



## SECTION 05090

### METAL FASTENINGS

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#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Metal Roofing Panel Fastenings.
- B. Metal Cladding Fastenings.

##### 1.2 RELATED SECTIONS

- A. Section 07410 - Metal roof and Wall Panels.

##### 1.3 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. Shop Drawings: Provide Plan, Section, elevation and perspective drawings as necessary to demonstrate the proper installation techniques, display fastener dimensions and position fasteners within the system.
- D. Selection Samples: For each finish product specified, two complete sets of fastener samples representing manufacturer's full range of available fastener types.
- E. Verification Samples: For each finish product specified, two samples representing each specified product.

##### 1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten (10) years experience.
- B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five (5) years demonstrated experience in installing products of the same type and scope as specified.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and

application workmanship.

1. Finish areas designated by Architect.
2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
3. Refinish mock-up area as required to produce acceptable work.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.

#### 1.6 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

#### 1.7 WARRANTY

- A. At project closeout, provide to Owner or Owners Representative an executed copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: SFS INTEC INC., which is located at: Van Reed Rd. at Spring St.; Wyomissing, PA 19610; Toll Free Tel: 800-234-4533;

Tel: 610-376-5751

Email: [request info \(frma@sfsintec.biz\);](mailto:request info (frma@sfsintec.biz);)

Web: [www.sfsintecusa.com](http://www.sfsintecusa.com)

- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

#### 2.2 SELF DRILLING FASTENERS

- A. 12-14 Impax HWH Self-Drill: Hex washer head fastener with #2 drill point for attaching metal to metal.
  1. Material: Carbon steel; case hardened.
  2. Material: 410 stainless steel; case hardened.
  3. Head Style: 5/16 inch (7.94 mm) AF hex washer head.
  4. Strength:
    - a. Tensile: 2900 Lb (12.9 kN) ultimate.
    - b. Torsional: 92 in-lbs (10 Nm) minimum.
    - c. Shear: 2050 Lb (9.12 kN).
  5. Washer: None.
  6. Washer: Galvanized steel bonded sealing washer with black EPDM sealing element.

- B. 1/4-14 Impax HWH Lap: Hex washer head fastener with #1 drill point for attaching panel to panel side lap.
1. Material: Carbon steel; case hardened.
  2. Material: 410 stainless steel; case hardened.
  3. Head Style: 5/16 inch (7.94 mm) AF hex washer head.
  4. Head Style: 3/8 inch (9.52 mm) AF hex washer head.
  5. Strength:
    - a. Tensile: 3800 Lb (16.9 kN) ultimate.
    - b. Torsional: 150 in-lbs (17 N\*m) minimum.
    - c. Shear: 2850 Lb (12.7 kN).
  6. Washer: None.
  7. Washer: Galvanized steel bonded sealing washer with black EPDM sealing element.
- C. 12-24 Impax 4 HWH Self-Drill: Hex washer head fastener with #4 drill point for attaching metal to metal.
1. Material: Carbon steel; case hardened.
  2. Head Style: 5/16 inch (7.94 mm) AF hex washer head.
  3. Strength:
    - a. Tensile: 3450 Lb (15.3 kN) ultimate.
    - b. Torsional: 100 in-lbs (11 N m) minimum.
    - c. Shear: 2420 Lb (10.8 kN).
  4. Washer: None.
  5. Washer: Galvanized steel bonded sealing washer with black EPDM sealing element.
- D. 12-24 Impax 4.5: hex washer head fastener with #5 drill point for attaching metal to metal.
1. Material: Carbon steel; case hardened.
  2. Head Style: 5/16 inch (7.94 mm) AF hex washer head.
  3. Head Style: 3/8 inch (9.52 mm) AF hex washer head.
  4. Strength:
    - a. Tensile: 3450 Lb (15.3 kN) ultimate.
    - b. Torsional: 100 in-lbs (11 Nm) minimum.
    - c. Shear: 2420 Lb (10.8 kN).
  5. Washer: None.
  6. Washer: Galvanized steel bonded sealing washer with black EPDM sealing element.
- E. 12-24 Impax 5: hex washer head fastener with #5 drill point for attaching metal to metal.
1. Material: Carbon steel; case hardened.
  2. Head Style: 5/16 inch (7.94 mm) AF hex washer head.
  3. Head Style: 3/8 inch (9.52 mm) AF hex washer head.
  4. Strength:
    - a. Tensile: 3450 Lb (15.3 kN) ultimate.
    - b. Torsional: 100 in-lbs (11 Nm) minimum.
    - c. Shear: 2420 Lb (10.8 kN).
  5. Washer: None.
  6. Washer: Galvanized steel bonded sealing washer with black EPDM sealing element.
- F. 12-14 Sealer Impax CHWH Self-Drill: Cupped hex washer head fastener with #2 drill point for attaching metal to metal.
1. Material: Carbon steel; case hardened.
  2. Head Style: 5/16 inch (7.94 mm) AF cupped hex washer head.

