



TECHNICAL SHEET BOOKLET

Steelbinder® MAXX Self Drill® FASTENER FEATURES

HEAD

Proper head style choice will ensure stability during driving, proper clamping and desired finished appearance.

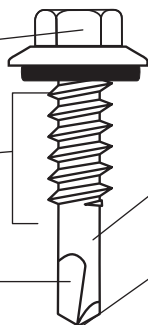
THREAD FORM AND DIAMETER

The correct choice of thread form and diameter optimizes low installation torque with high pull out strength.

FLUTE

Flute ejects material removed by the drill point & must clear all material before threads begin to engage.

Flute



PILOT SECTION

The unthreaded portion of the point assures that drilling of the steel is completed before the threads begin tapping into the drilled hole.

POINT

The point is designed to begin the cutting process & precisely size the hole to the proper diameter of the thread.

FINISH

Plating & coatings provide lubricity during drilling and tapping as well as corrosion resistance

* Drill capabilities may vary with special flute length

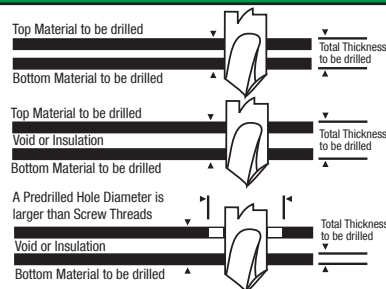
Steelbinder® MAXX Self Drill® DRILLING TECHNIQUE

ST Fastener Systems MAXX®... DRILLS, TAPS AND FASTENS IN ONE OPERATION.

A separate drilling operation is not necessary. However, specific installation procedures are necessary to ensure correct fastening results and to achieve published performance values for each fastener.

Important: A 1900 to 2500 RPM screwgun rated at 6 amps or higher, equipped with a properly adjusted depth-sensing nosepiece should be used to ensure proper fastening performance. During initial drilling, enough pressure must be applied while keeping the screwgun and fastener perpendicular to the work surface to prevent angle driving or walking. **The flute length must be long enough to ensure that drilling is completed before any threads engage the material. This includes all voids & insulation thickness.** It is essential to choose the correct fastener based upon the total thickness and type of material to be drilled and fastened for an application. Never overdrive the fasteners or install fasteners at an angle to the work surface as this may significantly reduce product performance or lead to failure.

Contact ST Fastening Systems Technical Services at 1-800-352-4864 for any specific information necessary.



FASTENER SELECTION GUIDE

TYPE	NOMINAL DIAMETER & ALLOY <small>All screws listed other than 304 Stainless Steel are carbon steel with zinc plating</small>	STEEL PANEL OR STRUCTURAL THICKNESS																									
		.010	.020	.030	.040	.050	.060	.070	.080	.090	.100	.110	.120	.130	.140	.150	.160	.170	.180	.190	.200	.210	.220	.230	.240	.250	
	Kwik-Seal® MB Woodbinder® (.190")	PREDRILL NOT REQUIRED																									
	#10 (.190")	1	1/8"				9/64"																				
	#12 (.210")	1		9/64"			9/64"																				
	#14 (.250")	1	1/8"		3/16"			#8																			
	#14 (.250") 304 S.S.	2		3/16"			#8																				
	#12 (.210")	1		1/8"			9/64"				11/64"																
	1/4" (.240")	1		1/8"			#8			#7		#1															
	#17 (.285")			3/16"	5			1/4"	5			17/64"	5														
	1/4" 304 S.S.	2		1/8"	3/16"		#8			#7		#1															
	#17 304 S.S.	2		3/16"	5			1/4"	5			17/64"	5														
	#12 (.210")	1						11/64"		3/16"																	
	1/4" (.240")	1						#8		#7																	3
	1/4" 304 S.S.	2						#8		#7																	3
	#10 (.190")	6																									
	#12 (.210") MAXX®	6																									
	#12 (.210) #4 POINT	6																									To .250"
	#12 (.210) #5 POINT																										To .500"
	1/4" (.240") #1 POINT																										
	1/4" (.240") #3 POINT	6																									
GAGE REFERENCE			26	24	20	18	16	14	13	12	11	10	8	3/16"	6	7/32"	4	1/4"									

- Drill bit sizes shown are for new construction applications
- 300 Series Stainless Steel fasteners require a screw gun with 600-800 rpm maximum.
- Use #1 bit to 3/8" thick. For heavier steel up to 1/2" thick, use .231 drill bit.
- Drill size recommendations assumes 50-55000 psi yield steel. Higher tensile steel may require adjustments in drill size to permit proper installation.
- #17 Type AB Self-Tapping screws are most often used as a repair screw for stripped 1/4" diameter fasteners in applications up to 11 ga. steel.
- Material thickness ranges indicating for self-drill fasteners are for structural steel only. Proper consideration must be made for multiple thicknesses of structural steel as in nested purlins and girts.

INSTALLATION RECOMMENDATIONS

1. Select the proper screw gun for installing self drilling fasteners.



IMPACT DRIVER

No**



BATTERY

OR



ELECTRIC

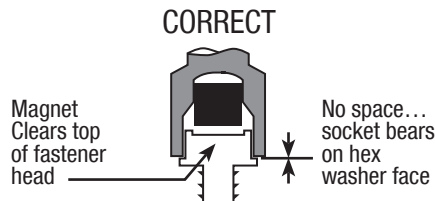
RECOMMENDED SCREW GUNS* W/ DEPTH SENSING NOSE PIECE.

MANUFACTURER	STEELBINDER® MAXX SELF DRILL®			HWH STEELBINDER® & KWIK-SEAL® MB WOODBINDER®		
	MODEL	AMPERAGE	RPMS	MODEL	AMPERAGE	RPMS
MILWAUKEE	6790-20	6.5	0-2500	6790-20	6.5	0-2500
DEWALT	DW266	6.5	0-2500	DW266	6.5	0-2500
DEWALT	DCD780	N/A	0-2000	DCD780	N/A	0-2000
BOSCH	SG25MT	7.0	0-2500	SG25MT	7.0	0-2500

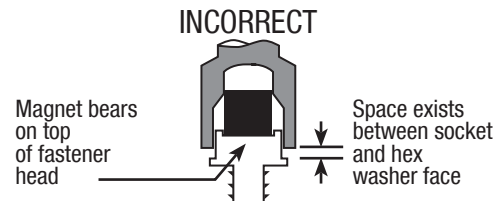
* For use in installing all self-drilling fasteners from #6 through #1/4 diameters. Tool speed as high as 2500 RPM can be used for #6 through #10 diameters in softer materials. Do not use 4000 RPM drywall guns.

**FOR PROPER APPLICATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED ON ANY POWDER COATED & PAINTED FASTENER.

2. Set the magnet in the driving socket to the proper depth. Socket must bear securely on the hex washer face of the fastener.



Magnet set to correct depth



Magnet set too shallow

3. Use depth sensing nosepiece on screw gun to allow proper seating of fastener. Do not overdrive. (See illustration)

	STEELBINDER® MAXX SELF DRILL®	HWH STEELBINDER® & KWIK-SEAL® II WOODBINDER®
CORRECT Sealing material slightly visible at edge of metal washer. Assembly is weather tight.		
UNDERDRIVEN Sealing material not compressed, Assembly loose.		
OVERDRIVEN Sealing material extruded beyond edge of washer. Washer deformed.		

4. Drive fastener perpendicular to surface.

STEELBINDER® MAXX SELF DRILL®		HWH STEELBINDER® & KWIK-SEAL® II WOODBINDER®	
CORRECT	INCORRECT	CORRECT	INCORRECT

5. Select extension cords with the correct wire size. See table below.

RECOMMENDED MINIMUM WIRE GAUGE* FOR EXTENSION CORDS

RATED AMPERES (TOOLS)	EXTENSION CORD LENGTH					
	25'	50'	75'	100'	150'	200'
Through 5	16	16	16	16	12	12
5.1 - 8.0	16	16	16	16	10	-
8.1 - 12.0	14	14	14	10	-	-
12.1 - 15.0	12	12	10	10	-	-



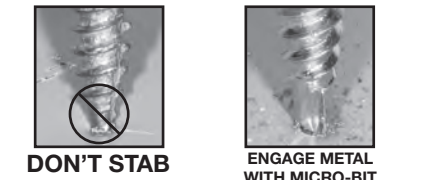

* Tool manufacturer's recommended size based upon limiting the line voltage drop to five volts at 150% of the rated amperes.

6. Do not force the fasteners. Apply only enough end pressure to allow drill point to cut efficiently.

PROPER TECHNIQUE IS KEY

Whether using a pierce-point or self-drilling fastener, proper techniques must be followed for efficient installation and optimum fastener function. Punching or stabbing fasteners through the metal panel is not proper technique! Nails are meant to be driven. Fasteners are designed to be set without impact.

Deviation from proper technique will adversely affect the fastener's corrosion resistance, its ability to seal, and structural engineering values such as shear strength, pull-out and pull-over. Improper installation technique negates any applicable warranties.

<h3>STEP 1</h3>	<h4>USE CORRECT TOOLS</h4>  <p>SOCKET BATTERY OR ELECTRIC</p>	<ul style="list-style-type: none"> The proper tool for installing self-piercing or self-drilling metal-to-wood fasteners is a corded electric screw gun or cordless battery drill, each 0-2000 RPM. They should be fitted with a depth sensing nose cone or a torque release clutch. A hex magnetic socket driver should be used that is clean of all metal shavings. A spring retainer socket may be used for non-magnetic fasteners. The use of an impact drill driver is strongly discouraged. The use of these drivers will damage the protective barrier coat paint system. They will invalidate published structural values due to the excessive torque applied. They can adversely affect the sealing performance of the washer & damage the metal panel.
<h3>STEP 2</h3>	<h4>SET PLACE DRILL</h4> 	<ul style="list-style-type: none"> Proper installation technique is important to maximize the micro-bit performance. Place the point of the fastener on the work surface & pull the trigger on the drill or screw gun. By slowly increasing the RPM, the drill point will begin the cutting process. This will eliminate any potential for screws "walking" on a panel & provide 100% installation success.
<h3>STEP 3</h3>	<h4>LET THE DRILL DO THE WORK</h4>  <p>DON'T STAB ENGAGE METAL WITH MICRO-BIT</p>	<h4>APPLY EVEN PRESSURE</h4> <ul style="list-style-type: none"> At no time, should an installer try to use the fastener as a "punch" to start the drilling process. This will cause the fastener to "walk" on the metal, possibly scratching the metal panel, or flipping out of the drill driver completely. The trigger should not be taped in the "on" position, as this may cause the fastener to rotate before it has been placed on the work surface. Let the drill point do the work. It will consistently cut the metal, ejecting small shavings, not long metal "pigtailes" as with sharp point screws.
<h3>STEP 4</h3>	<h4>SEAT WASHER PROPERLY</h4>  <p>CORRECT OVERDRIVEN UNDERDRIVEN</p>	<h4>VISUAL INSPECTION</h4> <ul style="list-style-type: none"> To prevent damage to the wood substrate, causing potential strip out of the fastener, the washer should be compressed, but not overdriven. It should be rounded evenly under the flange of the HWH. Driving the fastener perpendicular to the work service will allow this to happen. If the washer is overly flat, misshapen, or cut indicates the fastener has been over driven. If there is a gap between the washer & the flange of the HWH, this indicates an under driving condition.

EVOLUTION OF FASTENERS FOR WOOD FRAME CONSTRUCTION

In the early 1900's, "pole barns" became popular in the United States. The name arose from the use of telephone poles as the primary structural member. They were less expensive than conventional construction methods at the time, & they

could be erected quickly. Corrugated steel, developed in the 1800's, quickly became the cladding of choice for pole barns.



NAILS

Initially, the panels were attached to the wood substructure with nails. These nails were fitted with a lead washer. The nails were driven into the apex of the high rib of the corrugation because the lead washer did not provide good sealing qualities. The nails, being hammered into the panels were unsightly and difficult to install. Nails were eventually replaced by self-piercing fasteners.



SELF PIERCING FASTENERS

- Self-piercing fasteners are designed with a sharp point. The screw rotation helps the sharp point pierce the metal, allowing the threads to engage the metal panel & the wood.

- A rubber & metal washer combination will create a tight seal around the hole created. This allows the fastener to be installed in the flat of the metal panel instead of the high rib, creating a stronger connection.

- Fasteners do not require an impact to the head to be installed, unlike nails. This protects the paint finishes & corrosion resistant coatings on the metal panels & fasteners.

- Fasteners are installed with an electric screw gun or battery drill. They can be painted to match any panel color creating a more aesthetic appearance. These panels have evolved with high quality paint systems & finishes, & are no longer only used on pole barns.

- The primary complaint about self-piercing fasteners is the inconsistency of the drilling process. The points may not penetrate the steel panel quickly. This leads to a slow drill or no drill situation. The introduction of the WOODBINDER® Micro-Bit point resolves this issue.



SELF-DRILLING FASTENERS (NEW TECHNOLOGY)

- The Kwikseal® MB™ Woodbinder® combines metal to metal fastener point technology with ST Fastening Systems' unique deep crested thread design for maximum holding strength in all wood substrates.

- The Micro-Bit point acts as a drill bit, consistently drilling single or multiple thicknesses of high strength steel panels. It requires less end pressure to penetrate the metal & engage the wood.

- The Micro-Bit will eliminate the metal "pigtailes" commonly formed by self-piercing screws, which can embed themselves in the rubber washer, tearing the rubber. These can cause premature corrosion or a roof leak.

- The Micro-Bit creates small metal shavings that are ejected away from the fastener hole, which can easily be swept off the roof each day.



WWW.STFASTENING.COM

1-800-352-4864

FEATURES AND BENEFITS

- Fastener designed to attach metal roof and sidewall panels used in pre-engineered metal building applications.
- #12 Diameter 5/16" Cupped HWH self-drilling fastener easily penetrates steel up to .210" in thickness with no "point walking." 1/4" Stitch will securely fasten 2 layers of 26 GA with no strip-out.
- Cupped head & washer encapsulate EPDM rubber washer & provide a secure seal even when driven at an angle.

ALL UNPAINTED MAXX STEELBINDER[®] FASTENERS COME STANDARD WITH DURASEAL[®] PLUS ENHANCED CORROSION RESISTANCE COATING.

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

SIZE	CARTON QTY.	WEIGHT/M
12-14 x 3/4"	2500	11.3
12-14 x 1"	2500	13.2
12-14 x 1-1/4"	2500	14.8
12-14 x 1-1/2"	2000	15.5
12-14 x 2"	1500	18.8
12-14 x 2-1/2"	1500	24.6
12-14 x 3"	1000	26.6
1/4 X 7/8 " STITCH*	2500	13.4

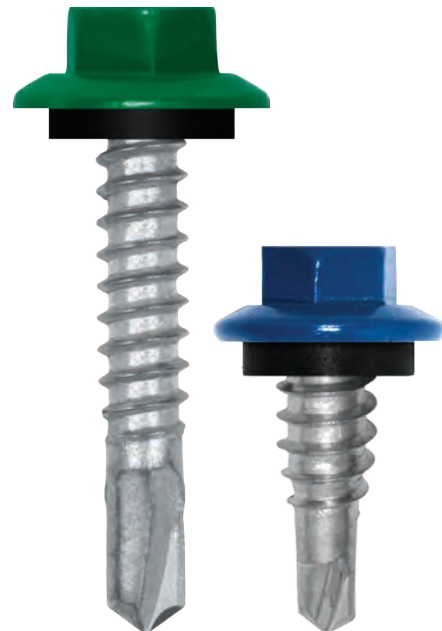
*CURRENT SIZES AVAILABLE WITH POWDER COATING

PULL OUT STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
HRS Primed Only #12	16	.060	927
HRS Primed Only #12	14	.075	958
HRS Primed Only #12	12	.105	1678
AZ55 Galvalume 1/4"	26	.018	342
AZ55 Galvalume 1/4"	24	.024	378
AZ55 Galvalume 1/4"	22	.030	418
AZ55 Galvalume 1/4"	18	.048	1038
G-90 Galvanized #12	20	.036	620
G-90 Galvanized #12	18	.048	729
G-90 Galvanized #12	16	.060	787
G-90 Galvanized #12	14	.075	1041
G-90 Galvanized #12	12	.105	1372

PULL OVER STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
AZ55 Galvalume #12	29	.014	687
AZ55 Galvalume #12	26	.018	1090
AZ55 Galvalume #12	24	.024	1299
AZ55 Galvalume #12	22	.030	1562
AZ55 Galvalume 1/4"	29	.014	746
AZ55 Galvalume 1/4"	26	.018	960
AZ55 Galvalume 1/4"	24	.024	1261
AZ55 Galvalume 1/4"	22	.030	1376

- NOTES**
1. HRS (Hot Rolled Steel)
 2. Pull over values calculated with EPDM rubber washer assembled to cupped head screw with .555" washer face.
 3. All strength values shown are ultimate values, expressed in LBS. Apply an appropriate safety factor to obtain design limits.

MAXX[™] SteelBinder[®]



HEAD STYLE
5/16" CHWH**

POINT DIAMETER
.181/.177
.156/.150 STITCH

MAJOR DIAMETER
.215/.209
.246/.240 STITCH

MINOR DIAMETER
.164/.157
.192/.185 STITCH

WASHER FACE DIAMETER
.560/.545
.560/.545 STITCH

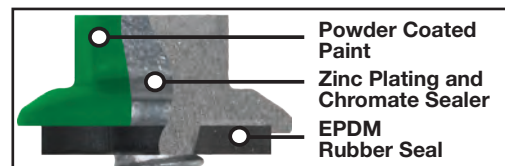
HEAD ACROSS FLATS
NOM .312"
NOM .312"

NOM. TENSILE STRENGTH
2900 LBS.
3800 LBS. STITCH

MIN. TORSIONAL STRENGTH
92 IN-LBS.
150 IN-LBS. STITCH

NOM. SHEAR STRENGTH
1962 LBS.
2850 LBS. STITCH

****CHWH-CUPPED HEX WASHER HEAD**



Cupped HWH head design improves Pull over strength versus standard HWH & Bonded Washer. ST Fastening Systems sockets are designed to allow for the added thickness of the powder coat.

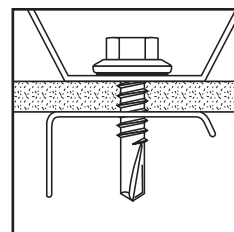


ST Magnetic Sockets are available for powder coated fasteners.

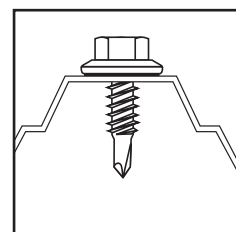


Drill point is designed to penetrate steel quickly with no "point walking"

APPLICATIONS



Purlin Screw



Stitch Screw



SELF DRILL POINT



ARCHITECTURAL
S E R I E S





FEATURES AND BENEFITS

- Fastener designed to attach long-life metal roof panels such as GALVALUME that are used in pre-engineered metal building applications.
- 5/16" Cupped HWH ZAMAC 5 Zinc-Aluminum Alloy provides lifetime protection against red rust on the head. The ZAMAC 5 alloy provides more strength than the more common ZAMAC. You may obtain a free copy of the written warranty upon request.
- Washer face design helps to capture rubber EPDM washer even when driven at an angle.
- #12 & 1/4" diameter drill point easily penetrates steel thickness up to .210" with no "point walking". 1/4" Diameter Stitch securely fastens 2 layers of 26 GA with no strip-out.
- Head & washer face are designed to maximize pull over strength.

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

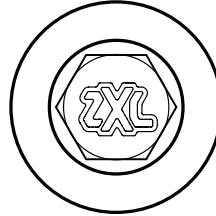
SIZE	CARTON QTY.	WEIGHT/M
12-14 x 1"	2000	16.9
12-14 x 1-1/4"	2000	18.8
12-14 x 1-1/2"	2000	22.0
12-14 x 2"	1500	23.1
12-14 x 3"	1000	31.0
1/4-14 x 1-1/4"	1500	24.1
14 x 7/8" Stitch	2000	17.2

PULL OUT STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
HRS Primed Only #12	16	.060	927
HRS Primed Only #12	14	.075	958
HRS Primed Only #12	12	.105	1678
AZ55 Galvalume 1/4"	26	.018	342
AZ55 Galvalume 1/4"	24	.024	378
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G-90 Galvanized #12	18	.048	729
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G-90 Galvanized #12	14	.075	1041
G-90 Galvanized #12	12	.105	1372

PULL OVER STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
AZ55 Galvalume #12	29	.014	803
AZ55 Galvalume #12	26	.018	1091
AZ55 Galvalume #12	24	.024	1393
AZ55 Galvalume #12	22	.030	2159
AZ55 Galvalume 1/4"	29	.014	813
AZ55 Galvalume 1/4"	26	.018	1436
AZ55 Galvalume 1/4"	24	.024	1601
AZ55 Galvalume 1/4"	22	.030	2037

- NOTES**
1. HRS (Hot Rolled Steel)
 2. Pull over values calculated with EPDM rubber washer assembled to cupped head screw with .630" washer face.
 3. All strength values shown are ultimate values, express in LBS. Apply an appropriate safety factor to obtain design limits.
 4. ** Nominal tensile strength value calculated at the point where the ZXL head breaks from the carbon steel body.

ZXL™ SteelBinder®



HEAD STYLE

5/16" CHWH**

POINT DIAMETER

.181/.177
.156/.150 STITCH

MAJOR DIAMETER

.215/.209
.246/.240 STITCH

MINOR DIAMETER

.164/.157
.192/.185 STITCH

WASHER FACE DIAMETER

.630
.630 STITCH

HEAD ACROSS FLATS

NOM .312"
NOM .312"

NOM. TENSILE STRENGTH

2240** LBS.
2240** LBS. STITCH

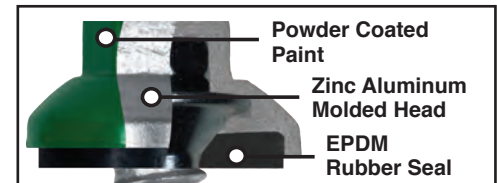
MIN. TORSIONAL STRENGTH

92 IN-LBS.
150 IN-LBS. STITCH

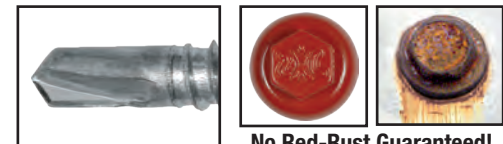
NOM. SHEAR STRENGTH

1962 LBS.
2850 LBS. STITCH

**CHWH-CUPPED HEX WASHER HEAD



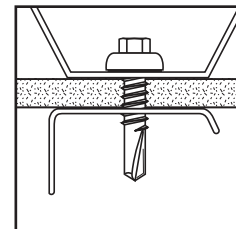
The Zinc-Aluminum alloy HWH prevents red rust from ever starting. ST Fastening Systems spring retainer sockets are recommended. ST Fastening Systems sockets are designed to allow for the added thickness of the powder coat.



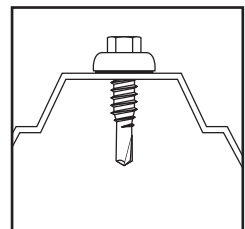
No Red-Rust Guaranteed!

Drill point is designed to penetrate steel quickly with no "point walking"

APPLICATIONS



Purlin Screw



Stitch Screw



SELF DRILL POINT



ARCHITECTURAL
S E R I E S



FEATURES AND BENEFITS

- Fastener lengths over 1-1/4" are designed to penetrate steel thickness up to .500".
- Thread to point ratio engineered to provide maximum pull out strength in heavy gauge steel.
- EPDM rubber is vulcanized to steel washer. Moisture has no place to penetrate. The washer provides a secure seal even when driven at an angle.
- Applications include metal deck to structural steel or bar joists, & retrofit clips to structural steel.
- Fastener is also available without a bonded sealing washer.

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

SIZE	CARTON QTY.	WEIGHT/M
12-24 x 1-1/4"	2500	12.6
12-24 x 1-1/2"	2000	16.2
12-24 x 2"	1500	22.1

LENGTHS LONGER THAN 2 INCHES ARE AVAILABLE BUT NON-STANDARD. CALL FOR PRICE AND AVAILABILITY.

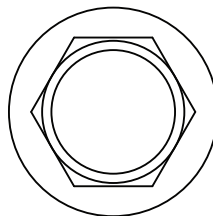
PULL OUT STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
HRS PRIMED ONLY	14	.075	924
HRS PRIMED ONLY	12	.105	1627
HRS PLATE	3/16"	.187	2556
HRS PLATE	1/4"	.250	3298

PULL OVER STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
AZ55 Galvalume BONDED WASHER (14mm O.D.)	26	.018	801
AZ55 Galvalume BONDED WASHER (14mm O.D.)	24	.024	996
AZ55 Galvalume BONDED WASHER (14mm O.D.)	22	.030	1258
AZ55 Galvalume (.398/.432 HWH DIA.)	26	.018	775
AZ55 Galvalume (.398/.432 HWH DIA.)	24	.024	956
AZ55 Galvalume (.398/.432 HWH DIA.)	22	.030	1078

NOTES:

1. HRS (Hot Rolled Steel)
2. All strength values shown are ultimate values, expressed in LBS. Apply an appropriate safety factor to obtain design limits.

HGTM SteelBinder[®]



HEAD STYLE

HWH

DRILL POINT

.199/.195

MAJOR DIAMETER

.215/.209

MINOR DIAMETER

.164 REF.

WASHER FACE DIAMETER

.432/.398

HEAD ACROSS FLATS

NOM .312"

NOM. TENSILE STRENGTH

2803 LBS.

MIN. TORSIONAL STRENGTH

100 IN-LBS.

NOM. SHEAR STRENGTH

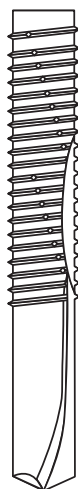
1999 LBS.



HWH with EPDM bonded washer provides a secure seal to prevent leaks.

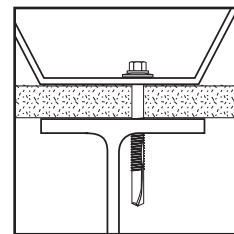


Sharp drill point & long flute length assures proper clearance of heavy gauge metal before any thread engagement begins.



LONG SELF
DRILL POINT

APPLICATIONS



TBPE
Board Certified
Engineering on Staff

ARCHITECTURAL
S E R I E S

ST
Fastening
Systems

WWW.STFASTENINGSYSTEMS.COM

FEATURES AND BENEFITS

- Fastener is designed to attach long-life metal roof panels such as GALVALUME to structural steel joists up to .500" thick.
- 5/16" Cupped HWH ZAMAC 5 Zinc-Aluminum Alloy provides lifetime protection against red rust on the head & washer face. The ZAMAC 5 alloy is stronger than the more common ZAMAC 3 alloy. A written warranty is available upon request.
- The head & washer face captures the rubber EPDM washer even when driven at an angle & are designed to maximize Pull over strength.
- For structural steel applications, a screwgun with RPM under 2000 is recommended for best performance.

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

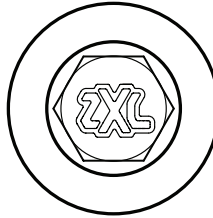
SIZE	CARTON QTY.	WEIGHT/M
12-24 x 1-1/4"	2000	25.8

PULL OUT STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
HRS PRIMED ONLY	14	.075	924
HRS PRIMED ONLY	12	.105	1627
HRS PLATE	3/16"	.187	2240
HRS PLATE	1/4"	.250	2240

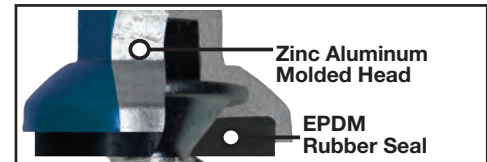
PULL OVER STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
AZ55 Galvalume	29	.014	637
AZ55 Galvalume	26	.018	1045
AZ55 Galvalume	24	.024	1303
AZ55 Galvalume	22	.030	1958

- NOTES**
- HRS (Hot Rolled Steel)
 - Pull over values calculated with EPDM rubber washer assembled to cupped head screw with .555" washer face.
 - All strength values shown are ultimate values, express in LBS. Apply an appropriate safety factor to obtain design limits.
 - ** The value tabulated is the force at which the ZXL head breaks from the carbon steel body.

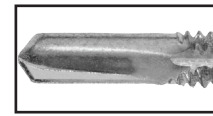
ZXL™ HG™ SteelBinder®



HEAD STYLE
5/16" CHWH
POINT DIAMETER
.199/.195
MAJOR DIAMETER
.215/.209
MINOR DIAMETER
.164 REF.
WASHER FACE DIAMETER
.630
HEAD ACROSS FLATS
NOM .312"
NOM. TENSILE STRENGTH
2240** LBS.
MIN. TORSIONAL STRENGTH
100 IN-LBS.
NOM. SHEAR STRENGTH
1999 LBS.



The Zinc-Aluminum alloy HWH prevents red rust from ever starting. ST Fastening Systems spring retainer sockets are recommended. ST Fastening Systems sockets are designed to allow for the added thickness of the powder coat.



Sharp drill point & long flute length assures proper clearance of heavy gauge metal before any thread engagement begins.

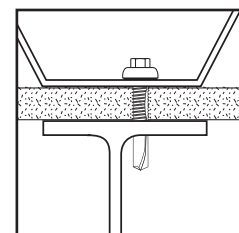


No Red-Rust Guaranteed!



SELF DRILL POINT

APPLICATIONS



FEATURES AND BENEFITS

- Truss Head with 6-lobe recess driver provides an aesthetic, low-profile appearance on sidewall metal applications installed into metal girts.
- Self-drilling point penetrates steel thickness up to .210".
- Undercut EPDM rubber washer provides a secure seal even when driven at an angle.
- T-30W driver is designed to fit securely into the 6-lobe recess to prevent bit "cam-out."

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

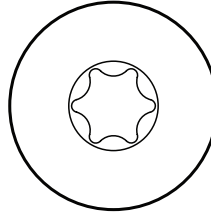
SIZE	CARTON QTY.	WEIGHT/M
12-14 x 3/4"	2500	10.7
12-14 x 1-1/4"	2500	14.1
1/4" - 14 x 7/8" STITCH	2500	13.0

PULL OUT STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
HRS Primed Only #12	16	.060	927
HRS Primed Only #12	14	.075	958
HRS Primed Only #12	12	.105	1678
AZ55 Galvalume 1/4"	26	.018	342
AZ55 Galvalume 1/4"	24	.024	378
AZ55 Galvalume 1/4"	22	.030	418
G-90 Galvanized 1/4"	18	.048	1038
G-90 Galvanized #12	20	.036	620
G-90 Galvanized 1/4"	18	.048	729
G-90 Galvanized #12	16	.060	787
G-90 Galvanized #12	14	.075	1041
G-90 Galvanized #12	12	.105	1372

PULL OVER STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
AZ55 Galvalume #12	29	.014	687
AZ55 Galvalume #12	26	.018	1090
AZ55 Galvalume #12	24	.024	1299
AZ55 Galvalume #12	22	.030	1562
AZ55 Galvalume 1/4"	29	.014	746
AZ55 Galvalume 1/4"	26	.018	960
AZ55 Galvalume 1/4"	24	.024	1261
AZ55 Galvalume 1/4"	22	.030	1376

- NOTES**
1. HRS (Hot Rolled Steel)
 2. Pull over values calculated with EPDM rubber washer assembled to cupped head screw with .544" washer face.
 3. All strength values shown are ultimate values, express in LBS. Apply an appropriate safety factor to obtain design limits.

ECLIPSE™ SteelBinder®



HEAD STYLE

TRUSS

POINT DIAMETER

.180/.175

.156/.150 STITCH

MAJOR DIAMETER

.215/.209

.246/.240 STITCH

MINOR DIAMETER

.164/.157

.192/.185 STITCH

WASHER FACE DIAMETER

.544 T-30 6-LOBE

TRUSS

.533/.551 6-LOBE

TRUSS

HEAD ACROSS FLATS

NOM .312"

NOM .312"

ULT. TENSILE STRENGTH

2900 LBS.

3800 LBS.

MIN. TORSIONAL STRENGTH

92 IN-LBS.

150 IN-LBS. STITCH

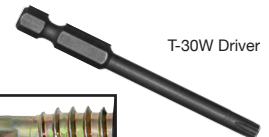
NOM. SHEAR STRENGTH

1962 LBS.

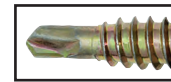
2850 LBS. STITCH



The Truss head is 50% lower than a standard HWH & provides a very aesthetic appearance.

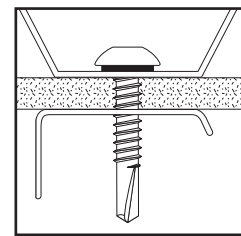


T-30W Driver

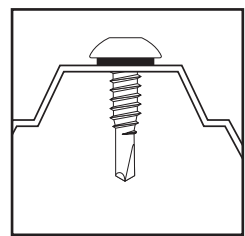


Drill point is designed to penetrate steel quickly with no "point walking"

APPLICATIONS



Purlin Screw



Stitch Screw



SELF DRILL POINT

TBPE
Board Certified
Engineering on Staff

ARCHITECTURAL
SERIES

ST
Fastening
Systems

WWW.STFASTENINGSYSTEMS.COM

FEATURES AND BENEFITS

- Self-drilling screws that are designed for general construction applications.
- Drill points are designed to penetrate a wide variety of metal thicknesses from thin sheet metal to 0.250".
- Applications include HVAC, roof deck to steel framing, and roof clips to steel framing.
- #10 and 1/4" HWH are available with or without a bonded sealing washer. The #12 HWH is available only without a sealing washer. The #12 MAXX™ Steelbinder fastener is available for applications requiring a washer.

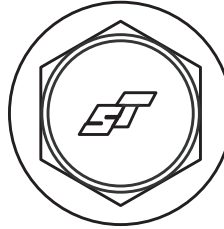
PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

SIZE	CARTON QTY.	WEIGHT/M
8-18 x 1/2"	10000	3.6
8-18 x 5/8" w/Nibbs	10000	4.0
10-16 x 5/8"	5000	5.7
10-16 x 3/4"	2500	6.3
10-16 x 1"	2500	7.6
12-14 x 3/4"	2500	8.4
12-14 x 1"	2500	10.0
12-14 x 1-1/4"	2500	11.8
12-14 x 1-1/2"	2000	13.3
12-14 x 2"	1500	16.7
12-14 x 2-1/2"	1500	21.4
12-14 x 3"	1000	25.0
1/4-14 x 7/8" Stitch	2500	8.8
1/4-14 x 3/4"	2500	12.5
1/4-14 x 1"	2500	15.2
1/4-14 x 1-1/4"	2000	17.5
1/4-14 x 1-1/2"	1500	19.6
1/4-14 x 2"	1000	23.8
1/4-14 x 2-1/2"	1000	30.0
1/4-14 x 3"	1000	33.2
1/4-14 x 4"	500	41.9
1/4-14 x 5"	500	50.7
1/4-14 x 6"	250	53.0

NOTES

1. HRS (Hot Rolled Steel)
2. All strength values shown are ultimate values, express in LBS. Apply an appropriate safety factor to obtain design limits.

HWH SteelBinder®



HEAD STYLE

1/4" HWH

5/16" HWH

3/8" HWH

POINT DIAMETER

#1/4-14 - .216/.210

#12-14 - .180/.175

#1/4-14 - .216/.210

MAJOR DIAMETER

#1/4-14 - .246/.240

#12-14 - .215/.209

#1/4-14 - .246/.240

MINOR DIAMETER

#1/4-14 - .192/.185

#12-14 - .164/.157

#1/4-14 - .192/.185

WASHER FACE DIAMETER

#1/4-14 - .520/.480

#12-14 - .432/.398

#1/4-14 - .432/.398

HEAD ACROSS FLATS

#1/4-14 - NOM .375"

#12-14 - NOM .312"

#1/4-14 - NOM .312"

ULT. TENSILE STRENGTH

#1/4-14 - 3697 LBS.

#12-14 - 2900 LBS.

#1/4-14 - 3697 LBS.

MIN. TORSIONAL STRENGTH

#1/4-14 - 150 IN-LBS.

#12-14 - 92 IN-LBS.

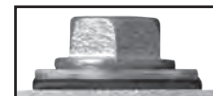
#1/4-14 - 150 IN-LBS.

NOM. SHEAR STRENGTH

#1/4-14 - 2682 LBS.

#12-14 - 1962 LBS.

#1/4-14 - 2682 LBS.



HWH head design improves Pull over strength versus standard HWH & Bonded Washer. ST Fastening Systems sockets are designed to allow for the added thickness of the powder coat.

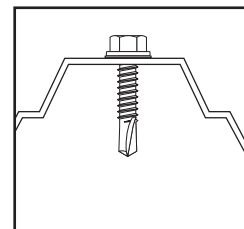
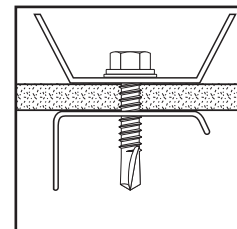


Drill point is designed to penetrate steel quickly with no "point walking".



SELF DRILL POINT

APPLICATIONS





PULL OUT STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
HRS Primed Only #1/4-14(3/8" AF)	16	0.065	986
HRS Primed Only #1/4-14(3/8" AF)	14	.070	1070
HRS Primed Only #1/4-14(3/8" AF)	12	.106	2003
HRS Primed Only #12-14(5/16" AF)	16	.065	927
HRS Primed Only #12-14(5/16" AF)	14	.070	958
HRS Primed Only #12-14(5/16" AF)	12	.106	1678
AZ55 Galvalume #1/4-14(3/8" AF)	22	.031	489
AZ55 Galvalume #1/4-14(5/16" AF)	18	.047	1038
AZ55 Galvalume #1/4-14(5/16" AF)	22	.031	418
AZ55 Galvalume #1/4-14(5/16" AF)	24	.024	378
AZ55 Galvalume #1/4-14(5/16" AF)	26	.019	342
G-90 Galvanized #1/4-14 (3/8" AF)	18	.047	868
G-90 Galvanized #1/4-14 (3/8" AF)	16	.06	890
G-90 Galvanized #1/4-14 (3/8" AF)	14	.072	1107
G-90 Galvanized #1/4-14 (3/8" AF)	12	.101	1327
G-90 Galvanized #12-14 (5/16" AF)	18	.047	729
G-90 Galvanized #12-14 (5/16" AF)	16	.060	787
G-90 Galvanized #12-14 (5/16" AF)	14	.072	1041
G-90 Galvanized #12-14 (5/16" AF)	12	.101	1372
G-90 Galvanized #1/4-14 (5/16" AF)	20	.038	620

PULL OVER STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
#1/4-14 (3/8" AF) BONDED WASHER (16mm) AZ55 Galvalume	26	.019	1001
#1/4-14 (3/8" AF) BONDED WASHER (16mm) AZ55 Galvalume	24	.024	1206
#1/4-14 (3/8" AF) BONDED WASHER (16mm) AZ55 Galvalume	22	.032	1649
#1/4-14 (3/8" AF) (.480/.520 HWH DIA) AZ55 Galvalume	26	.019	878
#1/4-14 (3/8" AF) (.480/.520 HWH DIA) AZ55 Galvalume	24	.024	1160
#1/4-14 (3/8" AF) (.480/.520 HWH DIA) AZ55 Galvalume	22	.032	1503
#12-14 (5/16" AF) BONDED WASHER (14mm) AZ55 Galvalume	26	.019	780
#12-14 (5/16" AF) BONDED WASHER (14mm) AZ55 Galvalume	24	.024	1078
#12-14 (5/16" AF) BONDED WASHER (14mm) AZ55 Galvalume	22	.032	1355
#12-14 (5/16" AF) BONDED WASHER (14mm) AZ55 Galvalume	20	.038	1608
#12-14 (5/16" AF) (.392/.432 HWH DIA) AZ55 Galvalume	26	.019	722
#12-14 (5/16" AF) (.392/.432 HWH DIA) AZ55 Galvalume	24	.024	1046
#12-14 (5/16" AF) (.392/.432 HWH DIA) AZ55 Galvalume	22	.032	1197
#12-14 (5/16" AF) (.392/.432 HWH DIA) G-90 GALVANIZED	20	.038	1419
#1/4-14 (5/16" AF) STITCH BONDED WASHER (14mm) AZ55 Galvalume	26	.019	892
#1/4-14 (5/16" AF) STITCH BONDED WASHER (14mm) AZ55 Galvalume	24	.024	1076
#1/4-14 (5/16" AF) STITCH BONDED WASHER (14mm) AZ55 Galvalume	22	.032	1243
#1/4-14 (5/16" AF) STITCH BONDED WASHER (14mm) G-90 GALVANIZED	20	.038	1916
#1/4-14 (5/16" AF) STITCH (.398/.432 HWH DIA) AZ55 Galvalume	26	.019	722
#1/4-14 (5/16" AF) STITCH (.398/.432 HWH DIA) AZ55 Galvalume	24	.024	990
#1/4-14 (5/16" AF) STITCH (.398/.432 HWH DIA) AZ55 Galvalume	22	.032	1088
#1/4-14 (5/16" AF) STITCH (.398/.432 HWH DIA) G-90 GALVANIZED	20	.038	1825

FEATURES AND BENEFITS

- Tapping screws that are designed to be used in wood or light gauge metal in a pre-drilled hole. See Fastener Selection Guide on page 1 for proper drill bit sizes.
- Screws can be used as replacements for nails or screws that have loosened from wood or steel.
- 3/8" HWH with EPDM bonded sealing washer provides maximum pull over strength in high wind uplift applications.
- EPDM rubber & HH with EPDM bonded sealing is vulcanized to a steel washer to form an excellent seal & will cover any existing hole to prevent leaks from re-occurring.
- Screws are available in carbon steel with mechanical zinc plating.

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

SIZE	CARTON QTY.	WEIGHT/M
17 X 3/4"	2000	14.0
17 X 1"	2000	18.0
17 X 1 1/4"	2000	22.0
17 X 1 1/2"	1500	25.9

PULL OUT STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
HRS Primed Only 17-14 HH	16	.060	1409
G-90 GALVANIZED 17-14 HH	18	.048	1119

PULL OVER STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
AZ55 Galvalume 17-14 HH	29	.014	556
AZ55 Galvalume 17-14 HH	26	.018	890
AZ55 Galvalume 17-14 HH	24	.024	1197
AZ55 Galvalume 17-14 HH	22	.030	1290

TAPPING SteelBinder®



POINT STYLE

TYPE AB

HEAD STYLE

3/8" HH

DRILL POINT (DIA)

45° SHARP

MAJOR DIAMETER

.280/.273

MINOR DIAMETER

NOM .220"

HEAD ACROSS FLATS

NOM .375"

NOM.TENSILE STRENGTH

5160 LBS.

MIN. TORSIONAL

STRENGTH

220 MIN.

NOM. SHEAR STRENGTH

3952 LBS.



FEATURES AND BENEFITS

- Type AB fasteners are designed to attach long-life roof panels such as GALVALUME that are used in pre-engineered metal building application. Type A fasteners are designed for use in wood framed buildings.
- Fasteners are also used in retrofit applications in which existing screws have stripped/backed out & need to be replaced with a larger diameter.
- 5/16" Cupped HWH ZAMAC 5 Zinc-Aluminum Alloy provides lifetime protection against red rust on the head & washer face. The ZAMAC 5 alloy is stronger than the more common ZAMAC 3 alloy. A written warranty is available upon request.
- The head & washer face captures the rubber EPDM washer even when driven at an angle & are designed to maximize Pull over strength.

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

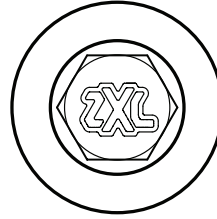
SIZE	CARTON QTY.	WEIGHT/M
1/4-14 x 3/4" AB	2000	18.2
1/4-14 x 1" AB	2000	19.6
1/4-14 x 1-1/4" AB	2000	21.0
17-14 x 1" AB	1500	23.0

PULL OUT STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
HRS PRIME ONLY 1/4-14	16	.060	1181
HRS PRIME ONLY 1/4-14	14	.075	1265
HRS PRIME ONLY 1/4-14	12	.105	2143
G-90 GALVANIZED 1/4-14	18	.048	1055
G-90 GALVANIZED 1/4-14	16	.060	1073
G-90 GALVANIZED 1/4-14	14	.075	1396
G-90 GALVANIZED 1/4-14	12	.105	1774
HRS PRIME ONLY 17-14	16	.060	1409
HRS PRIME ONLY 17-14	14	.075	1429
HRS PRIME ONLY 17-14	12	.105	2128
G-90 GALVANIZED 17-14	18	.048	1119

PULL OVER STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
1/4-14 ZXL (.630 DIA)	29	.014	886
1/4-14 ZXL (.630 DIA)	26	.018	1287
1/4-14 ZXL (.630 DIA)	24	.024	1572
1/4-14 ZXL (.630 DIA)	22	.030	2029
17-14 ZXL (.630 DIA)	29	.014	696
17-14 ZXL (.630 DIA)	26	.018	1101
17-14 ZXL (.630 DIA)	24	.024	1205
17-14 ZXL (.630 DIA)	22	.030	1446

- NOTES**
1. HRS (Hot Rolled Steel)
 2. Pull over values calculated with EPDM rubber washer assembled to cupped head screw with .630" washer face.
 3. All strength values shown are ultimate values, express in LBS. Apply an appropriate safety factor to obtain design limits.
 4. ** The value tabulated is the force at which the ZXL head breaks from the carbon steel body.

ZXL™ TAPPING SteelBinder®



HEAD STYLE

5/16" CHWH AB

DRILL POINT

30° SHARP POINT

45° SHARP POINT

MAJOR DIAMETER

.246/.240

.282/.273

MINOR DIAMETER

.192/.185

.220 NOM.

WASHER FACE DIAMETER

.630

.630

HEAD ACROSS FLATS

NOM .312"

NOM .312"

ULT. TENSILE STRENGTH

2240 LBS.

2240 LBS.

MIN. TORSIONAL STRENGTH

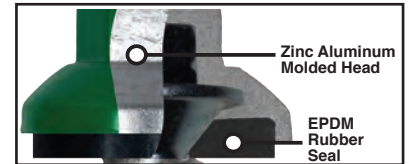
150 IN-LBS.

220 NOM.

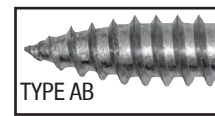
NOM. SHEAR STRENGTH

2850 LBS.

3952 LBS.



The Zinc-Aluminum alloy HWH prevents red rust from ever starting. ST Fastening Systems spring retainer sockets are recommended. ST Fastening Systems sockets are designed to allow for the added thickness of the powder coat.



TYPE AB

The AB thread form is designed to provide maximum pull out strength in steel in a pre-drilled hole.



No Red-Rust Guaranteed!



SHARP POINT



ARCHITECTURAL
S E R I E S





FEATURES AND BENEFITS

MB™ New Micro-Bit™ Engineering

- Fastener designed to attach steel roofing & siding used in post-frame & residential metal roofing applications.
- Threads transition from fine to coarse to generate superior holding strength in various wood substrates.
- Micro-Bit™ point reduces metal shavings that can embed themselves in the rubber washer.
- EPDM rubber is vulcanized to a steel washer to form an excellent seal even when driven at an angle.

ALL UNPAINTED WOODBINDER MB FASTENERS COME STANDARD WITH DURASEAL® PLUS ENHANCED CORROSION RESISTANCE COATING

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

SIZE	CARTON QTY.	WEIGHT/M
10 x 1"	3000	7.8
10 x 1 1/2"	2500	9.9
10 x 2"	2000	12.2
10 x 2 1/2"	1500	14.3
10 x 3"	1000	16.3
12 x 3/4" Stitch	2500	8.8

PULL OUT STRENGTH LBS. ULT.			
SUBSTRATE	PENETRATION	10-16/8 VALUE	STITCH VALUE
3/4" PLY	FULL	636	N/A
5/8" PLY	FULL	441	N/A
5/8" PLY	1/2"	N/A	297
1/2" PLY	FULL	368	N/A
1/2" PLY	1/2"	N/A	329
7/16" OSB	FULL	210	N/A
7/16" OSB	1/2"	N/A	217
2 X Y. PINE*	1"	713	N/A
2 X Y. PINE*	1 1/2"	1526	N/A
2 X Y. PINE*	1/2"	N/A	495
2 X SPF*	1"	466	N/A
2 X SPF*	1 1/2"	1216	N/A
2 X SPF*	1/2"	N/A	162

* Y.PINE (Yellow Pine) * SPF (Spruce Pine Fir)

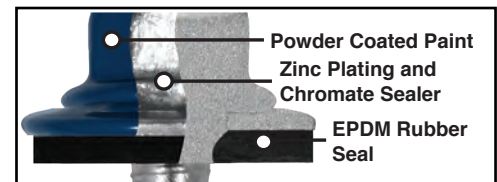
PULL OVER STRENGTH LBS. ULT.				
SUBSTRATE	GAUGE	THICKNESS	10-16/8 VALUE	STITCH VALUE
AZ55 Galvalume*	29	.014	378	378
AZ55 Galvalume*	26	.018	629	629
AZ55 Galvalume*	24	.024	721	721

- NOTES**
1. *w/ 12mm bonded washer
 2. All strength values shown are ultimate values, express in LBS. Apply an appropriate safety factor to obtain design limits.

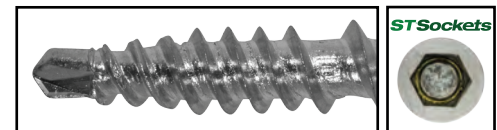
KWIKSEAL® MB™ WoodBinder®



HEAD STYLE
1/4" HWH
DRILL POINT
MICRO-BIT™
MAJOR DIAMETER
.205/.191
.215/.209 STITCH
MINOR DIAMETER
.121/.116
.160/.153 STITCH
WASHER/HEAD DIAMETER
.348/.322
.348/.322 STITCH
HEAD ACROSS FLATS
NOM .250
NOM .250 STITCH
ULT. TENSILE STRENGTH
1904 LBS.
2900 LBS. STITCH
MIN. TORSIONAL STRENGTH
56 IN.-LBS.
88 IN.-LBS. STITCH
NOM. SHEAR STRENGTH
1547 LBS.
1962 LBS. STITCH



Hex Washer Head with EPDM rubber washer provides a watertight seal on roof applications. ST Fastening Systems sockets are designed to allow for the added thickness of the powder coat.

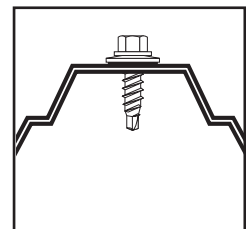
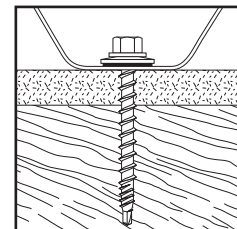


The combination of the Micro-Bit point & transition thread from fine to coarse generates superior drill speed in metal & holding strength in wood substrates.



Available for powder coated fasteners.

APPLICATIONS



ARCHITECTURAL
S E R I E S

MB™
Micro-Bit™
Patent Pending

ST
Fastening
Systems



FEATURES AND BENEFITS

MB™ New Micro-Bit™ Engineering

- Designed to fasten steel roofing to wood purlins used in post-frame construction, plywood or OSB used in residential construction.
- 5/16" cupped HWH with a molded ZAMAC 5 Zinc-Aluminum alloy provides lifetime protection against red rust on the head & washer. The ZAMAC 5 alloy provides more strength than more common ZAMAC 3 alloy. You may obtain a free copy of the written warranty upon request.
- ZXL™ is an excellent choice for GALVALUME & other long-life metal roof panels.
- Threads transition from fine to coarse to generate superior holding strength in various wood substrates.
- Micro-Bit™ point reduces metal shavings that can embed themselves in the rubber washer.

ALL UNPAINTED WOODBINDER MB FASTENERS COME STANDARD WITH DURASEAL® PLUS ENHANCED CORROSION RESISTANCE COATING

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

SIZE	CARTON QTY.	WEIGHT/M
10 x 1"	3000	12.7
10 x 1 1/2"	2500	14.7
10 x 2"	2000	17.0
10 x 2 1/2"	1500	19.2
10 x 3"	1000	21.0
12 x 3/4" Stitch	2500	9.0

PULL OUT STRENGTH LBS. ULT.			
SUB-STRATE	PENETRATION	10-16/8 VALUE	STITCH VALUE
3/4" PLY	FULL	636	N/A
5/8" PLY	FULL	441	N/A
5/8" PLY	1/2"	N/A	297
1/2" PLY	FULL	368	N/A
1/2" PLY	1/2"	N/A	329
7/16" OSB	FULL	210	N/A
7/16" OSB	1/2"	N/A	217
2 X Y. PINE	1"	713	N/A
2 X Y. PINE	1/2"	N/A	495
2 X Y. PINE	1 1/2"	1526	N/A
2 X SPF	1"	466	N/A
2 X SPF	1/2"	N/A	162
2 X SPF	1 1/2"	1216	N/A

PULL OVER STRENGTH LBS. ULT.				
SUBSTRATE	GAUGE	THICKNESS	10-16/8 VALUE	STITCH VALUE
AZ55 Galvalume	29	.014	658	658
AZ55 Galvalume	26	.018	927	927
AZ55 Galvalume	24	.024	1035	1035
AZ55 Galvalume	22	.030	1386	1386

- NOTES
- **CHWH-Cupped Hex Washer Head.
 - *** Tabulated value is the force at which the ZXL head breaks from the carbon steel body.
 - All strength values shown are ultimate values, express in LBS. Apply an appropriate safety factor to obtain design limits.

ZXL™ MB™ WoodBinder®



HEAD STYLE
5/16" CHWH**

DRILL POINT
MICRO-BIT™

MAJOR DIAMETER

.205/.191

.215/.209 STITCH

MINOR DIAMETER

.121/.116

.160/.153 STITCH

WASHER/HEAD DIAMETER

.500"

.500" STITCH

HEAD ACROSS FLATS

NOM .312"

NOM .312" STITCH

ULT. TENSILE STRENGTH

1585*** LBS.

2900 LBS.* STITCH

MIN. TORSIONAL STRENGTH

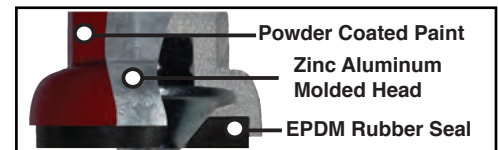
60 IN.-LBS.

88 IN.-LBS. STITCH

NOM. SHEAR STRENGTH

1574 LBS.

1962 LBS. STITCH



The Zinc-Aluminum alloy HWH prevents red rust from ever starting. ST Fastening Systems spring retainer sockets are designed to allow for the added thickness of the powder coat and are recommended.

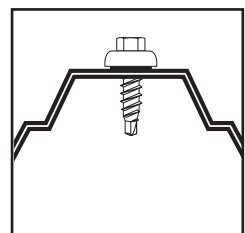
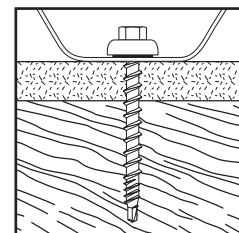


The combination of the Micro-Bit point & transition thread from fine to coarse generates superior drill speed in metal & holding strength in wood substrates.

No Red-Rust Guaranteed!



APPLICATIONS



ROLLING CHANGE
The new Micro-Bit will completely replace the Type 17 sharp point as current inventories are depleted. Sizes listed in GREEN will continue to be sharp points, as inventory levels of those turn over at a slower rate.

ARCHITECTURAL
S E R I E S



FEATURES AND BENEFITS

MB[™] New Micro-Bit Engineering

- Next generation stainless steel Micro-Bit screw.
- Proprietary raw material & work hardening during the wire drawing & thread rolling process provides a hardened drill point.
- Drill point will penetrate 24 gauge high tensile steel quickly with no point walking.
- Cupped Head design provides an attractive finished appearance. There is no dissimilar aluminum washer assembled to the screw. It can be used in all treated wood substrates.
- Micro-Bit point reduces metal shavings that can embed themselves in the rubber washer.

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

SIZE	CARTON QTY.	WEIGHT/M
10 x 1"	3000	8.0
10 x 1 1/2"	2500	10.1
10 x 2"	2000	12.2
10 x 2 1/2"	1500	15.4
10 x 3"	1000	17.2

NOTES: All strength values shown below are ultimate values, expressed in LBS. Apply an appropriate safety factor to obtain design limits.

PULL OUT STRENGTH LBS. ULT.		
SUBSTRATE	PENETRATION	VALUE
3/4" PLY	FULL	606
5/8" PLY	FULL	460
1/2" PLY	FULL	302
7/16" OSB	FULL	198
2X Y.PINE	1"	771
2X Y.PINE	1 1/2"	1100
2X SYF	1"	660/900
2X SYF	1 1/2"	1286

PULL OVER STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
AZ55 Galvallume	28	.014	629
AZ55 Galvallume	26	.018	802

HSS MB WoodBinder[®]

Stainless Steel



DRILL POINT

Micro-Bit[™]

MAJOR DIAMETER

.189/.183

MINOR DIAMETER

.122

WASHER FACE DIAMETER

.465/.433

HEAD ACROSS FLATS

NOM 0.250"

ULT. TENSILE STRENGTH

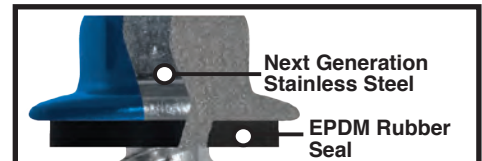
2700 LBS.

MIN. TORSIONAL STRENGTH

56 IN-LBS.

NOM. SHEAR STRENGTH

2480 LBS.



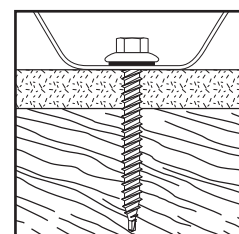
"Cutting" Edge Technology



MB[™]
Micro-Bit
Patent Pending



APPLICATIONS



ST[®]
Fastening
Systems

FEATURES AND BENEFITS

- 304 Stainless Steel cupped head & washer provide lifetime protection in the harshest environments. You may obtain a free copy of the written warranty upon request.
- 304 SS[™] Woodbinder[®] is an excellent choice for use in animal confinement applications or for aluminum liner panel applications.
- Type A point necessitates a pre-drilled hole in steel, but not aluminum.

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

PULLOUT & PULOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

SIZE	CARTON QTY.	WEIGHT/M
10 x 1"	3000	9.0
10 x 1 1/2"	2500	11.9
10 x 2"	2000	14.0

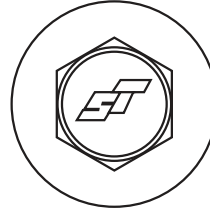
PULL OUT STRENGTH LBS. ULT.		
SUBSTRATE	PENETRATION	VALUE
3/4" PLY	FULL	616
5/8" PLY	FULL	473
1/2" PLY	FULL	283
7/16" OSB	FULL	208
2 X Y. PINE*	1"	802
2 X Y. PINE*	1 1/2"	1176
2 X SPF*	1"	678
2 X SPF*	1 1/2"	913

* Y.PINE (Yellow Pine) * SPF (Spruce Pine Fir)

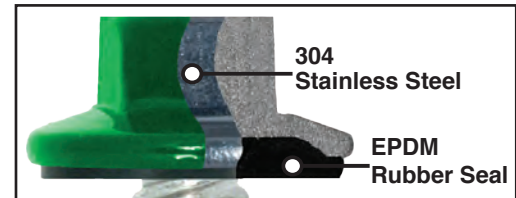
PULL OVER STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
304 SS Type A (EPDM)	29	.014	683
304 SS Type A (EPDM)	26	.018	870

NOTES 1. All strength values shown are ultimate values, express in LBS. Apply an appropriate safety factor to obtain design limits.

SS[™] WoodBinder[®]



HEAD STYLE
1/4" CHWH
POINT DIAMETER
30 ° SHARP POINT T-A
MAJOR DIAMETER
.183/.189
MINOR DIAMETER
.126/.132
WASHER FACE DIAMETER
.500
HEAD ACROSS FLATS
NOM .250"
ULT. TENSILE STRENGTH
1135 LBS.
MIN. TORSIONAL STRENGTH
48 IN-LBS.
NOM. SHEAR STRENGTH
1034 LBS.

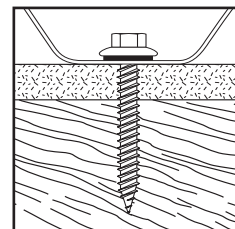


The Type A point will tap a predrilled hole in steel but will self-drill through aluminum liner panels.



SHARP POINT

APPLICATIONS





FEATURES AND BENEFITS

MB™ New Micro-Bit Engineering

- Designed as an alternative to the zinc-aluminum alloy head. It is also used to attach steel roofing used in post-frame & residential construction. The smaller cupped HWH provides an attractive low-profile appearance versus larger HWH fasteners.
- 304 Stainless Steel cap provides lifetime warranty against red rust on the head & washer. You may obtain a free copy of the written warranty upon request.
- ST-XL™ is an excellent choice for GALVALUME or other long-life metal roofs.
- The combination of a Micro-Bit™ drills 29 & 26 gauge consistently & eliminates the metal shavings that can embed themselves in the EPDM rubber washer.

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

SIZE	CARTON QTY.	WEIGHT/M
9 x 1"	3000	9.0
9 x 1 1/2"	2500	11.9
9 x 2"	2000	14.0
9 x 2 1/2"	1500	16.0
9 x 3"	1000	18.4
12 x 3/4" Stitch	2500	16.0

ROLLING CHANGE

The new Micro-Bit will completely replace the Type 17 sharp point as current inventories are depleted. Sizes listed in GREEN will continue to be sharp points, as inventory levels of those turn over at a slower rate.

PULL OUT STRENGTH LBS. ULT.			
SUB-STRATE	PENETRATION	VALUE	STITCH VALUE
3/4" PLY	FULL	688	N/A
3/4" PLY	1/2"	N/A	260
5/8" PLY	FULL	384	N/A
5/8" PLY	1/2"	N/A	233
1/2" PLY	FULL	242	N/A
1/2" PLY	1/2"	N/A	202
7/16" OSB	FULL	224	N/A
7/16" OSB	1/2"	N/A	164
2 X Y. PINE*	1"	852	N/A
2 X Y. PINE*	1 1/2"	1030	N/A
2 X Y. PINE*	1/2"	N/A	331
2 X SPF*	1"	604	N/A
2 X SPF*	1 1/2"	855	N/A
2 X SPF*	1/2"	N/A	237

PULL OVER STRENGTH LBS. ULT.				
SUBSTRATE	GAUGE	THICKNESS	VALUE	STITCH VALUE
AZ55 Galvalume	26	.018	726	629
AZ55 Galvalume	29	.014	573	378
AZ55 Galvalume	24	.024	869	721
Aluminum	21	.028	380	N/A

NOTES 1. All strength values shown are ultimate values, express in LBS. Apply an appropriate safety factor to obtain design limits.

ST-XL™ MB™ WoodBinder®

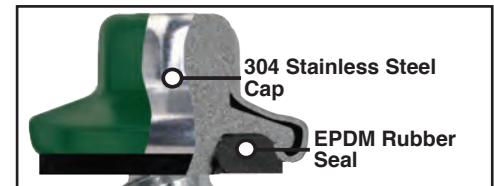


HEAD STYLE
1/4" CHWH*
DRILL POINT
MICRO-BIT™
TYPE 17 STITCH
MAJOR DIAMETER
.181/.178
MINOR DIAMETER
.215/.209 STITCH
.133/.127
.164/.157 STITCH
WASHER FACE DIAMETER
.500
.500 STITCH
HEAD ACROSS FLATS
NOM .250"
NOM .250" STITCH
ULT. TENSILE STRENGTH
2100 LBS.
2900 LBS. STITCH
MIN. TORSIONAL STRENGTH
48 IN-LBS.
88 IN-LBS. STITCH
NOM. SHEAR STRENGTH
1800 LBS.
1962 LBS. STITCH

*CHWH-Cupped Hex Washer Head



MB™
Micro-Bit™
Patent Pending

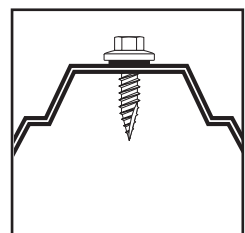
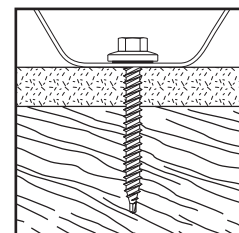


ST-XL has a 304 SS Cap on the head and washer. It will never red rust. Cupped head design provides low profile appearance.



Micro-Bit™ point is fully threaded to the end and is designed for the quickest penetration through light gauge steel panels.

APPLICATIONS



ST
Fastening
Systems

FEATURES AND BENEFITS

MB[™] New Micro-Bit Engineering

- Round head with 6-lobe recess driver provides an aesthetic, low-profile appearance on side wall metal applications installed into wood girts.
- Micro-Bit point reduces metal shavings that can embed themselves in the rubber washer.
- Undercut EPDM rubber washer provides a secure seal even when driven at an angle.
- T-25-W driver specially designed to fit securely in the 6-lobe recess with no cam-out or paint damage.

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

SIZE	CARTON QTY.	WEIGHT/M
10 x 1"	3000	8.0
10 x 1 1/2"	2500	10.1
10 x 2"	2000	12.2
10 x 2 1/2"	1500	15.4
10 x 3"	1000	17.2

ROLLING CHANGE

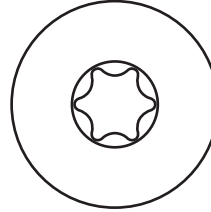
The new Micro-Bit will completely replace the Type 17 sharp point as current inventories are depleted. Sizes listed in GREEN will continue to be sharp points, as inventory levels of those turn over at a slower rate.

PULL OUT STRENGTH LBS. ULT.		
SUBSTRATE	PENETRATION	VALUE
3/4" PLY	FULL	536
5/8" PLY	FULL	420
1/2" PLY	FULL	379
7/16" OSB	FULL	190
2 X Y. PINE*	1"	929
2 X SPF*	1"	640

* Y.PINE (Yellow Pine) * SPF (Spruce Pine Fir)

PULL OVER STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
AZ55 Galvalume	29	.014	688
AZ55 Galvalume	26	.018	879

ECLIPSE[™] MB[™] WoodBinder[®]



HEAD STYLE
TRUSS
DRILL POINT
MICRO-BIT[™]
MAJOR DIAMETER
.206/.200
MINOR DIAMETER
.126/.122
WASHER/HEAD DIAMETER
.500
HEAD ACROSS FLATS
N/A
ULT. TENSILE STRENGTH
2023 LBS.
MIN. TORSIONAL STRENGTH
75 IN-LBS.
NOM. SHEAR STRENGTH
1653 LBS.



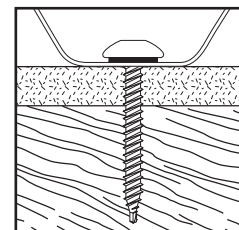
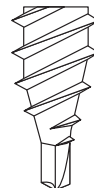
The Truss head is 50% lower than a standard HWH & provides a very aesthetic appearance.



The Micro-Bit point consistently drills 29 & 26 gauge hi-tensile steel with no "point walking."



APPLICATIONS



MB[™]
Micro-Bit
Patent Pending



FEATURES AND BENEFITS

- Designed to be used as a "rescue screw". This fastener will replace nails or smaller diameter fasteners that have loosened & backed out of steel roofing over time.
- 5/16" HWH with bonded sealing washer will completely cover existing hole, even if elongated by movement in the metal roof.
- Type 17 point will help clean the existing hole so that oversized threads can tap & generate maximum holding strength.
- EPDM rubber is vulcanized to the steel washer to prevent delamination & form an excellent seal even when driven at an angle.

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

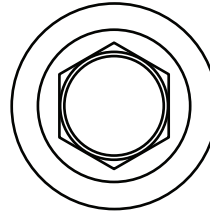
SIZE	CARTON QTY.	WEIGHT/M
14 x 1"	2000	13.0
14 x 1 1/4"	2000	15.7
14 x 1-1/2"	1500	17.7
14 x 2"	1500	22.3
14 x 2 1/2"	1000	26.7

PULL OUT STRENGTH LBS. ULT.		
SUBSTRATE	PENETRATION	VALUE
HRS Primed Only	.060	800
HRS Primed Only	.075	1250
HRS Primed Only	.105	2017
3/4" PLY	FULL	723
5/8" PLY	FULL	487
1/2" PLY	FULL	391
7/16" OSB	FULL	227
2 X Y. PINE*	1"	856
2 X Y. PINE*	1 1/2"	1669
2 X SPF*	1"	594
2 X SPF*	1 1/2"	1235

PULL OVER STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
AZ55 Galvalume BONDED WASHER (14mm)	29	.014	495
AZ55 Galvalume BONDED WASHER (14mm)	26	.018	780
AZ55 Galvalume BONDED WASHER (14mm)	24	.024	1078
AZ55 Galvalume BONDED WASHER (14mm)	22	.030	1355
AZ55 Galvalume NONE (.398/.432 HWH DIA)	26	.018	722
AZ55 Galvalume NONE (.398/.432 HWH DIA)	24	.024	1040
AZ55 Galvalume NONE (.398/.432 HWH DIA)	22	.030	1197
G-90 Galvanized BONDED WASHER (14mm)	20	.036	1608
G-90 Galvanized NONE (.398/.432 HWH DIA)	20	.038	1419

NOTES 1. All strength values shown are ultimate values, express in LBS. Apply an appropriate safety factor to obtain design limits.

#14 TYPE 17 WoodBinder®



HEAD STYLE
5/16" HWH
POINT DIAMETER
30° Sharp Point Type 17
MAJOR DIAMETER
.254/.248
MINOR DIAMETER
.185/.178
WASHER/HEAD DIAMETER
.398/.432
HEAD ACROSS FLATS
NOM .312"
ULT. TENSILE STRENGTH
4270 LBS.
MIN. TORSIONAL STRENGTH
125 IN-LBS.
NOM. SHEAR STRENGTH
2997 LBS.



Hex Washer Head with EPDM rubber will completely cover the existing hole to provide a watertight seal.

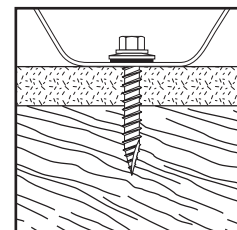


The Type 17 point will clean the existing hole of metal burrs & the oversized threads will generate increased holding strength.



**Sharp Point
Type 17**

APPLICATIONS



FEATURES AND BENEFITS

- Tapping screws that are designed to be used in wood or light gauge metal in a pre-drilled hole. See Fastener Selection Guide on page 1 for proper drill bit sizes.
- Screws can be used as replacements for nails or screws that have loosened from wood or steel.
- 3/8" HWH with EPDM bonded sealing washer provides maximum pull over strength in high wind uplift applications.
- EPDM rubber & HH with EPDM bonded sealing is vulcanized to a steel washer to form an excellent seal & will cover any existing hole to prevent leaks from re-occurring.

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

SIZE	CARTON QTY.	WEIGHT/M
14 X 1"	2000	16.9
14 X 1 1/4"	2000	17.6
14 X 1 1/2"	1500	24.6
14 X 2"	1000	26.0
14 X 2 1/2"	1000	30.8
14 X 3"	1000	35.9

PULL OUT STRENGTH LBS. ULT.		
SUBSTRATE	PENETRATION	VALUE
HRS Primed Only	.060	800
HRS Primed Only	.075	1250
HRS Primed Only	.105	2017
3/4 PLY	FULL	723
5/8 PLY	FULL	487
1/2 PLY	FULL	391
7/16 OSB	FULL	227
2X Y. PINE*	1"	856
2X Y. PINE*	1 1/2"	1669
2X SPF*	1"	594
2X SPF*	1 1/2"	1235

PULL OVER STRENGTH LBS. ULT.			
MATERIAL	GAUGE	THICKNESS	
AZ55 Galvalume	26	.018	1001
AZ55 Galvalume	24	.024	1206
AZ55 Galvalume	22	.030	1649

TAPPING WoodBinder®



POINT STYLE

TYPE A

HEAD STYLE

3/8" HWH

DRILL POINT

30 ° Sharp Point T-A

MAJOR DIAMETER

.254/.248

MINOR DIAMETER

.185/.178

WASHER HEAD DIAMETER

.500

HEAD ACROSS FLATS

NOM .375"

ULT. TENSILE STRENGTH

4270 LBS.

MIN. TORSIONAL STRENGTH

125 IN-LBS.

NOM. SHEAR STRENGTH

2997 LBS.

FEATURES AND BENEFITS

- Type A fasteners are designed for use in wood framed buildings.
- Fasteners are also used in retrofit applications in which existing screws have stripped/backed out & need to be replaced with a larger diameter.
- 5/16" Cupped HWH ZAMAC 5 Zinc-Aluminum Alloy provides lifetime protection against red rust on the head & washer face. The ZAMAC 5 alloy is stronger than the more common ZAMAC 3 alloy. A written warranty is available upon request.
- The head & washer face captures the rubber EPDM washer even when driven at an angle & are designed to maximize Pull over strength.

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY USING STEEL PANELS/FRAMING & WOOD DENSITIES WHOSE STRUCTURAL PROPERTIES ARE FOUND IN PRESENT DAY PRODUCTS.

SIZE	CARTON QTY.	WEIGHT/M
14-10 x 1-1/2" A	1500	23.0

PULL OUT STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
HRS Primed Only	16	.060	1181
HRS Primed Only	14	.075	1265
HRS Primed Only	12	.105	2143
3/4 PLY	N/A	FULL	707
5/8 PLY	N/A	FULL	391
1/2 PLY	N/A	FULL	378
7/16 OSB	N/A	FULL	238
2x Y.PINE	N/A	1"	828
2x Y.PINE	N/A	1 1/2"	1669
2x SPF	N/A	1"	594
2x SPF	N/A	1 1/2"	1235

PULL OUT STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
AZ55 GALVALUME	29	.014	886
AZ55 GALVALUME	26	.018	1287
AZ55 GALVALUME	24	.024	1572
AZ55 GALVALUME	22	.030	2029

- NOTES**
1. HRS (Hot Rolled Steel)
 2. Pull over values calculated with EPDM rubber washer assembled to cupped head screw with .630" washer face.
 3. All strength values shown are ultimate values, express in LBS. Apply an appropriate safety factor to obtain design limits.
 4. ** The value tabulated is the force at which the ZXL head breaks from the carbon steel body.

