

PRODUCT CATALOG

**BUILT STRONG THROUGH™
INNOVATION**





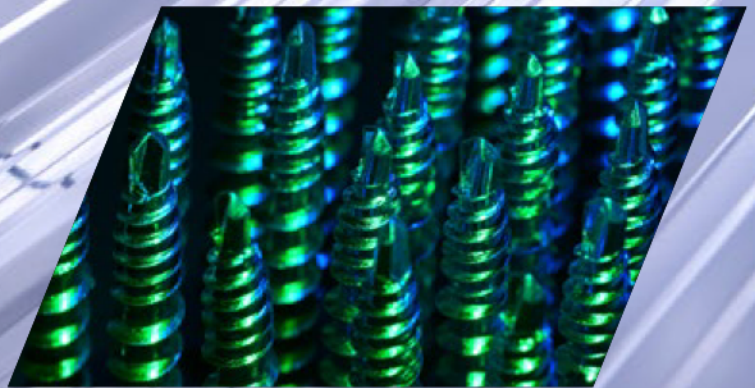
ZXL™



POWERFUL™



MB™



COATING SYSTEMS



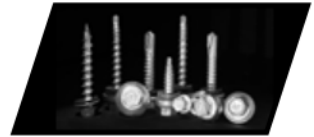
Powder coating is superior to wet paint in every way. Wet Paint fades while the formulation of POWDERFUL coating will continue to match the metal panels for decades.



Environmentally Friendly, No-VOC'S



DURASEAL+ corrosion resistant coating is a clear coating for unpainted fasteners. It will protect fasteners from elemental corrosion for decades.



LONG LIFE HEAD SYSTEM



Zinc-Aluminum alloy is impervious to red rust. The warranty on the ZXL matches that of the metal panel, completing the roof "System."



ZXL

Competitor

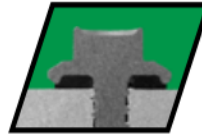
DURABLE HEAD SYSTEM



KS V-NECK design adds strength to prevent head twist off under extreme torque.



Maximum pull over strength and positive seal at any angle while protecting the EPDM washer from direct UV sun rays.



THREAD DESIGN



Thread transitions from fine to coarse with superior pullout strength.



POINT DESIGN



Consistent drilling. Slow drill or no drill screws and pigtails are eliminated.



Combination 2 and 3 point design—effortless, quick penetration into multilayers without point walking.



Resists the expansion & contraction found in metal roofing applications. Keeps metal panels securely fastened to the OSB. Design greatly reduces the potential for fastener strip out in OSB, enabling the full pullout value to be realized, thus protecting your valuable metal panel investment.





ST ADVANTAGE...VALUE ADDED INNOVATION

Woodbinder® and Steelbinder® fasteners that bear the ST Advantage seal are engineered with multiple unique technologies. When these innovative technologies are combined, they create a synergy of unmatched performance that give ST Advantage fasteners a clear competitive edge.

POWERFUL™ CORROSION DEFENSE POWDER COAT SYSTEM

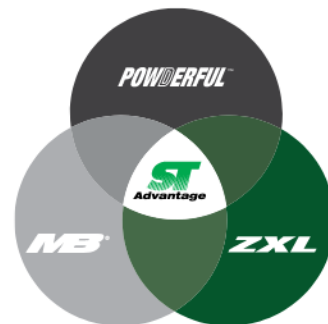
Powderful™ is an innovative process that adds decades to a structure's aesthetic appearance, helping retain its value over the long run.

ZXL™ NO RED RUST. ZAMAC DIE CAST HEAD.

Test results prove that ZXL's unique features add years of durability over the industries top metal building fasteners. The building investment retains its value when installed with ZXL Steelbinder or Woodbinder fasteners longer than traditional carbon steel fasteners, which will not last the life of the metal panel.

MB™ MICRO-BIT SELF DRILL POINT

Total in-place cost is reduced due to no dropped screws due to dull points.



ST GREEN PROGRAM

A sign of our environmentally friendly and sustainable manufacturing processes.



LEAN MANUFACTURING

Producing a significant reduction to energy usage and waste materials.



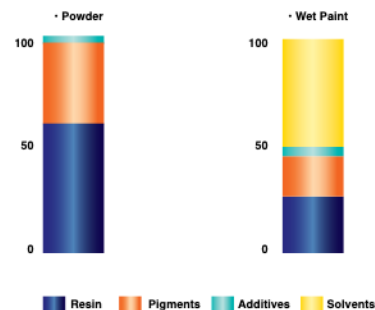
RECYCLING

Washer division recycles EPDM rubber and steel potentially wasted in the production of washers.



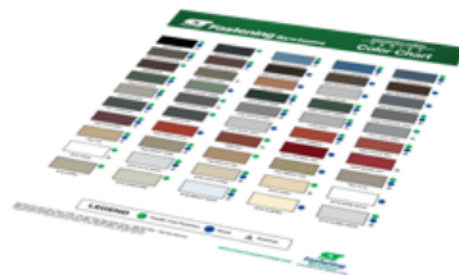
AIR POLLUTION

No harmful VOCs are produced in the manufacturing of powder coated fasteners unlike in the wet paint process.



ST ARCHITECTURAL SERIES

Products come in colors that match popular metal panel colors. The color chart shows the metal panel colors matched to Powderful™ powder coated fasteners, powder coated Snowtrax™ and wet painted ST® Rivet product lines. Roofjack™ and NovaFlex® product colors are not included on this color chart.



BETTER BUILT IN AMERICA

We take pride in knowing American made products command respect and are purchased with confidence solely based on a reputation for quality craftsmanship . As a manufacturer, ST believes that American Built is Stronger Built. All ST engineering innovations are American, and we continue to manufacture, design, and inspect our products with value-added processes in our US plants. The Proudly Assembled or Made in the USA badge is given to products in support of our commitment to this principle. This is why we can feel so confident in our quality.



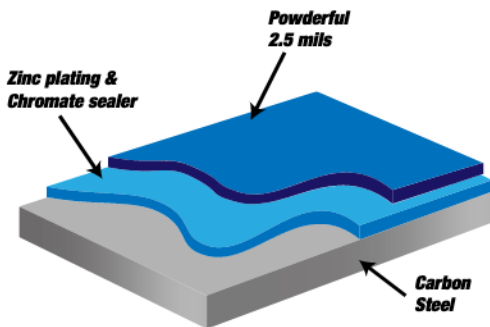
A ST Fastening System product that carries the PROUDLY MADE IN THE USA logo means it passes the guidelines set forth by the federal trade commission that requires products that claim to be Made in USA must be "all or virtually all" made in the U.S.



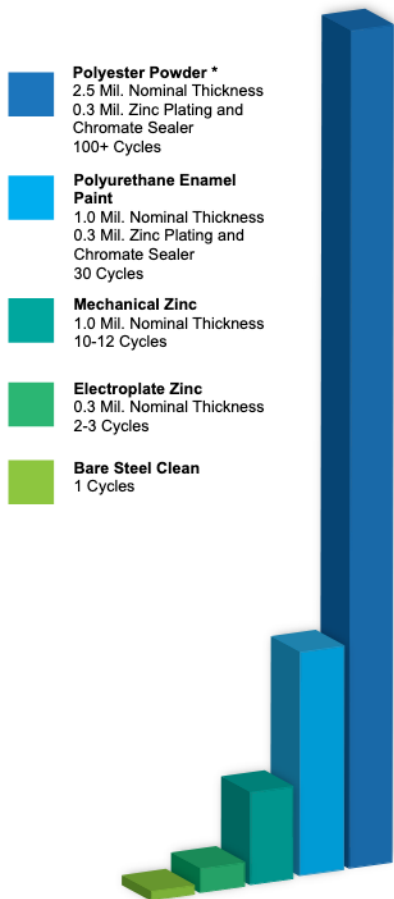
A ST Fastening System product that carries the PROUDLY ASSEMBLED IN THE USA logo means it passes the guidelines set forth by the federal trade commission that requires products that include foreign components but principal assembly takes place in the U.S. are permitted to be called "Assembled in USA" without qualification.

POWERFUL™

3X UV/Rust Protection



CORROSION RESISTANCE OF POWDER VERSUS OTHER PAINT/COATINGS.



Protects the Fastener and the Environment

The Power of Powder

ST Fastening Systems's innovative powder coating is both friendly to the environment and resistant to the environment. The powder releases no harmful VOCs (Volatile Organic Compounds) into the atmosphere as does solvent based wet paint. There is minimal waste in the process, as the powder is completely recyclable. Any waste generated is non-hazardous & landfill friendly. The corrosion resistance of powder surpasses that of wet paint processes by a wide margin as detailed in the bar graph to the left. Electroplated zinc & wet painted screws will withstand 25-30 cycles in the harsh Kesternich Corrosion Chamber. One cycle is 8 hours in the corrosion

chamber & 16 hours outside it. Some colors of powder applied over zinc plating & chromate sealer will withstand over 100 cycles. Powder is formulated to maintain its color just as the metal panels it is used with maintain their color. It does not chalk & has a UV (ultraviolet) inhibitor that prevents fade. Powder coverage is uniformly applied to the fastener head & washer, & its hard shell finish prevents cracking or scratching. The standard colors included mimic the high volume metal panel colors available today. All powder is analyzed at the ST Fastening Systems's Technical Lab for proper matching to those metal panels.



Durability

Taken head to head, powder coating is superior to wet paint in every way. Powder coating outperforms wet paint in resistance to corrosion, chemicals, heat, impact, abrasion, UV rays and extreme weather conditions. Wet paint fades, while the unique formula of a Powderful™ coating will continue to match the metal panel for decades.



Sustainability

Powderful™ is environmentally friendly. The wet paint process releases 1000's of lbs. of harmful volatile organic compounds into the environment daily, but the powder coating process releases no VOCs or solvents to evaporate into the atmosphere. Powder leaves no footprint on the environment as all the air born powder is filtered and then sent back to the workplace.

The Resulting Benefits to the Customer

- ✓ Exceptional corrosion resistance.
- ✓ Excellent color matching to industry standard colors. Colors are formulated at the powder manufacturer to specified industry color standards. Colors are again analyzed at ST Fastening Systems using spectral color analyzer to assure exact matching to the specified standard color as another step in ST Fastening Systems's Quality Assurance procedure. This assures reproducibility of colors from one manufacturing lot to another.
- ✓ Superior weathering characteristics.
- ✓ Powder is formulated to provide the color retention, chalk resistance, and fade resistance expected of the finished building panels.
- ✓ Excellent film hardness. ST Fastening Systems' powder coated fasteners resist scratches and damage during shipping better than conventionally applied wet paints. The overall toughness and heavier coating thickness of the powder finish provides excellent resistance to the abuses of normal installation.

35 standard colors are available & contained in the new **POWERFUL™** color chart



MAXX™ SteelBinder®

POWERFUL™ CORROSION DEFENSE POWDER COAT SYSTEM
MAXX™ SEALS ANY ANGLE
2+3 HYBRID™ NO POINT WALKING SELF DRILL POINT



- 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 panel sidelaps up to 18 ga. panel thickness with no strip-out when installed correctly.
- 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.

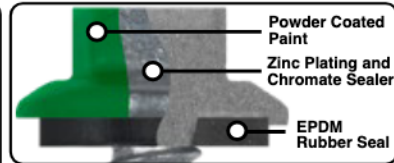
SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
12-14 x 3/4"	5/16" CHWH**	2500	11.3
12-14 x 1"	5/16" CHWH**	2500	13.2
12-14 x 1-1/4"	5/16" CHWH**	2500	14.8
12-14 x 1-1/2"	5/16" CHWH**	2000	15.5
12-14 x 2"	5/16" CHWH**	1500	18.8
12-14 x 2-1/2"	5/16" CHWH**	1500	21.0
12-14 x 3"	5/16" CHWH**	1000	24.6
1/4-14 x 7/8" STITCH*	5/16" CHWH**	2500	13.4

*Current sizes available with powder coating
 **CHWH-Cupped Hex Washer Head

TECHNICAL INFORMATION	DRILL POINT (DIA)	MAJOR DIAMETER	MINOR DIAMETER	WASHER FACE DIAMETER	HEAD ACROSS FLATS	NOM. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
#12	.181/.177	.215/.209	.164/.157	.560/.545	NOM .312"	2900 LBS.	92 IN.-LBS.	1962 LBS.
1/4" STITCH	.156/.150	.246/.240	.192/.185	.560/.545	NOM .312"	3800 LBS.	150 IN.-LBS.	2850 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	MATERIAL	MATERIAL													
		HRS PRIMED ONLY				AZ55 GALVALUME				G-90 GALVANIZED				HRS. PLATE	
		NOM. GAUGE	16	14	12	26	24	22	18	20	18	16	14	12	3/16"
#12		927	958	1678	N/A	N/A	N/A	N/A	N/A	729	787	1041	1372	N/A	N/A
1/4" STITCH		N/A	N/A	N/A	342	378	418	1038	620	N/A	N/A	N/A	N/A	N/A	N/A

PULL OVER STRENGTH VALUE (LBS. ULT.)	DESIGNATION	MATERIAL						
		AZ55 GALVALUME				G90	ALUMINUM	SLOT EDGE PANEL
		NOM. GAUGE	29	26	24	22	20	21
#12		687	1090	1299	1562	N/A	N/A	N/A
1/4" STITCH		746	960	1261	1376	N/A	N/A	N/A



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

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.

- 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.

ZXL™ SteelBinder®

POWERFUL™ CORROSION DEFENSE POWDER COAT SYSTEM
ZXL™ NO RED RUST (AFTER 2 HRS OF COAT DRY)
2+3 HYBRID™ NO POINT WALKING SELF DRILL POINT



- 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 Zinc-Aluminum Alloy provides lifetime protection against red rust on the head. 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 fasten panel sidelaps up to 18 ga. panel thickness 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.

SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
12-14 x 1"	5/16" CHWH**	2000	16.9
12-14 x 1-1/4"	5/16" CHWH**	2000	18.8
12-14 x 1-1/2"	5/16" CHWH**	2000	22.0
12-14 x 2"	5/16" CHWH**	1500	23.1
12-14 x 3"	5/16" CHWH**	1000	31.0
1/4-14 x 1-1/4"	5/16" CHWH**	1500	24.1
1/4-14 x 7/8" STITCH	5/16" CHWH**	2000	17.2

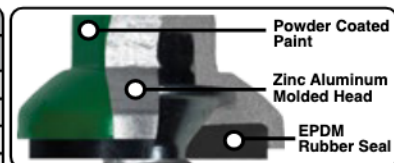
**CHWH-Cupped Hex Washer Head.

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.

TECHNICAL INFORMATION	DRILL POINT (DIA)	MAJOR DIAMETER	MINOR DIAMETER	WASHER FACE DIAMETER	HEAD ACROSS FLATS	NOM. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
#12	.181/.177	.215/.209	.164/.157	.630	NOM .312"	1525** LBS.	92 IN.-LBS.	1962 LBS.
1/4"	.156/.150	.246/.240	.192/.185	.630	NOM .312"	1525** LBS.	150 IN.-LBS.	2850 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	MATERIAL	MATERIAL													
		HRS PRIMED ONLY				AZ55 GALVALUME				G-90 GALVANIZED				HRS. PLATE	
		NOM. GAUGE	16	14	12	26	24	22	18	20	18	16	14	12	3/16"
#12		927	958	1525**	N/A	N/A	N/A	N/A	N/A	729	787	1041	1372	N/A	N/A
1/4"		N/A	N/A	N/A	342	378	418	1038	620	N/A	N/A	N/A	N/A	N/A	N/A

PULL OVER STRENGTH VALUE (LBS. ULT.)	DESIGNATION	MATERIAL						
		AZ55 GALVALUME				G90	ALUMINUM	SLOT EDGE PANEL
		NOM. GAUGE	29	26	24	22	20	21
#12		803	1091	1393	1525**	N/A	N/A	N/A
1/4"		813	1436	1525**	1525**	N/A	N/A	N/A



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

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.

- 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.

HG SteelBinder®



- 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.

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

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

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.

TECHNICAL INFORMATION	DRILL POINT (DIA)	MAJOR DIAMETER	MINOR DIAMETER	WASHER FACE DIAMETER	HEAD ACROSS FLATS	NOM. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
#12-24	.199/.195	.215/.209	.164 REF	.432/.398	NOM .312"	2803 LBS.	100 IN.-LBS.	1999 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	MATERIAL														
		HRS PRIMED ONLY				AZ55 GALVALUME				G-90 GALVANIZED				HRS. PLATE	
		NOM. GAUGE	16	14	12	26	24	22	18	20	18	16	14	12	3/16"
#12-24		N/A	924	1627	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2556	3298

PULL OVER STRENGTH VALUE (LBS. ULT.)	DESIGNATION	MATERIAL						
		AZ55 GALVALUME				690	ALUMINUM	SLOT EDGE PANEL
		NOM. GAUGE	29	26	24	22	20	21
#12-24 W/ 14 MM BONDED WASHER		N/A	801	996	1258	N/A	N/A	N/A
(.398/.432 HWH DIA.)		N/A	775	956	1078	N/A	N/A	N/A



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.