3. Strength:
    - a. Tensile: 2900 Lb (12.9 kN) ultimate.
    - b. Torsional: 92 in-lbs (10 N\*m) minimum.
    - c. Shear: 2050 Lb (9.12 kN).
  4. Washer: Integrated dome washer cold-formed into head and assembled with black EPDM sealing element.
- G. 1/4-14 Sealer Impax CHWH Lap: cupped hex washer head fastener with #1 drill point for attaching panel to panel side lap.
1. Material: Carbon steel; case hardened.
  2. Head Style: 5/16 inch (7.94 mm) AF cupped hex washer head.
  3. Strength:
    - a. Tensile: 3800 Lb (16.9 kN) ultimate.
    - b. Torsional: 150 in-lbs (17 Nm) minimum.
    - c. Shear: 2850 Lb (12.7 kN).
  4. Washer: Integrated dome washer cold-formed into head and assembled with black EPDM sealing element.
- H. 1/4-14 Impax HWH Self-Drill: Hex washer head fastener with drill point for attaching metal to metal.
1. Material: Carbon steel; case hardened.
  2. Head Style: 5/16 inch (7.94 mm) AF hex washer head.
  3. Head Style: 3/8 inch (9.52 mm) AF hex washer head.
  4. Point Style: #2 Point.
  5. Point Style: #3 Point.
  6. Strength:
    - a. Tensile: 3800 Lb (16.9 kN) ultimate.
    - b. Torsional: 150 in-lbs (17 Nm) minimum.
    - c. Shear: 2850 Lb (12.7 kN).
  7. Washer: None.
  8. Washer: Galvanized steel bonded sealing washer with black EPDM sealing element.
- I. 1/4-20 Impax HWH Self-Drill: Hex washer head fastener with #4 drill point for attaching metal to metal.
1. Material: Carbon steel; case hardened.
  2. Head Style: 3/8 inch (9.52 mm) AF hex washer head.
  3. Strength:
    - a. Tensile: 4200 Lb (18.7 kN) ultimate.
    - b. Torsional: 156 in-lbs (18 N m) minimum.
    - c. Shear: 2920 Lb (13.0 kN).
  4. Washer: None.
  5. Washer: Galvanized steel bonded sealing washer with black EPDM sealing element.
- J. 12-14 Impax HWH Self-Drill Insulated Panel Fastener: hex washer head fastener with #3 drill point and interrupted thread for attaching foam insulated metal composite panels to steel.
1. Material: Carbon steel; case hardened.
  2. Head Style: 5/16 inch (7.94 mm) AF hex washer head.
  3. Strength:
    - a. Tensile: 2900 Lb (12.9 kN) ultimate.
    - b. Torsional: 92 in-lbs (10 N m) minimum.
    - c. Shear: 2050 Lb (9.12 kN).
  4. Washer: None.
  5. Washer: Galvanized steel bonded sealing washer with black EPDM sealing

element.

- K. 10-16 SFS-5 HWH Self-Drill. Selective Hardened Fastener. Hex washer head fastener #3 drill point with load bearing area heat treated to grade 5 specification performance.
1. Material: Carbon Steel; selectively case hardened.  
Load bearing area: SEA J429 Grade 5 (ASTM A449 Type 1), RC 28 - 34  
Point and lead threads: RC 52 min.
  2. Head Style: 5/16 inch (7.94 mm) AF hex washer head.
  3. Strength: See attached technical data.
  4. Washer: None
  5. Coating: vistaCorr™ polymer coating 1000 hours salt spray (ASTM B117)
- L. 12-14 SFS-5 HWH Self-Drill. Selective Hardened Fastener. Hex washer head fastener #3 drill point with load bearing area heat treated to grade 5 specification performance.
1. Material: Carbon Steel; selectively case hardened.  
Load bearing area: SEA J429 Grade 5 (ASTM A449 Type 1), RC 28 - 34  
Point and lead threads: RC 52 min.
  2. Head Style: 5/16 inch (7.94 mm) AF hex washer head.
  3. Strength: See attached technical data.
  4. Washer: None
  5. Coating: vistaCorr™ polymer coating 1000 hours salt spray (ASTM B117)
- M. 1/4-14 SFS-5 HWH Self-Drill. Selective Hardened Fastener. Hex washer head fastener #3 drill point with load bearing area heat treated to grade 5 specification performance.
1. Material: Carbon Steel; selectively case hardened.  
Load bearing area: SEA J429 Grade 5 (ASTM A449 Type 1), RC 28 - 34  
Point and lead threads: RC 52 min.
  2. Head Style: 3/8 inch (9.52 mm) AF hex washer head.
  3. Strength: See attached technical data.
  4. Washer: None
  5. Coating: vistaCorr™ polymer coating 1000 hours salt spray (ASTM B117)
- N. 1/4-20 SFS-5 HWH Self-Drill. Selective Hardened Fastener. Hex washer head fastener #4 drill point with load bearing area heat treated to grade 5 specification performance.
1. Material: Carbon Steel; selectively case hardened.  
Load bearing area: SEA J429 Grade 5 (ASTM A449 Type 1), RC 28 - 34  
Point and lead threads: RC 52 min.
  2. Head Style: 3/8 inch (9.52 mm) AF hex washer head.
  3. Strength: See attached technical data.
  4. Washer: None
  5. Coating: vistaCorr™ polymer coating 1000 hours salt spray (ASTM B117)

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### 3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### 3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.

### 3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION