

GENERAL INFORMATION

ARCHITECTURAL ROOF CLIP FASTENERS

Self-Drilling Screws

PRODUCT DESCRIPTION

Architectural Roof Clip Fasteners offer a low-profile head design for wood and steel applications.

GENERAL APPLICATIONS AND USES

The efficiency of self-drilling fasteners and the aesthetics of an unobtrusive head are ideal for attaching metal roof clips to metal and wood.

FEATURES AND BENEFITS

- + Eliminates separate drilling and tapping operations
- + Pancake head improves aesthetics, prevents panel dimpling
- + Fasteners coated with Stalgard® typically show no red rust or other base metal corrosion on significant surfaces after 1000 hours of salt spray exposure in accordance with ASTM B117
- + Stalgard® coating provides improved corrosion resistance compared with fasteners with standard zinc plating
- + Fasteners coated with Stalgard® are compatible with ACQ-treated lumber with a maximum retention of 0.4 pcf and CA-B treated lumber with a maximum retention of 0.3 pcf

APPROVALS AND LISTINGS

- International Code Council, Evaluation Service (ICC-ES), ESR-3294
- Tested in accordance with ICC-ES AC118 for use in Steel (#10 diameter self-drilling fasteners only)
- City of Los Angeles, LABC & LARC Supplement (within ICC-ES report)
- Florida Building Code, FBC Supplement including HVHZ (within ICC-ES report)

GUIDE SPECIFICATIONS

05 05 23 – Metal Fastenings, 06 05 23 – Wood, Plastic and Composite Fastening, 09 22 16.23 - Fasteners. Fasteners shall be Architectural Roof Clip Fasteners as supplied by DEWALT, Towson, MD. Fasteners shall be installed with published instructions and the Authority Having Jurisdiction

MATERIAL SPECIFICATIONS

| Fastener Component | Specification |
|------------------------|--|
| Fastener Body and Head | Case hardened carbon steel |
| Plating/Coating | Stalgard coating 1,000 hour rating in ASTM B117 salt spray test |

SECTION CONTENTS

General Information..... 1
 Material Specifications 1
 Installation Procedures 2
 Performance Data 3
 Ordering Information 4