- 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.

ZXL HG SteelBinder®



- 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 Zinc-Aluminum Alloy provides lifetime protection against red rust on the head & washer face. 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	HEAD STYLE	CARTON QTY.	WEIGHT/M
12-24 x 1-1/4"	5/16" CHWH	2000	25.8/M

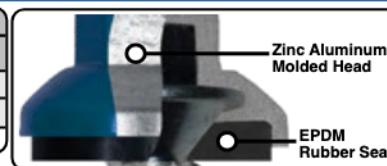


No Red-Rust Guaranteed!

TECHNICAL INFORMATION	DRILL POINT (DIA)	MAJOR DIAMETER	MINOR DIAMETER	WASHER FACE DIAMETER	HEAD ACROSS FLATS	NOM. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
12-24	.199/.195	.215/.209	.164 REF.	.630	NOM .312"	1525** LBS.	100 IN.-LBS.	1999 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	MATERIAL														
		HRS PRIMED ONLY				AZ55 GALVALUME				G-90 GALVANIZED				HRS. PLATE	
		NOM. GAUGE	16	14	12	26	24	22	18	20	18	16	14	12	3/16"
12-24		N/A	924	1525**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1525**LBS	

PULL OVER STRENGTH VALUE (LBS. ULT.)	DESIGNATION	MATERIAL						
		AZ55 GALVALUME				690	ALUMINUM	SLOT EDGE PANEL
		NOM. GAUGE	29	26	24	22	20	21
12-24		637	1045	1303	1525**	N/A	N/A	N/A



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.

- 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.
4. ** The value tabulated is the force at which the ZXL head breaks from the carbon steel body.

ECLIPSE SteelBinder®



- 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

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

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.

TECHNICAL INFORMATION	DRILL POINT (DIA)	MAJOR DIAMETER	MINOR DIAMETER	WASHER FACE DIAMETER	NOM. TENSILE STRENGTH	ULT. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
#12	.180/.175	.215/.209	.164/.157	.544 T-30 6-Lobe Truss	2900 LBS.	92 IN-LBS.	1962 LBS.
#14	.156/.150	.246/.240	.192/.185	.533/.551 T-30 6-Lobe Truss	3800 LBS.	150 IN-LBS.	2850 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	NOM. GAUGE	MATERIAL													
		HRS PRIMED ONLY				AZ55 GALVALUME				G-90 GALVANIZED				HRS. PLATE	
		16	14	12	26	24	22	18	20	18	16	14	12	3/16"	1/4"
#12	THICKNESS	.060	.075	.105	.018	.024	.030	.048	.036	.048	.060	.075	.105	.187	.250
		927	958	1678	N/A	N/A	N/A	N/A	N/A	729	787	1041	1372	N/A	N/A
#14		N/A	N/A	N/A	342	378	418	1038	620	1038	N/A	N/A	N/A	N/A	N/A

PULL OVER STRENGTH VALUE (LBS. ULT.)	DESIGNATION	MATERIAL						
		AZ55 GALVALUME				G90	ALUMINUM	SLOT EDGE PANEL
		29	26	24	22	20	21	29
#12	THICKNESS	.014	.018	.024	.030	.036	.028	.014
		687	1090	1299	1562	N/A	N/A	N/A
#14		746	960	1261	1376	N/A	N/A	N/A



The Truss head is 50% lower than a standard HWH & provides a very aesthetic appearance. Drill point is designed to penetrate steel quickly with no "point walking"

- 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, expressed in LBS. Apply an appropriate safety factor to obtain design limits

HWH SteelBinder®



- Self-drilling screws that are designed for general construction applications.
- Drill points are designed to penetrate a wide variety of metal thicknesses.
- Applications include HVAC, roof deck to steel framing, and roof clips to steel framing.

SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
8-18 x 1/2"	1/4" HWH	10000	3.6
8-18x5/8" w/Nibbs	1/4" HWH	10000	4.0
10-16 x 5/8"	5/16" HWH	5000	5.7
10-16 x 3/4"	5/16" HWH	2500	6.3
10-16 x 1"	5/16" HWH	2500	7.6
12-14 x 3/4"	5/16" HWH	2500	8.4
12-14 x 1"	5/16" HWH	2500	10.0
12-14 x 1-1/4"	5/16" HWH	2500	11.8
12-14 x 1-1/2"	5/16" HWH	2000	13.3
12-14 x 2"	5/16" HWH	1500	16.7
12-14 x 2-1/2"	5/16" HWH	1500	21.4
12-14 x 3"	5/16" HWH	1000	25.0

SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
1/4-14x7/8" Stitch	5/16" HWH	2500	8.8
1/4-14 x 3/4"	3/8" HWH	2500	12.5
1/4-14 x 1"	3/8" HWH	2500	15.2
1/4-14 x 1-1/4"	3/8" HWH	2000	17.5
1/4-14 x 1-1/2"	3/8" HWH	1500	19.6
1/4-14 x 2"	3/8" HWH	1000	23.8
1/4-14 x 2-1/2"	3/8" HWH	1000	30.0
1/4-14 x 3"	3/8" HWH	1000	33.2
1/4-14 x 4"	3/8" HWH	500	41.9
1/4-14 x 5"	3/8" HWH	500	50.7
1/4-14 x 6"	3/8" HWH	250	53.0

TECHNICAL INFORMATION	DRILL POINT (DIA)	MAJOR DIAMETER	MINOR DIAMETER	WASHER FACE DIAMETER	HEAD ACROSS FLATS	NOM. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
#1/4-14 (3/8" AF)	.216/.210	.246/.240	.192/.185	.520/.480	NOM .375"	3697 LBS.	150 IN-LBS.	2682 LBS.
#12-14 (5/16" AF)	.180/.175	.215/.209	.164/.157	.432/.398	NOM .312"	2900 LBS.	92 IN-LBS.	1962 LBS.
#1/4-14 (5/16" AF)	.156/.150	.246/.240	.192/.185	.432/.398	NOM .312"	3697 LBS.	150 IN-LBS.	2682 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	NOM. GAUGE	MATERIAL													
		HRS PRIMED ONLY				AZ55 GALVALUME				G-90 GALVANIZED				HRS. PLATE	
		16	14	12	26	24	22	18	20	18	16	14	12	3/16"	1/4"
#14-14 (3/8" AF)	THICKNESS	.060	.075	.105	.018	.024	.030	.048	.036	.048	.060	.075	.105	.187	.250
		986	1070	2003	342	418	486	1038	620	868	890	1107	1327	N/A	N/A
#12-14 (5/16" AF)		927	958	1678	N/A	N/A	N/A	N/A	N/A	729	787	1041	1372	N/A	N/A
#14-14 (5/16" AF)		986	1070	2003	342	418	486	1038	620	868	890	1107	1327	N/A	N/A

PULL OVER STRENGTH VALUE (LBS. ULT.)	DESIGNATION	MATERIAL						
		AZ55 GALVALUME				G90	ALUMINUM	SLOT EDGE PANEL
		29	26	24	22	20	21	29
#14-14 (3/8" AF) BONDED WASHER (16mm)	THICKNESS	.014	.018	.024	.030	.036	.028	.014
		N/A	1001	1206	1649	N/A	N/A	N/A
#12-14 (5/16" AF) BONDED WASHER (14mm)		N/A	780	1078	1355	1608	N/A	N/A
#14-14 (5/16" AF) STITCH BONDED WASHER (14mm)		N/A	892	1076	1243	1916	N/A	N/A

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

#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.

TAPPING SteelBinder®



- Tapping screws that are designed to be used in light gauge metal 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 screws that have loosened from steel.
- 5/16" 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

SIZE	POINT STYLE	HEAD STYLE	CARTON QTY.	WEIGHT /M
17 x 3/4"	TYPE AB	5/16" HWH	2000	14.0
17 x 1"	TYPE AB	5/16" HWH	2000	18.0
17 x 1-1/4"	TYPE AB	5/16" HWH	2000	22.0
17 x 1-1/2"	TYPE AB	5/16" HWH	1500	25.9

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.