ZXL[™] TAPPING WoodBinder[®]



HEAD STYLE

5/16" CHWH

DRILL POINT

30° SHARP POINT

MAJOR DIAMETER

.254/.248

MINOR DIAMETER

.185/.178

WASHER FACE DIAMETER

.630

HEAD ACROSS FLATS

.305/.311

ULT. TENSILE STRENGTH

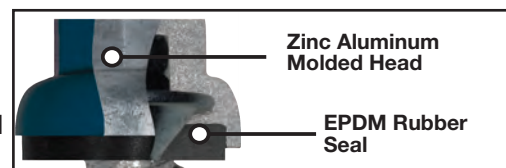
2240 LBS.

MIN. TORSIONAL STRENGTH

125 IN-LBS.

NOM. SHEAR STRENGTH

2997 LBS.



The Zinc-Aluminum alloy HWH prevents red rust from ever starting. ST Fastening Systems spring retainer sockets are designed to allow for the added thickness of the powder coat and are recommended.



TYPE A

The Type A is designed for wood. See Catalog page 1 for proper drill bit sizes.



No Red-Rust Guaranteed!



FEATURES AND BENEFITS

- #10 Diameter is designed to attach standing seam roof clips to plywood, OSB, or wood purlins.
- Low profile head design provides excellent pull over strength.
- Thin Wafer Head is designed for standing seam panels that utilize no clip but require a very thin head so as to not to dimple the roof panel.
- Available in Ruspert® corrosion resistant coated carbon steel or 304 stainless steel.

SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
10 x 1" PANCAKE TYPE 17	#2 SQUARE/PHILLIPS COMBO	3000	7.0
10 x 1-1/2" PANCAKE TYPE 17	#2 SQUARE/PHILLIPS COMBO	2500	9.0
10 x 1" PANCAKE TYPE 17	#2 SQUARE DRIVE HEAD	3000	7.0
10 x 1-1/2" PANCAKE TYPE 17	#2 SQUARE DRIVE HEAD	2500	9.0
10 x 2" PANCAKE TYPE 17	#2 SQUARE DRIVE HEAD	2000	10.2
10 x 1" WAFER SHARP POINT	#2 SQUARE/PHILLIPS COMBO	3000	5.0
10 x 1-1/2" WAFER SHARP POINT	#2 SQUARE/PHILLIPS COMBO	2500	7.0
10 x 2" WAFER SHARP POINT	#2 SQUARE/PHILLIPS COMBO	2000	9.0
10 x 1" 304 SS SHARP POINT	#2 SQUARE/PHILLIPS COMBO	3000	7.0
10 x 1-1/2" 304 SS SHARP POINT	#2 SQUARE/PHILLIPS COMBO	2500	9.0

PULL OUT STRENGTH LBS. ULT.		
SUBSTRATE	PENETRATION	VALUE
#10 PANCAKE T-17 3/4 PLY	FULL	684
#10 WAFER 3/4 PLY	FULL	684
#10 PANCAKE 304 SS 3/4 PLY	FULL	544
#10 PANCAKE T-17 5/8 PLY	FULL	435
#10 WAFER 5/8 PLY	FULL	435
#10 PANCAKE 304 SS 5/8 PLY	FULL	424
#10 PANCAKE T-17 1/2 PLY	FULL	352
#10 WAFER 1/2 PLY	FULL	352
#10 PANCAKE 304 SS 1/2 PLY	FULL	335
#10 PANCAKE T-17 7/16" OSB	FULL	218
#10 WAFER 7/16" OSB	FULL	218
#10 PANCAKE 304 SS 7/16" OSB	FULL	182
#10 PANCAKE T-17 2X Y.PINE	1"	868
#10 WAFER 2X Y.PINE	1"	868
#10 PANCAKE 304 SS 2X Y.PINE	1"	779
#10 PANCAKE T-17 2X SPF	1"	597
#10 WAFER 2X SPF	1"	597
#10 PANCAKE 304 SS 2X SPF	1"	719

PULL OVER STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
#10 PANCAKE T-17 3/4 PLY	29	.014	529
#10 PANCAKE 304 SS 3/4 PLY	29	.014	529
#10 PANCAKE T-17 3/4 PLY	26	.018	779
#10 PANCAKE 304 SS 3/4 PLY	26	.018	779
#10 PANCAKE T-17 3/4 PLY	24	.024	1128
#10 PANCAKE 304 SS 3/4 PLY	24	.024	1128
#10 PANCAKE T-17 3/4 PLY	22	.030	1512
#10 PANCAKE 304 SS 3/4 PLY	22	.030	1512
#10 WAFER 3/4 PLY	29	.014	685

ST® Clip Screw Metal to Wood

DRILL POINT

TYPE 17 - 30° T-17
WAFER - 30° SHARP POINT
304 SS - 30° SHARP POINT

MAJOR DIAMETER

TYPE 17 - .204/.198
WAFER - .204/.198
304 SS - .194/.188

MINOR DIAMETER

TYPE 17 - .128/.122
WAFER - .128/.122
304 SS - .133/.126

HEAD DIAMETER

TYPE 17 - .447/.423
WAFER - .477/.423
304 SS - .440 NOM.

ULT. TENSILE STRENGTH

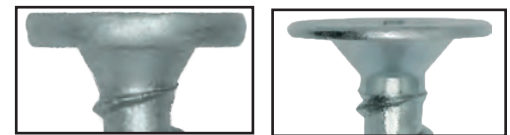
TYPE 17 - 1981 LBS.
WAFER - 1981 LBS.
304 SS - 1450 LBS.

MIN. TORSIONAL STRENGTH

TYPE 17 - 66 IN-LBS.
WAFER - 66 IN-LBS.
304 SS - 48 IN-LBS.

NOM. SHEAR STRENGTH

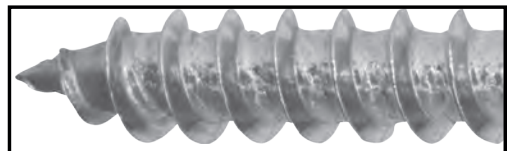
TYPE 17 - 1428 LBS.
WAFER - 1428 LBS.
304 SS - 1113 LBS.



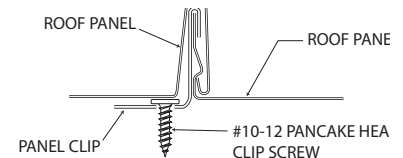
Thin Wafer Head can be used for non-clip applications. Pancake Head is best suited for roof clip applications.



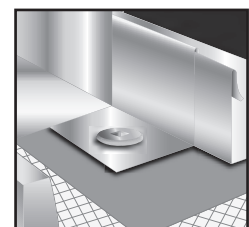
2 driver bits to choose from.



Type A point & thread design maximizes holding strength in plywood, OSB, & wood purlins.



TYPICAL CLIP APPLICATION APPLICATIONS



MIAMI-DADE COUNTY
LISTED

FEATURES AND BENEFITS

- A self-drilling Pancake Head is available to attach standing seam roof clips to steel framing.
- Low profile head design provides excellent pull over strength.
- Ruspert® corrosion resistant coating is standard on all Clip Screws.

SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
10 x 1" SD CARBON STL.	#2 SQUARE/PHILLIPS COMBO	3000	7.0
10 x 1-1/2" SD CARBON STL.	#2 SQUARE/PHILLIPS COMBO	2500	9.0

PULL OUT STRENGTH LBS. ULT.		
SUBSTRATE	GAUGE	VALUE
HRS Primed Only	16	830
HRS Primed Only	14	1006
HRS Primed Only	12	1495
G-90 GALVANIZED	18	731

PULL OVER STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
AZ55 Galvalume	29	.015	529
AZ55 Galvalume	26	.019	779
AZ55 Galvalume	24	.024	1128
AZ55 Galvalume	22	.032	1512

ST[®] Clip Screw ^{Metal to Metal}



POINT DIAMETER

.151/.156

MAJOR DIAMETER

.189/.183

MINOR DIAMETER

.135/.141

HEAD DIAMETER

.443/.423

ULT. TENSILE STRENGTH

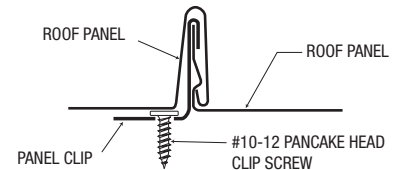
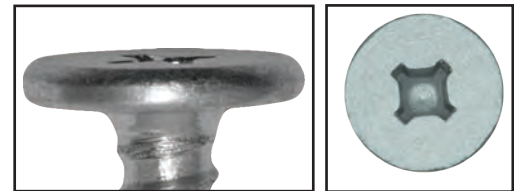
1920 LBS.

MIN. TORSIONAL STRENGTH

61 IN-LBS.

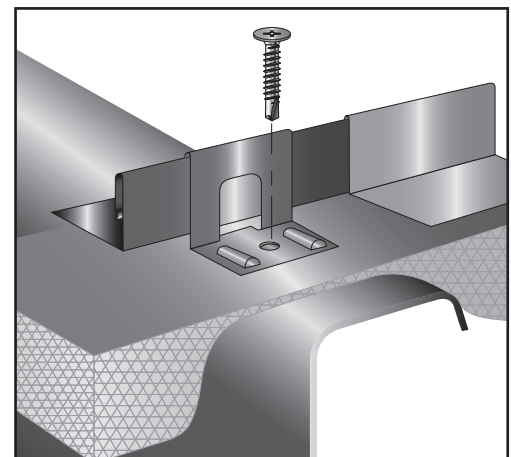
NOM. SHEAR STRENGTH

1633 LBS.



TYPICAL CLIP APPLICATION

APPLICATIONS





FEATURES AND BENEFITS

- Family of screws designed to attach plywood & dimensional lumber to steel thickness up to .250"
- Small wings help bore a clearance hole to help prevent premature thread engagement in the wood. The wings break off after drilling is completed.
- Wafer head design is used for plywood applications. Flat head design is used for lumber applications.
- Applications include flooring in steel frame homes & truck body beds.

SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
10-16 x 1-5/8"	#2 Square/Phillips Combo	3500	9.2
12-24 x 2"	#3 PFH	2000	17.5
12-24 x 2-1/2"	#3 PFH	2000	19.5
1/4-20 x 2-3/4"	#3 PFH	1500	28.6
1/4-20 x 3-1/4"	6 LOBE	1000	35.0

PULL OUT STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
10-16 HRS Primed Only	16	.065	847
10-16 HRS Primed Only	14	.070	916
10-16 HRS Primed Only	12	.106	1085
10-16 A36 HRS	3/16"	.187	2371*
10-16 G-90 GALVANIZED	18	.047	587
12-24 HRS Primed Only	16	.065	832
12-24 HRS Primed Only	14	.070	947
12-24 HRS Primed Only	12	.106	1480
12-24 A36 HRS	3/16"	.187	2582
12-24 A36 HRS	1/4"	.250	3494*
1/4-20 HRS Primed Only	16	.065	970
1/4-20 HRS Primed Only	14	.070	1165
1/4-20 HRS Primed Only	12	.106	1838
1/4-20 A36 HRS	3/16"	.187	3145
1/4-20 A36 HRS	1/4"	.250	5240*

*DENOTES TENSILE FAILURE OF FASTENER

**HOT ROLLED STEEL

PULL OVER STRENGTH LBS. ULT.		
DESIGNATION	CDX PLYWOOD	2 X YELLOW PINE
THICKNESS	(NOM 1/2")	(1.5 ACTUAL)
10-16 (NOTE 3)	680 (NOTE 1)	596
12-24		1302
1/4-20		1383

- NOTES**
1. Wafer head flanges broke during pull over testing in nom. 1/2" plywood value tabulated 1/2" plywood for represents the ultimate strength of the fastener. Pull over strength for plywood thickness is greater than 1/2" can be considered same value as tabulated (596 lbs. ult.)
 2. Technical data provided herein is to be used as a guide for typical strength characteristics only. All strength values shown are ultimate values expressed in pounds. An appropriate factor of safety must be applied by the user to obtain allowable limits for design.
 3. Max. plywood thickness for use with this reamer fastener is 3/4." ** The value tabulated is the force at which the ZXL head breaks from the carbon steel body.
 4. Square/Phillips Combo Head available on #10 Diameter.

ST ReamerScrew

DRILL POINT

10-16 - WINGED SD
12-24 - WINGED SD
1/4-20 - WINGED SD

MAJOR DIAMETER

10-16 - .189/.183
12-24 - .216/.209
1/4-20 - .250/.242

MINOR DIAMETER

10-16 - .141/.135
12-24 - .165 REF.
1/4-20 - .187 REF.

HEAD DIAMETER

10-16 -.440 NOM.
12-24 -.389 NOM.
1/4-20 -.507/.452.

POINT DIAMETER

10-16 -.156/.151
12-24 -.191/.197
1/4-20 -.226/.220

ULT. TENSILE STRENGTH

10-16 - 1920 LBS.
12-24 - 2800 LBS.
1/4-20 - 4270 LBS.

ULT. TENSILE STRENGTH

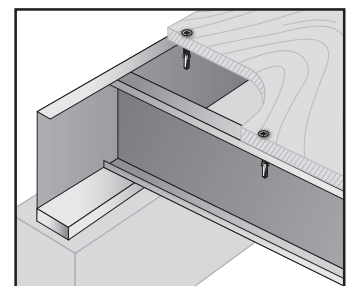
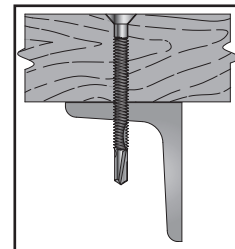
10-16 - 61 IN-LBS.
12-24 - 100 IN-LBS.
1/4-20 - 168 IN-LBS.

ULT. TENSILE STRENGTH

10-16 - 1633 LBS.
12-24 - 2000 LBS.
1/4-20 - 3000 LBS.



APPLICATIONS



FEATURES AND BENEFITS

- #12 diameter screw has 1/4" HWH. Thread design has excellent holding strength in wood.
- #1 drill point will penetrate steel thickness up to 18 gauge.
- Black e-coat corrosion resistant coating is standard on all screws.
- G-90 bonded sealing washer is assembled to the fastener.
- Applications include retrofit & metal panels through rigid insulation to wood.
- Screws are available in all standard ST Fastening Systems colors (wet-paint process).

FOR PROPER INSTALLATION, THE USE OF IMPACT DRIVERS ARE NOT RECOMMENDED FOR POWDER COATED OR ANY WET PAINTED FASTENER.

SIZE	CARTON QTY.	WEIGHT/M
12 x 3 3/4"	1000	26.5
12 x 4 1/2"	1000	30.7
12 x 5"	1000	33.4
12 x 6"	500	39.0
12 x 7"	500	43.7
12 x 8"	500	49.7

PULL OUT STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICKNESS	VALUE
# 12 Diameter GALVANIZED	18	.047	653
# 12 Diameter GALVANIZED	20	.038	489
# 12 Diameter GALVANIZED	22	.031	406
# 12 Diameter GALVANIZED	24	.024	319
# 12 Diameter GALVANIZED	26	.019	263
# 12 Diameter 3/4 PLY	N/A	FULL	795
# 12 Diameter 5/8 PLY	N/A	FULL	564
# 12 Diameter 1/2 PLY	N/A	FULL	457
# 12 Diameter 7/16 OSB	N/A	FULL	177
# 12 Diameter 2x Y.PINE	N/A	FULL	1605
# 12 Diameter 2x Y.PINE	N/A	1"	976

PULL OVER STRENGTH LBS. ULT.			
SUBSTRATE	GAUGE	THICK- NESS	VALUE
BONDED WASHER (.472" Dia) (12mm)	29	.015	671
BONDED WASHER (.472" Dia) (12mm)	26	.019	845

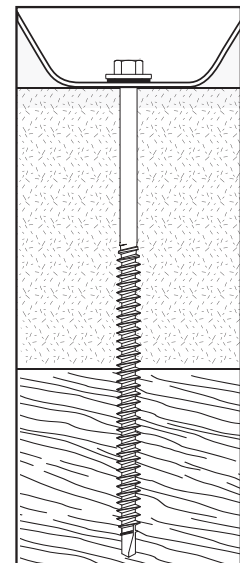
- NOTES**
1. *Tensile strength shown represents ultimate load at which the integral washer brakes from the hex washer head.
 2. 26 and 29 GA. values shown were obtained using 80 KSI steel sheeting. 24, 22, 20, and 18 GA. values were obtained using 50 KSI minimum steel sheeting.

InsulDrill™

HEAD STYLE
1/4" HWH
POINT DIAMETER
SELF-DRILL
MAJOR DIAMETER
.215 NOM.
MINOR DIAMETER
.130 NOM.
WASHER/HEAD DIAMETER
.400 NOM.
HEAD ACROSS FLATS
.250 NOM.
NOM. TENSILE STRENGTH
*1723 LBS.
MIN. TORSIONAL STRENGTH
125 IN-LBS.
NOM. SHEAR STRENGTH
1324 LBS.



APPLICATIONS



FEATURES AND BENEFITS

- Open-end blind rivet is designed to attach 2 thin pieces of metal for a low profile appearance.
- Applications include metal roofing ridge-caps, roof gutters & downspouts.
- 304 Stainless Steel, Carbon Steel, & Aluminum are available.
- Painted #43 Stainless are available to match most architectural panel colors.
- Color chart available upon request.

SIZE	CARTON	WEIGHT/M
SSD43**	1000	3.0
SD42*	1000	2.9
SD44*	1000	3.3
AD42*	1000	1.1
AD44*	1000	1.3
AD46*	1000	1.4
AD66*	1000	3.4
SSD42*	1000	2.9

* Sizes listed are non-stock items & only available unpainted Call for price & availability.