#3 POINT



PIERCE POINT

FASTENER MATERIAL

- Carbon Steel

HEAD STYLES

- Pan Head

DIAMETERS

- #10
- #12

FINISH

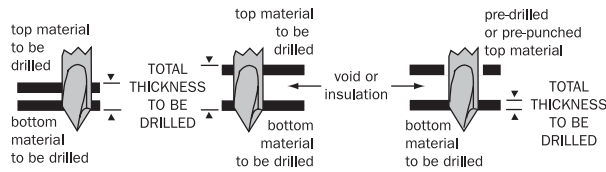
- Stalgard®

DRILL POINT TYPES

- #3
- Pierce

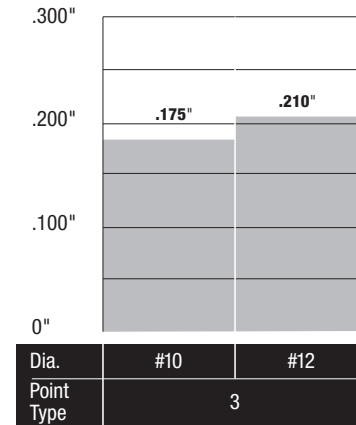
CODE LISTED
ICC-ES ESR-3294
STEEL

Point Size Selection
Maximum Combined Material Thickness By Point Type



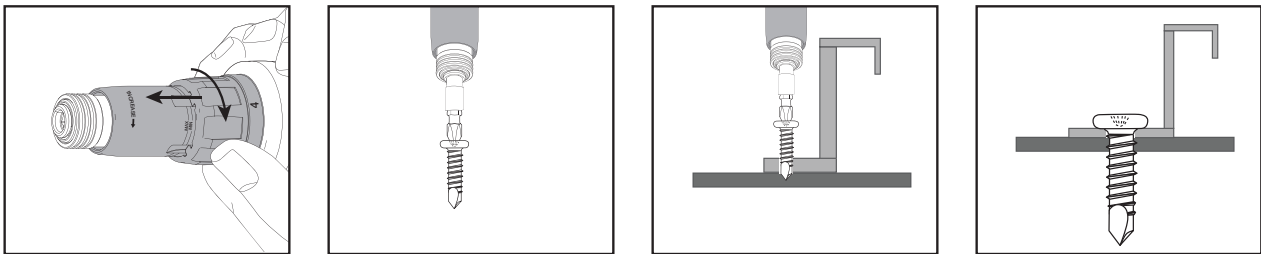
| Maximum Recommended Installation RPM | | Nominal Sheet Metal Sizes | | Nominal Screw Sizes | |
|--------------------------------------|------|---------------------------|---------------|---------------------|---------------|
| Diameter | RPM | Gauge | Decimal (in.) | Thread Dia. | Decimal (in.) |
| #10 | 2500 | 26 | 0.018 | #10 | .190 |
| #12 | | 24 | 0.024 | #12 | .216 |
| | | 22 | 0.030 | | |
| | | 20 | 0.036 | | |
| | | 18 | 0.048 | | |
| | | 16 | 0.060 | | |
| | | 14 | 0.075 | | |
| | | 12 | 0.105 | | |

Drilling and Tapping Capacity (Maximum Material Thickness)

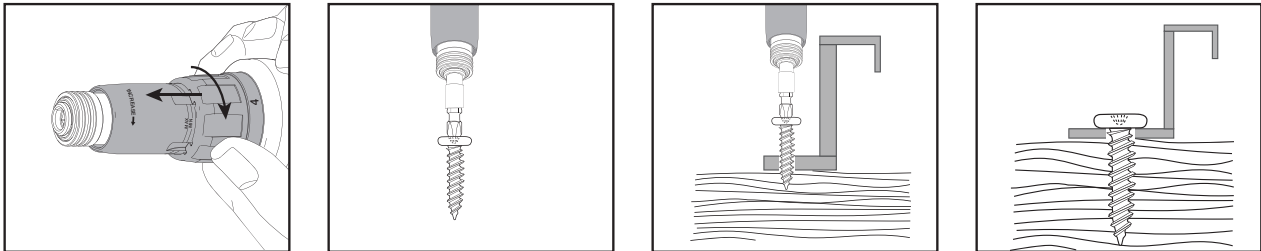


INSTALLATION PROCEDURES

Drill Point



Pierce Point



Select a torque adjustable screwgun that aligns with the recommended installation RPM's of the particular fastener (DeWALT VersaClutch Screwguns are recommended). Adjust the setting on the screwgun so that the tool does not overdrive the fastener.

Attach #2 phillips bit to the screwgun. Mount the screw fastener head into the driver.

Place the screw fastener against the work surface. While the screw fastener is in a perpendicular position, begin driving the screw fastener into the base material.

Drive the screw fastener until the head of the screw is in contact and snug tight with the work surface and/or the material being fastened.

PERFORMANCE DATA

Fastener Strengths^{1,2,3,4,5,6,7}

| Description | Point Type | Tension (lbf) | | | Shear (lbf) | | | Minimum Torsional Strength (In-lbs) |
|-------------|------------|---------------|-------|-------|-------------|-----|------|-------------------------------------|
| | | Ultimate | ASD | LRFD | Ultimate | ASD | LRFD | |
| #10-16 | #3 | 2,325 | 775 | 1,165 | 1,560 | 520 | 780 | 61 |
| #12-14 | #3 | 3,210 | 1,070 | 1,605 | 1,785 | 595 | 895 | 92 |

1. Ultimate strengths are based on laboratory tests.
2. Allowable (ASD) strengths are based on a safety factor, Ω , of 3.0 in accordance with ICC-ES AC118 and AISI S100-16.
3. Design (LRFD) strengths are based on a resistance factor, ϕ , of 0.50 in accordance with ICC-ES AC118 and AISI S100-16.
4. For ASD tension connections, the lower of the ASD tension strength and ASD pull-out strength must be used for design.
5. For LRFD tension connections, the lower of the LRFD tension strength and LRFD pull-out strength must be used for design.
6. For ASD shear connections, the lower of the ASD shear (bearing) capacity and the ASD fastener shear strength must be used for design.
7. For LRFD shear connections, the lower of the LRFD shear (bearing) capacity and the LRFD fastener shear strength must be used for design.

