

BUILDING FASTENERS

QUIKDRILL

METAL TO METAL FASTENERS

Painting Options



POLYURETHANE
Crimped washer heads show polyurethane's superior durability while powder coating can chip and flake.

+ MATCHTECH

The world's best fasteners - now in any color, any time.

MatchTech™ is Marco Industries' state-of-the-art, high quality polyurethane paint for all of your fastener needs. MatchTech™ uses Imron 6000 from DuPont. Due to the added amount of polyurethane in Imron 6000, it produces a rubber-based material which eliminates chipping, especially when lobe sockets are used.

QUALITY:
Offers unsurpassed durability and chemical resistance.

CONSISTENCY:
High quality coating makes your fasteners last, and keeps you coming back for more.

LIMITLESS POSSIBILITIES:
There are endless color possibilities with this state of the art color system.

QUICK:
Non-standard color matches can be produced within a 24 to 48 hour turn around using our in house color eye computer station.

SUPERIOR POLYURETHANE PAINT COATING

Marco's use of polyurethane paint makes it the most durable paint coating technology in the industry.

Unlike typical powder coating paint processes, which can end up cracking, flaking, chipping, and disintegrating under pressure, polyurethane paint has a rubbery

compound that allows it to bend and bounce back under stress without cracking, flaking, or chipping.



Testing **Laboratory**

Marco Industries and Sherry Laboratories

Marco Industries has partnered with Sherry Laboratories for product testing and validation. Marco's partnership with Sherry Laboratories ensures that all products can withstand the most brutal elements in the harshest climates North America has to offer.

Sherry Laboratories has built a reputation as an industry leader in the field of metallurgical testing by meeting and exceeding customers' expectations for accuracy and time requirements for more than 60 years.

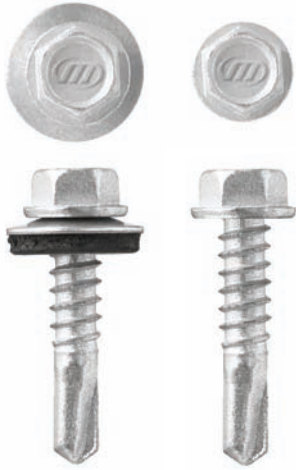
Sherry Holdings LLC is five premier testing companies combining to provide uniquely accredited testing, technical expertise and services of superior quality through eight testing facilities. Founded in 1947, Sherry has been adding value to Marco Industries by providing efficient, timely and responsive testing services.

Few laboratories around the world carry the range of professional accreditations and approvals enjoyed by Sherry Laboratories.

Sherry's metallurgical laboratories have been accredited through Nadcap and the American Association of Laboratory Accreditation (A2LA). They also meet the requirements of ISO 17025, and the general requirements for the Competence of Calibration and Testing Laboratories for Mechanical, Chemical and Fastener testing as outlined in the Fastener Quality Act (FQA).

OEMs, fabricators and end users rely on Sherry Laboratories to test their metals, exotic alloys and polymers in accordance with standards set forth by a number of organizations, including the American Society for Testing and Materials (ASTM), American Society of Mechanical Engineers (ASME), American Petroleum Institute (API), American Welding Society (AWS), American Association of State Highway and Transportation Officials (AASHTO), Federal, Military or individual customer specifications.





QUIKDRILL
METAL2METAL

FASTEN LIGHT GAUGE METALS TO METAL PURLINE OR STEEL FRAME

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 0.25". Applications include HVAC, roof deck or side panels to steel framing, and roof clips to steel framing. #10 and #14 HWH are available with or without a bonded sealing washer. Mechanical zinc plating provides

superior corrosion protection versus thinner electro-zinc plating. All QuikDrill are 1 mil mechanical plating.

QuikDrill #2 and #3 point is designed with a new chisel flute point that speeds up drilling time. This point delivers ultimate performance of the fastener and no walking.

INSTALLATION SPECIFICATIONS

Always choose the appropriate fastener for the thickness and type of material to be drilled for any given application. To ensure optimum fastening performance, a 1900 to 2500 RPM screwgun rated 6 amps or more and fitted with a properly adjusted depth-locating nosepiece should be used. Sufficient pressure must be applied while screwgun is perpendicular to the working area. Overdriving fasteners can lead to leaks and other problems.

LOBE SOCKET

Lobe socket grips the fastener on 2 sides to prevent paint chipping which leads to rust.



The nosepiece of the drill needs to be set to the correct height for proper washer installation.

CORRECT **INCORRECT**



Drive fastener level to metal surface.

