

**FLAT RIVER FIELD OFFICE  
SIDING REPLACEMENT**

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**SECTION 07270**

**AIR BARRIER / WEATHER RESISTANT BARRIER**

**PART 1 GENERAL**

1.01 Summary:

A. Includes but not limited to:

- 1) Furnish and install air barrier/weather resistant barrier over exterior of wall sheathing at all locations regardless of whether or not indicated on drawings to protect exterior sheathing and interior walls.

1.02 Related Sections

- A. Section 05400 – Cold Formed Metal Framing
- B. Section 06160 – Sheathing
- C. Section 07610 – Flashing and Sheet Metal

1.03 References:

- A. American Society for Testing and Materials
- B. Technical Association of the Pulp and Paper Industry
- C. American Association of Textile Chemists and Colorists

1.04 Submittals:

- A. General: Submit each item in this Article according to the conditions of the Contract and Division I Specifications Sections.
- B. Product Data: Submit product specifications, technical data and installation instructions of manufacturer equaling or exceeding those specified.

1.05 Quality Assurance

A. Qualifications:

1. Installer with successful experience in the installation of air barrier/secondary weather resistant barriers.

- B. Install job mock-up using specified air barrier/secondary weather resistant barrier with system of fastening and taping seams as per manufacturer's instructions. Obtain architect's approval of system for appearance and workmanship standard.

**PART 2 – PRODUCTS**

2.01 Manufacturers

A. Acceptable Manufacturer:

DuPont Weatherization Systems Contact:  
4417 Lancaster Pike 800-448-9835  
Building 728  
Wilmington, DE 19805  
[www.tyvek.com](http://www.tyvek.com)

2.02 Materials

- A. DuPont™ Tyvek® CommercialWrap®: A flash spunbonded olefin, non-woven, non-perforated secondary weather resistant barrier.

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### **B. Performance Characteristics**

1. AATCC-127, Water Penetration Resistance, exceeded at 280
2. TAPPI T-460, Gurley Hill (sec/100cc) Air infiltration at >1500 seconds
3. ASTM E 96 Method B(g/m<sup>2</sup>-24hr.)Water vapor transmission of 200
4. TAPPI T-41D, Basis weight of 2.7oz/yd
5. ASTM E96 Method B, Water Vapor Transmission, 28 perms
6. ASTM E1677, Air Retarder Material Standard Specification, Type I air barrier

### **C. Sealing Tape/Fasteners**

1. DuPont™ Tyvek® Tape, DuPont Weatherization Systems.
2. For wood frame construction: DuPont™ Tyvek® Wrap Caps, DuPont Weatherization Systems. Nails with large heads or plastic washers.
3. Caulks or Sealants: polyurethane or elastomeric sealants
  1. Available Products:
    - a. OSI® Quad Pro-Series®, solvent release butyl rubber sealant
    - b. DAP® Dynaflex 230™
    - c. Other products as approved and recommended by air barrier/weather resistant barrier manufacturer.

## **PART 3 – EXECUTION**

### **3.01 Installation**

#### **A. . Install Air Barrier over exterior side of exterior wall sheathing.**

1. Install Air Barrier after sheathing is installed and before windows and doors are installed. Install lower level barrier prior to upper layers to ensure proper shingling of layers.
2. Overlap Air Barrier at corners of building by a minimum of 12 inches.
3. Overlap Air Barrier vertical seams by a minimum of 6 inches.
4. Ensure barrier is plum and level with foundation, and unroll extending Air Barrier over window and door openings.
5. Attach Air Barrier to wood, insulated sheathing board or exterior gypsum with plastic cap nails every 12" to 18" on vertical stud line with wood stud framing, and screws with washers to metal stud framing. When attaching to masonry, use adhesive recommended by manufacturer.
6. Prepare window and door rough openings as follows:
  - a. Prepare each window rough opening by cutting a modified "I" pattern in the Air Barrier.
    1. Horizontally cut Air Barrier along bottom of header.
    2. Vertically cut Air Barrier down the center of window openings from the top of the window opening down to 2/3 of the way to the bottom of the window openings.
    3. Diagonally cut Air Barrier from the bottom of the vertical cut to the left and right corners of opening.
    4. Fold side and bottom flaps into window opening and fasten every 6 inches. Trim off excess.
  - b. Prepare each rough door opening by cutting a standard "I" pattern in the Air Barrier.
    1. Horizontally cut Air Barrier along bottom of door frame header and along top of sill.
    2. Vertically cut Air Barrier down the center of door openings from the top of the door opening (header) down to the bottom of the door opening (sill).
    3. Fold side flaps inside around door openings and fasten every 6 inches. Trim off excess.