Ultimate Shear (Bearing) Capacity of Screw Connections, lbf^{1,2}

| Description | Point Type | Steel Thickness (Lapped Sheets/Bars) | | | | | | | |
|-------------|------------|--------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | 26-26 Ga. | 24-24 Ga. | 22-22 Ga. | 20-20 Ga. | 18-18 Ga. | 16-16 Ga. | 14-14 Ga. | 12-12 Ga. |
| #10-16 | #3 | 200 | 305 | 430 | 565 | 865 | 1,210 | 1,690 | - |
| #12-14 | #3 | 210 | 325 | 455 | 600 | 920 | 1,290 | 1,800 | 2,755 |

1. Ultimate strengths were calculated in accordance with AISI S100-16 based on steel with a minimum tensile strength of $F_u = 45$ ksi.
2. Ultimate load capacities must be reduced by a minimum safety factor to determine allowable loads (ASD) or by a load resistance factor to determine strength design capacities (LRFD).

Allowable (ASD) And Design (LRFD) Shear (Bearing) Capacity of Screw Connections (Steel)^{1,2,3,4}

| Description | Point Type | Steel Thickness (Lapped Sheets/Bars) | | | | | | | | | | | | | | | |
|-------------|------------|--------------------------------------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|-------|
| | | 26-26 Ga. | | 24-24 Ga. | | 22-22 Ga. | | 20-20 Ga. | | 18-18 Ga. | | 16-16 Ga. | | 14-14 Ga. | | 12-12 Ga. | |
| | | ASD. | LRFD | ASD. | LRFD | ASD. | LRFD | ASD. | LRFD | ASD. | LRFD | ASD. | LRFD | ASD. | LRFD | ASD. | LRFD |
| #10-16 | #3 | 65 | 100 | 100 | 155 | 145 | 215 | 190 | 285 | 290 | 435 | 405 | 605 | 565 | 845 | - | - |
| #12-14 | #3 | 70 | 105 | 110 | 165 | 150 | 230 | 200 | 300 | 305 | 460 | 430 | 645 | 600 | 900 | 920 | 1,380 |

1. Allowable (ASD) strengths are based on a safety factor, Ω , of 3.0 in accordance with ICC-ES AC118 and AISI S100-16.
2. Design (LRFD) strengths are based on a resistance factor, ϕ , of 0.50 in accordance with ICC-ES AC118 and AISI S100-16.
3. For ASD shear connections, the lower of the ASD shear (bearing) capacity and the ASD fastener shear strength must be used for design.
4. For LRFD shear connections, the lower of the LRFD shear (bearing) capacity and the LRFD fastener shear strength must be used for design.

Ultimate Tension Pull-out Capacity of Screw Connections, lbf^{1,2}

| Description | Point Type | Minimum Thickness of Steel Not in Contact with Screw Head | | | | | | | |
|-------------|------------|---|--------|--------|--------|--------|--------|--------|--------|
| | | 26 Ga. | 24 Ga. | 22 Ga. | 20 Ga. | 18 Ga. | 16 Ga. | 14 Ga. | 12 Ga. |
| #10-16 | #3 | 135 | 205 | 270 | 300 | 420 | 550 | 660 | 1,125 |
| #12-14 | #3 | 140 | 210 | 295 | 345 | 580 | 765 | 1,075 | 1,550 |

1. Ultimate strengths are based on laboratory tests.
2. Ultimate load capacities must be reduced by a minimum safety factor to determine allowable loads (ASD) or by a load resistance factor to determine strength design capacities (LRFD).

Allowable (ASD) And Design (LRFD) Pull-out Capacity of Screw Connections (Steel)^{1,2,3,4}

| Description | Point Type | Minimum Thickness of Steel Not in Contact with Screw Head | | | | | | | | | | | | | | | |
|-------------|------------|---|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|
| | | 26 Ga. | | 24 Ga. | | 22 Ga. | | 20 Ga. | | 18 Ga. | | 16 Ga. | | 14 Ga. | | 12 Ga. | |
| | | ASD. | LRFD | ASD. | LRFD | ASD. | LRFD | ASD. | LRFD | ASD. | LRFD | ASD. | LRFD | ASD. | LRFD | ASD. | LRFD |
| #10-16 | #3 | 45 | 65 | 65 | 100 | 90 | 135 | 100 | 150 | 140 | 210 | 180 | 275 | 220 | 330 | 375 | 565 |
| #12-14 | #3 | 45 | 70 | 70 | 105 | 95 | 145 | 115 | 170 | 190 | 290 | 255 | 380 | 355 | 535 | 515 | 775 |

1. Allowable (ASD) strengths are based on a safety factor, Ω , of 3.0 in accordance with ICC-ES AC118 and AISI S100-16.
2. Design (LRFD) strengths are based on a resistance factor, ϕ , of 0.50 in accordance with ICC-ES AC118 and AISI S100-16.
3. For ASD tension connections, the lower of the ASD tension strength and the ASD pull-out strength must be used for design.
4. For LRFD tension connections, the lower of the LRFD tension strength and the LRFD pull-out strength must be used for design.

Ultimate Tension Pull-out Capacity of Screw Connections (Wood)¹

| Description | Point Type | Base Material | | | | |
|-------------|------------|---------------|--------------|--------------|-------------|----------|
| | | 1/2" Plywood | 5/8" Plywood | 3/4" Plywood | Yellow Pine | 3/4" OSB |
| #10-12 | Pierce | 365 | 380 | 400 | 580 | 290 |
| #12-11 | Pierce | 375 | 390 | 425 | 675 | 325 |

1. Ultimate strengths are based on laboratory tests.

ORDERING INFORMATION

Architectural Roof Clip Fasteners

| Cat. No. | Description (Diameter - TPI x Nominal Length) | Point Type | Finish | Maximum Load Bearing Length ¹ (in.) | Minimum Protrusion Length ² | Nominal Head Diameter ³ (in.) | Nominal Head Height ⁴ (in.) | Qty / Carton |
|---|---|--------------|-----------|--|--|--|--|--------------|
| #10 DIAMETER, #2 PHILLIPS PANCAKE HEAD | | | | | | | | |
| DFSE0450 | #10 - 16 x 1" | #3 | STALGARD® | 0.500 | 1/2" | 0.437 | 0.075 | 4000 |
| DFSE0460 | #10 - 16 x 1-1/2" | #3 | STALGARD® | 1.000 | 1/2" | 0.437 | 0.075 | 3000 |
| DFSE0470 | #10 - 16 x 2" | #3 | STALGARD® | 1.500 | 1/2" | 0.437 | 0.075 | 2000 |
| DFSETA850 | #10 - 12 x 1" | PIERCE POINT | STALGARD® | - | - | 0.437 | 0.075 | 4000 |
| DFSETA855 | #10 - 12 x 1-1/2" | PIERCE POINT | STALGARD® | - | - | 0.437 | 0.075 | 3000 |
| DFSETA860 | #10 - 12 x 2" | PIERCE POINT | STALGARD® | - | - | 0.437 | 0.075 | 2000 |
| #12 DIAMETER, #2 PHILLIPS PANCAKE HEAD | | | | | | | | |
| DFSE0735 | #12 - 14 x 1" | #3 | STALGARD® | 0.438 | 9/16" | 0.437 | 0.075 | 4000 |
| DFSETA870 | #12 - 11 x 1" | PIERCE POINT | STALGARD® | - | - | 0.437 | 0.075 | 4000 |

1. Length of Load Bearing Area is calculated by subtracting the Minimum Protrusion Length from the Nominal Length of the fastener.
2. Minimum Protrusion Length is the length that allows the tip and three full threads to protrude out of the back side of the supporting material (applies to self-drilling fasteners only).



#3 Point



Pierce Point

Screwguns

| Cat. No. | Description | Screw Diameter |
|----------|---|----------------|
| DW268 | 2,500 RPM VSR VERSA-CLUTCH™ Screwgun | #10 |
| DW267 | 2,000 RPM VSR VERSA-CLUTCH™ Screwgun | #12 |
| DCF622M2 | 20V MAX* XR® VERSA-CLUTCH™ Adjustable Torque Screwgun Kit | #10 & #12 |

* For 20V MAX* maximum initial battery voltage measured without a workload is 20 volts. Nominal voltage is 18.
- Impact tools are not recommended for the installation of Architectural Roof Clip Fasteners.



Accessories

| Cat. No. | Description |
|--------------|--|
| DWA3HLDFT | 3IN IMPACT READY® HOLDER |
| DWA1PH2IR3 | 1IN PHILLIPS #2 IMPACT READY® BIT TIP (3 PACK) |
| DWANGFT32SET | 32 PIECE NEXT GEN IR FLEX TORQ SET |
| DWANGFT26SET | 26 PIECE NEXT GEN IR FLEX TORQ SET |

