release paper. When using to seal applications involving fasteners, position on the entry side to prevent penetration of weather elements through fastener holes. Remove release paper prior to assembly / fastening of adjoining surface.

### CLEAN UP

Mineral spirits will readily facilitate the cleaning of tools and equipment.

### Adheres To

- Painted Metal
- Galvalume®
- Kynar®
- Aluminized Metal

### Easy to install!



Property	Value
Color	Off-White / Gray
Specific Gravity	(ASTM D792)- 1.6 ± 5
Percent Solids	(ASTM C771)- 100%
Cone Penetration	(ASTM D217)- 80 - 95
Tensile Adhesive Strength	(ASTM C907)- 15 - 18 psi
Application Temperature Range	-5°F to 120°F -20°C to 49°C
Service Temperature Range	-40°F to 200°F -40°C to 93°C
Sag	(AAMA 800)- None
Elongation	(ASTM C908) > 1000%
Low Temperature Flexibility	(ASTM C734 -40°F/-40°C)- No cracking or loss of adhesion
Peel Adhesion	(ASTM D3330) > 8 psi
Staining	(ASTM D925)- Will not stain painted/ unpainted surfaces
Water Penetration / Static Water Pressure	(ASTM E2140) - Pass/No leakage
Shelf Life	18 Months

TFC122012

**BUTYL TAPE-SEAL™ meets or exceeds the following specifications:**

MIL-C-1969B, Type II, Class B  
TT-C-1796A, Type II, Class B (supersedes MIL-C-18909B) AAMA 804.3-92 and 807.3-92 USDA Acceptable Freight Classification: Caulking Compound, NOIBN, NFMC #149610, Class 55

The following information is provided to help you specify and install BLAZER Drill Screws. Care should be used when selecting and installing screws to assure optimal performance.

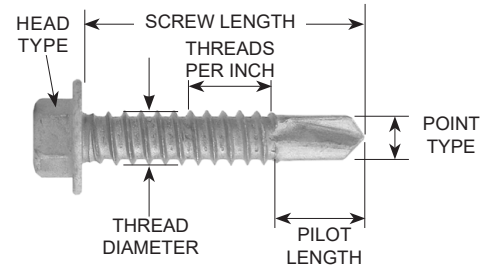
## TERMINOLOGY

To eliminate confusion and assure the proper screw is used, specifications for tapping screws should be written to include;

1. Thread diameter
2. Threads per inch
3. Point type
4. Description of the screw
5. Drive size
6. Head Style
7. Material
8. Finish / plating

**Example**  
1/4-14 x 1" BLAZER-3 Drill Screw. 3/8" HWH.  
Carbon Steel. TRI-SEAL™ 1,000 hour coating.

Thread Diameter	Threads Per Inch	Screw Length	Point Type	Head Size & Type
1/4	- 14	x 1"	BLAZER-3	3/8" HWH

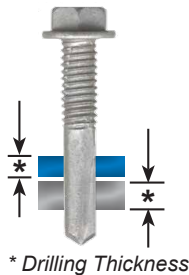


## DETERMINE DRILL POINT TYPE

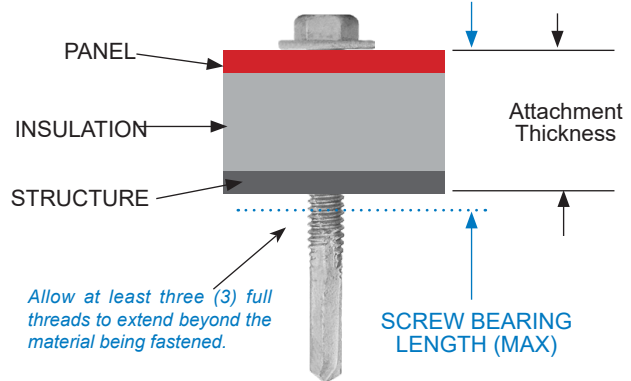
### Drilling Thickness (Drill Point Type)

Add up the total thickness that will be drilled by the screw and select a drill point type that meets the required drilling thickness range. (Do not include pre-punched materials that will not be drill by the screw.)

Select the desired drill point type located on the size chart of the BLAZER® sell sheet (i.e. BLAZER-5).



## DETERMINE FASTENER LENGTH



## INSTALLATION TECHNIQUES



### Recommended Screw-Gun Speed

Using the proper tooling is important for producing consistent installation. It also minimizes potential screw or application failure caused by over-driven and under-driven fasteners.

Screw Size	Max RPM
#6, #8, #10	2,500
All wood screws	2,500
#12, 1/4", 5/16"	2,000
All DP5	2,000
304 Stainless Screws	1,200

## WARNING! DO NOT USE IMPACT TOOLS FOR INSTALLATION!

Using impact tools to install pancake head screws can cause the head to separate from the body due to the high torque and impulse generate by the tool. HWH screws can also be easily overtighten which can lead to connection failure.

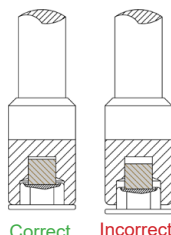
TFC is not responsible for failures caused by the use of improper tooling or improper installation.

## ACCESSORY TIPS

### Look familiar?



Worn out drive bits and sockets produces poor drilling, can strip the recess, and damage painted fasteners.



**SET THE MAGNET!**  
Be sure screw head engages into the socket completely. This will eliminate screw wobble, improve the drilling performance, and reduce damage to painted screw heads.



### Do

- Install fastener perpendicular to the work surface.
- Let the drill point do the work.
- Use a tool with torque control or depth sensing nose piece to prevent over-torqued and under-torqued screws.
- Allow all material to be drilled before tapping into the steel.

### Do Not

- Do not exert excessive pressure!
- Do not over drive the screw!
- **Do not use impact tools! (They can torque the screw to failure!)**



## SEALING WASHERS

To assure a proper seal, tighten the screw until the EPDM sealant extrudes just to the outer edge of the backing material. This also is a great way to visually inspect the screw to assure it is properly sealed.

Disclaimer: Hardware should always be installed by a competent professional with a good understanding of interior wall types and mounting fasteners. Please do not attempt to install any hardware unless you know how to safely operate the necessary tools, and have a good understanding of what you are doing. The following instructions are basic guidelines for qualified installers, and should be read through completely before starting your job.

© Triangle Fastener Corporation 2017



# FASTENER SELECTION GUIDE FOR EXPOSED METAL BUILDING AND ROOFING APPLICATIONS

## Environments

URBAN/RURAL  
INDUSTRIAL  
COASTAL/MARINE

**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.

Use With Warranted Roof Systems

## PANEL MATERIAL

### Fasteners



#### COATED STEEL

- Galvanized
- Zinc/Aluminum
- Painted Metal



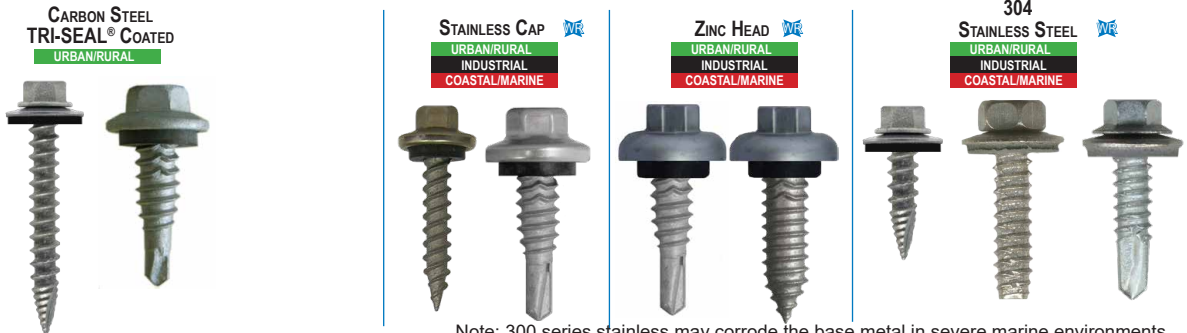
Note: 300 series stainless may corrode the base metal in severe marine environments. Consult the panel manufacturer for specific conditions

## PANEL MATERIAL

### Fasteners



#### ALUMINUM



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

## PANEL MATERIAL

### Fasteners



#### COPPER



## PANEL MATERIAL

### Fasteners



#### STAINLESS STEEL



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!



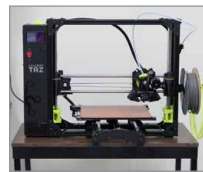
### **Tensile & Compression (10kips max)**

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.



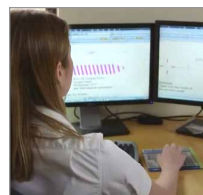
### **3D Printer**

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.



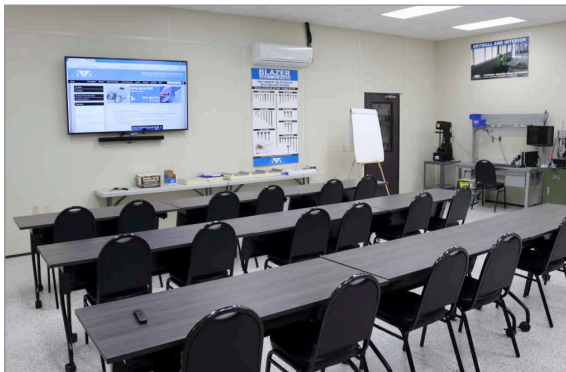
### **Drill / Pierce Test Machine**

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**

4661 Hinckley Parkway • Cleveland, OH 44109

P: 216.351.9933 • [www.trianglefastener.com](http://www.trianglefastener.com)

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## NEED-IT-NOW?