SIZE	HEAD	CARTON QTY	WEIGHT/M
* 10 - 16 x 1/2"	5/16" HWH	10000	5.0
* 10 - 16 x 5/8"	5/16" HWH	10000	5.7
10 - 16 x 3/4"	5/16" HWH	5000	6.3
10 - 16 x 1"	5/16" HWH	5000	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	2500	13.3
12 - 14 x 2"	5/16" HWH	2000	16.7
12 - 14 x 2-1/2"	5/16" HWH	1500	21.4
12 - 14 x 3"	5/16" HWH	1000	25.0
12 - 14 x 4"	5/16" HWH	500	30.3
14 - 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	2000	19.6
1/4 - 14 x 2"	3/8" HWH	1500	23.8
1/4 - 14 x 2-1/2"	3/8" HWH	1500	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	500	53.0
12 - 14 x 3/4"	5/16" CHWH	2500	11.8
12 - 14 x 1"	5/16" CHWH	2500	12.5
12 - 14 x 1-1/4"	5/16" CHWH	2500	14.1
12 - 14 x 1-1/2"	5/16" CHWH	2000	15.9
12 - 14 x 2"	5/16" CHWH	1500	21.3
12 - 14 x 2-1/2"	5/16" CHWH	1500	28.4
12 - 14 x 3"	5/16" CHWH	1000	28.4
1/4 - 14 x 7/8" stitch	5/16" CHWH	2500	13.0

