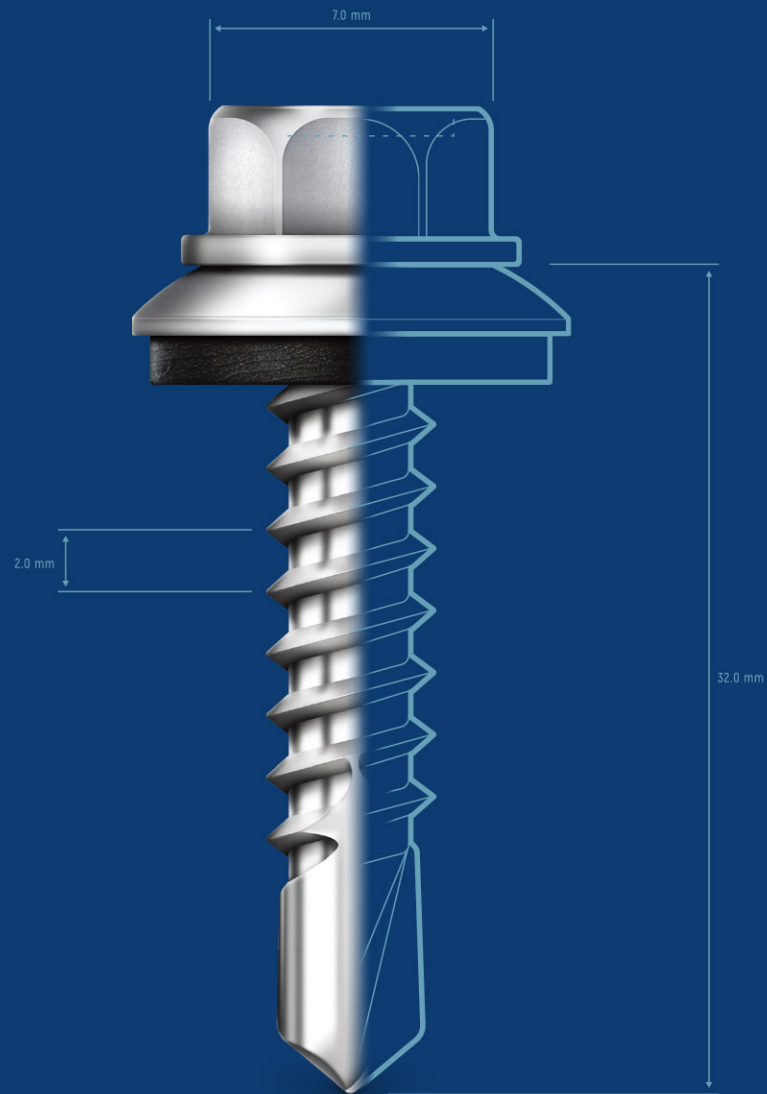


PATTA[®]



Self Drilling Screws

Our components, your key



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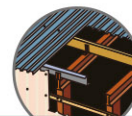
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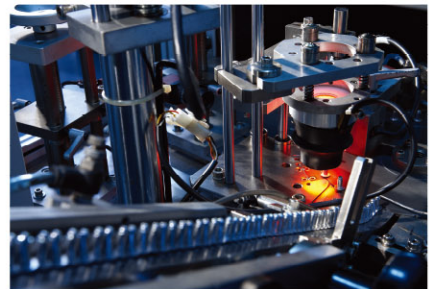
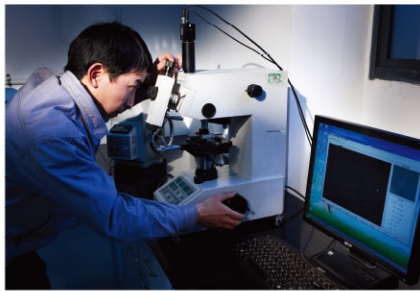
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* Technical data shown in the specification table is subject to change without prior notice as per continuous product development and improvement.





Grip Forever

Our Components, Your Key

PATTA[®]

Professional

provide expertise and know-how in fastener and construction hardware industry

Active

keep improving quality product and service to customers

Trustworthy

with 30-year experience under well-known "PATTA" brand name

Typical

provide unique fastener problem solving

Ambitious

provide a series of activities to meet customers expectation

Screw Data

Head Styles

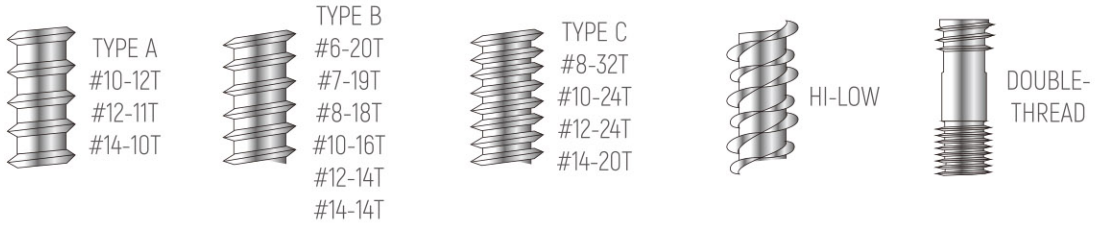


Head Recess

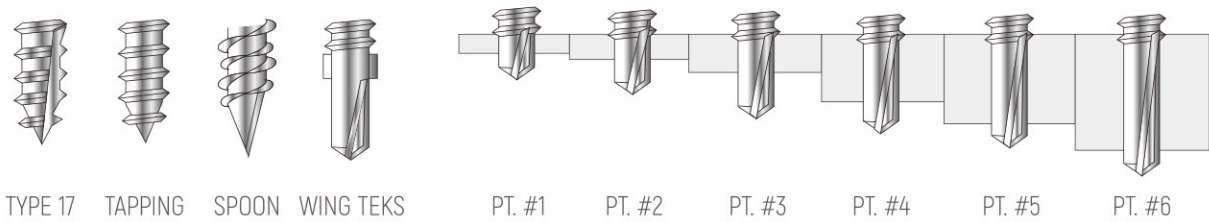
Under Head



Threads



Points



Washer



Plating

- PL: Plain
- YZ: Yellow Zinc
- ZN: Zinc
- KP: Black Phosphated
- BP: Grey Phosphated
- BZ: Black Zinc
- BO: Black Oxide
- DC: Dacrotized
- RS: Ruspert
- XY: Xylan

Mechanical Data I

- Material

C-1022 Steel Case Hardened
IND Flange Washer

- Special

High Grip

- Hexagon

Washer Face with E.P.D.M Seal

- Coating and Finish

- Standard

AS 3566
ASTMD 2247
DIN 50018

- E.P.D.M Seal



- High grip



Nanoplating

Technical description

It is innovative nano scale surface treatment technology that provides inexpensive, high quality and extreme corrosion resistance properties in current competitive markets. Nanoplating is no toxic and no pollution to the environment as reach to world standard.

Characteristics

- Stronger than Bi-metal screws or alloy steel screw without breaking during usage.
- Extreme corrosion resistance for more than 2000 hours salt spray test
- Environment friendly process reduces waste effluent
- Available for ACQ with treated wood
- Excluded lead, cadmium and other heavy metal
- Meets WEEE and ROHS directive from European Union and ELF (End of Life Vehicle) directive for eliminating hazardous chemicals

Resistance Performance

| | |
|-----------------------------------|-----------------|
| Salt Spray [ASTM B117] | 2000 hours |
| Kesternich [DIN 50018 2.0L (SO2)] | 25 cycles |
| Acid Resistance [ASTM D-1308] | 320 hours |
| Heat Resistance [250°C] | 15 hours |
| Meet Australia Standard | As 3566 CLASS 4 |

Nanoplating VS Mechanically Plated Tin-zinc

| | Thickness | Salt Spray Test | Kesternich |
|--------------|------------|-------------------|------------|
| Nanoplating | 20 mu | 2000 hours passed | 25 cycles |
| C4 + Coating | 60 - 70 mu | 1500 hours passed | 20 cycles |

Note: the test results shown above are the result of laboratory tests and are guidance purpose only

Mechanical Data II

Shear Strength

| Gauge | #6 | #8 | #10 | #12 | #14 |
|-------|------|------|------|------|-------|
| MM | 3.5 | 4.2 | 4.8 | 5.5 | 6.3 |
| Kn | 2.93 | 4.36 | 6.28 | 8.36 | 12.27 |



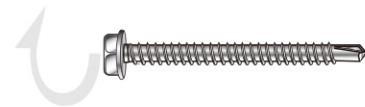
Tensile Strength

| Gauge | #6 | #8 | #10 | #12 | #14 |
|-------|-----|-----|------|------|------|
| MM | 3.5 | 4.2 | 4.8 | 5.5 | 6.3 |
| Kn | 5.0 | 7.0 | 10.0 | 12.5 | 17.0 |



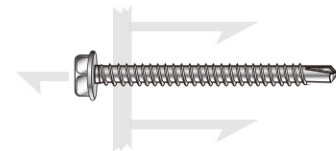
Torsional Strength

| Gauge | #6 | #8 | #10 | #12 | #14 |
|-------|-----|-----|-----|------|------|
| MM | 3.5 | 4.2 | 4.8 | 5.5 | 6.3 |
| Nm | 2.8 | 4.5 | 6.5 | 10.0 | 14.0 |



Pull-out Strength

| Gauge | Drill Point #2, #3 | | | | | #5 | |
|-------|--------------------|------|------|------|------|-------|-------|
| MM | 1.6 | 2.0 | 2.5 | 3.0 | 3.2 | 5.0 | 6.0 |
| Kn | 3.82 | 4.93 | 6.32 | 7.92 | 9.30 | 11.21 | 12.50 |



Performance And Mechanical Data

| | Steel Thickness | 4.8 mm (#10) | 5.5 mm (#12) | 6.3 mm (#14) |
|----------------------------|-----------------|--------------|--------------|--------------|
| Shear Strength (N) | | 6700 | 10400 | 13400 |
| Tensile Strength (N) | | 9500 | 13900 | 15500 |
| Torsional Strength (N - M) | | 6.5 | 10.0 | 14.0 |
| Pull-out Strength (N) | 2.3 mm | 4690 | 4700 | 5000 |
| | 3.2 mm | 7480 | 7610 | 7930 |
| | 4.5 mm | 9680 | 12700 | 13500 |
| | 6.0 mm | | 13900 | 15000 |
| Drilling Capacity | max. mm | 3.5 | 4.5 | 6.0 |

The test results shown above are the result of laboratory tests and are guidance purpose only.

Mechanical Data III

Suggested Material Thickness For Steel Application

| Self Drilling Screws | Size | Drill Point | Drill Capacity (m/m) max. |
|----------------------|------------------------|-------------|---------------------------|
| | M3.5 (#6), M3.9 (#7) | #2 | 0.5 - 1.0 mm |
| | M4.2 (#8) | #2 | 1.0 - 2.0 mm |
| | M4.8 (#10) | #2 | 1.0 - 2.0 mm |
| | M4.8 (#10) | #3 | 1.0 - 3.0 mm |
| | M5.5 (#12), M6.3 (#14) | #3 | 2.0 - 4.0 mm |
| | | #4 | 7.0 - 8.0 mm |
| | | #5 | 10.0 - 12.0 mm |
| Drywall Screws | | Point NO. | Drill Capacity (m/m) max. |
| | | | 0.7 - 1.0 mm |

Plating

| Types | Salt Spray Test/hrs | Kesternich/cycles |
|----------------------------------|---------------------|-------------------|
| Zinc | 24 - 36 | — |
| Yellow Zinc | 24 - 36 | — |
| Black Phosphate | 24 - 36 | — |
| Grey Phosphate | 24 - 36 | — |
| Dacromet | 500 - 1000 | — |
| Ruspert | 500 - 1000 | — |
| Mechanical Galvanizing | 500 - 1000 | — |
| Mechanical Galvanizing + Coating | 1000 - 1500 | 15 - 20 |
| Nanoplating | 1500 - 2000 | 20 - 25 |

Washer Material's General Properties

| Physical Properties | E.P.D.M | P.V.C |
|------------------------|---------|-------|
| Age-Heat Resistance | ● | × |
| Cold Resistance | ● | × |
| Weather Resistance | ● | × |
| Ozone Resistance | ● | ○ |
| Oil Resistance | ● | × |
| Bending Strength | ○ | × |
| Wear Resistance | ○ | × |
| Repulsive Elasticity | ○ | × |
| Compressive Distortion | ○ | ○ |

● EXCELLENT ○ GOOD × POOR

The test results shown above are the result of laboratory tests and are guidance purpose only

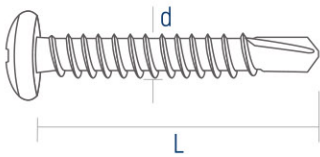
Phillips Pan Head

Applications

- Skin sheet to steel
- Residential steel frame construction
- For light duty purpose
- Suitable for stitching 1 thick & 1 thin steel plate

Features

- Pan head design on purost using
- Non-walking point provides fast material engagement



Plated **ZN** **SS** Point **2** **3**



Suggested application thickness
point #2 < 2mm
point #3 < 5mm

| Size | Length (inch) | Length (mm) | Drill Point (m/m) | Drill Capacity (m/m) |
|----------------|---------------|-------------|-------------------|----------------------|
| #6-20 M3.5 | 3/8" | 10 | #2 | 0.5 - 1.0 |
| | 1/2" | 13 | #2 | 0.5 - 1.0 |
| | 5/8" | 16 | #2 | 0.5 - 1.0 |
| #8-18 M4.2 | 1/2" | 13 | #2 | 1.0 - 2.0 |
| | 5/8" | 16 | #2 | 1.0 - 2.0 |
| | 3/4" | 19 | #2 | 1.0 - 2.0 |
| | 1" | 25 | #2 | 1.0 - 2.0 |
| | 1-1/4" | 32 | #2 | 1.0 - 2.0 |
| | 1-1/2" | 38 | #2 | 1.0 - 2.0 |
| | 1/2" | 13 | #2 | 1.0 - 2.0 |
| #10-16 M4.8 | 5/8" | 16 | #2 | 1.0 - 2.0 |
| | 3/4" | 19 | #2 | 1.0 - 2.0 |
| | 1" | 25 | #3 | 1.0 - 3.0 |
| | 1-1/4" | 32 | #3 | 1.0 - 3.0 |
| | 1-1/2" | 38 | #3 | 1.0 - 3.0 |
| | 2" | 50 | #3 | 1.0 - 3.0 |



Stainless Steel



Yellow Zinc



Black phosphate



Ruspert



Zinc

Phillips Countersunk Head

Applications

- Best choice for fastening in window or door frames purpose
- Using in flat surface required
- Using in pre-drilled hole for fitting

Features

- Precise cutting edges to improve drill performance
- Countersunk head available for working purpose



Plated

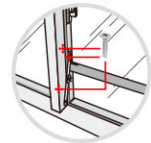
ZN

SS

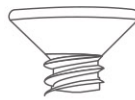
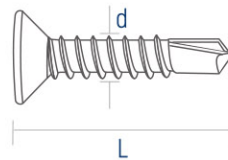
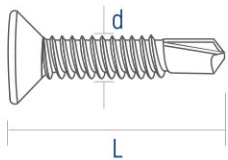
Point

2

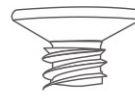
3



Suggested application thickness
point #2 < 2mm
point #3 < 5mm



80° degree



100° degree

| Size | Length (inch) | Length (mm) | Drill Point (m/m) | Drill Capacity (m/m) |
|------------------------------|---------------|-------------|-------------------|----------------------|
| #6-20 M3.5 | 3/8" | 10 | #2 | 0.5 - 1.0 |
| | 1/2" | 13 | #2 | 0.5 - 1.0 |
| | 5/8" | 16 | #2 | 0.5 - 1.0 |
| | 3/4" | 19 | #2 | 0.5 - 1.0 |
| | 1" | 25 | #2 | 0.5 - 1.0 |
| #8-18 M4.2 | 1/2" | 13 | #2 | 1.0 - 2.0 |
| | 5/8" | 16 | #2 | 1.0 - 2.0 |
| | 3/4" | 19 | #2 | 1.0 - 2.0 |
| | 1" | 25 | #2 | 1.0 - 2.0 |
| #10-16 M4.8 | 1/2" | 13 | #2 | 1.0 - 2.0 |
| | 5/8" | 16 | #2 | 1.0 - 2.0 |
| | 3/4" | 19 | #2 | 1.0 - 2.0 |
| | 1" | 25 | #3 | 1.0 - 3.0 |
| | 1-1/4" | 32 | #3 | 1.0 - 3.0 |
| | 1-1/2" | 38 | #3 | 1.0 - 3.0 |

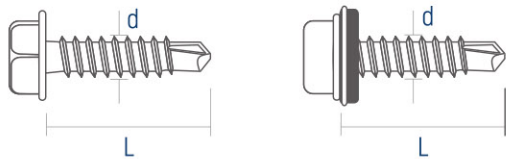
Light duty Hex Washer Head

Applications

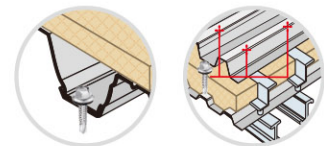
- For light duty purpose
- Stitch roof deck and wall panel sidelaps
- Residential steel frame construction
- Brick ties to steel framing

Features

- Unique point to thread design extrudes the metal preventing stripout
- Non-walking point provides fast material engagement
- Point to thread design maximizes pullout performance and minimizes backout



Plated **ZN** **YZ** **SS** Point **2** **3**



Suggested application thickness point #2 < 2mm

| Size | Length (inch) | Length (mm) | Drill Point (m/m) | Drill Capacity (m/m) |
|----------------|---------------|-------------|-------------------|----------------------|
| #6-20 M3.5 | 3/8" | 10 | #2 | 0.5 - 1.0 |
| | 1/2" | 13 | #2 | 0.5 - 1.0 |
| | 5/8" | 16 | #2 | 0.5 - 1.0 |
| #8-18 M4.2 | 1/2" | 13 | #2 | 1.0 - 2.0 |
| | 5/8" | 16 | #2 | 1.0 - 2.0 |
| | 3/4" | 19 | #2 | 1.0 - 2.0 |
| | 1" | 25 | #2 | 1.0 - 2.0 |
| | 1-1/4" | 32 | #2 | 1.0 - 2.0 |
| | 1-1/2" | 38 | #2 | 1.0 - 2.0 |
| #10-16 M4.8 | 1/2" | 13 | #2 | 1.0 - 2.0 |
| | 5/8" | 16 | #2 | 1.0 - 2.0 |
| | 3/4" | 19 | #2 | 1.0 - 2.0 |
| | 1" | 25 | #3 | 1.0 - 3.0 |
| | 1-1/4" | 32 | #3 | 1.0 - 3.0 |
| | 1-1/2" | 38 | #3 | 1.0 - 3.0 |
| | 2" | 50 | #3 | 1.0 - 3.0 |

SS Stainless Steel
 YZ Yellow Zinc
 BP Black phosphate
 RS Ruspert
 ZN Zinc

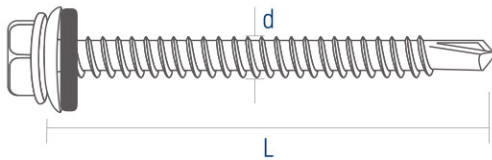
Medium duty Hex Washer Head

Applications

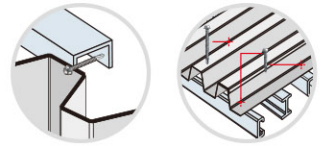
- For medium duty purpose
- Roof deck to steel framing
- Accessories to steel framing

Features

- Precise cutting edges to improve drill performance with less effort
- Point to thread design maximize pullout performance and minimizes backout



Plated **ZN** **YZ** **SS** Point **3**



Suggested application thickness point #3 < 5mm

| Size | Length (inch) | Length (mm) | Drill Point (m/m) | Drill Capacity (m/m) |
|----------------|---------------|-------------|-------------------|----------------------|
| #12-14 M5.5 | 3/4" | 19 | #3 | 2.0 - 4.0 |
| | 1" | 25 | #3 | 2.0 - 4.0 |
| | 1-1/4" | 32 | #3 | 2.0 - 4.0 |
| | 1-1/2" | 38 | #3 | 2.0 - 4.0 |
| | 2" | 50 | #3 | 2.0 - 4.0 |
| | 2-1/2" | 63 | #3 | 2.0 - 4.0 |
| | 3" | 75 | #3 | 2.0 - 4.0 |
| #14-14 M6.3 | 3/4" | 19 | #3 | 2.0 - 4.0 |
| | 1" | 25 | #3 | 2.0 - 4.0 |
| | 1-1/4" | 32 | #3 | 2.0 - 4.0 |
| | 1-1/2" | 38 | #3 | 2.0 - 4.0 |
| | 2" | 50 | #3 | 2.0 - 4.0 |
| | 2-1/2" | 63 | #3 | 2.0 - 4.0 |
| | 3" | 75 | #3 | 2.0 - 4.0 |
| | 4" | 100 | #3 | 2.0 - 4.0 |
| 5" | 125 | #3 | 2.0 - 4.0 | |

Heavy duty steel to steel applications

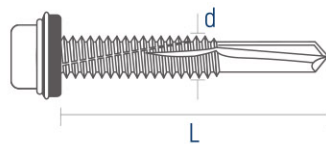
Hex Washer Head

Applications

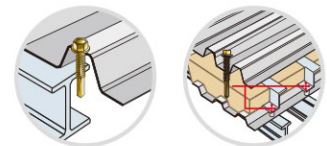
- For heavy duty purpose
- Metal deck to structural steel or bar joist
- Clip to structural or bar joist
- Longer length fasteners for sheet applications

Features

- Engineered for fast drilling and smooth tapping with less effort



Plated **ZN** **YZ** **SS** Point **5**



Suggested application thickness point #5 < 12mm

| Size | Length (inch) | Length (mm) | Drill Point (m/m) | Drill Capacity (m/m) |
|---------------------------|---------------|-------------|-------------------|----------------------|
| #12 M5.5 | 1-1/4" | 32 | #5 | 12.0 |
| | 1-1/2" | 38 | #5 | 12.0 |
| | 2" | 50 | #5 | 12.0 |
| | 2-1/2" | 63 | #5 | 12.0 |
| | 3" | 75 | #5 | 12.0 |



Stainless Steel



Yellow Zinc



Black phosphate



Ruspert



Zinc

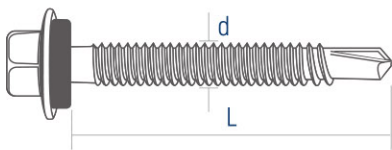
Hex Washer Flange

Applications

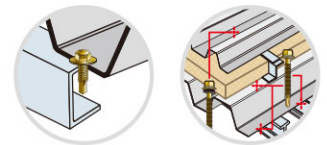
- For medium duty purpose
- Roof deck to steel framing
- Accessories to steel framing

Features

- Precise cutting edges to improve drill performance with less effort
- Provide bigger cover surface in using exterior enviormen



Plated
ZN **YZ** **SS** Point
3



Suggested application thickness
 point #3 < 5 mm

| Size | Length (inch) | Length (mm) | Drill Point (m/m) | Drill Capacity (m/m) |
|----------------|---------------|-------------|-------------------|----------------------|
| #12-24 M5.5 | 3/4" | 19 | #3 | 2.0 - 4.0 |
| | 1" | 25 | #3 | 2.0 - 4.0 |
| | -3/8" | 35 | #3 | 2.0 - 4.0 |
| | 1-1/2" | 38 | #3 | 2.0 - 4.0 |
| | 1-3/4" | 45 | #3 | 2.0 - 4.0 |
| | 2" | 50 | #3 | 2.0 - 4.0 |
| | 2-3/16" | 55 | #3 | 2.0 - 4.0 |
| | 2-1/2" | 63 | #3 | 2.0 - 4.0 |
| | 3" | 75 | #3 | 2.0 - 4.0 |
| | 3-1/2" | 88 | #3 | 2.0 - 4.0 |
| | 4" | 100 | #3 | 2.0 - 4.0 |
| | 5" | 125 | #3 | 2.0 - 4.0 |

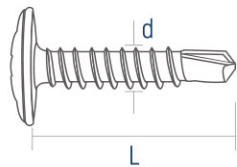
Phillips Truss Head

Applications

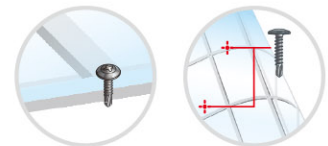
- Residential steel frame construction
- For using in object like polycarbonate sheet, shadow cover

Features

- Truss head design on purpose using
- Non-walking point provides fast material engagement



Plated **ZN** **BP** **SS** Point **2**



Suggested application thickness point #2 < 2mm

| Size | Length (inch) | Length (mm) | Drill Point (m/m) | Drill Capacity (m/m) |
|---------------|---------------|-------------|-------------------|----------------------|
| #8-18 M4.2 | 1/2" | 13 | #2 | 1.0 - 2.0 |
| | 5/8" | 16 | #2 | 1.0 - 2.0 |
| | 3/4" | 19 | #2 | 1.0 - 2.0 |
| | 1" | 25 | #2 | 1.0 - 2.0 |
| | 1-1/4" | 32 | #2 | 1.0 - 2.0 |
| | 1-5/8" | 41 | #2 | 1.0 - 2.0 |