** In stock painted to match most architectural panel colors

TABLE II: APPLICATION DATA

RIVET SERIES NO.	NOM RIVET SIZE	RECOMMENDED DRILL SIZE	RIVET NO.	MATERIAL REFERENCE (**)	GRIP RANGE (T)	BODY LENGTH (L)
					MIN.	MAX.
4	1/8"	#30 (.129)	42	S, A,	.063	.125
			43	SS	.126	.187
			44	S, A, SS	.188	.250
			46	S	.313	.375
5	5/32"	#30 (.161)	52	---	.020	.125
			53	S, A	.126	.187
			54	---	.188	.250
			56	---	.313	.375
6	3/16"	#11 (.191)	66	SS, A	.251	.375

S = Steel Body, Steel Mandrel | A = Aluminum Body, Aluminum Mandrel
SS = Stainless Steel Body, Stainless Steel Mandrel

TABLE III: MECHANICAL PROPERTIES OF ST RIVETS

RIVET SERIES NO.	GRADE DESIGNATION	RIVET BODY MATERIAL	MANDREL MATERIAL	ULTIMATE SHEAR (LBS. MIN.)	ULTIMATE TENSILE (LBS. MIN.)	PULL-OUT IN 18 GA. MIN. (ACTUAL TESTED TENSILE STRENGTH)
4	10	ALUMINUM	ALUMINUM	120	150	189 LBS.
	30	STEEL	STEEL	260	310	437 LBS.
	51	STAINLESS STEEL	STAINLESS STEEL	420	530	643 LBS.
5	10	ALUMINUM	ALUMINUM	190	230	254 LBS.
	30	STEEL	STEEL	370	470	491 LBS.
	51	STAINLESS STEEL	STAINLESS STEEL	650	820	886 LBS.
6	10	ALUMINUM	ALUMINUM	260	320	471 LBS.
	30	STEEL	STEEL	540	680	----
	51	STAINLESS STEEL	STAINLESS STEEL	950	1200	1570 LBS.

ST[®] Rivet

DIMENSION OF RIVET

NOM. RIVET SIZE

4 - 1/8"
5 - 5/32"
6 - 3/16"

HEAD DIAMETER

4 - .128/.122
5 - .159/.153
6 - .191/.183

MANDREL DIAMETER

4 - .076
5 - .095
6 - .114

BLIND SIDE PROJ.

4 - L+.120
5 - L+.140
6 - L+.160

HEAD HEIGHT

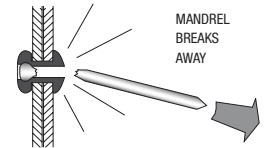
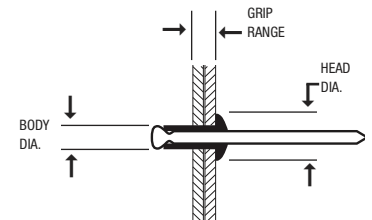
4 - .040
5 - .050
6 - .060

BODY LENGTH

4 - SEE TABLE II
5 - SEE TABLE II
6 - SEE TABLE II



APPLICATIONS



Notes:

* PLAIN RIVETS AVAILABLE. PAINTED RIVETS IN THESE SIZES REQUIRE 50M PIECE MINIMUM.

**SSD43 ALL COLORS ON THIS CHART ARE IN STOCK.

1. Tensile and shear data tabulated represents minimum ultimate required values as tabulated in IFI - 114 standard for break mandrel blind rivets.

2. Only ST Fastening Systems standard rivets are shown on this document. Contact ST Fastening Systems for values for rivets of other sizes and material types.



FEATURES AND BENEFITS

- Grommet consists of 304 Stainless Steel machine screw, 304 Stainless Steel bonded washer, & internally threaded rubber sleeve with pre-assembled nut.
- As the fastener is tightened, the rubber sleeve expands to provide a gasketing effect on the bottom side of the pre-drilled hole.
- Applications include fastening fiberglass sheets together or other dissimilar materials that are prone to extensive expansion & contraction due to temperature changes.
- 316 Series Stainless Steel is available as an option.

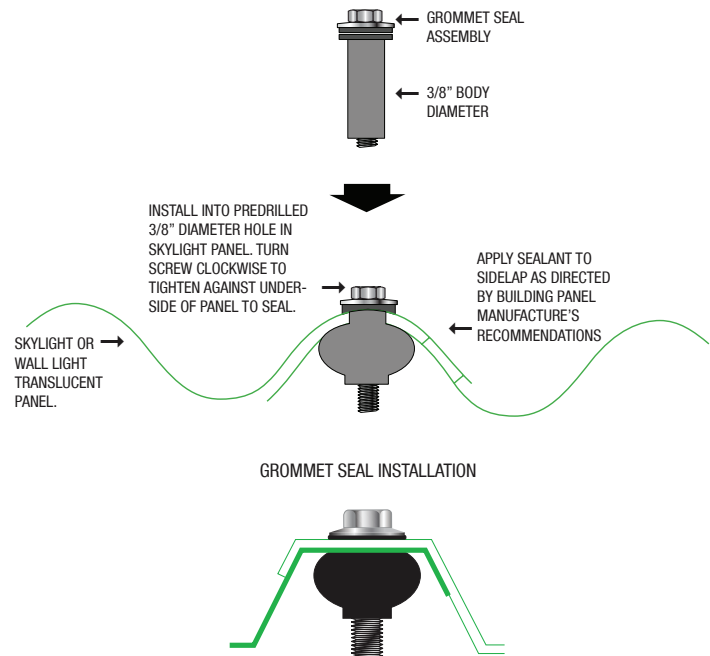
ST Grommet



MATERIAL & GROMMET DIAMETER	HAND STYLE AND LENGTH	BOX QTY.	WEIGHT LBS. PER 1000 PCS.
18-8 STAINLESS	(3/8") HH 5/16" AF 1"	2500	17.5
316 STAINLESS	(3/8") HH 5/16" AF 1"	2500	17.5

GROMMET SPECIFICATIONS				
SIZE	BODY LENGTH	NUT INSERT	DUROMETER (SLEEVE)	ULTIMATE TENSILE
3/8" x 1"	.812	10-12	60	80 LBS.

MACHINE SCREW SPECIFICATIONS							
SIZE	HEX SIZE	MATERIAL	BONDED WASHER	SLEEVE	NUT INSERT	REC. HOLE SIZE	GRIP RANGE
10-32 x 1-1/4"	5/16	302 HQ	304 SS/EPDM	EPDM	BRASS	.375	.312-.545



*Also available in 316 S/S

FEATURES AND BENEFITS

- Manufactured from EPDM or silicone rubber, Roofjack™ RD is compounded for maximum resistance to ozone, UV light, & temperature extremes.
- Flexible aluminum base will allow the flashing to conform to any metal roof configuration. Pipe location can be centered in the flat of the panel or the rib. Urethane sealant & self-drilling screws complete the installation
- Roofjack RD are well marked so they can easily be cut with shears to fit exactly the pipe size used.
- Roofjack RD are available in Black or Gray EPDM as well as Red or Gray high temperature Silicone.

	PIPE SIZE	BASE DIAMETER	COLOR MATERIAL	CARTON QUANTITY	WEIGHT PER CARTON
#1	1/4" -2-1/2"	4.75" (120.7mm)	Black/Gray EPDM & Red/Gray Silicone	15	2.5
#2	1-3/4"-3"	6.21" (157.7mm)	Black/Gray EPDM & Red/Gray Silicone	15	4.5
#3	1/4"-5"	7.74" (196.6mm)	Black/Gray EPDM & Red/Gray Silicone	15	7.5
#4	3"-6-1/4"	9.26" (235.2mm)	Black/Gray EPDM & Red/Gray Silicone	10	8.0
#5	4-1/4"-7-3/4"	10.75" (273.0mm)	Black/Gray EPDM & Red/Gray Silicone	10	9.5
#6	5" - 9"	12.50" (317.5mm)	Black/Gray EPDM & Red/Gray Silicone	10	12.0
#7	6" - 11"	14.60" (370.8mm)	Black/Gray EPDM & Red/Gray Silicone	10	15.5
#8	7" - 13"	16.5" (419.1mm)	Black/Gray EPDM & Red/Gray Silicone	5	12.8
#9	9" - 19"	25.25" (641.1mm)	Black/Gray EPDM & Red/Gray Silicone	5	19.3

	EPDM 500	SILICONE
Advanced Ozone Resistance Tested to...	70 hr @500 pphm	70 hr @ 500 pphm
High Temperature Resistance Tested to Intermittent Continuous	+135°C (+275°F) +100°C (+212°F)	+260°C (+500°F) +225°C (+500°F)
Low Temperature Resistance tested to...	-55°C (-65°F)	-74°C (-100°F)
Tensile Set Maximum... Compression Set Maximum...	10MPa (1450psi) 25%	5MPa (700psi) 50%

RoofjackRD™



HIGH TEMPERATURE SILICONE IS NOW AVAILABLE IN GRAY

EASY INSTALLATION



1. Choose pipe opening and trim

2. Slide over pipe



3. Form to roof profile

4. Apply sealant

5. Fasten to complete

FEATURES AND BENEFITS

- Manufactured from EPDM or silicone rubber, Roofjack™ SQ is compounded for maximum resistance to ozone, UV light, & temperature extremes.
- Flexible aluminum base will allow the flashing to conform to any metal roof configuration. Pipe location can be centered in the flat of the panel or the rib. Urethane sealant & self-drilling screws complete the installation
- Roofjack SQ are well marked so they can easily be cut with shears to fit exactly the pipe size used.
- Roofjack SQ are available in Black or Gray EPDM & Red Silicone.
- Square Roofjack SQ can be turned so corner is pointing up the roof. It will act as a water diverter.

RoofjackSQ™



	PIPE SIZE	BASE DIMENSION	COLOR MATERIAL	CARTON QUANTITY	WEIGHT PER CARTON
MINI	1/8"-3/4"	2 - 1/4" (57mm)	Black/Gray EPDM & Red Silicone	15	2.5
#1	1/4"-2-3/4"	4-1/2" (114mm)	Black/Gray EPDM & Red Silicone	15	2.5
#2	7/8"-4"	6" (152mm)	Black/Gray EPDM & Red Silicone	15	4.5
#3	1/4"-5-3/4"	8" (203mm)	Black/Gray EPDM & Red Silicone	15	7.5
#4	2-3/4"-7"	10" (254mm)	Black/Gray EPDM & Red Silicone	10	8.0
#5	4"-8-1/4"	11" (279mm)	Black/Gray EPDM & Red Silicone	10	9.5
#6	4-3/4"-10"	12" (304mm)	Black/Gray EPDM & Red Silicone	10	12.0
#7	5-1/2"-11-1/2"	14" (355mm)	Black/Gray EPDM & Red Silicone	10	15.5
#8	6-3/4"-13-1/2"	17" (431mm)	Black/Gray EPDM & Red Silicone	5	12.8
#9	9-1/2"-20-1/2"	25" (635mm)	Black/Gray EPDM & Red Silicone	5	19.3
MAXI	12"-28-1/2"	34" (863mm)	Black/Gray EPDM & Red Silicone	5	25.6

	EPDM 500	SILICONE
Advanced Ozone Resistance Tested to...	70 hr @500 pphm	70 hr @ 500 pphm
High Temperature Resistance Tested to Intermittent Continuous	+135°C (+275°F) +100°C (+212°F)	+260°C (+500°F) +225°C (+500°F)
Low Temperature Resistance tested to...	-55°C (-65°F)	-74°C (-100°F)
Tensile Set Maximum...	10MPa (1450psi)	5MPa (700psi)
Compression Set Maximum...	25%	50%

EASY INSTALLATION



1. Choose pipe opening and trim 2. Slide over pipe



3. Form to roof profile 4. Apply sealant 5. Fasten to complete

FEATURES AND BENEFITS

- Manufactured from EPDM or silicone rubber, Retrofit Roofjack™ RD is compounded for maximum resistance to ozone, UV light, & temperature extremes.
- Flexible aluminum base will allow the flashing to conform to any metal roof configuration. Pipe location can be centered in the flat of the panel or the rib. Urethane sealant & self-drilling screws complete the installation
- Retrofit Roofjack RD are well marked so they can easily be cut with shears to fit exactly the pipe size used.
- Stainless steel teeth grip the material & secure it tightly.

RETROFIT RoofjackRD™



	PIPE SIZE	BASE DIAMETER	COLOR MATERIAL	CARTON QUANTITY	WEIGHT PER CARTON
#1	3/4" - 2-3/4" (19 - 70 mm)	6-3/10" (160mm)	Black EPDM/ Grey EPDM/Red Silicone	15	2.5
#2	2" - 7-1/4" (50.8 - 184 mm)	10-3/4" (273.1mm)	Black EPDM/ Grey EPDM/Red Silicone	10	8.0
#3	3-1/4" - 10" (95 - 254 mm)	14-1/2" (641.4mm)	Black EPDM/ Grey EPDM/Red Silicone	10	15.5

	EPDM 500	SILICONE
Advanced Ozone Resistance Tested to...	70 hr @500 pphm	70 hr @ 500 pphm
High Temperature Resistance Tested to		
Intermittent	+135°C (+275°F)	+260°C (+500°F)
Continuous	+100°C (+212°F)	+225°C (+500°F)
Low Temperature Resistance tested to...	-55°C (-65°F)	-74°C (-100°F)
Tensile Set Maximum...	10MPa (1450psi)	5MPa (700psi)
Compression Set Maximum...	25%	50%



EASY INSTALLATION



1. Using tin snips, cut the cone to fit pipe.

2. Wrap Retrofit around pipe, join the interlocking teeth

3. Squeeze joiner tightly with pliers to crimp



4. Apply sealant shape Retrofit to roof

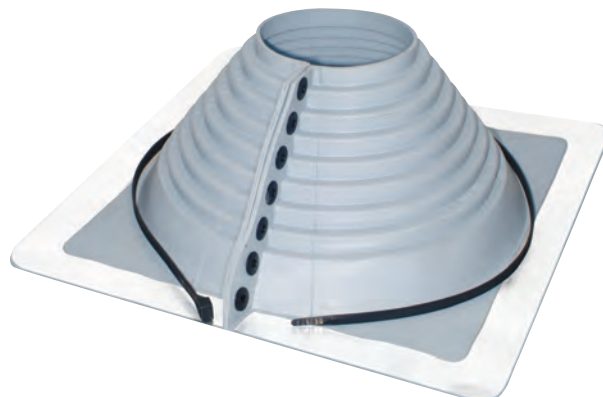
5. Fasten Retrofit to roof

6. Apply additional sealant to mechanical locking joiner seam

FEATURES AND BENEFITS

- Manufactured from EPDM or silicone rubber, Retrofit Roofjack™ SQ is compounded for maximum resistance to ozone, UV light, & temperature extremes.
- Flexible aluminum base will allow the flashing to conform to any metal roof configuration. Pipe location can be centered in the flat of the panel or the rib. Urethane sealant & self drilling screws complete the installation.
- Retrofit Roofjack SQ are well marked so they can easily be cut with shears to fit exactly the pipe size used.
- Retrofit Roofjack SQ are used in applications for which a standard flashing will not work. It wraps around the pipe instead of pulling down over the pipe. Hardware is included to ensure a watertight connection.
- Fastener snaps & cable tie are included.

RETROFIT RoofjackSQ™



RETROFIT SQUARE BASE	PIPE SIZE	BASE DIMENSION	COLOR MATERIAL	CARTON QUANTITY	WEIGHT PER CARTON
#1	1/2" - 4" (12.7 - 101.6mm)	8" - 3/16" (80.96mm)	Black EPDM/ Grey EPDM/ Red Silicone	5	2.5
#2	4" - 9-1/4" (101.6 - 135mm)	14-1/4" (361.95mm)	Black EPDM/ Grey EPDM/ Red Silicone	5	8.0
#3	9-1/4" - 16-1/4" (235 - 412.8mm)	21-1/2" (546.1mm)	Black EPDM/ Grey EPDM/ Red Silicone	5	15.5

**RED SILICONE
RETROFIT
ROOFJACK**



EASY INSTALLATION

	EPDM 500	SILICONE
Advanced Ozone Resistance Tested to...	70 hr @500 pphm	70 hr @ 500 pphm
High Temperature Resistance Tested to		
Intermittent	+135°C (+275°F)	+260°C (+500°F)
Continuous	+100°C (+212°F)	+225°C (+500°F)
Low Temperature Resistance tested to...	-55°C (-65°F)	-74°C (-100°F)
Tensile Set Maximum...	10MPa (1450psi)	5MPa (700psi)
Compression Set Maximum...	25%	50%



1. Trim to Fit



2. Wrap and Snap



3. Press and Mold



4. Add Urethane Sealant.



5. Fasten

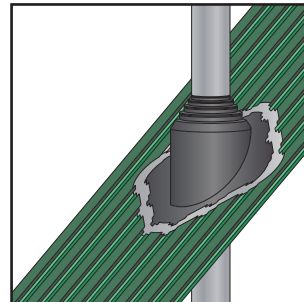


6. Install Cable Tie

FEATURES AND BENEFITS

- Weather Resistance Designed to withstand the damaging effects of ultra violet light and ozone.
- Modification Made Simple Easy to see pipe diameters make for painless on-site customization.
- The built in 40° degree pitch allows to handle any extreme roof pitch (35° - 65°), sleeve flexibility accommodates vibration and pipe movement caused by expansion contraction.
- Easy on-site customization accommodates all normal installations.
- Adaptable Base. The base is designed to mold to most panel configurations and roof pitches regardless of pipe location.

EXTREME Roofjack™



	EPDM 500	SILICONE
Advanced Ozone Resistance Tested to...	70 hr @500 pphm	70 hr @ 500 pphm
High Temperature Resistance Tested to		
Intermittent	+135°C (+275°F)	+260°C (+500°F)
Continuous	+100°C (+212°F)	+225°C (+500°F)
Low Temperature Resistance tested to...	-55°C (-65°F)	-74°C (-100°F)
Tensile Set Maximum...	10MPa (1450psi)	5MPa (700psi)
Compression Set Maximum...	25%	50%



FEATURES AND BENEFITS

- Designed for an over-sized hole, but smaller diameter pipe, over which a standard Roofjack™ will not fit.
- Manufactured from EPDM or silicone rubber, the FIX-A-FLASH™ material compound is designed for maximum resistance to ozone, UV light, & temperature extremes.
- Each FIX-A-FLASH is well marked with pipe sizes, so it can be easily cut to properly conform to the pipe size used.
- FIX-A-FLASH have a flexible aluminum band that will conform to any metal roof configuration.