BONDED WASHER

CUPPED HEAD

* Not sold with sealing washer

STANDARD



OPTIONAL



WASHER SIZES

#10	12mm	OD
#12	14mm	OD
#14	15mm	OD

WASHER SIZE STITCH

#12	14mm	OD
#14	15mm	OD

DRILLING CAPACITY

#2	.050 - .150
#3	.051 - .210

CUPPED HEAD

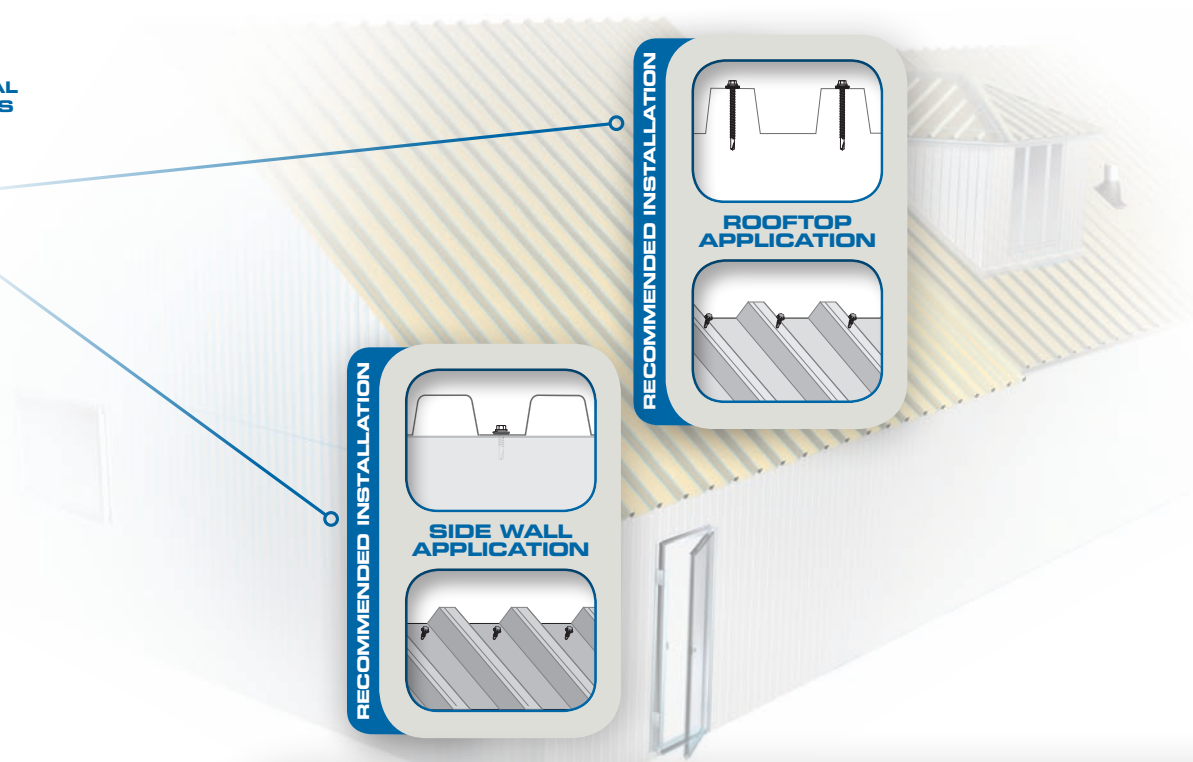


POINT DIAMETER	DRILL POINT	MAJOR DIAMETER	MINOR DIAMETER	HEAD ACROSS FLAT	WASHER FACE DIAMETER
#10	#2	.189 / .183	.141 / .135	.311 / .305	.414 / .384
#12	#2.5	.215 / .209	.164 / .157	.311 / .305	.432 / .398
#14	#3	.246 / .240	.192 / .185	.374 / .367	.520 / .480
1/4" STITCH	#1	.246 / .240	.192 / .185	.305 / .311	.432 / .398

PULL OUT STRENGTH (LBS ULT)	DESIGNATION	MATERIAL							
		HRS PRIMED ONLY			G-90 GALVANIZED				
	NOM. GAUGE	16	14	12	18	16	.14	12	22
THICKNESS	.065	.070	.106	.047	.060	.072	.101	.031	
#10	818	882	1495	731	-	-	-	-	
#12	927	958	1678	729	787	1041	1372	-	
1/4"	986	1070	2003	868	890	1107	1327	489	

PULL OVER STRENGTH (LBS ULT)	DESIGNATION	MATERIAL			
		AZ55 GALVALUME			
	NOM. GAUGE	26	24	22	20
THICKNESS	.019	.024	.032	.038	
#10 with 12mm washer	722	1040	1197	1419	
#12 with 14mm washer	1001	1206	1649	-	
1/4" with 15mm washer	878	1160	1503	-	

METAL 2 METAL APPLICATIONS

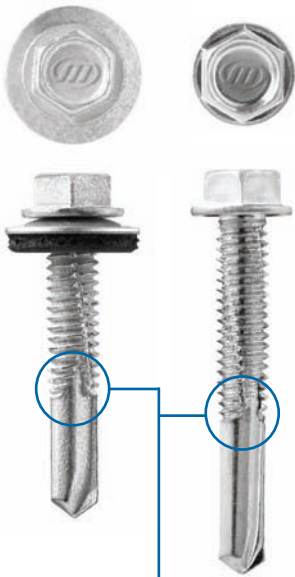


RECOMMENDED INSTALLATION

ROOFTOP APPLICATION

RECOMMENDED INSTALLATION

SIDE WALL APPLICATION



SLOTTED SHANK aids thread cutting into substrate, while **FLUTING** removes small chips

QUIKDRILL
METAL2METAL HD
HEAVY DUTY

FASTEN LIGHT GAUGE METALS TO THICKER METALS

Metal2Metal Heavy Duty self drilling fasteners are designed to drill over 1/4 to .500 steel thickness assembled with optional galvanized attached to EPDM rubber.

Applications include metal decks to structural steel, awnings, canopies, bar joists, and retrofit clips.

Fastener lengths over 1-1/4" are designed to penetrate steel thickness up to .5". 12-24 x 7/8" is designed to drill up to .25"

All QuikDrill HD are mechanical plated with 1 mil thickness.

SIZE	HEAD	DRILL POINT	CARTON QTY	WEIGHT/M
12 - 24 x 7/8"	5/16" HWH	#4	2500	12.0
12 - 24 x 1-1/4"	5/16" HWH	#4.5 or #5	2500	12.6
12 - 24 x 1-1/2"	5/16" HWH	#4.5 or #5	2000	16.2
12 - 24 x 2"	5/16" HWH	#4.5 or #5	1500	22.1
1/4" - 20 x 3"	5/16" HWH	#5	1000	v29.5
1/4" - 20 x 4"	5/16" HWH	#5	500	36.0
1/4" - 20 x 5"	5/16" HWH	#5	500	43.6
1/4" - 20 x 6"	5/16" HWH	#5	500	51.9

INSTALLATION SPECIFICATIONS

Always choose the appropriate fastener for the thickness and type of material to be drilled for any given application. To ensure optimum fastening performance, a 1900 to 2500 RPM screwgun rated 6 amps or more and fitted with a properly adjusted depth-locating nosepiece should be used. Sufficient pressure must be applied while screwgun is perpendicular to the working area. Overdriving fasteners can lead to leaks and other problems.

LOBE SOCKET

Lobe socket grips the fastener on 2 sides to prevent paint chipping which leads to rust.