### We can help!

- Fasteners, Tools, Sealants and Contractor Supplies
- Delivery and Stocking Programs
- Technical Support
- Product Development
- Job-site Assistance



## FASTENING SYSTEMS AND SOLUTIONS FOR COMMERCIAL CONSTRUCTION

### MARKETS



### Application Focused

- Flat Roofing
- Metal Building and Roofing
- Post Frame
- Misc. Cladding | Curtain Wall
- Drywall | Interior
- HVAC / Electrical / Mechanical

### 25 LOCATIONS

### How Can We Help You?

### Contact us toll free at 800.486.1832

Alabama - Birmingham  
3800 1st Ave. North  
Birmingham, AL 35222  
P: 205.595.3444 | F: 205.595.7544

Florida - Orlando  
114 Atlantic Annex Pt.  
Maitland, FL 32751  
P: 407.660.0167 | F: 407.660.1256

North Carolina - Charlotte  
3317 Pelton Street  
Charlotte, NC 28217  
P: 704.586.0400 | F: 704.586.0300

Tennessee - Madison  
213 Nesbitt Lane  
Madison, TN 37115  
P: 615.865.0007 | F: 615.868.7257

Alabama - Mobile  
764 Lakeside Drive Suite A  
Mobile, AL 36693  
P: 251.665.5000 | F: 251.665.5001

Florida - Tampa  
10111 Woodberry Road  
Tampa, FL 33619  
P: 813.689.6877 | F: 813.689.6717

North Carolina - Raleigh  
79 Rupert Rd.  
Raleigh, NC 27603  
P: 919.733.1845 | F: 919.856.4910

Texas - Dallas  
2801 West Airport Freeway  
Irving, TX 75062  
P: 972.659.9400 | F: 972.659.9403

Alabama - Montgomery  
508 Hackel Drive  
Montgomery, AL 36117  
P: 334.270.8800 | F: 334.270.0331

Georgia - Atlanta  
5800 Oakbrook Parkway, Suite A  
Norcross, GA 30093  
P: 770.417.1515 | F: 770.409.1451

Ohio - Cincinnati  
1021 W. 8th Street  
Cincinnati, OH 45203  
P: 513.242.5802 | F: 513.242.8209

Texas - Houston  
5210 Brittmoore Rd.  
Houston, TX 77041  
P: 713.466.7758 | F: 713.466.8390

California - San Jose  
1425 Koll Circle  
San Jose, CA 95112  
P: 408-982-0581

Indiana - Indianapolis  
7768 Zionsville Rd #400  
Indianapolis, IN 46268  
P: 317.872.3944 | F: 317.879.2181

Ohio - Cleveland  
4661 Hinckley Ind. Pkwy.  
Cleveland, OH 44109  
P: 216.351.9933 | F: 216.351.5008

Texas - San Antonio  
12746 O'Connor Road  
San Antonio, TX 78233

Delaware - New Castle  
243-C Quigley Blvd.  
New Castle, DE 19720  
P: 302.322.0600 | F: 302.322.5102

Maryland - Baltimore  
6550 Moravia Park Dr.  
Baltimore, MD 21237  
P: 410.485.8665 | F: 410.485.4560

Ohio - Columbus  
1244 West Goodale Blvd.  
Columbus, OH 43212  
P: 614.487.8800 | F: 614.487.1634

Virginia - Richmond  
6529 Dickens Place  
Richmond, VA 23230  
P: 804.282.2360 | F: 804.282.4069

Florida - Ft Lauderdale  
5600 NW 12th Ave Suite 303  
Ft. Lauderdale, FL 33309  
P: 954.771.5232 | F: 954.771.5441

Michigan - Detroit Sales  
Mark Enderle  
Sales | Michigan / NW Ohio  
C: 734.674.2466 | F: 216.351.5008

Pennsylvania - Pittsburgh  
2001 Preble Ave.  
Pittsburgh, PA 15233  
P: 412.321.5000 | F: 412.321.7838

Washington - Seattle  
8459 South 208th Street  
Kent, WA 98031  
P: 206.575.0144 | F: 206.575.1118

Florida - Jacksonville  
6800 Suemac Place, Suite 2  
Jacksonville, FL 32254  
P: 904.695.0404 | F: 904.695.0062

Mississippi - Jackson  
102 Diane Dr.  
Richland, MS 39218  
P: 601.664.3449 | F: 601.664.7185

Pennsylvania - Pittsburg (Corp.)  
1925 Preble Ave.  
Pittsburgh, PA 15233  
P: 412.321.5021 | F: 412.321.7838