TECHNICAL INFORMATION	DRILL POINT (DIA)	MAJOR DIAMETER	MINOR DIAMETER	WASHER FACE DIAMETER	HEAD ACROSS FLATS	NOM. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
17-14	45° Sharp Point	.280/.273	NOM .220"	N/A	NOM .375"	5160 LBS.	220 MIN.	3952 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	NOM. GAUGE	MATERIAL													
		HRS PRIMED ONLY				AZ55 GALVALUME				G-90 GALVANIZED				HRS. PLATE	
		THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS
17-14		16	14	12	26	24	22	18	20	18	16	14	12	3/16"	1/4"
		.060	.075	.105	.018	.024	.030	.048	.036	.048	.060	.075	.105	.187	.250
		1409	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1119	N/A	N/A	N/A	N/A	N/A

PULL OVER STRENGTH VALUE (LBS. ULT.)	DESIGNATION	MATERIAL						
		AZ55 GALVALUME				G90	ALUMINUM	SLOT EDGE PANEL
		NOM. GAUGE	NOM. GAUGE	NOM. GAUGE	NOM. GAUGE	NOM. GAUGE	NOM. GAUGE	NOM. GAUGE
		29	26	24	22	20	21	29
		.014	.018	.024	.030	.036	.028	.014
17-14		556	890	1197	1290	N/A	N/A	N/A

NOTES: 1. For metal to wood tapping screws refer to page 12.

ZXL™ TAPPING SteelBinder®



- 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 Zinc-Aluminum Alloy provides lifetime protection against red rust on the head & washer face. 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.

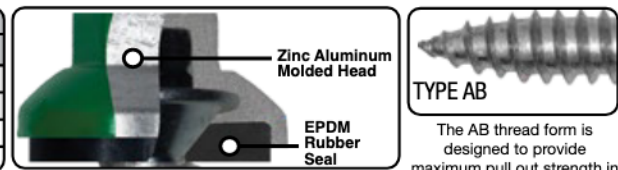
SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
1/4-14 x 3/4" AB	5/16" CHWH	2000	18.2
1/4-14 x 1" AB	5/16" CHWH	2000	19.6
1/4-14 x 1-1/4" AB	5/16" CHWH	2000	21.0
17-14 x 1" AB	5/16" CHWH	1500	23.0



TECHNICAL INFORMATION	DRILL POINT (DIA)	MAJOR DIAMETER	MINOR DIAMETER	WASHER FACE DIAMETER	HEAD ACROSS FLATS	NOM. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
1/4-14	30° Sharp Point	.246/.240	.192/.185	.630	NOM .312"	1525** LBS.	150 MIN.	2850 LBS.
17-14	45° Sharp Point	.282/.273	.220 NOM.	.630	NOM .312"	1525** LBS.	220 MIN.	3952 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	NOM. GAUGE	MATERIAL													
		HRS PRIMED ONLY				AZ55 GALVALUME				G-90 GALVANIZED				HRS. PLATE	
		THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS	THICKNESS
1/4-14		16	14	12	26	24	22	18	20	18	16	14	12	3/16"	1/4"
		.060	.075	.105	.018	.024	.030	.048	.036	.048	.060	.075	.105	.187	.250
		1181	1265	1525**	N/A	N/A	N/A	N/A	N/A	1055	1073	1396	1525**	N/A	N/A
17-14		1409	1429	1525**	N/A	N/A	N/A	N/A	N/A	1119	N/A	N/A	N/A	N/A	N/A

PULL OVER STRENGTH VALUE (LBS. ULT.)	DESIGNATION	MATERIAL						
		AZ55 GALVALUME				G90	ALUMINUM	SLOT EDGE PANEL
		NOM. GAUGE	NOM. GAUGE	NOM. GAUGE	NOM. GAUGE	NOM. GAUGE	NOM. GAUGE	NOM. GAUGE
		29	26	24	22	20	21	29
		.014	.018	.024	.030	.036	.028	.014
1/4-14 (.630 DIA)		886	1287	1525**	1525**	N/A	N/A	N/A
17-14 (.630 DIA)		696	1101	1205	1446	N/A	N/A	N/A



- 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. ** Ultimate tensile strength value calculated at the point where the ZXL head breaks from the carbon steel body.

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.

The AB thread form is designed to provide maximum pull out strength in steel in a pre-drilled hole. See Catalog page 1 for proper drill bit sizes.

KWIKSEAL MB WoodBinder

POWERFUL™ CORROSION DEFENSE POWDER COAT SYSTEM // **KS V-NECK™** PREVENTS TWIST OFF HEX WASHER HEAD // **KS LO-ROOT™** PATENTED XTREME HOLD THREAD DESIGN // **MB™** MICRO-BIT SELF DRILL POINT



- 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

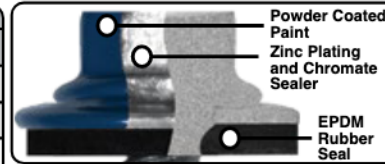
SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
10 x 1"	1/4" HWH	3000	7.8
10 x 1-1/2"	1/4" HWH	2500	9.9
10 x 2"	1/4" HWH	2000	12.2
10 x 2-1/2"	1/4" HWH	1500	14.3
10 x 3"	1/4" HWH	1000	16.3
12 x 3/4" STITCH	1/4" HWH	2500	8.8

PULLOUT & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY & BASED UPON WOOD DENSITIES FOUND IN PRESENT DAY WOOD PRODUCTS.

TECHNICAL INFORMATION	DRILL POINT	MAJOR DIAMETER	MINOR DIAMETER	WASHER/HEAD DIAMETER	HEAD ACROSS FLATS	ULT. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
10-16/8	MICRO-BIT	.205/.191	.121/.116	.348/.322	NOM. .250"	1904 LBS.	56 IN.-LBS.	1547 LBS.
#12-14 STITCH	MICRO-BIT	.215/.209	.160/.153	.348/.322	NOM. .250"	2900 LBS.	88 IN.-LBS.	1962 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	MATERIAL	SUBSTRATE																			
		HRS PRIMED ONLY						(1) 1" PENETRATION				(3) FULL PENETRATION									
		NOM. GAUGE			THICKNESS			3/4" PLY		5/8" PLY		1/2" PLY		7/16" OSB		2X Y.PINE		2X SPF			
10-16/8	N/A	N/A	N/A	.060	.075	.105	(3)	(4)	(3)	(4)	(3)	(4)	(3)	(4)	(1)	(2)	(4)	(1)	(2)	(4)	
#12-14 STITCH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

PULL OVER STRENGTH VALUE (LBS. ULT.) (EPDM ONLY)	DESIGNATION	MATERIAL							
		AZ55 GALVALUME				G90	ALUMINUM	SLOT EDGE PANEL	
		NOM. GAUGE	THICKNESS	NOM. GAUGE	THICKNESS	NOM. GAUGE	THICKNESS	NOM. GAUGE	THICKNESS
#10 W/ BONDED 12 MM WASHER	378	629	721	N/A	N/A	N/A	N/A	N/A	N/A
#12-14 STITCH W/ BONDED 12 MM WASHER	378	629	721	N/A	N/A	N/A	N/A	N/A	N/A



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.

NOTES: 1. All strength values shown below are ultimate values, expressed in LBS. Apply an appropriate safety factor to obtain design limit

ZXL MB WoodBinder

POWERFUL™ CORROSION DEFENSE POWDER COAT SYSTEM // **ZXL™** NO RED RUST ZAMAC DIE CAST HEAD // **KS LO-ROOT™** PATENTED XTREME HOLD THREAD DESIGN // **MB™** MICRO-BIT SELF DRILL POINT



- Fastener designed to attach steel roofing & siding used in post-frame & residential metal roofing applications.
- 5/16" cupped HWH with a molded ZAMAC Zinc-Aluminum alloy provides lifetime protection against red rust on the head & washer. (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.

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 & BASED UPON WOOD DENSITIES FOUND IN PRESENT DAY WOOD PRODUCTS.

SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
10 x 1"	5/16" CHWH**	3000	12.7
10 x 1-1/2"	5/16" CHWH**	2500	14.7
10 x 2"	5/16" CHWH**	2000	17.0
10 x 2-1/2"	5/16" CHWH**	1500	19.2
10 x 3"	5/16" CHWH**	1000	21.0
12 x 3/4" STITCH	5/16" CHWH**	2500	9.0

**CHWH-Cupped Hex Washer Head.
*** Tabulated value is the force at which the ZXL head breaks from the carbon steel body.

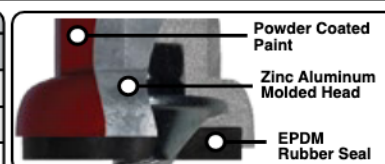


No Red-Rust Guaranteed!