The nosepiece of the drill needs to be set to the correct height for proper washer installation.

CORRECT **INCORRECT**



Drive fastener level to metal surface.

STANDARD



OPTIONAL



WASHER SIZES

#12	14mm	OD
#14	15mm	OD

DRILLING CAPACITY

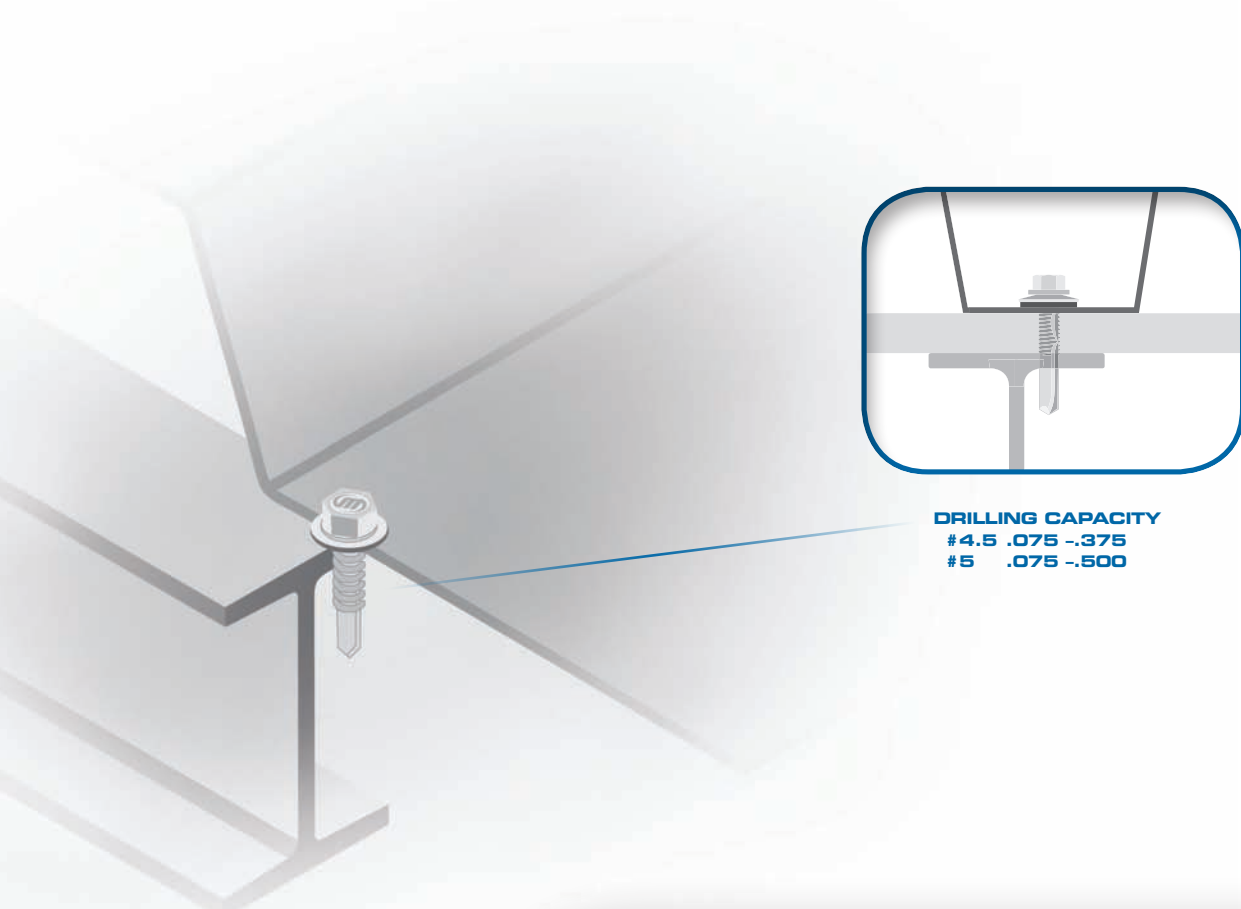
#4.5	.075 - .375
#5	.075 - .500

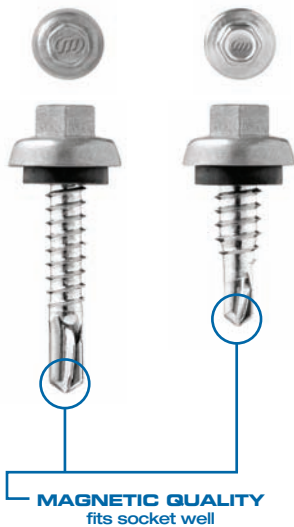


<i>POINT DIAMETER</i>	<i>DRILL POINT</i>	<i>MAJOR DIAMETER</i>	<i>MINOR DIAMETER</i>	<i>WASHER FACE DIA</i>	<i>HEAD ACROSS</i>	<i>NOMINAL TENSILE</i>	<i>MINIMUM TORSIONAL</i>	<i>NOMINAL SHEAR</i>
#12-24	#4, #5	.215 / .209	.164 REF	.432/.398	.311 / .305	2803 LBS	100 IN-LBS	1999 LBS
1/4"-20	#5	.246 / .240	.192 REF	.520/.480	.375 / .367	4275 LBS	168 IN-LBS	2700 LBS

PULL OUT STRENGTH <i>(LBS ULT)</i>	<i>DESIGNATION</i>	<i>MATERIAL</i>			
		<i>HRS PRIMED ONLY</i>			
	NOM. GAUGE	14	12	3/16	1/4
THICKNESS	.070	.106	.187	250	
#12-24 HD	924	1627	2556	3298	

PULL OVER STRENGTH <i>(LBS ULT)</i>	<i>DESIGNATION</i>	<i>MATERIAL</i>		
		<i>AZ55 GALVALUME</i>		
	NOM. GAUGE	26	24	22
THICKNESS	.019	.024	.032	
#12-24 HD	801	996	1258	





40 YEAR WARRANTY

QUIKDRILL
ReZistor

FASTEN ON GALVALUME® FOR LONG LASTING PROTECTION

ReZistor's zinc aluminum capped fasteners are the most widely used product in the industry for 40 year application. ReZistors are designed to attach long life metal roof panels – such as galvalume – for long lasting protection.

up to .210 with no point walking. 1/4" diameter stitch securely fastens 2 layers of 26 guage steel with no strip out.

Washer face design helps to capture rubber EPDM washer even when driven at an angle.

#12 diameter drill point easily penetrates steel thickness

SIZE	HEAD	CARTON QTY	WEIGHT/M
12 - 14 x 1	5/16" CHWH	2500	18.19
12 - 14 x 1-1/4	5/16" CHWH	2500	19.82
12 - 14 x 1-1/2	5/16" CHWH	2000	20.35
12 - 14 x 2	5/16" CHWH	2000	23.33
12 - 14 x 3/4" Sharp Point	5/16" CHWH	2500	16.23
1/4 - 14 x 7/8" Stitch	5/16" CHWH	2500	18.49

*ReZistor is also offered with 4.5 and 5 points for heavy gauge steel.

STANDARD	OPTIONAL	WASHER SIZES	DRILLING CAPACITY
		#12 11mm OD 1/4" 11mm OD	#12 .035 - .210 1/4" .030 - .095



40 YEAR WARRANTY

QUIKDRILL
ReZistor3

FASTEN ON GALVALUME® FOR LONG LASTING PROTECTION

ReZistor 3 has a stainless steel cupped hex washer head, so you can be sure that rust will never happen.

SIZE	HEAD	CARTON QTY	WEIGHT/M
12 - 14 x 1	5/16" HWH	2500	13.96
12 - 14 x 1-1/4"	5/16" HWH	2500	14.61
1/4" - 14 x 7/8" Stitch	5/16" HWH	2500	13.61
12 - 1-1/4" Heavy Duty	5/16" HWH	2500	14.46

*ReZistor3 is also offered with 4.5 and 5 points for heavy gauge steel.

STANDARD	OPTIONAL	WASHER SIZES	DRILLING CAPACITY
		#12 10.5mm OD 1/4" 10.5mm OD	#12 .035 - .210 1/4" .030 - .095

<i>POINT DIAMETER</i>	<i>DRILL POINT</i>	<i>MAJOR DIAMETER</i>	<i>MINOR DIAMETER</i>	<i>WASHER FACE DIA</i>	<i>HEAD ACROSS FLAT</i>	<i>MINIMUM TENSILE</i>	<i>MINIMUM TORSIONAL</i>	<i>NOMINAL SHEAR</i>
#12	#2.5	.215 / .209	.164 / .157	.555 / .545	.305 / .311	2900 LBS	93 IN-LBS	1962 LBS
1/4" STITCH	#1	.246 / .240	.192 / .185	.555 / .545	.305 / .311	3800 LBS	151 IN-LBS	2850 LBS
#12 SHARP	—	.215 / .208	.164 / .157	.555 / .545	.305 / .311	2100 LBS	92 IN-LBS	1800 LBS