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4. Tape all horizontal and vertical seam of Air Barrier with DuPont™ Tyvek® Tape.
5. Seal all tears and cuts in Air Barrier with DuPont™ Tyvek® Tape.

**END OF SECTION**

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**SECTION 07610**

**SHEET METAL SIDING**

**PART ONE - GENERAL**

1.01 SUMMARY

- A. Section Includes
  - 1. Preformed corrugated system.
  - 2. Fasteners.
  - 3. Underlayment.
  - 4. Slip Sheet.
- B. Related Sections
  - 2. Section 07620 - Sheet Metal Flashing and Trim
  - 3. Section 07920 - Joint Sealants

1.02 REFERENCES

- A. Aluminum Association (AA)
  - 1. AA-C22-A41: Clear Coatings
  - 2. AA-C22-A42: Integral Color Coatings
  - 3. AA-C22-A44: Color In Process
- B. American Society for Testing and Materials (ASTM)
  - 1. ASTM A167: Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
  - 2. ASTM A653: Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvanized) by the Hot-Dip Process
  - 3. ASTM B137: Test Method for Measurement of Coating Mass Per Unit Area of Anodically Coated Aluminum
  - 4. ASTM B209: Specification for Aluminum and Aluminum-Alloy Sheet and Plate
- D. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA)
  - 1. Architectural Sheet Metal Manual

1.03 SUBMITTALS

- A. Submit the following in accordance with Section 01330 [Other]:
  - 1. Product Data: Manufacturer's product literature for the roofing specified.
  - 2. Shop Drawings: Indicate thickness and dimension of parts, flashing and anchoring methods, and detail and location of joints; including joints necessary to accommodate thermal movement.
  - 3. Samples
    - a. 2 samples of each type of panel assembly, 12 inch by 12 inch minimum.
    - b. 2 samples of each finish in color or colors selected, 3 inch by 5 inch minimum.
  - 4. Affidavit certifying that the material meets the requirements specified.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum of 5 years experience in manufacturing roofing panels similar to those specified.
- B. Installer Qualifications: Acceptable to roofing manufacturer.

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1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the project site in manufacturer's original crating, properly labeled for identification and installation purposes. Store materials in accordance with panel manufacturer's recommendations. Handle materials carefully to avoid damage to panels and finishes.

1.06 WARRANTY

- A. The Contractor shall warrant the materials to be free of faults and defects in accordance with the General Conditions, except that the warranty shall be extended by paint manufacturer's standard multi-year warranty. The warranty shall be in writing and shall be signed by the manufacturer.

**PART 2 – PRODUCTS**

2.01 MANUFACTURER

- A. Firestone Metal Products / UNACLAD
- B. Other manufacturers seeking approval of their products must comply with requirements of the Instructions to Bidders (AIA Document A701), Paragraph 3.3 prior to bidding.

2.02 ROOFING TYPE

- A. UNA-CLAD Commercial/Industrial Panels, roll formed steel wall panels.

2.03 PANEL MATERIALS AND FABRICATION

- A. Aluminum Panels: ASTM B209, Aluminum Association specification sheet 5005-H34AQ for anodized finish
  - 1. Thickness: 24 gauge.