TECHNICAL INFORMATION	DRILL POINT	MAJOR DIAMETER	MINOR DIAMETER	WASHER/HEAD DIAMETER	HEAD ACROSS FLATS	ULT. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
10-16/8	MICRO-BIT	.210/.191	.121/.116	.500"	NOM .312"	1575** LBS.	60 IN.-LBS.	1574 LBS.
#12-14 STITCH	MICRO-BIT	.215/.209	.160/.153	.500"	NOM .312"	1575** LBS.	88 IN.-LBS.	1962 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	MATERIAL	SUBSTRATE																	
		HRS PRIMED ONLY						(1) 1" PENETRATION				(3) FULL PENETRATION							
		NOM. GAUGE			THICKNESS			3/4" PLY		5/8" PLY		1/2" PLY		7/16" OSB		2X Y.PINE		2X SPF	
10-16/8	N/A	N/A	N/A	.060	.075	.105	(3)	(4)	(3)	(4)	(3)	(4)	(1)	(2)	(4)	(1)	(2)	(4)	
#12-14 STITCH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

PULL OVER STRENGTH VALUE (LBS. ULT.) (EPDM ONLY)	DESIGNATION	MATERIAL							
		AZ55 GALVALUME				G90	ALUMINUM	SLOT EDGE PANEL	
		NOM. GAUGE	THICKNESS	NOM. GAUGE	THICKNESS	NOM. GAUGE	THICKNESS	NOM. GAUGE	THICKNESS
10-16/8 (EPDM ONLY)	658	927	1035	1386	N/A	N/A	N/A	N/A	N/A
#12-14 STITCH SD (EPDM ONLY)	658	927	1035	1386	N/A	N/A	N/A	N/A	N/A



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.

NOTES: 1. All strength values shown below are ultimate values, expressed in LBS. Apply an appropriate safety factor to obtain design limit

#12 TYPE 17 WoodBinder® The OSB Screw



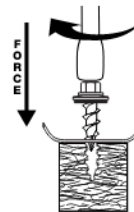
- OSB/Replacement Applications
- Deep, forceful threads that will grip into the soft fibers.
- Color matched Powderful™ coating
- KS V-Neck technology, Hex washer head
- Strip-Loc Thread to Point technology

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 & BASED UPON WOOD DENSITIES FOUND IN PRESENT DAY WOOD PRODUCTS. TECHNICAL DATA PROVIDED HEREIN IS TO BE USED AS A GUIDE FOR TYPICAL STRENGTH CHARACTERISTICS ONLY.
 AN APPROPRIATE FACTOR OF SAFETY MUST BE APPLIED BY THE USER TO OBTAIN ALLOWABLE LIMITS FOR DESIGN.
 ALL STRENGTH VALUES SHOWN ARE ULTIMATE VALUES, EXPRESSED IN POUNDS.
 DUE TO THE INCONSISTENCY OF OSB, THE #12 OSB SCREW WAS DEVELOPED TO REDUCE STRIPOUT TO ENABLE FULL PULLOUT VALUES TO BE OBTAINED.

POWERFUL™ CORROSION DEFENSE POWDER COAT SYSTEM
KS V-NECK™ PREVENTS TRUST OUT HEX WASHER HEAD
Strip-Loc™ THREAD 2 POINT TECHNOLOGY



SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
#12 x 3/4"	HEX	2500	8.0
#12 x 1-1/2"	HEX	2500	10.1



Rescue Screw with Anti-Strip Out Technology



Residential



Backyard Sheds

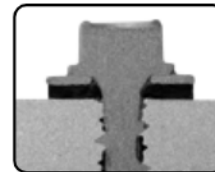
TECHNICAL INFORMATION	DRILL POINT	MAJOR DIAMETER	MINOR DIAMETER	WASHER/HEAD DIAMETER	HEAD ACROSS FLATS	ULT. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
#12 TYPE 17	Sharp Point	.215/.210	.130/.135	.348/.322	.250 NOM	2450 LBS.	65 IN.-LBS.	2100 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	MATERIAL				SUBSTRATE											
	HRS PRIMED ONLY				3/4" PLY		5/8" PLY		1/2" PLY		7/16" OSB		2X Y.PINE		2X SPF	
	NOM. GAUGE	16	14	12	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
#12 TYPE 17	N/A	N/A	N/A	N/A	380	585	453	588	297	390	198	212	438	1090	378	739

NOTES: 1-1/2" LENGTH FULLY PENETRATES OSB AND PLYWOOD SHEETING

PULL OVER STRENGTH VALUE (LBS. ULT.) (EPDM ONLY)	DESIGNATION	MATERIAL			
		AZ55 GALVALUME			
	NOM. GAUGE	29	26	24	22
THICKNESS	.015	.019	.024	.032	
#12 TYPE 17 (EPDM WASHER ONLY)		378	629	721	N/A

BMT DENOTES BASE METAL THICKNESS AFTER REMOVAL OF PAINT FINISH AND METALLIC PROTECTIVE COATING.



KS V-Neck Anatomy of the KS V-neck weather tight system



Strip-Loc thread to point technology grips the fiber of OSB

NOTES: 26 AND 29 GA. VALUES SHOWN WERE OBTAINED USING 80 KSI STEEL SHEETING. 24, 22, AND 20 GA. VALUES WERE OBTAINED USING 50 KSI MINIMUM STEEL SHEETING.

ZXL #12 T-17 WoodBinder® The OSB Screw



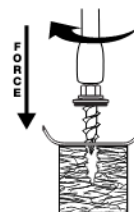
- OSB/Replacement Applications
- Deep, forceful threads that will grip into the soft fibers.
- Color matched Powderful™ coating
- ZXL™ is an excellent choice for GALVALUME & other long-life metal roof panels.
- Strip-Loc Thread to Point technology

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 & BASED UPON WOOD DENSITIES FOUND IN PRESENT DAY WOOD PRODUCTS. TECHNICAL DATA PROVIDED HEREIN IS TO BE USED AS A GUIDE FOR TYPICAL STRENGTH CHARACTERISTICS ONLY.
 DUE TO THE INCONSISTENCY OF OSB, THE #12 OSB SCREW WAS DEVELOPED TO REDUCE STRIPOUT TO ENABLE FULL PULLOUT VALUES TO BE OBTAINED.

POWERFUL™ CORROSION DEFENSE POWDER COAT SYSTEM
ZXL™ NO RED RUST CANADA NO GRAY HEAD
Strip-Loc™ THREAD 2 POINT TECHNOLOGY



SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
#12 x 1-1/2"	HEX	2500	10.1



Rescue Screw with Anti-Strip Out Technology



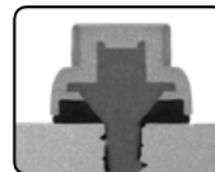
Residential

TECHNICAL INFORMATION	DRILL POINT	MAJOR DIAMETER	MINOR DIAMETER	WASHER/HEAD DIAMETER	HEAD ACROSS FLATS	ULT. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
#12 TYPE 17	Sharp Point	.215/.210	.130/.135	.500	.305/.311	1575 LBS.*	65 IN.-LBS.	2100 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	MATERIAL				SUBSTRATE											
	HRS PRIMED ONLY				3/4" PLY		5/8" PLY		1/2" PLY		5/8" OSB		7/16" OSB		2X SPF	
	NOM. GAUGE	16	14	12	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
#12 TYPE 17	N/A	N/A	N/A	N/A	380	585	453	588	297	390	361	441	198	212	378	739

PULL OVER STRENGTH VALUE (LBS. ULT.) (EPDM ONLY)	DESIGNATION	MATERIAL			
		AZ55 GALVALUME			
	NOM. GAUGE	29	26	24	22
THICKNESS	.015	.019	.024	.032	
#12 TYPE 17 (EPDM WASHER ONLY)		658	927	1035	1386

NOTES: 1. *The tabulated value represents the ultimate tensile load at which the ZXL head breaks from the carbon steel fastener body.
 2. 1-1/2" Length fully penetrates OSB and Plywood sheeting.
 3. 26 and 29 GA values shown were obtained using 80 KSI steel sheeting. 24, 22, and 20 GA values were obtained using KSI minimum steel sheeting.



ZXL Anatomy of the ZXL weather tight system



Strip-Loc thread to point technology grips the fiber of OSB

SS WoodBinder



- 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 & PULLOVER VALUES ARE DETERMINED IN THE ST FASTENING SYSTEMS ENGINEERING LABORATORY & BASED UPON WOOD DENSITIES FOUND IN PRESENT DAY WOOD PRODUCTS.

THE USE OF 304 SS SCREWS MAY CAUSE BLISTERING ON ALUMINUM PANELS DUE TO THE MANY DIFFERENT ALLOYS FOUND. CHECK WITH THE ALUMINUM PANEL SUPPLIER FOR PROPER FASTENER RECOMMENDATION.

SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
10 x 1"	1/4" CHWH	3000	9.0
10 x 1-1/2"	1/4" CHWH	2500	11.9
10 x 2"	1/4" CHWH	2000	14.0

TECHNICAL INFORMATION	DRILL POINT	MAJOR DIAMETER		MINOR DIAMETER		WASHER/HEAD DIAMETER	HEAD ACROSS FLATS	ULT. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH							
		#10	30° SHARP POINT-A	.183/.189	.126/.132						.500	NOM .250"	1135 LBS.	48 IN.-LBS.	1034 LBS.		
PULL OUT STRENGTH VALUE (LBS. ULT.)	MATERIAL	SUBSTRATE										(1) 1" PENETRATION		(3) FULL PENETRATION			
		SUBSTRATE										(2) 1 1/2" PENETRATION		(4) 1/2" PENETRATION			
		HRS PRIMED ONLY			3/4" PLY		5/8" PLY		1/2" PLY		7/16" OSB		2X Y.PINE		2X SPF		
		NOM. GAUGE	16	14	12	(3)	(4)	(3)	(4)	(3)	(4)	(3)	(4)	(1)	(2)	(4)	(1)
THICKNESS	.060	.075	.105	(3)	(4)	(3)	(4)	(3)	(4)	(3)	(4)	(1)	(2)	(4)	(1)	(2)	(4)
#10	N/A	N/A	N/A	616	N/A	473	N/A	312	N/A	208	N/A	802	1176	N/A	678	913	N/A

PULL OVER STRENGTH VALUE (LBS. ULT.) (EPDM ONLY)	DESIGNATION	MATERIAL						
		AZ55 GALVALUME				G90	ALUMINUM	SLOT EDGE PANEL
		NOM. GAUGE	29	26	24	22	20	21
THICKNESS	.014	.018	.024	.030	.036	.028	.014	
#10 (EPDM WASHER ONLY)		683	870	N/A	N/A	N/A	N/A	N/A



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

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

ST-XLMB WoodBinder



- 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 & BASED UPON WOOD DENSITIES FOUND IN PRESENT DAY WOOD PRODUCTS. THE

USE OF 304 SS SCREWS MAY CAUSE BLISTERING ON ALUMINUM PANELS DUE TO THE MANY DIFFERENT ALLOYS FOUND. CHECK WITH THE ALUMINUM PANEL SUPPLIER FOR PROPER FASTENER RECOMMENDATION.

SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
9 x 1"	1/4" CHWH*	3000	9.0
9 x 1-1/2 "	1/4" CHWH*	2500	11.9
9 x 2"	1/4" CHWH*	2000	14.0
9 x 2-1/2"	1/4" CHWH*	1500	16.0
9 x 3 "	1/4" CHWH*	1000	18.4
12x3/4" STITCH	1/4" CHWH*	2500	16.0

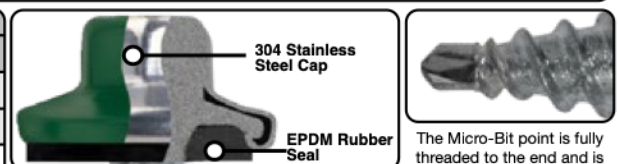
*CHWH-Cupped Hex Washer Head.

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.

TECHNICAL INFORMATION	DRILL POINT	MAJOR DIAMETER		MINOR DIAMETER		WASHER/HEAD DIAMETER	HEAD ACROSS FLATS	ULT. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH							
		#9	MICRO-BIT	.181/.178	.133/.127						.500	NOM .250"	2100 LBS.	48 IN.-LBS.	1800 LBS.		
#12-14 STITCH	MICRO-BIT	.215/.209	.164/.157	.500	NOM .250"	2900 LBS.	88 IN.-LBS.	1962 LBS.									
PULL OUT STRENGTH VALUE (LBS. ULT.)	MATERIAL	SUBSTRATE										(1) 1" PENETRATION		(3) FULL PENETRATION			
		SUBSTRATE										(2) 1 1/2" PENETRATION		(4) 1/2" PENETRATION			
		HRS PRIMED ONLY			3/4" PLY		5/8" PLY		1/2" PLY		7/16" OSB		2X Y.PINE		2X SPF		
		NOM. GAUGE	16	14	12	(3)	(4)	(3)	(4)	(3)	(4)	(3)	(4)	(1)	(2)	(4)	(1)
THICKNESS	.060	.075	.105	(3)	(4)	(3)	(4)	(3)	(4)	(3)	(4)	(1)	(2)	(4)	(1)	(2)	(4)
#9	N/A	N/A	N/A	668	N/A	384	N/A	242	N/A	224	N/A	852	1030	N/A	604	855	N/A
#12-14 STITCH	N/A	N/A	N/A	N/A	260	N/A	233	N/A	202	N/A	164	N/A	N/A	331	N/A	N/A	237

PULL OVER STRENGTH VALUE (LBS. ULT.) (EPDM ONLY)	DESIGNATION	MATERIAL						
		AZ55 GALVALUME				G90	ALUMINUM	SLOT EDGE PANEL
		NOM. GAUGE	29	26	24	22	20	21
THICKNESS	.014	.018	.024	.030	.036	.028	.014	
#9 (EPDM WASHER)		573	726	869	N/A	N/A	380	N/A
#12-14 STITCH (EPDM WASHER)		378	629	721	N/A	N/A	N/A	N/A



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

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

ECLIPSE® WoodBinder®



- Round head with 6-lobe recess driver provides an aesthetic, low-profile appearance on sidewall metal applications installed into wood girts.
- Micro-Bit™ point quickly penetrates steel siding and eliminates metal shaving 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 & BASED UPON WOOD DENSITIES FOUND IN PRESENT DAY WOOD PRODUCTS.

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

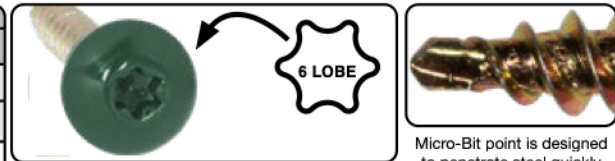
ROLLING CHANGE

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.

TECHNICAL INFORMATION	DRILL POINT	MAJOR DIAMETER	MINOR DIAMETER	WASHER/HEAD DIAMETER	HEAD ACROSS FLATS	ULT. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
#10	MICRO-BIT	.206/.200	.126/.122	.500	N/A	2023 LBS.	75 IN.-LBS.	1653 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	MATERIAL	SUBSTRATE																
		HRS PRIMED ONLY				3/4" PLY		5/8" PLY		1/2" PLY		7/16" OSB		2X Y.PINE		2X SPF		
		NOM. GAUGE	16	14	12	(3)	(4)	(3)	(4)	(3)	(4)	(3)	(4)	(1)	(2)	(4)	(1)	(2)
#10	N/A	N/A	N/A	N/A	536	N/A	420	N/A	379	N/A	190	N/A	929	N/A	N/A	640	N/A	N/A

PULL OVER STRENGTH VALUE (LBS. ULT.) (EPDM ONLY)	DESIGNATION	MATERIAL						
		AZ55 GALVALUME				G90	ALUMINUM	SLOT EDGE PANEL
		NOM. GAUGE	29	26	24	22	20	21
#10 (EPDM WASHER ONLY)	THICKNESS	.014	.018	.024	.030	.036	.028	.014
		688	879	N/A	N/A	N/A	N/A	N/A



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

Micro-Bit point is designed to penetrate steel quickly with no "point walking."



T-25-W Driver

#14 TYPE 17 WoodBinder®



- 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 & BASED UPON WOOD DENSITIES FOUND IN PRESENT DAY WOOD PRODUCTS.

SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
14 x 1"	5/16" HWH	2000	13.0
14 X 1-1/4"	5/16" HWH	2000	15.7
14 x 1-1/2"	5/16" HWH	1500	17.7
14 x 2"	5/16" HWH	1500	22.3
14 x 2-1/2"	5/16" HWH	1000	26.7

TECHNICAL INFORMATION	DRILL POINT	MAJOR DIAMETER	MINOR DIAMETER	WASHER/HEAD DIAMETER	HEAD ACROSS FLATS	ULT. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
#14-10	30° SHARP POINT T-17	.254/.248	.185/.178	.398/.432	NOM .312"	4270 LBS.	125 IN.-LBS.	2997 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	MATERIAL	SUBSTRATE																			
		HRS PRIMED ONLY				3/4" PLY		5/8" PLY		1/2" PLY		7/16" OSB		2X Y.PINE		2X SPF					
		NOM. GAUGE	16	14	12	(3)	(4)	(3)	(4)	(3)	(4)	(3)	(4)	(1)	(2)	(4)	(1)	(2)	(4)		
#14-10	N/A	N/A	N/A	N/A	800	1250	2017	723	N/A	487	N/A	391	N/A	227	N/A	856	1669	N/A	594	1235	N/A

PULL OVER STRENGTH VALUE (LBS. ULT.) (EPDM ONLY)	DESIGNATION	MATERIAL						
		AZ55 GALVALUME				G90	ALUMINUM	SLOT EDGE PANEL
		NOM. GAUGE	29	26	24	22	20	21
#14 -10 (14MM O.D. BONDED WASHER)	THICKNESS	.014	.018	.024	.030	.036	.028	.014
		495	780	1078	1355	1608	N/A	N/A
#14-10 (W/ NO WASHER)		N/A	722	1040	1197	1419	N/A	N/A



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.