PULL OUT STRENGTH (LBS ULT)	<i>DESIGNATION</i>	<i>MATERIAL</i>								
		<i>HRS PRIME ONLY</i>			<i>G-90 GALVANIZED</i>					
	NOM. GAUGE	16	14	12	29	26	24	22	20	18
THICKNESS	.065	.070	.106	.015	.019	.024	.032	.038	.048	
#12	927	958	1678	729	787	1041	1372	1372	729	
1/4" Stitch	-	-	-	-	342	378	418	620	1038	
#12 Sharp	-	-	-	-	330	430	538	-	-	

PULL OVER STRENGTH (LBS ULT)	<i>DESIGNATION</i>	<i>MATERIAL</i>			
		<i>AZ55 GALVALUME</i>			
	NOM. GAUGE	29	26	24	22
THICKNESS	.015	.019	.024	.032	
#12	687	1090	1299	1562	
1/4" Stitch	746	960	1261	1376	

<i>POINT DIAMETER</i>	<i>DRILL POINT</i>	<i>MAJOR DIAMETER</i>	<i>MINOR DIAMETER</i>	<i>WASHER FACE DIA</i>	<i>HEAD ACROSS FLAT</i>	<i>NOMINAL TENSILE</i>	<i>MINIMUM TORSIONAL</i>	<i>NOMINAL SHEAR</i>
#12	#2.5	.215 / .219	.164 / .157	.555 / .545	.305 / .311	2900 LBS	92 IN-LBS	1962 LBS
1/4" STITCH	#1	.246 / .240	.192 / .185	.555 / .545	.305 / .311	3800 LBS	150 IN-LBS	2850 LBS

PULL OUT STRENGTH (LBS ULT)	<i>DESIGNATION</i>	<i>SUBSTRATES</i>											
		<i>HRS PRIME ONLY</i>			<i>AZ-55 GALVALUME</i>				<i>G-90 GALVANIZED</i>				
	NOM. GAUGE	16	14	12	26	24	22	18	20	18	16	14	12
THICKNESS	.065	.070	.106	.019	.024	.032	.048	.038	.048	.060	.072	.101	
#12	927	958	1678	-	-	-	-	-	729	787	1041	1372	
1/4" Stitch	-	-	-	342	378	418	1038	620	-	-	-	-	

PULL OVER STRENGTH (LBS ULT)	<i>DESIGNATION</i>	<i>MATERIAL</i>		
		<i>AZ55 GALVALUME</i>		
	NOM. GAUGE	22	24	26
THICKNESS	.030	.024	.019	
#12	1298	1102	692	



QUIKDRILL
ClipScrews™

FASTEN STANDING SEAM ROOF CLIPS TO STEEL FRAME

Marco's QuikDrill™ ClipScrews™ are designed to attach standing seam roof clips to steel purlins or frames.

Marco's low profile clip screws with heads that are 50% lower than standard clip screws.

ClipScrews™ have a low head style and a deep thread that pulls the fastener tighter and resists pullout better. Standard clip screws have regular profile heads. When those don't fasten tight, it can cause dimpled roof panels and result in serious loose panel problems. The problem is solved with

Material and plating options meet performance requirements to secure roof clips while providing long lasting quality. ClipScrews™ are engineered with an installation combo drive control for uniform installation performance.

SIZE	HEAD STYLE	CARTON QTY	WEIGHT/M
10 - 16 x 1"	#2 Phillips Square Pancake	5000	6.776
10 - 16 x 1-1/2"	#2 Phillips Square Pancake	2500	9.268
12 - 14 x 1"	#2 Phillips Square Pancake	5000	7.996

STANDARD

OPTIONAL



QUIKDRILL
INSULATOR

FASTEN RIGID INSULATION TO LIGHT, MEDIUM, & HEAVY GAUGE METALS

This fastener delivers maximum performance in light, medium and heavy gauge applications. QuikDrill Insulater is designed for a particular insulation thickness to ensure consistent attachment without overdriving and dimpling the panel surface. The Insulater is precision cold forged

assuring the best point strength and the fastest drilling time performance through high strength steel and nested purlins. The Insulater is designed and engraved to provide maximum clamp load and have low driving and thread engagement torque.