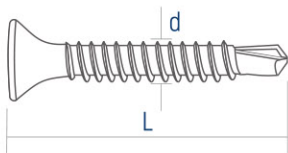
Phillips Bugle Head

Applications

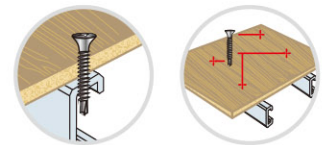
- For using in stitch wood to metal
- Using in flat surface required
- Using in pre-drilled hole for fitting

Features

- Precise cutting edges to improve drill performance with less effort
- Bugle head available for working purpose



Plated **ZN** **BP** **SS** Point **3**



Suggested application thickness
point #2 < 2 mm

| Size | Length (inch) | Length (mm) | Drill Point (m/m) | Drill Capacity (m/m) |
|-----------------------------|---------------|-------------|-------------------|----------------------|
| #6-20 M3.5 | 1" | 25 | #2 | 0.5 - 1.0 |
| | 1-1/8" | 28 | #2 | 0.5 - 1.0 |
| | 1-1/4" | 32 | #2 | 0.5 - 1.0 |
| | 1-5/8" | 41 | #2 | 0.5 - 1.0 |
| | 2" | 50 | #2 | 0.5 - 1.0 |
| #8-18 M4.2 | 1" | 25 | #2 | 1.0 - 2.0 |
| | 1-1/4" | 32 | #2 | 1.0 - 2.0 |
| | 2" | 50 | #2 | 1.0 - 2.0 |
| | 2-3/8" | 60 | #2 | 1.0 - 2.0 |
| | 2-5/8" | 65 | #2 | 1.0 - 2.0 |
| | 3" | 75 | #2 | 1.0 - 2.0 |

Countersunk Wings

Applications

- Wood mansard to steel frames
- Plywood fascial to steel frames
- Plywood roof and floor sheet to steel frames

Features

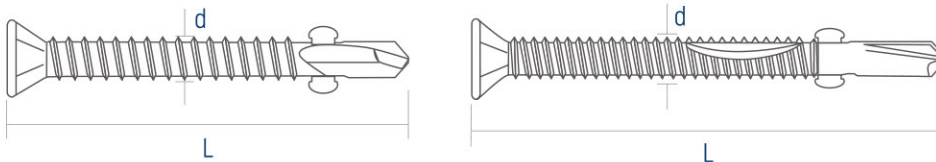
- Large bearing surface ideal for plywood
- Flat head desing countersunks and seats flush in wood
- Aluminium/Steel washer
- Special winged fasteners ream a hole in wood preventing thread engagement during drilling



Plated **ZN** **YZ** **SS** Point **3** **4** **5**



Suggested application thickness
 point #3 < 2 - 5 mm
 point #4 < 5 - 8 mm
 point #5 < 9 - 12 mm



| Size | Length (inch) | Length (mm) | Drill Point (m/m) | Drill Capacity (m/m) |
|---------------------------|---------------|-------------|-------------------|----------------------|
| #10 M4.8 | 1" | 25 | #3 | 1.0 - 3.0 |
| | 1-1/4" | 32 | #3 | 1.0 - 3.0 |
| | 1-1/2" | 38 | #3 | 1.0 - 3.0 |
| | 1-3/4" | 45 | #3 | 1.0 - 3.0 |
| #12 M5.5 | 1-1/2" | 38 | #3 | 2.0 - 4.0 |
| | 2" | 50 | #3 · #5 | 2.0 - 4.0 · 12.0 |
| | 2-3/16" | 55 | #3 · #5 | 2.0 - 4.0 · 12.0 |
| | 3" | 75 | #3 · #5 | 2.0 - 4.0 · 12.0 |
| | 3-5/32" | 80 | #3 · #5 | 2.0 - 4.0 · 12.0 |
| | 3-1/2" | 45 | #3 · #5 | 2.0 - 4.0 · 12.0 |
| #14 M6.3 | 4-3/4" | 120 | #3 · #5 | 2.0 - 4.0 · 12.0 |
| | 2" | 50 | #4 · #5 | 7.0 - 8.0 · 12.0 |
| | 3-5/32" | 80 | #4 · #5 | 7.0 - 8.0 · 12.0 |
| | 3-1/2" | 88 | #4 · #5 | 7.0 - 8.0 · 12.0 |
| | 4-3/4" | 120 | #4 · #5 | 7.0 - 8.0 · 12.0 |
| | 6" | 150 | #4 · #5 | 7.0 - 8.0 · 12.0 |

SS Stainless Steel
 YZ Yellow Zinc
 BP Black phosphate
 RS Ruspert
 ZN Zinc

Phillips Wafer Head

Applications

- Roof and skin sheet to steel
- Residential steel frame construction
- For light duty purpose

Features

- Wafer head design on purpose using
- Non-walking point provides fast material engagement



Plated

ZN

YZ

SS

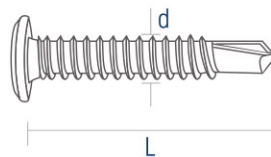
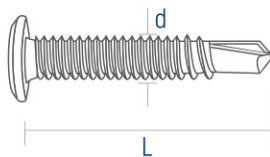
Point

2

3



Suggested application thickness
point #3 < 5mm



| Size | Length (inch) | Length (mm) | Drill Point (m/m) | Drill Capacity (m/m) |
|----------------|------------------|----------------|----------------------|-------------------------|
| #10-16 M4.8 | 5/8" | 16 | #2 | 1.0 - 2.0 |
| | 7/8" | 22 | #2 | 1.0 - 2.0 |
| | 1-1/4" | 32 | #3 | 1.0 - 3.0 |
| | 1-1/2" | 38 | #3 | 1.0 - 3.0 |
| #10-24 M4.8 | 5/8" | 16 | #2 | 1.0 - 2.0 |
| | 7/8" | 22 | #2 | 1.0 - 2.0 |
| | 1-1/4" | 32 | #3 | 1.0 - 3.0 |
| | 1-1/2" | 38 | #3 | 1.0 - 3.0 |

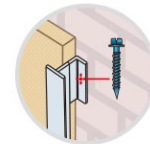
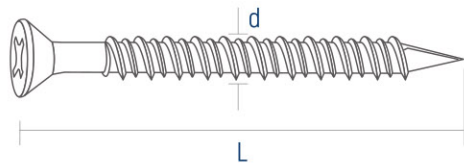
Concrete & Masonry Application

Applications

- Concrete material fixtures
- Flexible flashing
- Suitable for soft brick & masonry work

Features

- Can be using in exterior environment
- Internal washer design provides more bearing surface
- Hi-lo thread provides smooth power for drilling
- Pre-drilled hole are requested



Suggested application thickness
diamond point < 0.6 mm

| Size | Length (inch) | Dia. x Length (m/m) | Drill Point (m/m) |
|-------------|---------------|---------------------|-------------------|
| #14 M6.3 | 2-3/8" | 60 | Diamond |
| | 3" | 75 | Diamond |
| | 3-5/32" | 80 | Diamond |
| | 3-1/2" | 90 | Diamond |
| | 4" | 100 | Diamond |
| | 5" | 125 | Diamond |
| | 5-1/2" | 140 | Diamond |
| | 6-5/16" | 160 | Diamond |
| | 7-1/8" | 180 | Diamond |
| 7-7/8" | 200 | Diamond | |

SS
Stainless Steel

YZ
Yellow Zinc

BP
Black phosphate

RS
Ruspert

ZN
Zinc



Grip Forever

PATTA Self Drilling Screws

Environment Characteristics

To determine the type of environment, an inspection of building in the area is usually necessary

Very Severe Marine (ISO Category 5)



Includes off-shore area and up to 100m from the high waterline of area with breaking surf.

| Warranty Periods | not recommended | no warranty | available |
|---------------------|-----------------|-------------|-----------|
| Zinc or yellow zinc | X | | |
| Painted head | X | | |
| 410 Stainless steel | | ▲ | |
| Anti-corrosion R3 | | | ● |
| Anti-corrosion R4 | | | ● |
| 304 Stainless steel | | | ● |

Severe Marine (ISO Category 4)



Generally between 100m from the beach front to approximately 300m inland. In high wind area may extend further inland depending on prevailing winds and geography of the area. Characterized by Strong salt structures generally a very noticeable deterioration of most building material is evident.

| Warranty Periods | not recommended | no warranty | available |
|---------------------|-----------------|-------------|-----------|
| Zinc or yellow zinc | X | | |
| Painted head | X | | |
| 410 Stainless steel | | ▲ | |
| Anti-corrosion R3 | | | ● |
| Anti-corrosion R4 | | | ● |
| 304 Stainless steel | | | ● |

Moderate Marine (ISO Category 3)



Generally between 300m and 1000m from marine surf, although strong prevailing wind may extend this distance. Characterized by occasionally noticeable slight salt. Airborne salt present but not visible as haze.

| Warranty Periods | not recommended | no warranty | available |
|---------------------|-----------------|-------------|-----------|
| Zinc or yellow zinc | X | | |
| Painted head | | ▲ | |
| 410 Stainless steel | | ▲ | |
| Anti-corrosion R3 | | | ● |
| Anti-corrosion R4 | | | ● |
| 304 Stainless steel | | | ● |

Very Severe Industrial (ISO Category 5)



Characterized by heavy fall-out and emission from sacks and strong sulphur and smells. Generally very high rates of corrosion in most building structures in evident.

| Warranty Periods | not recommended | no warranty | available |
|---------------------|-----------------|-------------|-----------|
| Zinc or yellow zinc | X | | |
| Painted head | | ▲ | |
| 410 Stainless steel | | ▲ | |
| Anti-corrosion R3 | | | ● |
| Anti-corrosion R4 | | | ● |
| 304 Stainless steel | | | ● |

Note: Warranty period is based on 20-years duration of constructions.

X not recommended

▲ no warranty

● available

Severe Industrial (ISO Category 4)



Characterized by fall-out and emission from stack sulphur and acid smell. Include only plant buildings themselves and any building immediately under stacks. Also includes buildings with high internal humidity and/or corrosion from operation within.

| Warranty Periods | not recommended | no warranty | available |
|---------------------|-----------------|-------------|-----------|
| Zinc or yellow zinc | X | | |
| Painted head | | ▲ | |
| 410 Stainless steel | | ▲ | |
| Anti-corrosion R3 | | | ● |
| Anti-corrosion R4 | | | ● |
| 304 Stainless steel | | | ● |

Industrial (ISO Category 3)



Characterized by fall-out from adjoining severe industrial environments of were small industries lead to significant industrial fall-out. Generally includes other service buildings located near heavy industrial plants, including out-buildings of the plant itself.

| Warranty Periods | not recommended | no warranty | available |
|---------------------|-----------------|-------------|-----------|
| Zinc or yellow zinc | X | | |
| Painted head | | ▲ | |
| 410 Stainless steel | | ▲ | |
| Anti-corrosion R3 | | | ● |
| Anti-corrosion R4 | | | ● |
| 304 Stainless steel | | | ● |

Light Industrial/Urban (ISO Category 2-3)



This environment is widespread in industrial urban area, away from all environments listed above and typically more than 500m from heavy industrial fall-out or where small industrial lead to a moderate level of fall-out from small stacks etc.

| Warranty Periods | not recommended | no warranty | available |
|---------------------|-----------------|-------------|-----------|
| Zinc or yellow zinc | X | | |
| Painted head | | ▲ | |
| 410 Stainless steel | | ▲ | |
| Anti-corrosion R3 | | | ● |
| Anti-corrosion R4 | | | ● |
| 304 Stainless steel | | | ● |

Mild Urban/Rural (ISO Category 1-2)



Always from all above environments and corrosive fall out with 2kms.

| Warranty Periods | not recommended | no warranty | available |
|---------------------|-----------------|-------------|-----------|
| Zinc or yellow zinc | | ▲ | |
| Painted head | | ▲ | |
| 410 Stainless steel | | ▲ | |
| Anti-corrosion R3 | | | ● |
| Anti-corrosion R4 | | | ● |
| 304 Stainless steel | | | ● |

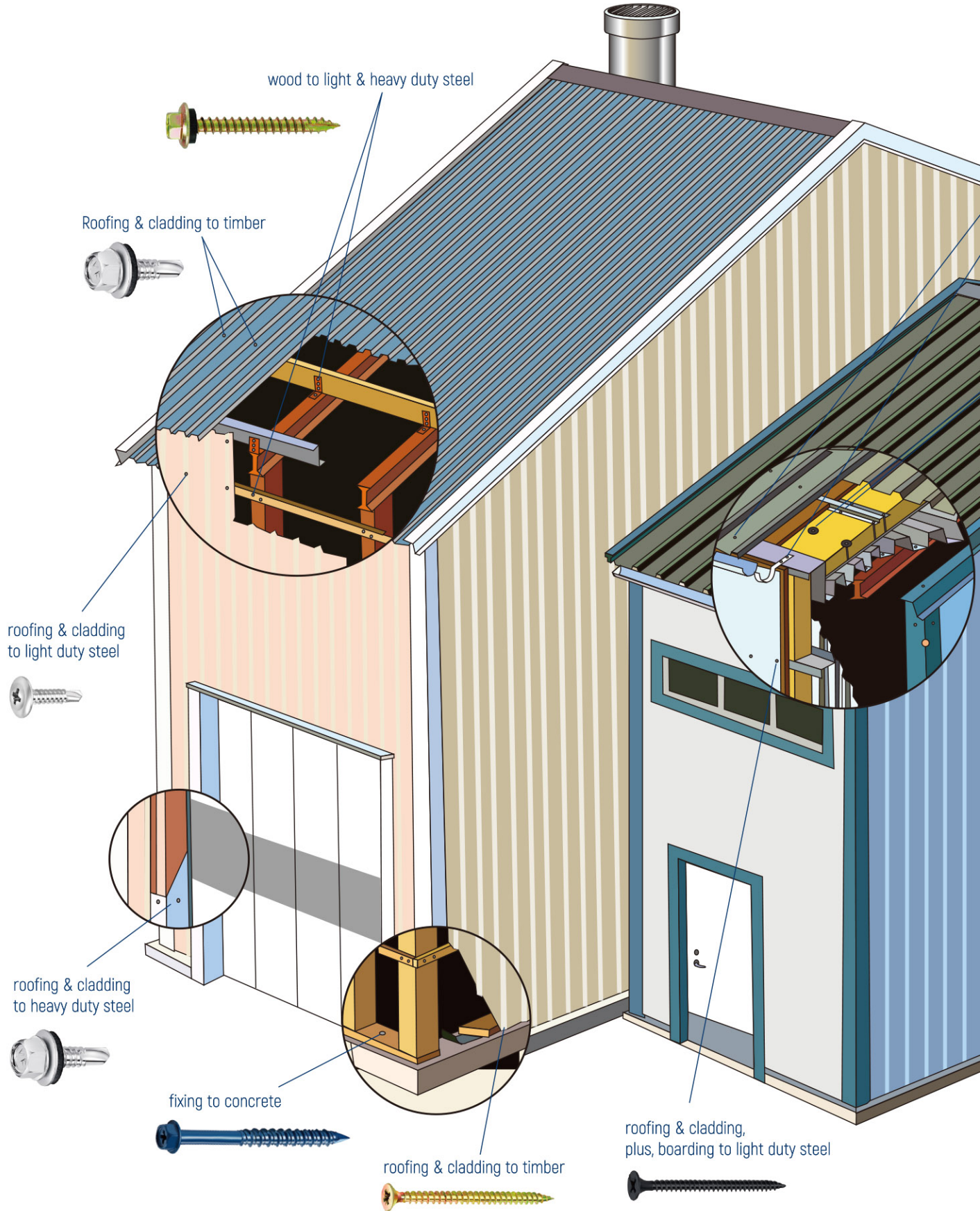
Note: Warranty period is based on 20-years duration of constructions.

X not recommended

▲ no warranty

● available

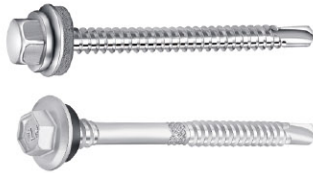
Our Components, Your Key



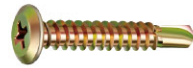
roofing & cladding to light duty steel



roofing insulation to steel sheets & profiles



roofing & cladding to light duty steel



sandwich panel to light duty steel



roofing & cladding to heavy duty steel



fixing to concrete



sandwich panel to heavy duty steel



PATEK

— Self Drilling Screw —

NSSC Stainless Steel

Superior anti-corrosion

Salt Spray Test

5,000-10,000 hrs

Kesternich Test

70 cycles

High Hardness

615-640 HV

High Tensile Strength

1,800 Mpa.

Bi-metal

- High drilling ability and corrosion resistance.
- A2-700N in ISO standard for strength is guaranteed.

High-hardness / High-strength

Drivability of self-drilling screws

| Material of Screw | Drivable Steel Sheet Thickness | Tip Hardness (Hv) | | |
|-------------------|--------------------------------|-------------------|-----|-----|
| | | 200 | 400 | 600 |
| PATEK | > 5.5mm* | | | ■ |
| Type 410 | > 5.5mm | | | ■ |
| Carbon steel | > 5.5mm | | | ■ |
| Type202 | 1.6mm | | ■ | |
| Type304 | < 1.6mm | | ■ | |

* Drivable through 10mm thick steel sheet



High Drilling Capacity

PATEK screw size 5.5 with Tek #5



Stainless steel sheet
3mm thick

Steel sheet
12mm thick

Applications



Size (mm)

| PAN | CSK | TRUSS | HWH |
|--------|--------|--------|--------|
| 4.2X13 | 4.2X16 | 4.2X13 | 5.5X25 |
| 4.2X16 | 4.2X25 | 4.2X16 | 5.5X38 |
| | | 4.2X19 | 5.5X50 |
| | | | 5.5X65 |
| | | | 5.5X75 |

※ Other sizes available upon request

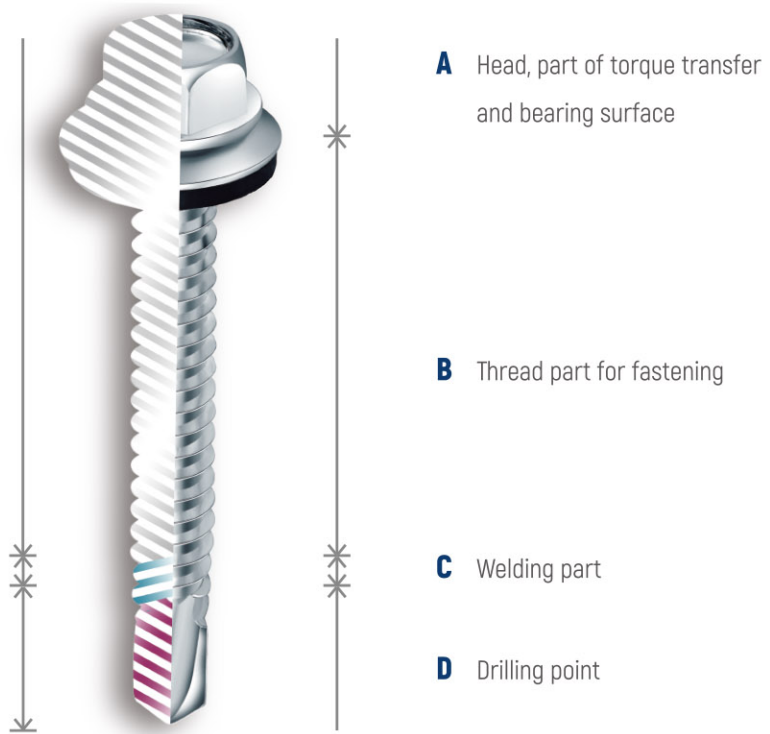
304 Bi-metal

SUS304 Bi-metal screws

combined together two parts by welding, the one consisting of a stainless head which shall be exposed air and a stainless shank which undergoes the full-stress after fastened into materials, and the another is a carbon steel hardened for self-drilling and self-tapping.

Configuration

- stainless head & body
- stainless steel, SUS 304
- with corrosion resistance (no case-hardening)
- welded
- self-drilling point
- stainless steel, SUS 410
- case-hardened carbon steel



A Head, part of torque transfer and bearing surface

B Thread part for fastening

C Welding part

D Drilling point

Strength

- A - No case-hardening for keeping anti-corrosion high. Surface hardness 350HV
- B - Tensile stress value over A2 (700N/mm)
- C - Welding strength over the breaking values for torsion and tensile of part B
- D - Case-hardening for over 600HV



#12-24 x 1" (5.5 x 25 mm)



#12-24 x 1-1/2" (5.5 x 38 mm)



#12-24 x 2" (5.5 x 50 mm)



#12-24 x 2-1/2" (5.5 x 65 mm)



#12-24 x 3" (5.5 x 75 mm)

410 Stainless Steel

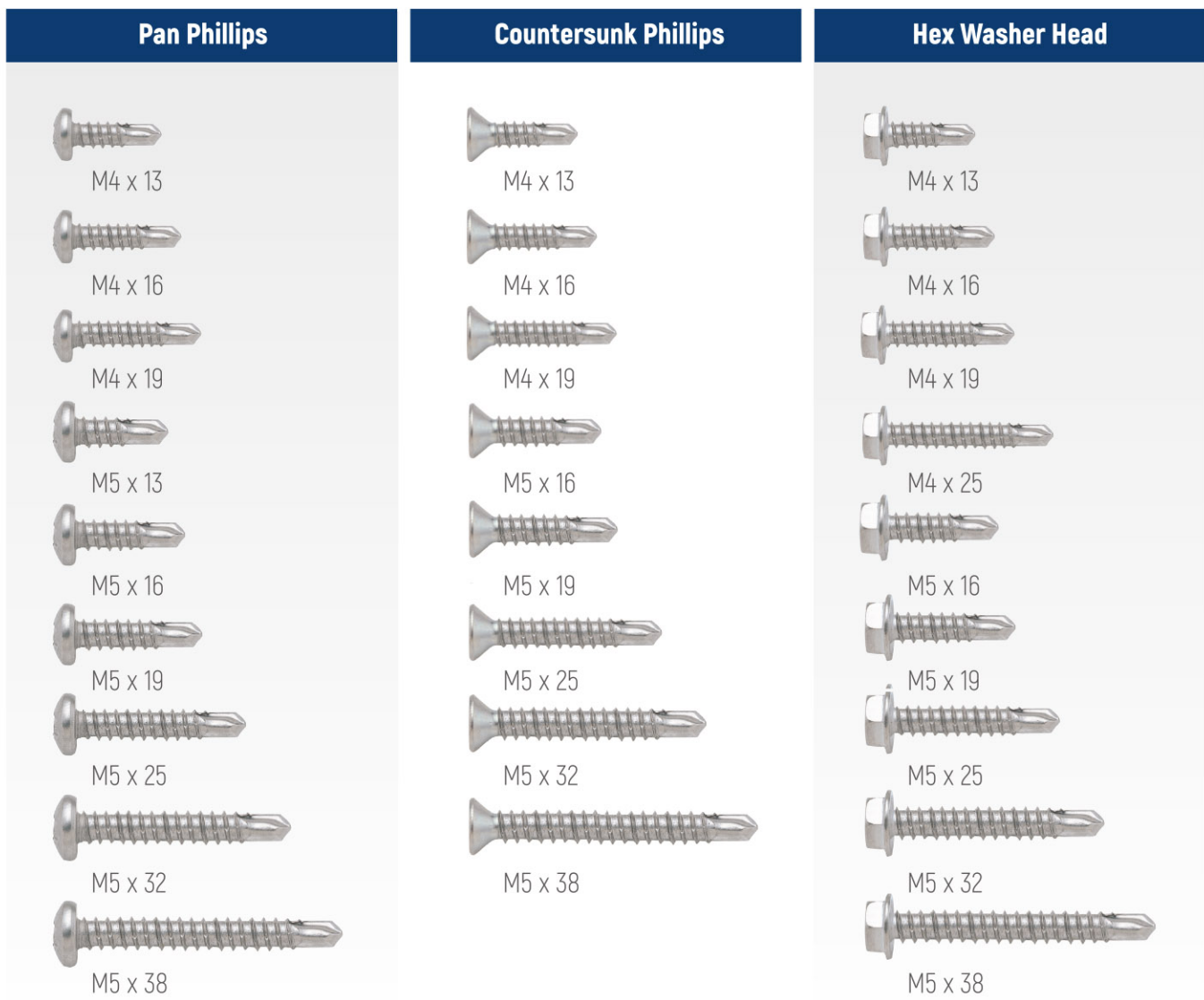
SUS410 Stainless Steel screws

Stainless steel fasteners are a natural choice with stainless steel building components.

Where possible, a fastener of similar or superior corrosion resistance to the component should be used.

Type 410 is a general-purpose martensitic stainless steel that is frequently used for fasteners.

Its resistance to corrosion is not as good as Type 304, but it is satisfactory for many architectural applications.



Custom Options

All our products come in various sizes, styles and can be customized to fit your needs.

What is Anti-corrosion R3 & R4?

Abstraction

Not solely the omnigenous usage of metal material or as the conductor medium be performed, that particularly issues which come into notice for the metal material are their exposure to every potential destruction and deteriorate environment hence enormous pecuniary loss resulted in.

Lately, statistics shows thereabouts 1million tons above narrated or relative. Therefore, the research of their protection has been the momentous task and the pressing need for engineers and scientists.

Surface Anti-corrosion Treatment

Means apply kinds of protection on the surface of metal to quarantine itself from the corrosives environment and restrain the progress of or reduce the adjoining between corrosive media and metal surface to avoid or mitigate the corrosion situation.

The Reason of Metal Corrosion

Produced by industrial pollution and plenty exhausted fume emission of vehicles, the gaseous, minute particle corrosiveness sulfides as well as chloride teemed within the air and made the major reason of metal eroding.

Anti-corrosion R3, Anti-corrosion R4

This advance technology now are all available to apply to screw & nuts, helps to defense the corrosion once exposure to the sever marine, industrial, critical and air pollution as well. To determine the type of usage and cost, we have contained total solution for your essential.

Typical appearance of heads of fasteners using the salt-spray test

Anti-corrosion R3 & R4 is a superior corrosion resistant fastener finish. When a fastener is treated with Anti-corrosion R3 & R4, its entire surface is covered with polymer coating not susceptible to oxidation. Anti-corrosion R3 & R4 outperform all other existing electro-plating and prevent corrosion caused by chemical reaction between dissimilar metals. Anti-corrosion R3 & R4 create an attractive, metallic-grey finish that provide an excellent base surface for color matching paint. It is compatible with all painted and metal-coated surface.

Anti-corrosion Fasteners Deemed to Comply

Self drilling screws shall exhibit the minimum properties appropriate to the intended usage as given in below.

| Anti-corrosion | Maximum Coating Porosity | Coating Type | Minimum Average Coating Thickness | Salt-spray Test |
|----------------|--------------------------|------------------------------|-----------------------------------|-----------------|
| R3 | 30% | Mechanically plated Tin-Zinc | 25μ | 1000 hrs |
| R4 | 30% | Mechanically plated Tin-Zinc | 45μ | 1500 hrs |

Ruspert Coating - Super Anti-corrosion

What is Ruspert Coating?

Ruspert metal finish is a high-grade, non-organic, tri-layered ceramic surface coating developed to attain optimum performance in the various pollutive and atmospheric conditions that cause corrosion. It consists of three layers:

- The 1st layer: a metallic zinc layer.
- The 2nd layer: a high-grade anti-corrosion chemical conversion film.
- The 3rd top layer : a baked ceramic top coating.

The unique feature of Ruspert Coating is the tight joining of the baked ceramic top coating and the chemical conversion film thanks to the cross-linking effect. These layers are bonded together with the metallic zinc layer through chemical reactions, and this unique method of combining layers results in a rigid and dense combination of the coating films.

Ruspert Coating treatment does not attribute its anti-corrosion properties to merely a single material, but the synergy of these three layers, which combined have superb rustproof qualities. Compatible with metal coated and painted surfaces, fasteners coated with Ruspert are resistant to acid and alkaline attack, galvanic corrosion and hydrogen embrittlement.

Ruspert Coating Processes

Material : metallic zinc & resin

Coating Type : metallic zinc

(3 layers) dip-coating
baked ceramic top coating

Minimum Average Coating Thickness :

20 μ 、 30 μ 、 40 μ

Salt-spray Test : 500 、 1000 、 1500 hrs



Extra-heavy plating provides long corrosion-free service.

EPDM Sealing

Made of macromolecule material, the EPDM seal contains excellent characters of aging, ultraviolet rays resistance and endure to ozone, high temperature and low temperature [-50°C - 150°C]

Hi-grip

Hi-grip is a dual-threaded system that provides positive support to roofing profiles and secures a watertight seal between fastener and roofing sheet during crest fixing.

Drillshield

To enlarge the hole in the profile, and to avoid damage to the protective coating on the shank beneath the roof.

Thread

PATA fasteners are designed to give the best possible holding power with a low installation torque. As thinner high tensile sections are introduced, our engineers ensure that screws have optimum holding power and pullout strength.

Hi Tek

C-1022 steel case hardened drill point that will drill and thread in structural steel and mild steel. This technology is designed in a manner much the same as a high speed steel drill bits.

Salt-spray Test Result

after 1500 hrs (40μ)



after 1000 hrs (30μ)



after 500 hrs (20μ)



PATTA Painted System

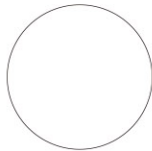
Advantages

- Customized combination w/screw & washer
- RAL, RR or customized colors option
- Complete automatic production system
- Automatic Spray Painting Machine
- High Production Capacity
- Evenly Painted
- Obvious Head Marking
- Large Automatic Oven with Stabilized Temperature
- Customized Paint Colors (RAL and RR)
- High Quality Paint Powder
- SGS Certified
- Well-managed QC Tests

RAL Colors



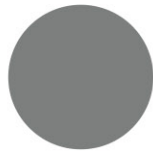
RAL 6020



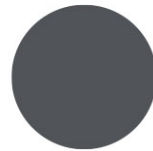
RAL 9010



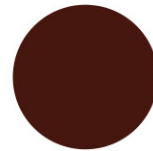
RAL 7035



RAL 7000



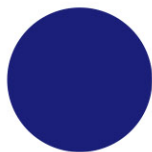
RAL 7015



RAL 8012



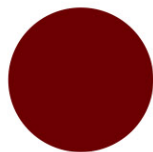
RAL 1004



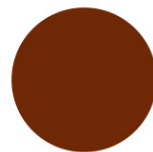
RAL 5002



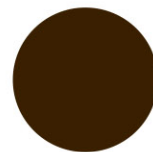
RAL 1034



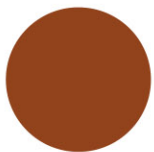
RAL 3003



RAL 3009



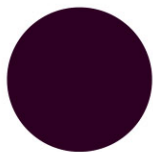
RAL 8014



RAL 8004



RAL 8022



RAL 4007



RAL 6021



RAL 6002



RAL 4008

• Note: Sample colors are for reference only. Please refer to the original RAL color card for a precise color reproduction.

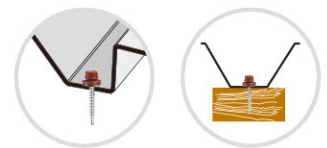
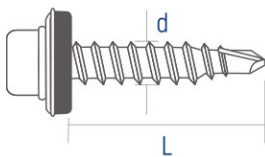
Farmer Screws

Features

- Used for fasten sheet-metal to walls and roofs, the aluminium washer with EPDM rubber covering ensures an effective seal and resistance to aging. Moreover, farmer screws are electro galvanised with coating thickness as available, and various colors as in RAL and RR for selection.

Conditions

- Durable painting
- Ideal for walls and roofs with overlap joints
- Aluminium/Steel washer
- 2.5/3 mm EPDM thickness



Suggested application thickness
Reduced point < 1.6 mm

| Size | Length (inch) | Length (mm) | Drill Point (m/m) | Drill Capacity (m/m) |
|----------------|---------------|-------------|-------------------|----------------------|
| #10-12 M4.8 | 3/4" | 20 | #2 | 1.0 - 1.6 |
| | 1-1/8" | 28 | #2 | 1.0 - 1.6 |
| | 1-3/8" | 35 | #2 | 1.0 - 1.6 |
| | 1-1/2" | 38 | #2 | 1.0 - 1.6 |
| | 2-3/8" | 60 | #2 | 1.0 - 1.6 |
| | 2-3/4" | 70 | #2 | 1.0 - 1.6 |



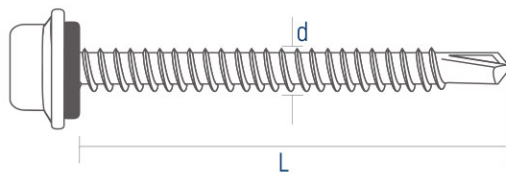
Stainless Steel Cap

Applications

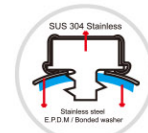
- For steel construction
- Excellent works for steel plate roof
- Suitability of aluminum and plastic window accessory

Features

- Weather resistance
- Water proof for exterior environment
- Prevent rust



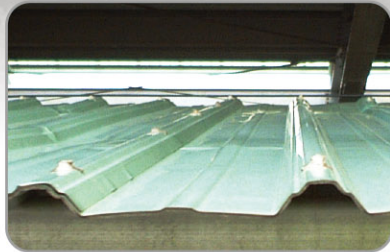
Plated Point
ZN **2** **3**



Suggested application thickness
 point #2 < 2 mm
 point #3 < 5 mm

| Size (inch) | Length (inch) | Length (mm) | Drill Point (m/m) | Drill Capacity (m/m) |
|----------------|------------------|----------------|----------------------|-------------------------|
| #10-16 M4.8 | 5/8" | 16 | #2 | 1.0 - 2.0 |
| | 3/4" | 19 | #2 | 1.0 - 2.0 |
| | 1" | 25 | #3 | 1.0 - 3.0 |
| | 1-1/2" | 38 | #3 | 1.0 - 3.0 |
| #12-14 M5.5 | 3/4" | 19 | #3 | 1.0 - 4.0 |
| | 1" | 25 | #3 | 1.0 - 4.0 |
| | 1-1/2" | 38 | #3 | 1.0 - 4.0 |
| | 2" | 50 | #3 | 1.0 - 4.0 |
| | 2-5/6" | 65 | #3 | 1.0 - 4.0 |
| | 3" | 75 | #3 | 1.0 - 4.0 |
| | 3-1/2" | 90 | #3 | 1.0 - 4.0 |
| | 4" | 100 | #3 | 1.0 - 4.0 |
| | 5" | 125 | #3 | 1.0 - 4.0 |





Works excellent for roofing, perfect in weather resistance.

| Size (inch) | Length (inch) | Length (mm) | Drill Point (m/m) | Drill Capacity (m/m) |
|------------------------|------------------|----------------|----------------------|-------------------------|
| #14-14 M6.3 | 3/4" | 19 | #3 | 2.0 - 4.0 |
| | 1" | 25 | #3 | 2.0 - 4.0 |
| | 1-1/4" | 32 | #3 | 2.0 - 4.0 |
| | 1-1/2" | 38 | #3 | 2.0 - 4.0 |
| | 2" | 50 | #3 | 2.0 - 4.0 |
| | 2-5/8" | 65 | #3 | 2.0 - 4.0 |
| | 3" | 75 | #3 | 2.0 - 4.0 |
| | 3-1/2" | 90 | #3 | 2.0 - 4.0 |
| | 14" | 100 | #3 | 2.0 - 4.0 |
| | 14 x 5" | 125 | #3 | 2.0 - 4.0 |
| | 6" | 150 | #3 | 2.0 - 4.0 |

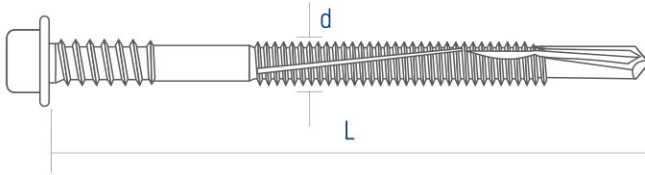
Double Thread

Applications

- Roof and wall panel over rigid insulation to steel framing
- Roof panel over spacer block and insulation to eaves purlin

Features

- Double thread for the purpose using exterior roofing environment
- High thread under the head prevents panel stripout
- Point to thread design maximizes pullout performance and minimizes backout



Plated **ZN** **RS** Point **5**



Suggested application thickness
 point #3 < 5 mm
 point #4 < 8 mm
 point #5 < 12 mm

| Size | Length (inch) | Length (mm) | Drill Point (m/m) | Drill Capacity (m/m) |
|--------------------------------|---------------|-------------|-------------------|----------------------|
| #14-14 / #12-24 M6.3 / M5.5 | 2-3/8" | 60 | #5 | 12.0 |
| | 3-5/32" | 80 | #5 | 12.0 |
| | 4" | 100 | #5 | 12.0 |
| | 5" | 125 | #5 | 12.0 |
| | 6" | 150 | #5 | 12.0 |
| | 2-3/8" | 60 | #5 | 12.0 |
| | 3-5/32" | 80 | #5 | 12.0 |
| | 5" | 125 | #5 | 12.0 |
| | 4" | 100 | #5 | 12.0 |
| | 6" | 150 | #5 | 12.0 |
| | 7" | 175 | #5 | 12.0 |
| | 8" | 200 | #5 | 12.0 |
| | 10" | 250 | #5 | 12.0 |
| | 11" | 275 | #5 | 12.0 |



Stainless Steel



Yellow Zinc



Black phosphate



Ruspert



Zinc

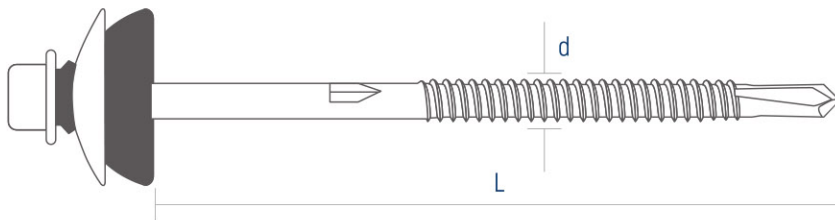
Wing up With Washer Hex Washer Head

Applications

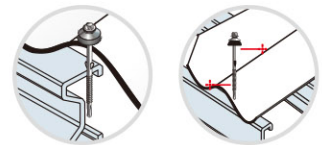
- For fibre cement sheet to steel application

Features

- EPDM with good water proof for exterior environment
- Wing up to enhance the drilling performance for fitting in exterior environment



Plated **ZN** **YZ** Point **2**



Suggested application thickness
point #3 < 5 mm
point #5 < 12 mm

| Size | Length (inch) | Length (mm) | Drill Point (m/m) | Drill Capacity (m/m) |
|------------------------------|---------------|-------------|-------------------|----------------------|
| #14-20 M6.3 | 4-5/32" | 105 | #5 | 12.0 |
| | 4-9/16" | 115 | #5 | 12.0 |
| | 5" | 125 | #5 | 12.0 |
| | 5-3/4" | 145 | #5 | 12.0 |
| | 6-1/8" | 155 | #5 | 12.0 |

Long Size Screws

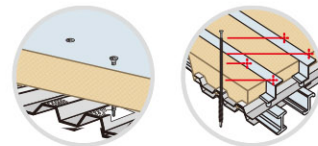
Applications

- Reduced point suitable for joint thin board
- Countersunk head for drilling material purpose
- Joint of composite panel or wall panel

Features

- Engineered for fast drilling and smooth tapping with less effort
- Screw length can be made by request
- High thread under head prevents panel stripout
- Fastens the broadest range of insulation thickness

Plated **ZN** **YZ** **RS** Point **2** **3** **5**



Suggested application thickness
 point #2 < 2 mm point #4 < 8 mm
 point #3 < 5 mm point #5 < 12 mm

| Size | Length (inch) | Length (mm) | Drill Point (m/m) | Drill Capacity (m/m) |
|-------------------------------|---------------|-------------|-------------------|----------------------|
| #10 M4.8 | 6" | 150 | #2 | 1.0 - 2.0 |
| | 7" | 175 | #2 | 1.0 - 2.0 |
| | 8" | 200 | #2 | 1.0 - 2.0 |
| #14 M6.3 | 6" | 150 | #3 | 2.0 - 4.0 |
| | 7" | 175 | #3 | 2.0 - 4.0 |
| | 8" | 200 | #3 | 2.0 - 4.0 |
| #12 M5.5 | 6" | 150 | #5 | 12.0 |
| | 7" | 175 | #5 | 12.0 |
| | 8" | 200 | #5 | 12.0 |
| #14-14 / #12-12 M6.3 / 5.5 | 6" | 150 | #5 | 12.0 |
| | 7" | 175 | #5 | 12.0 |
| | 8" | 200 | #5 | 12.0 |



Stainless Steel



Yellow Zinc



Black phosphate



Ruspert



Zinc

Type 17 hex washer flange yellow zinc



countersunk head, reduced point



Hex flange washer wing up with umbrella washer



Concrete & masonry screw ruspert



Bugle head reduced point, plain



Type 17 double thread ruspert



Double thread nano plating



Hex washer double thread #5 with bonded washer zinc plated

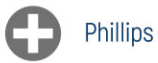


Custom Options

All our products come in various sizes, styles and can be customized to fit your needs.

Bits & Sockets

Iron Work Applications, Made of Alloy Steel



Phillips



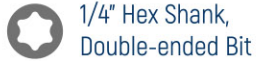
Square(Roberson)



Pozidriv



Torx



1/4" Hex Shank,
Double-ended Bit



Nut Setters
• Magnetic
• Non-Magnetic

Packaging



Self Drilling Screws



Self Tapping Screws



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Bolts & Nuts



Blind Rivets



Structural Rivets



Rivet Nuts



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