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

TAPPING WoodBinder®



- 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 & HWH with EPDM bonded washer 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 & BASED UPON WOOD DENSITIES FOUND IN PRESENT DAY WOOD PRODUCTS.

SIZE	POINT STYLE	HEAD STYLE	CARTON QTY.	WEIGHT /M
14 x 3/4"	TYPE A	3/8" HWH	2500	16.5
14 x 1"	TYPE A	3/8" HWH	2000	16.9
14 x 1-1/4"	TYPE A	3/8" HWH	2000	17.6
14 x 1-1/2"	TYPE A	3/8" HWH	1500	24.6
14 x 2"	TYPE A	3/8" HWH	1500	26.0
14 x 2-1/2"	TYPE A	3/8" HWH	1000	30.8
14 x 3"	TYPE A	3/8" HWH	1000	35.9

TECHNICAL INFORMATION	DRILL POINT	MAJOR DIAMETER	MINOR DIAMETER	WASHER/HEAD DIAMETER	HEAD ACROSS FLATS	ULT. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
#14-10 HWH TYPE A	30° SHARP POINT-A	.254/.248	.185/.178	.500	NOM .375"	4270 LBS.	125 IN.-LBS.	2997 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	NOM. GAUGE	MATERIAL								SUBSTRATE								
		HRS PRIMED ONLY								(1) 1" PENETRATION				(3) FULL PENETRATION				
										(2) 1 1/2" PENETRATION				(4) 1/2" PENETRATION				
#14-10 HWH TYPE A	16	3/4" PLY		5/8" PLY		1/2" PLY		7/16" OSB		2X Y.PINE		2X SPF						
	14																	
	12																	
	THICKNESS	.060	.075	.105	(3)	(4)	(3)	(4)	(3)	(4)	(3)	(4)	(1)	(2)	(4)	(1)	(2)	(4)
#14-10 HWH TYPE A		800	1250	2017	723	N/A	487	N/A	391	N/A	227	N/A	856	1669	N/A	594	1235	N/A

PULL OVER STRENGTH VALUE (LBS. ULT.) (EPDM ONLY)	DESIGNATION	MATERIAL							
		AZ55 GALVALUME				G90	ALUMINUM	SLOT EDGE PANEL	
		NOM. GAUGE	29	26	24	22	20	21	29
	THICKNESS	.014	.018	.024	.030	.036	.028	.014	
#14-10 HWH TYPE A (16mm O.D. bonded washer)		N/A	1001	1206	1649	N/A	N/A	N/A	

NOTES: For metal to metal tapping screws refer to page 7.

ZXL TAPPING WoodBinder®



- 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 Zinc-Aluminum Alloy provides lifetime protection against red rust on the head & washer face. A written warranty is available upon request.
- The head and washer face captures the rubber EPDM washer even when driven at an angle and is designed to maximize pull over strength.



SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
14-10 x 1-1/2" A	5/16" CHWH	1500	23.0

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 & BASED UPON WOOD DENSITIES FOUND IN PRESENT DAY WOOD PRODUCTS.



No Red-Rust Guaranteed!

TECHNICAL INFORMATION	DRILL POINT	MAJOR DIAMETER	MINOR DIAMETER	WASHER/HEAD DIAMETER	HEAD ACROSS FLATS	ULT. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
#14-10	30° SHARP POINT	.254/.248	.185/.178	.630	NOM .312"	1525** LBS.	125 IN.-LBS.	2997 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	NOM. GAUGE	MATERIAL								SUBSTRATE								
		HRS PRIMED ONLY								(1) 1" PENETRATION				(3) FULL PENETRATION				
										(2) 1 1/2" PENETRATION				(4) 1/2" PENETRATION				
#14-10	16	3/4" PLY		5/8" PLY		1/2" PLY		7/16" OSB		2X Y.PINE		2X SPF						
	14																	
	12																	
	THICKNESS	.060	.075	.105	(3)	(4)	(3)	(4)	(3)	(4)	(3)	(4)	(1)	(2)	(4)	(1)	(2)	(4)
#14-10		1181	1265	1525**	707	N/A	554	N/A	391	N/A	238	N/A	828	1525**	N/A	594	1235	N/A

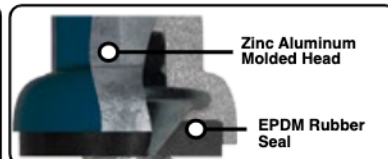
PULL OVER STRENGTH VALUE (LBS. ULT.) (EPDM ONLY)	DESIGNATION	MATERIAL							
		AZ55 GALVALUME				G90	ALUMINUM	SLOT EDGE PANEL	
		NOM. GAUGE	29	26	24	22	20	21	29
	THICKNESS	.014	.018	.024	.030	.036	.028	.014	
#14-10 (EPDM WASHER ONLY)		886	1287	1525**	1525**	N/A	N/A	N/A	

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. ** Ultimate tensile strength value calculated at the point where the ZXL head breaks from the carbon steel body.



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

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.

ST Clip Screw Metal to Wood



- #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 not to dimple the roof panel.
- Available in Ruspert® corrosion resistant coated carbon steel or 304 stainless steel

MIAMI DADE COUNTY
APPROVED

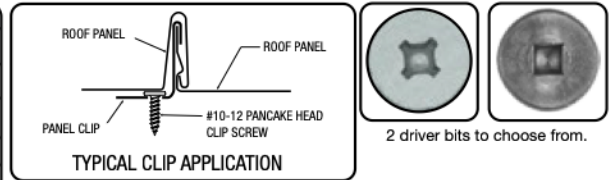
*In compliance with Dade County TAS
114 Appendix E for Ferrous Fasteners

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

TECHNICAL INFORMATION	DRILL POINT	MAJOR DIAMETER	MINOR DIAMETER	WASHER/HEAD DIAMETER	HEAD ACROSS FLATS	ULT. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
#10 PANCAKE TYPE 17	30° T-17	.204/.198	.128/.122	.447/.423	N/A	1981 LBS.	66 IN-LBS.	1428 LBS.
#10 WAFER	30° SHARP POINT	.204/.198	.128/.122	.447/.423	N/A	1981 LBS.	66 IN-LBS.	1428 LBS.
#10 PANCAKE 304 SS	30° SHARP POINT	.194/.188	.133/.126	.440 NOM.	N/A	1450 LBS.	48 IN-LBS.	1113 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	MATERIAL	SUBSTRATE														
		HRS PRIMED ONLY			3/4" PLY		5/8" PLY		1/2" PLY		7/16" OSB		2X Y.PINE		2X SPF	
		NOM. GAUGE	16	14	12	(3)	(3)	(3)	(3)	(2)	(1)	(2)	(1)			
#10 PANCAKE T-17	N/A	N/A	N/A	N/A	684	435	352	218	N/A	868	N/A	597				
#10 WAFER	N/A	N/A	N/A	N/A	684	435	352	218	N/A	868	N/A	597				
#10 PANCAKE 304 SS	N/A	N/A	N/A	N/A	544	424	335	182	N/A	779	N/A	719				

PULL OVER STRENGTH VALUE (LBS. ULT.) (EPDM ONLY)	DESIGNATION	MATERIAL						
		AZ55 GALVALUME				G90	ALUMINUM	SLOT EDGE PANEL
		NOM. GAUGE	29	26	24	22	20	21
#10 PANCAKE T-17	529	779	1128	1512	N/A	N/A	N/A	
#10 WAFER	N/A	N/A	N/A	N/A	N/A	N/A	685	
#10 PANCAKE 304 SS	529	779	1128	1512	N/A	N/A	N/A	



ST Clip Screw Metal to Metal



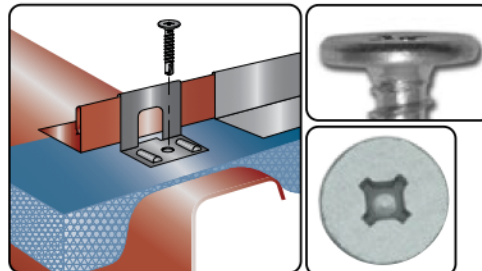
- A self-drilling Pancake Head is available to attach standing seam roof clips to steel framing.
- Low profile head design provides excellent pull over strength.
- Ruspert® corrosion resistant coating is standard on all Clip Screws.

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

TECHNICAL INFORMATION	POINT DIAMETER	MAJOR DIAMETER	MINOR DIAMETER	HEAD DIAMETER	ULT. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
#10-16 PANCAKE SD	.151/.156	.189/.183	.135/.141	.443/.423	1920	61 IN-LBS.	1633 LBS.

PULL OUT STRENGTH (LBS. ULT.)	SUBSTRATE				
	HRS PRIMED ONLY			G-90 GALVANIZED	
	16	14	12	18	20
#10-16 PANCAKE SD	830	1006	1495	731	

PULL OVER STRENGTH VALUE (LBS. ULT.)	DESIGNATION	MATERIAL			
		AZ55 GALVALUME			
		NOM. GAUGE	29	26	24
#10-16 PANCAKE SD	529	779	1128	1512	



ST Reamer Screws



- 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.

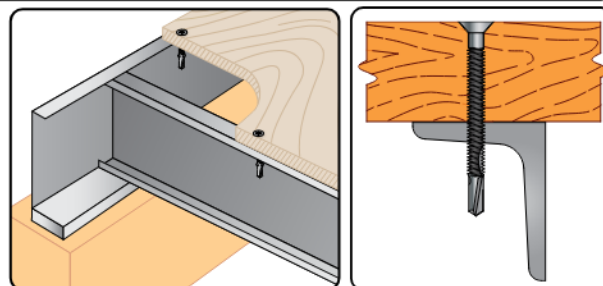
SIZE	HEAD STYLE	CARTON QTY.	WEIGHT/M
10-16 x 1-5/8"	#2 Square/Phillips Combo	3500	9.2/M
12-24 x 2"	#3 PFH	2000	17.5/M
12-24 x 2-1/2"	#3 PFH	2000	19.5/M
1/4-20 x 2-3/4"	#3 PFH	1500	28.6/M
1/4-20 x 3-1/4"	6 LOBE	1000	35.0/M



TECHNICAL INFORMATION	DRILL POINT	MAJOR DIAMETER	MINOR DIAMETER	HEAD DIAMETER	POINT DIAMETER	ULT. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
10-16	WINGED SD	.189/.183	.141/.135	.440 NOM.	.156/.151	1920 LBS.	61 IN-LBS.	1633 LBS.
12-24	WINGED SD	.216/.209	.165 REF.	.389 NOM.	.191/.197	2800 LBS.	100 IN-LBS.	2000 LBS.
1/4-20	WINGED SD	.250/.242	.187 REF.	.507/.452	.226/.220	4270 LBS.	168 IN-LBS.	3000 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	NOM. GAUGE	MATERIAL						
		HRS PRIMED ONLY			A36 HRS**		G-90 GALVANIZED	
		THICKNESS						
	16		14		12	3/16"	1/4"	18
	.065		.070		.106	.187	.250	.047
10-16		847	916		1085	1920*		587
12-24		832	947		1480	2582	2800*	
1/4-20		970	1165		1838	3145	4270*	

PULL OVER STRENGTH VALUE (LBS. ULT.)	MATERIAL	DESIGNATION	CDX PLYWOOD	2 x YELLOW PINE
	WASHER/ HEAD DIAMETER	THICKNESS	15/32" (NOM 1/2")	(1.5 ACTUAL)
10-16 (NOTE 3)			596 (NOTE 1)	680
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."
 4. Square/Phillips Combo Head available on #10 Diameter.

InsulDrill™



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

TECHNICAL INFORMATION	DRILL POINT	MAJOR DIAMETER	MINOR DIAMETER	WASHER/HEAD DIAMETER	HEAD ACROSS FLATS	ULT. TENSILE STRENGTH	MIN. TORSIONAL STRENGTH	NOM. SHEAR STRENGTH
# 12 Diameter	SELF-DRILL	.215 NOM.	.130 NOM.	.400 NOM.	.250 NOM.	*1723 LBS.	125 IN-LBS.	1324 LBS.

PULL OUT STRENGTH VALUE (LBS. ULT.)	NOM. GAUGE	GALVANIZED STEEL					SUBSTRATE					(1) FULL PENETRATION	(2) 1" PENETRATION	
		THICKNESS					3/4 PLY	5/8 PLY	1/2 PLY	7/16 OSB	2x Y.PINE	2x Y.PINE		
# 12 Diameter		653	489	406	319	263	795	564	457	177	1605	976		

PULL OVER STRENGTH VALUE (LBS. ULT.) (EPDM ONLY)	DESIGNATION	MATERIAL												
		AZ55 GALVALUME				G90	ALUMINUM	SLOT EDGE PANEL						
	NOM. GAUGE	THICKNESS												
	29	.015	26	.019	24	.024	22	.032	20	.038	21	.028	29	.0175
BONDED WASHER (.472" Dia) (12mm)		671	845	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A



- 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.

ST Rivet



- 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 QTY.	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 I: DIMENSIONS OF ST FASTENING SYSTEMS RIVET	RIVET SERIES NO.	NOM. RIVET SIZE	D		H		W	F	E	L
			BODY DIAMETER		HEAD DIAMETER					
			MAX.	MIN.	MAX.	MIN.				
4	1/8"	.128	.122	.262	.207	.076	L+.120	.040	SEE TABLE II	
5	5/32"	.159	.153	.328	.238	.095	L+.140	.050	SEE TABLE II	
6	3/16"	.191	.183	.394	.356	.114	L+.160	.060	SEE TABLE II	

ST FASTENING SYSTEMS STANDARDS (**)	S =	STEEL BODY	A =	ALUMINUM BODY	SS =	STAINLESS STEEL BODY
		STEEL MANDREL		ALUMINUM MANDREL		STAINLESS STEEL MANDREL

TABLE II: APPLICATION DATA	RIVET SERIES NO.	NOM RIVET SIZE	RECOMMENDED DRILL SIZE	RIVET NO.	MATERIAL REFER- ENCE (**)	GRIP RANGE (T)		BODY LENGTH (L)
						MIN.	MAX.	
						4	1/8"	
43	SS	.126	.187	.337				
44	S, A, SS	.188	.250	.400				
46	S	.313	.375	.525				
5	5/32"	#20 (.161)	52	---	.020	.125	.300	
			53	S, A	.126	.187	.362	
			54	---	.188	.250	.425	
			56	---	.313	.375	.550	
6	3/16"	#11 (.191)	66	SS, A	.251	.375	.575	

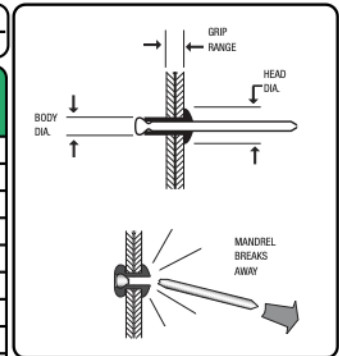


TABLE III: MECHANICAL PROPERTIES OF ST FASTENING SYSTEMS RIVETS	RIVET SERIES NO.	GRADE DESIGNATION	RIVET BODY MATERIAL	MANDREL MATERIAL	ULTIMATE SHEAR (LBS. MIN.)	ULTIMATE TENSILE (LBS. MIN.)	PULL-OUT IN
							18 GA. MIN.
							(ACTUAL TESTED TENSILE STRENGTH)
4	10	ALUMINUM	ALUMINUM	120	150	189 LBS.	
	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.	

- NOTES: 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.

ST Grommet



- Grommet consists of 316 Stainless Steel machine screw, 304 Stainless Steel bonded washer, & internally threaded rubber sleeve with preassembled 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 bonded washer is available as an option.

MATERIAL & GROMMET DIAMETER	FASTENER HEAD AND LENGTH	BOX QTY.	WEIGHT LBS. PER 1000 PCS.
316 STAINLESS (3/8")	5/16" HH* x 1 1/4"	2500	17.5

GROMMET SPECIFICATIONS				
SIZE	BODY LENGTH	NUT INSERT	DUROMETER (SLEEVE)	ULTIMATE TENSILE
3/8" x 1"	.812	10-32	60	80 LBS.
3/8" x 1 1/2"	.812	10-32	60	80 LBS.

SIZE	HEX SIZE	MATERIAL	BONDED WASHER	SLEEVE	NUT INSERT	REC. HOLE SIZE	GRIP RANGE
10-32 x 1-1/4"	5/16	316 SS	304 SS/EPDM	EPDM	BRASS	.375	.312-.545
10-32 x 1 3/4"	5/16	316 SS	304 SS/EPDM	EPDM	BRASS	.375	.312-.545