SIZE	HEAD	CARTON QTY	INSULATED PANEL THICKNESS
12 - 14 x 1 7/8"	HWH	2000	3/4" to 1"
12 - 14 x 2-3/8"	HWH	1500	1 1/8" to 1 1/2"
12 - 14 x 3-1/4"	HWH	1000	1 5/8" to 2 3/8"
12 - 14 x 5"	HWH	500	2 1/2" to 5"

STANDARD

OPTIONAL

WASHER SIZES

DRILLING CAPACITY



#12 15mm OD

#12 .035 - .210



POINT DIAMETER	DRILL POINT	MAJOR DIAMETER	MINOR DIAMETER	HEAD DIAMETER	NOMINAL TENSILE	MINIMUM TORSIONAL	NOMINAL SHEAR
#10	#3	.194 / .188	.133 / .126	.447 / .423	1825	56 LBS	1535
#12	#3	.215 / .209	.164 / .157	.447 / .423	2900	92-IN LBS	2050

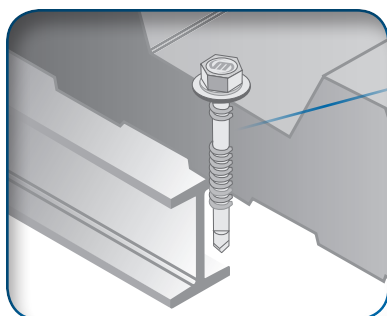
PULL OUT STRENGTH (LBS ULT)	DESIGNATION	MATERIAL		
		HRS PRIMED ONLY		
	NOM. GAUGE	12	14	16
	THICKNESS	.105	.075	.060
	#10	1782	1072	782
	#12	1539	1010	724

CLIP SCREWS are designed with a low head style and superior hold to attach standing seam roof clips to metal frame

POINT DIAMETER	DRILL POINT	MAJOR DIAMETER	MINOR DIAMETER
#12	#2.5	.215 / .209	.164 / .157

PULL OUT STRENGTH (LBS ULT)	DESIGNATION	MATERIAL		
		ROLLED STEEL		
	NOM. GAUGE	16	14	12
	THICKNESS	.060	.075	.105
	#12	727	1012	1540

PULL OVER STRENGTH (LBS ULT) WITH WASHER	DESIGNATION	MATERIAL		
		A255 GALVALUME		
	NOM. GAUGE	26	24	22
	THICKNESS	.018	.024	.030
	#12	655	1159	1151



INSULATED PANEL TO METAL FASTENERS are designed to provide the best point strength and fastest drilling time through high strength steel and nested purlins.



**TRIPLEGUARD GOLD
LONG LIFE COATING**
is a standard feature
on our P2M fasteners

QUIKDRILL
P2M

FASTEN THROUGH PLYWOOD TO METAL

If your project involves applying wood to metal, choosing the right fastener is essential.

Marco's P2M (plywood-to-metal) winged fasteners have either a #3 or #4 point for clean cuts. Special winged fasteners ream a hole in the wood and prevent the threads from engaging as you drill. When the fastener point hits the metal, the wings break off and threads engage the metal. This design makes P2M work faster and hold stronger.

Triple Guard Gold long life coating makes P2M ideal for fastening plywood roof and floor sheets to steel frames, 2x4 headers to steel frames, plywood fascia to steel frames, and wood mansards to steel frames.

For faster, easier, stronger fasteners on your next wood-to-metal project, choose Marco P2M plymetal fasteners with wings, and you'll complete the job with flying colors.

SIZE	HEAD	CARTON QTY	WEIGHT/M	CAPACITY	ATTACHMENT
* 10 - 24 x 3/4"	Wafer Head	5000	25	.035 - .175"	1/4"
* 10 - 24 x 1"	Wafer Head	5000	35	.035 - .175"	1/4" - 1/2"
10 - 24 x 1-7/16"	Wafer Head	2500	24	.060 - .175"	1/4 - 3/4"
10 - 16 x 1-5/8"	Flat head	2500	23	.036 - .175"	3/8 - 3/4"
12 - 24 x 2"	Flat head	2000	32	.125 - .250"	3/4 - 1"
12 - 24 x 2-1/2"	Flat head	1500	30	.125 - .250"	3/4 - 1-1/2"
1/4 - 20 x 2-3/4"	Flat head	1000	30	.125 - .250"	3/4 - 1-5/8"
1/4 - 20 x 3-1/4"	Flat head	1000	35	.125 - .250"	3/4 - 2"
1/4 - 20 x 3-1/2"	Flat head	750	28	.125 - .250"	3/4 - 2-1/4"
1/4 - 20 x 3-3/4"	Flat head	750	30	.125 - .250"	3/4 - 2-1/2"

*Does not come with wings.