FIX-A-FLASH RoofjackSQ™



PIPE SIZE	BASE DIMENSION	COLOR MATERIAL	CARTON QUANTITY	WEIGHT PER CARTON
6-3/4" - 15" (171-381mm)	19-1/2" (495mm) Base	Black/Gray EPDM & Red Silicone	5	15
0" - 15" (0-381mm)	19-1/2" (495mm) Base	Black/Gray EPDM & Red Silicone	5	15

	EPDM 500	SILICONE
Advanced Ozone Resistance Tested to...	70 hr @500 pphm	70 hr @ 500 pphm
High Temperature Resistance Tested to		
Intermittent	+135°C (+275°F)	+260°C (+500°F)
Continuous	+100°C (+212°F)	+225°C (+500°F)
Low Temperature Resistance tested to...	-55°C (-65°F)	-74°C (-100°F)
Tensile Set Maximum...	10MPa (1450psi)	5MPa (700psi)
Compression Set Maximum...	25%	50%



CHECK OUT THESE OTHER ROOFJACK PRODUCTS

RoofjackRD™ **RoofjackSQ™** **RETROFIT RoofjackRD™** **RETROFIT RoofjackSQ™** **EXTREME Roofjack™** **EXPANSION JOINT Roofjack™**



FEATURES AND BENEFITS

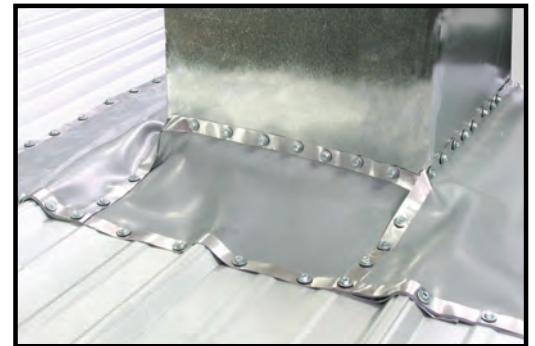
- LINEAR EXPANSION JOINT is manufactured from EPDM rubber to resist UV light, ozone, & temperature extremes.
- There are flexible aluminum bands integrated into each width of the material that conform to any metal roof panel configuration.
- Applications include transition walls, parapet walls, stepped roofs, square vents.

EXPANSION JOINT **Roofjack**[™]



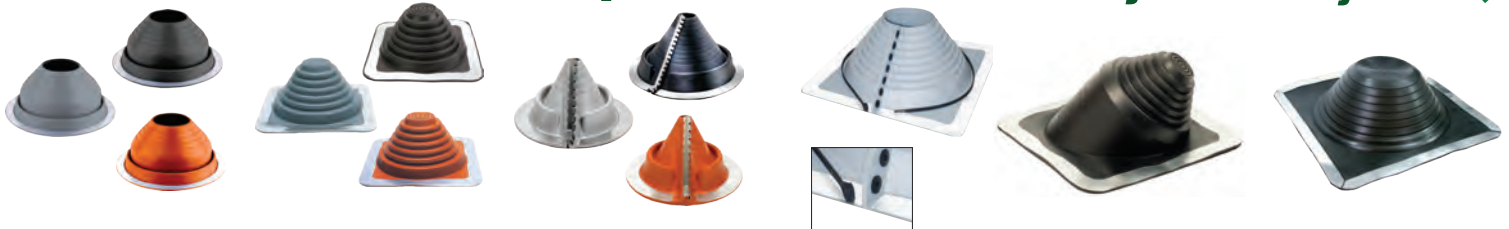
WIDTH	LENGTH	COLOR MATERIAL	WEIGHT PER CARTON
9" (228mm)	3ft (914mm)	Gray EPDM	1.8 LBS.
9" (228mm)	12ft (3.65meters)	Gray EPDM	5.18 LBS.
9" (228mm)	33ft (10meters)	Gray EPDM	13.37 LBS.
12" (305mm)	3ft (914mm)	Gray EPDM	2.28 LBS.
12" (305mm)	12ft (3.65meters)	Gray EPDM	6.10 LBS.
12" (305mm)	33ft (10meters)	Gray EPDM	15.02 LBS.

	EPDM 500	SILICONE
Advanced Ozone Resistance Tested to...	70 hr @500 pphm	70 hr @ 500 pphm
High Temperature Resistance Tested to		
Intermittent	+135°C (+275°F)	+260°C (+500°F)
Continuous	+100°C (+212°F)	+225°C (+500°F)
Low Temperature Resistance tested to...	-55°C (-65°F)	-74°C (-100°F)
Tensile Set Maximum...	10MPa (1450psi)	5MPa (700psi)
Compression Set Maximum...	25%	50%



CHECK OUT THESE OTHER ROOFJACK PRODUCTS

RoofjackRD[™] RoofjackSQ[™] RETROFIT RoofjackRD[™] RETROFIT RoofjackSQ[™] EXTREME Roofjack[™] FIX-A-FLASH RoofjackSQ[™]



FEATURES AND BENEFITS

- MultiVent10™ is a ventilated roll product for metal roof ridge cap applications.
- Material is a non-woven, UV resistant, polyester fabric with an acrylic binder that allows for maximum air movement.
- Provides more air movement than polyurethane rolls coated with PVC
- Passes the extreme wind driven rain test
- Polyester vented strip has pre-applied adhesive strip
- Universal feature allows application to ridge cap.
- 200 lineal feet per box-2 each 10' strips per package/10 packages per box.

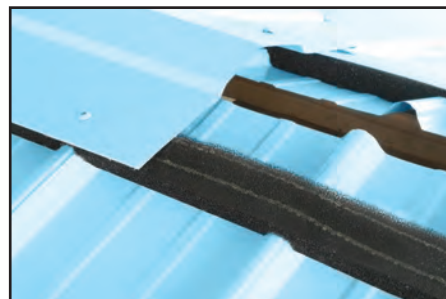


Universal Ridge Cap Ventilation Material

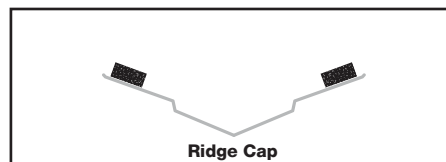


	LENGTH PER PIECE	PIECES PER CTN.	FEET PER CTN.	WIDTH	HEIGHT
R	10"	20	200	2"	1 1/2"
G	10"	20	200	2"	1"

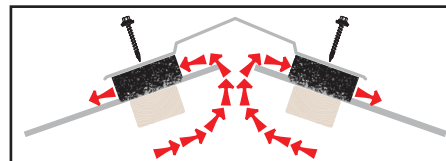
MultiVent 10		Non-Woven Polyester	
Physical Properties	TEST METHODS	REQUIREMENT	
Density (lb./cf)	ASTM D 3574	0.9	
110 mph Wind Driven Rain Test	AS 100(A)	pass	
Air Permeability (ft3/m./ft2 of Surface)	ASTM D737	1329	
Tear Resistance (lb./in. min.)	ASTM D 3574	4.5	
Tensile Strength (lbs/in2 min.)	ASTM D 3574	19 minimum	
Compress Force Deflection (lbs/in2 @ 50%)	ASTM D 3574	.52	
Elongation (% min.)			
Net Free Area			
Grandrib panel - 3/4" rib height (in2/lf of Ridge)	1 side	9.5	
R panel - 1-1/4" rib height (in2/lf of Ridge)	1 side	13.23	
Service Temperature Range			
High Intermittent (oF)		250	
Continuous		200	
Cold Temperature Resistance		-40	
Melt Temperature		500	



MultiVent10™ with a pre-applied adhesive strip is easily applied to the underside of a metal ridge cap for easy field installation



1. Roll MultiVent10™ onto ridge cap.



2. Fasten ridge cap to roof with Kwikseal® II Woodbinder® fasteners. MultiVent10™ will mold to roof panel profile

FEATURES AND BENEFITS

- Adhesive is applied to the flat of the foam strip for easy field installation.
- Open cell foam formulated to allow as much as 98% free air flow.
- Material design prevents wind-driven rain from penetrating the material causing undesired leaks.
- Material design is universal in nature. It will conform to any panel 1 1/4" or less in height.
- MultiVent™ can be used on angled roof applications. There is no need for special angle cut closures.

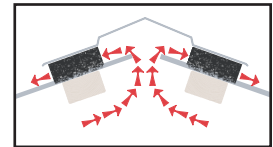


LENGTH PER PIECE	PIECES PER CTN.	FEET PER CTN.	WIDTH	HEIGHT
36"	60	180	2"	1.75"

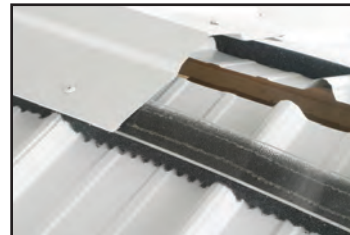
Multivent		Reticulated Poly-urethane Pore Size 13 - 25 PPI	
Physical Properties	TEST METHODS	REQUIREMENT	
Density (lb./cf)	ASTM D 3574	1.1 -- 1.6	
110 mph Wind Driven Rain Test		not tested	
Air Permeability (ft3/m./ft2 of Surface)	ASTM D737	700-800	
Tear Resistance (lb./in. min.)	ASTM D 3574	2.9 minimum	
Tensile Strength (lbs/in2 min.)	ASTM D 3574	12 minimum	
Compress Force Deflection (lbs/ in2 @ 25%)	ASTM D 3574	.5 - .65	
Elongation (% min.)	ASTM D 3574	90 minimum	
Net Free Area			
Grandrib panel - 3/4" rib height (in2/lf of Ridge)	1 side	8.85	
R panel - 1-1/4" rib height (in2/lf of Ridge)	1 side	14.76	
Service Temperature Range			
High Intermittent (oF)		250	
Continuous		200	
Cold Temperature Resistance		-40	
Melt Temperature		500	



Material conforms to any panel configuration.



MultiVent™ maximizes free air flow due to its unique open-cell structure



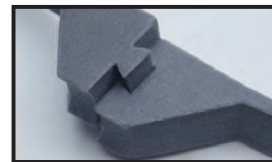
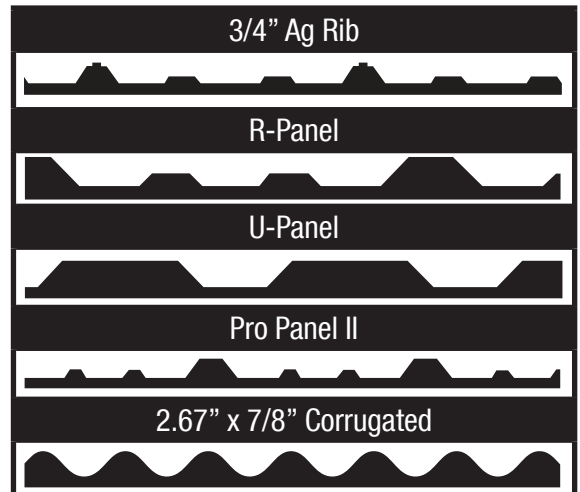
ST ClosureStrip

FEATURES AND BENEFITS

- Designed to close gaps in roof & sidewall applications. Material is pre-cut to conform to metal panel configurations.
- Applications include closing the openings at the ridge (peak of the building) or at the eave (gutter-line of a building).
- 1.8 lb. Density polyethylene foam is designed to withstand harsh weather elements including moisture & ultraviolet rays.
- Optional pre-applied adhesive helps to keep closure in place before roof panel is fastened.
- Interlocking dovetails provide a secure end to-end fit, eliminating any potential gaps
- Other profiles are available. Call ST Fastening Systems Customer Service for availability.

DESCRIPTION	PITCH OF CORR	WIDTH OF STRIP	HEIGHT OF CORR	LENGTH OF STRIP	PIECES PER CTN.	WEIGHT PER CTN.
3/4" Ag Rib	9"	7/8	3/4"	36"	100	6 LBS.
R-Panel	12"	7/8	1-1/4"	36"	100	6 LBS.
U-Panel	6"	7/8	3/4"	36"	100	6 LBS.
Pro Panel II	9"	7/8	5/8"	36"	100	6 LBS.
2.67" x 7/8" Corrugated	2.67"	7/8	7/8"	36"	100	6 LBS.

ST Closure Strips		
Physical Properties	TEST METHODS	REQUIREMENT
Density (lb./cf)	ASTM D 3574	1.8 - 2.0
110 mph Wind Driven Rain Test	AS 100(A)	NA
Air Permeability (ft3/m./ft2 of Surface)	ASTM D737	NA
Tear Resistance (lb./in. min.)	ASTM D 3574	6 machine direction
	ASTM D 3574	11 cross direction
Tensile Strength (lbs/in2 min.)	ASTM D 3574	60 machine direction
	ASTM D 3574	38 cross direction
Compress Force Deflection (lbs/in2 @ 25%)	ASTM D 3574	5
Compress Force Deflection (lbs/in2 @ 50%)	ASTM D 3574	15
Compression Set (% Original Thickness)	ASTM D 3574	24 - 28
Elongation (% min.)	ASTM D 3574	124 machine direction
		88 Cross Direction
Shore Hardness (00 Scale)	ASTM 2240	51
Thermal Stability (% Max)	Machine Direction	-2.0
	Cross Direction	-1.0
(24 hour @ 158oF)		
Thermal Conductivity (K Factor)	ASTM C177	0.25
BTU in./F Hr oF		
Water Absorption (Lbs/SqFt Cut Surface)	ASTM D-1667	0.04
Working Temperature Range (Fo)		-40 to 160
Flammability	AVSS 302	Pass



Interlocking dovetails provide a secure end-to-end fit, eliminating any potential gaps



Pre-applied adhesive helps to keep closure in place before roof panel is fastened.



FEATURES AND BENEFITS

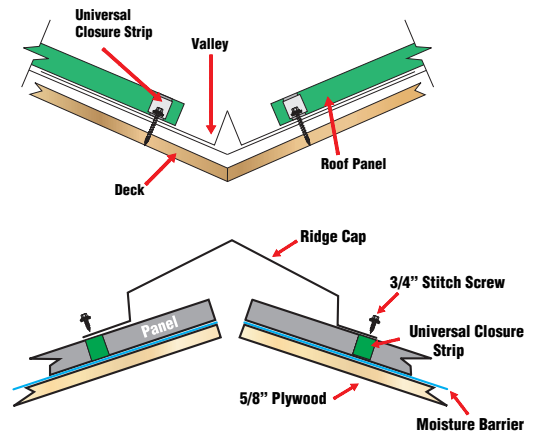
- Polyurethane foam strip is also referred to as Universal Closures.
- The material is a flexible semi-closed cell material that is used for filling voids & other openings between metal panels.
- They are available with or without pre applied adhesive.
- Standard length is 25'.

ST PolyUrethane Strip



THICKNESS	WIDTH	LENGTH	/CARTON
1"	1"	25 FT.	10/BOX
1"	1-1/2"	25 FT.	10/BOX
1-1/2"	1-1/2"	25 FT.	10/BOX
2"	2"	25 FT.	8/BOX

ST POLYURETHANE STRIPS (UNIVERSAL CLOSURE)		
	TEST METHODS	REQUIREMENT
Density (lb./cf)	ASTM D 3574	1.00 +/-0.1
110 mph Wind Driven Rain Test	AS 100(A)	NA
Air Permeability (ft3/m./ft2 of Surface)	ASTM D737	NA
Tear Resistance (lb./in. min.)	ASTM D 3574	1.25
Tensile Strength (lbs/in2 min.)	ASTM D 3574	10
Compress Force Deflection (lbs/in2 @ 25%)	ASTM D 3574	30 +/-3 lbs (50 in2)
Elongation (% min.)	ASTM D 3574	125
Net Free Area		
Grandrib panel - 3/4" rib height (in2/lf of Ridge)	1 side	NA
R panel - 1-1/4" rib height (in2/lf of Ridge)	1 side	NA
Service Temperature Range		
High Intermittent (oF)		200
Continuous		200
Cold Temperature Resistance		-40
Melt Temperature		465



EASY INSTALLATION

STEP 1

FIT TO METAL PANEL



STEP 2

FIRMLY APPLY



FEATURES AND BENEFITS

- TACKY TAPE is a 100% solids, asbestos free butyl tape sealant in roll form.
- Applications include metal roof endlaps, sidelaps, vents, gutters, pipe flashings, skylights.
- Service temperature range is -40 Degrees F- +180 Degrees F
- Material will not become brittle or crack.

TACKY TAPE ROLL	CARTON QTY.
3/32" x 3/8" x 45'	40
3/32" x 1/2" x 45'	32
3/32" x 3/4" x 45'	24
3/32" x 1" x 45'	20

PROPERTY	TYPICAL VALUES	TEST METHOD
Specific Gravity:	1.47	ASTM D 792
Density:	13.54 Lbs/Gal 1.62 Kg/Liter	ITW PSNA Lab Test
Percent Solids:	100%	ITW PSNA Lab Test
Peel Adhesion 16 (2.8) / 100 PIW (N/mm ²) / % Cohesive Separation 16 (2.8) / 100 Galvalume Anodized Aluminum Mill Finish 16 (2.8) / 100 Aluminum Polyvinylidene Fluoride 17 (2.8) / 100 PVC Plastisol Polyester 17 (2.8) / 100 Siliconized Polyester 16 (2.8) / 100 16 (2.8) / 100		AAMA 800 1/16" (0.158cm) thick
Tensile Adhesive Strength PSI (kPa) % Cohesive Separation	20 (138) 95	ASTM C 907
Yield Strength PSI (kPa)	8 (55)	ASTM C 908
% Elongation	>1000	ASTM C 908
Sag	None	AAMA 800
Vehicle Migration	Pass, <1/8" (<3.175mm)	AAMA 800
Water Resistance	No Effects	AAMA 800
Hardness (Shore 00)	50-60	AAMA 800
Crazing to Acrylic plastics	None	MIL-S-11030C
Cone Penetration (0.1mm) @77°F (25°C) @120°F (48.8°C) @0°F (-17.7°C)	85-100 125-135 45-55	ASTM D 217 300 g cone (5 Sec)
Application Temperature Range	-5°F to 120°F (-20°C to 49°C)	ITW PSNA Lab Test
Service Temperature Range	-40°F to 200°F (-40°C to 93°C)	ITW PSNA Lab Test
Color	Light Gray	Visual ITW PSNA Test
Weatherability QUV, 340A lamp 1000 Hrs	Excellent, no cracking, chalking, wash-off or flow (sag) Test	ITW PSNA Lab Test
6" Static Water Pressure	Pass – No Leakage	ASTM Proposed Test Method
Water Penetration	Pass – No leakage	ASTM E 1646
Air Leakage At 1.57 PSF At 6.24 PSF	0.051 CFM/FT ² 0.068 CFM/FT ² 0.1024 CFM/FT ² 0.1365 CFM/FT ²	ASTM E 1680

Shelf Life 18 months when stored at or below 100°F (38°C)

TackyTape®



FEATURES AND BENEFITS

- Tube sealant is designed for a wide variety of substrates including steel, aluminum, concrete & wood.
- Urethane is designed to seal horizontal construction joints that are subject to structural movement.
- Urethane can withstand prolonged water immersion.
- Urethane is available in various colors to match substrates.
- Acrylic is a multipurpose sealant designed for exterior applications such as skylights or window frames. It is available in several colors.

Acrylic/Urethane **ST Sealant**



CARTON QTY.