GOLD STANDARD

OPTIONAL



P2M FASTENERS
winged design works
faster with a strong
hold when attaching
wood to metal.
Ideal for box truck
interiors, boat docks
and mobile homes.

POINT DIAMETER	DRILL POINT	THREAD MAJOR	HEAD DIAMETER	DRILL CAPACITY
#10	#3	.186	.060 / .175	.445
#12	#3	.212	.060 / .210	.413
1/4"	#4	.246	.095 / .250	.479



STEP 01

As P2M's special wings bore a hole in the wood, it prevents the threads from engaging.



STEP 02

Wings make contact with the metal, and break off allowing the threads to engage the metal.



STEP 03

P2M's threads now engage the metal substrate.

QuikDrill™ Salt Spray Test Data



Worst Weather Condition Simulation— 1,000 hours of coastal salt water storms

Marco's Sureshield standard plating with MatchTech™ polyurethane paint coating has a corrosion resistance in excess of 1000 hours in neutral 5% salt spray test (ASTM B117-09) when tested in application.

Plating Options



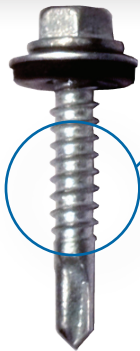
SURESHIELD

Standard mechanical plating

Marco's standard plating is 1 mil of mechanical plating. This provides all our fasteners with maximum plating protection.

Salt spray tests for our standard SureShield plated fasteners exceed 1,000 salt spray hours. Our mechanical plating eliminates all hydrogen embrittlement.

MARCO'S FASTENER SALT SPRAY TEST RESULTS AVAILABLE UPON REQUEST.



ELECTROPLATE

Marco's electroplating technology.

Marco uses .005 electroplating for all fasteners, with the option to add additional coatings as well. This provides excellent salt spray and Kesternich ratings. Electroplating also provides good lubricity and wear resistance for both the QuikGrip and QuikDrill fastener families.

MARCO'S FASTENER SALT SPRAY TEST RESULTS AVAILABLE UPON REQUEST.

Coating Options



TRIPLEGUARD

The one coating with three times the protection.

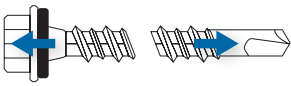
Extend the life of your fasteners by choosing Marco TripleGuard. This fastener coating combines an electroplated zinc and chromate substrate with an organic topcoat. The electroplated zinc layer provides sacrificial protection of the steel substrate while the topcoat creates a durable barrier.

TripleGuard is engineered to provide extended field life

and improve the mechanical performance of fasteners. It is also engineered with integrated friction modifiers to eliminate the need for sealers or post-coating lubricants.

TripleGuard provides superior product performance in fewer layers than comparable finishes. Fewer processing steps result in improved quality and reduced cost.

FastenerTerms

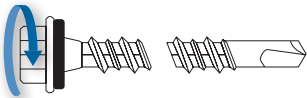


TENSIONSTRENGTH

The point at which a fastener fails under a load exerted in two direct and opposite directions.

Fastener tension is created when a fastener elongates

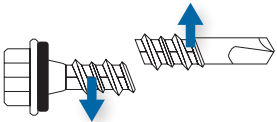
during tightening, producing the clamp load that prevents movement between joint members. Such movement is arguably the most common cause of structural joint failures.



TORSIONSTRENGTH

With Torsion testing, we are able to simulate real life service conditions, check product quality, and ensure proper manufacturing techniques. Torsion tests are performed by applying rotational forces or by applying

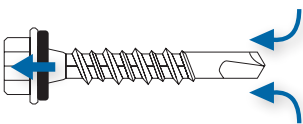
both compression and rotational forces. Types of torsion testing vary from product to product but can usually be classified as failure, proof, or product operation testing.



SHEARSTRENGTH

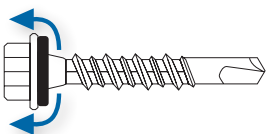
Shear is accomplished by exerting shear force (pressure) in the crosswise surface of the fastener until shear failure occurs.

Shear force causes the two adjacent portions of the fastener to slide in opposite directions parallel to their contact surface.



PULLOUTPERFORMANCE

Pullout is the capacity of a fastener's thread connection with a particular medium to remain intact and resist being pulled out of the medium.



PULLOVERPERFORMANCE

Pullover performance relates to the capacity of a fastener to resist the pulling of the fastened sheet material over the head of the fastener.

The resistance to pullover is related to the strength and diameter of the fastener washer as well as the strength and thickness of the metal panel used.



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