ACRYLIC TUBE #5522 Clear	30
URETHANE TUBE #7108 White	30
URETHANE TUBE #7108 Gray	30
URETHANE TUBE #7108 Bronze	30
URETHANE TUBE #7108 Almond	30

FEATURES AND BENEFITS

- Permanently flexible, invisible to UV light, and mold/mildew resistant
- Waterproof, weather tight seal that will not freeze, shrink, crack, sag, or slump. Plastic tubes will not fall apart, crack or split open.
- Excellent adhesion to most building substrates, excellent tooling, and easily gunned at all temperatures— winter and summer. Tack free in 10 minutes, and completely cured within 48 hours.
- 18 month shelf life, solvent free, low odor, and VOC compliant in all 50 states (green building compliance).
- Available in all major siding, trim, coil, window and metal roof manufacturer colors AAMA verified for all window installations, and it can be used on interior and exterior surfaces/applications
- Ability to use entire tube—or can save with end cap—no waste, removable tips.

DESCRIPTION	CARTON STYLE	CARTON WEIGHT
Silicone Metal Roof Sealant	Qty. 12	10 lbs.
100 Series Silicone for Polycarbonate and Fiber-glass	Qty. 24	20 lbs.



100 Series

MRS

EMSEAL AST Hi-Acrylic

FEATURES AND BENEFITS

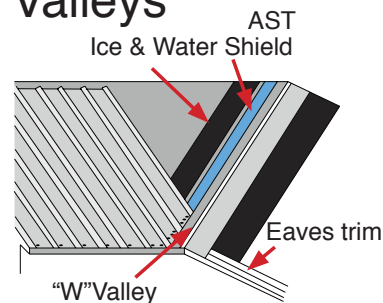
- Will not dry out and become hard and brittle
- UV-stable
- Highly resistant to bugs and vermin
- Will not extrude from between joints like caulk or butyl tapes
- Conforms to contours and fills gaps
- Maintains a seal during thermal expansion and contraction of building panels
- Excellent compressibility and recovery (minimal compression set)
- Good thermal and sound insulator
- No shrinkage or blow-out due to closed-cell breakage
- Supplied with self-adhesive on one side. After removal of packaging, material begins gradual expansion - more slowly in cold weather than in hot.



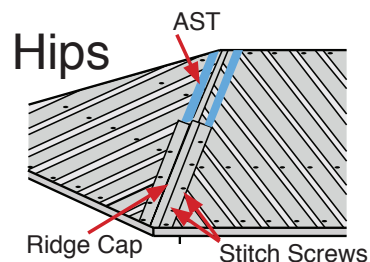
SUPPLIED SIZE	EXPANDED SIZE	LF/BOX	REELS PER BOX	REEL LENGTH
1/4" x 1"	1" x 1"	511.68 LF	26	19.7"
3/8" x 1"	1 1/2" x 1"	314.88 LF	24	13.1"

TABLE 1: TYPICAL PHYSICAL PROPERTIES OF AST		
PROPERTY	VALUE	TEST METHOD
BASE MATERIAL	OPEN CELL, HIGH DENSITY, POLY-URETHANE FOAM	N/A
IMPREGNATION	ACRYLIC-MODIFIED ASPHALT	N/A
COLOR	BLACK	N/A
TENSILE STRENGTH	21 PSI MIN (145 kPa)	ASTM D3574
ELONGATION - ULTIMATE	150% MIN	ASTM D3574
TEMPERATURE RANGE		ASTM C711
HIGH-PERMANENT	185°F (85°C)	
HIGH-SHORT TERM	203°F (95°C)	
LOW	-40°F (-40°C)	
SOFTENING POINT	140°F MIN (60°C)	ASTM D816
UV RESISTENCE	EXCELLENT	
MILDEW RESISTENCE	EXCELLENT	
RESISTENCE TO AGING	EXCELLENT	
BLEEDING	NONE (WHEN COMPRESSED DOWN TO 20 % OF UNCOMPRESSED THICKNESS)	
-40°F TO 180°F		
(-40°F TO 85°F)		
COMPRESSION SET	3 % MAX	ASTM D3574
70°C 50% RH AFTER 72HRS		
THERMAL CONDUCTIVITY	0.34 BTU. IN/HR. FT2.°F (0.05 W/M. °C)	ASTM C518
LOW. TEMP. FLEXIBILITY	NO CRACKING OR SPLITTING	ASTM C711
32°F TO -10°F		
(0°C TO -23°C)		
WATER VAPOR TRANSMISSION AT 25% COMPRESSION	0.011 PERMS	ASTM C355-64

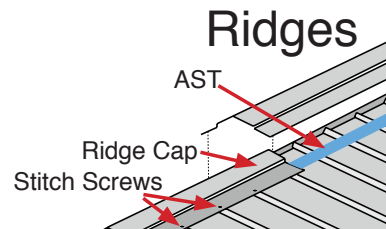
Valleys



Hips



Ridges



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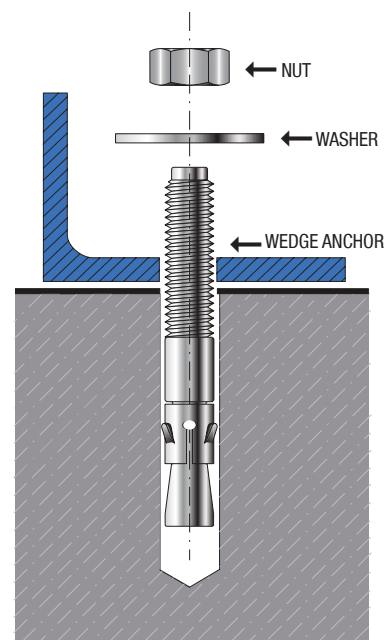
FEATURES AND BENEFITS

- Wedge anchor is carbon steel with zinc plating.
- Applications include attaching base angle to concrete as well as other equipment subject to vibration or extreme movement.
- The hole diameter drilled with a carbide masonry bit is equal to the diameter of the anchor installed
- Expansion cone provides full 360 degree contact with the concrete, allowing maximum pull out strength.

SIZE	CASE QTY.	CARTON QTY.	WEIGHT/M
3/8 x 3"	50	200	10.8
3/8 x 3-3/4"	50	200	12.5
1/2 x 2-3/4"	25	100	19.0
1/2 x 3-3/4"	25	100	24.4
1/2 x 4-1/4"	25	100	26.0
5/8 x 4-1/2"	10	40	22.5
5/8 x 6"	10	40	59.0
3/4 x 5-1/2"	10	40	81.0
3/4 x 7"	10	40	99.0
3/4 x 10"	10	20	140.0

MAXIMUM TENSILE CAPACITY FOR STATIC LOADS						
ANCHOR AND HOLE SIZE (INCHES)	400 PSI CONCRETE			600 PSI CONCRETE		
	EMBED-MENT DEPTH (IN)	TENSION (LBS)	SHEAR (LBS)	EMBED-MENT DEPTH (IN)	TENSION (LBS)	SHEAR (LBS)
1/4"	1-1/4"	2000	2811	1-1/4"	2042	2811
	2-1/2"	2600	2811	2-1/2"	2826	2811
3/8"	1-3/4"	3850	3075	1-3/4"	4790	3075
	5-5/8"	6020	4227	5-5/8"	6635	4227
1/2"	2-1/8"	6324	6260	2-1/8"	7540	6260
	6-1/4"	8249	7516	6-1/4"	10713	7516
5/8"	2-5/8"	9527	9760	2-5/8"	10597	9760
	6"	15893	11743	6"	16705	11743
3/4"	3-3/4"	13130	15860	3-3/4"	18979	15860
	7-7/8"	19795	23817	7-7/8"	24145	23817
7/8"	4"	18591	24000	4"	19945	24000
	8"	27484	25710	8"	33113	25710
1"	5"	26676	32494	5"	30683	32494
	9"	36171	36896	9"	36171	36896
1-1/4"	5-5/8"	28733	46976	5-5/8"	28733	46975
	10"	50390	46975	10"	50390	46975

ST WedgeAnchor



NOTES: 1. An appropriate factor of safety must be applied to the above ultimate values to determine the allowable loads for design purposes.

FEATURES AND BENEFITS

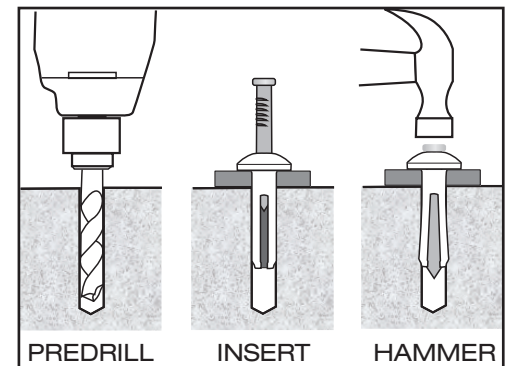
- Anchor is designed for light duty & tamperproof applications in masonry materials---brick, block, or stone.
- Body is manufactured in a high strength zinc aluminum---ZAMAC---alloy
- Drive Nail is either carbon steel or 304 stainless steel
- Applications include Roof Flashings, Electrical Fixtures, & Brick Ties & Furring Strips

ST® Nail Anchor



ANCHOR SIZE (IN.)	INDUSTRIAL PACK QUANTITY BOX/CARTON
1/4 x 1	100/1000
1/4 x 1-1/4	100/1000
1/4 x 1-1/2	100/800
1/4 x 2	100/800

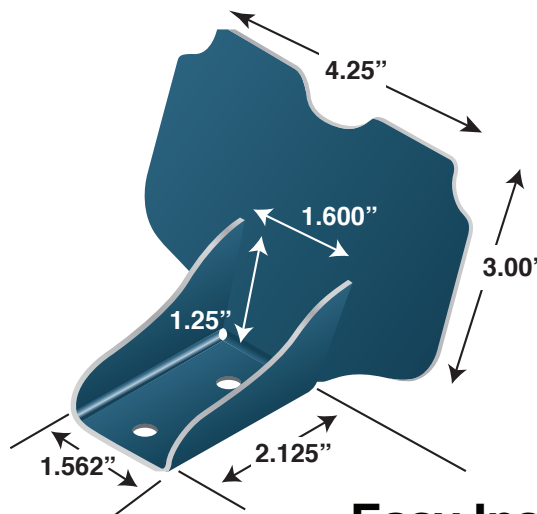
SPECIFICATIONS, LISTINGS AND APPROVALS					
DIAMETERS	BODY MATERIAL	PIN MATERIAL	HEAD STYLE	FINISH	FEDERAL SPECIFICATIONS
1/4"	Die Cast Zamac Alloy	Cold Rolled Steel	Mush-room	Zinc Plating ASTM B633	• GSA FFS-325, Group V, Type 2, Class 2



FEATURES AND BENEFITS

- Designed for through fastener metal roofs
- Material is 16 gauge 304 Stainless Steel
- Snowtrax™ are packaged 50 pieces per box
- No additional sealant is required, which saves cost & maintains a finished appearance.
- Snowtrax can be added to fastener orders to save freight costs.

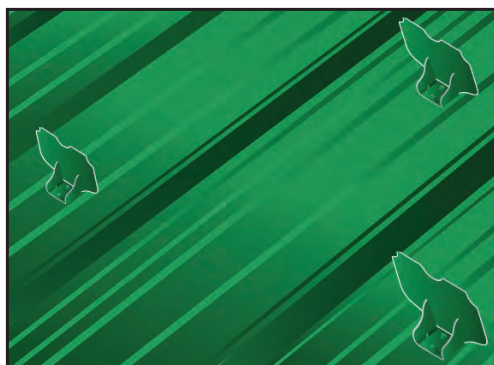
SnowTrax™



Easy Installation



- Powder coat paint is standard on all Snowtrax in 28 colors as well as unpainted.
- Snow Trax design is best suited for exposed fastener metal to wood roof applications.
- EPDM rubber gasket provides maximum sealing capability when installed with Kwikseal MB Woodbinder® screws.
- Powder coat colors will be consistent from job to job with no color drift.



			
BK01 BLACK	BL04 HAWAIIAN BLUE	BL20 GALLERY BLUE	BL53 OCEAN BLUE
			
BN02 BURNISHED SLATE	BN03 KOKO BROWN	GN03 EVERGREEN	GN10 FERN GREEN
			
GN26 FOREST GREEN	GY02 CHARCOAL	GY04 ASH GRAY	GY05 QUAKER GRAY
			
GY06 PEWTER GRAY	GY08 GRAY	GY11 GRAY	RD02 CRIMSON
			
RD03 RUSTIC RED	RD04 BURGUNDY	RD09 RED	TN02 TAN
			
TN03 DESERT SAND	TN41 CLAY	WT01 WHITE	WT02 POLAR WHITE
			
WT06 LIGHT STONE	WT07 IVORY	WT35 BRIGHT WHITE	WT79 ALAMO WHITE

Color Disclaimer

Due to the limitations of scanners and the relative limitations of 4 color process offset printing, the colors you see may not be a totally accurate reproduction of the actual product. We strive to make our colors as accurate as possible, but color images are intended as a guide only and should not be regarded as absolutely correct. Please contact Customer Service at 800-352-4864 or 800-944-8920 to request a color chart that matches the powder colors accurately. You may also request one by visiting our website at www.STFasteningSystems.com & filling in the contact page.

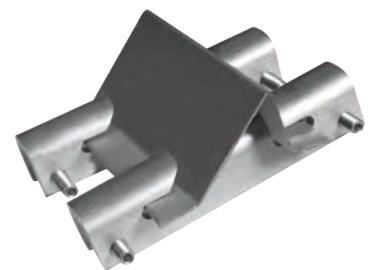
MRC **SnowTrax[™]**



Putting the Clamps on Snow

Bend Your Own Rail From Your *Color* Matched Roof Material

ST FASTENING SYSTEMS introduces a functional but aesthetic way to prevent snow & ice dams from building up on standing seam metal roofs. The MRC SNOW TRAX incorporates a roof clamp & rail system that is easy to install & blends well into the color scheme of the roof panel. The panel manufacturer will form the rail from trim stock & slide it through the clamp to complete the system. It is functional & cost effective.



The extruded aluminum clamp & painted 26 gauge metal rail combine to form the MRC SNOW TRAX system

SnowTrax[™] Available For Exposed Fastener Metal Panels



304 Stainless Steel snow guard is available in 28 powder coated industry standard colors. Use with the WOODBINDER MB micro-bit for a secure attachment to metal roof panels.

FEATURES AND BENEFITS

- Designed for standing seam roofs
- Made in USA
- Colored rail bent out of customer inventory
- Freight savings
- Efficient inventory management
- Product testing independently verified
- 25 Year Warranty

The MRC SNOW TRAX standing seam roof clamp system has been designed to provide the highest degree of safety.

The extruded aluminum clamp is attached to the roof panel rib by tightening two 5/32" stainless steel cone set screws. They should be set at 70-90 inch pounds of torque. The cone shape of the point will not penetrate the seam. This will ensure the weather tightness & protect the finish on the roof panel. The clamp & rail system is designed to provide excellent holding strength.

The 25 year written warranty ensures that the MRC SNOW TRAX is free of material defects, & will provide a safe & maintenance free snow retention system.



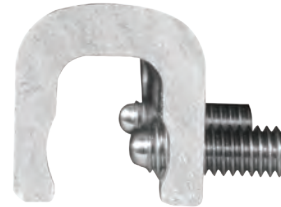
TABLE 1 - TEST RESULTS FOR MRC SNOW TRAX

Ultimate Axial Load Capacity - 26 gauge steel roof panel	913 lbf [S.D. 46.6 lbf]
Ultimate Axial Load Capacity - 24 gauge steel roof panel	843 lbf [S.D. 67.4 lbf]
Ultimate Axial Load Capacity - All Samples	878 lbf [S.D. 64.7 lbf]

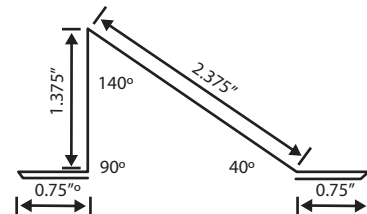
MRC SnowTrax™



The Extruded Aluminum alloy clamp is machined with pre-drilled holes. 26 gauge colored rail is formed to slide through the grooves in the clamp.

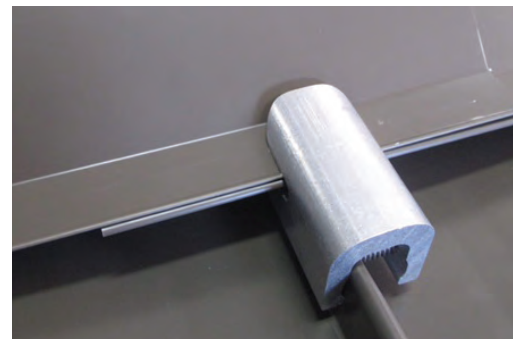


304 Stainless Steel coned set screws are provided to secure the clamp to the standing seam roof panel.



The schematic drawing below illustrates the dimensions to fabricate the rail from the same material as the roof.

APPLICATIONS



The MRC SNOW TRAX is shown installed with the colored rail.



The MRC SNOW TRAX is both functional & attractive. The colored rail blends into the overall look of the roof panel.

FEATURES AND BENEFITS

- 1/4", 5/16", 3/8" sizes are standard.
- Magnetic or Spring Retainer are both available
- Magnetic socket is designed with a high power magnet for a secure fit.
- Spring retainer socket is designed for use with all ST Fastening Systems non-magnetic screws, especially the ZXL long-life family. The clip & ball bearing hold the screw securely in place during installation.

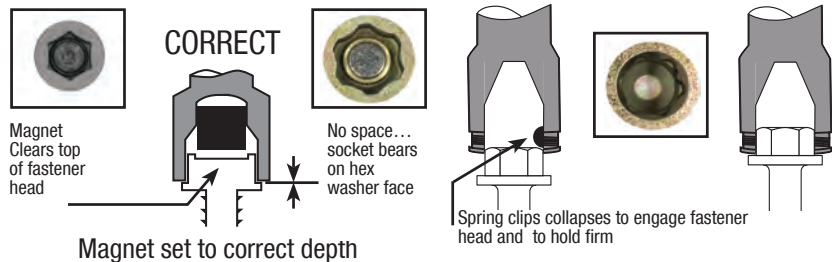
ST[®] Socket



ST Magnetic Socket is available for powder coated fasteners

SIZE	TYPE	LENGTH
1/4"	Magnetic, Spring Retainer	2-9/16", 1-3/4"
5/16"	Magnetic, Spring Retainer	2-9/16", 1-3/4"
3/8"	Magnetic, Spring Retainer	2-9/16", 1-3/4"

NOTES: 1. A 1 3/4" short magnetic socket is also available.



FEATURES AND BENEFITS

- Maximum torque transfer & positive tool engagement means easier drive installation with less pressure & slippage.
- Drivers are specifically designed to fit ECLIPSE WOODBINDER & STEELBINDER screws.

ST[®] Driver



SIZE	TYPE	LENGTH
T25W275	6 LOBE	2-3/4"
T30W275	6 LOBE	2-3/4"
275-SQP2	SQUARE/PHILLIPS Combo	2-3/4"