2.04 ACCESSORIES

- A. Fasteners: Exposed, non-corrosive type, as recommended by the panel manufacturer.

2.05 FINISHES

- 1. Color: To be selected by Owner
- 2. Number of Coats: 2-coat
- 3. Provide factory applied strippable plastic film for protection during fabrication and installation.

**PART 3 – EXECUTION**

3.01 EXAMINATION

- A. Examine the areas and conditions under which materials are to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.
- B. Surfaces to receive panels shall be even, smooth, sound, clean, dry, free of ice and snow, and free from defects.
- C. Verify that roof openings, curbs, pipes, sleeves, ducts, vents, and other penetrations through roof substrate are complete.

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### **3.02 PREPARATION**

- A. Obtain field measurements prior to completion of manufacturing and finishing. When field measurements are not possible, provide method of installation that will allow minor adjustment in the field.

### **3.03 INSTALLATION**

- A. Install commercial/industrial panels plumb, level and true, in accordance with manufacturer's instructions, final shop drawings, and SMACNA Architectural Sheet Metal manual and standard practices.
- B. Install starter and edge strips, and cleats before underlayment is installed.
- C. Install waterproof membrane in accordance with manufacturer's instructions beginning at the roof edge and extending up roof slope to 24 inches inside of interior wall line (minimum), measured perpendicular to the floor. Lap ends and edges 6 inches. Over valleys prior to installing flashing, install waterproofing shingle underlayment in one continuous sheet, top to bottom of valley, and extending 18 inches minimum in each direction.
- D. Install felt underlayment over remainder of roof substrate to receive roofing system, in shingle fashion, lapping ends 12 inches and edges 6 inches minimum. Install slip sheet over underlayment in a similar fashion.
- E. Completed system shall be free from overbending, deforming, stretching, distortion, waves, and buckles.

### **3.04 ADJUSTING AND CLEANING**

- A. Repair panels with minor damage.
- B. Remove panels damaged beyond repair and replace with new panels to match adjacent undamaged panels.
- C. Clean exposed panel surfaces promptly after installation in accordance with recommendations of panel and coating manufacturers.
- D. Remove protective film immediately after installation.

**END OF SECTION**

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**SECTION 07900**

**SEALANTS**

**PART ONE - GENERAL**

1.01 DESCRIPTION

- A. Work included: The work under this Section includes, but is not necessarily limited to, the furnishing and installation of all caulking and sealants as indicated on the Drawings, herein specified, and as necessary for the proper and complete performance of this work.
  
- B. General:
  - 1. Fill all exposed joints on the exterior of buildings as required to provide a weather-tight condition and all joints throughout that are subject to movement with sealant.
  - 2. The principal locations are as follows:
    - a. All control joints in masonry walls.
    - b. Elsewhere as indicated on the Drawings by the words "Caulk" or "Seal" when used in connection with exterior building walls.
  
- C. Caulking types:
  - 1. Caulking materials shall be provided and used for the various types and locations of joints as noted below:
    - a. Polyurethane sealant:
      - 1) Multiple-component high-performance polyurethane sealant, together with suitable backup material shall be used for exterior control joints in masonry and concrete walls, head and jambs of door frames, louver frames, etc.
    - b. Acrylic latex caulking compound:
      - 1) Interior sealant at windows, doors, concrete and block joints.

**PART TWO - PRODUCTS**

2.01 MATERIALS

- A. General:
  - 1. All materials shall be delivered to the site in the manufacturer's original, plainly marked and identified containers, with seals unbroken.
  - 2. All materials shall be of fresh stock, and include date.
  - 3. Colors of sealant shall match the building materials adjacent to the joints.
  - 4. For masonry, the color shall match the color of the mortar joints.
  - 5. All materials shall be prepared and used in strict accordance with the manufacturer's directions.
  
- B. Polyurethane sealant:
  - 1. Polyurethane sealant shall conform to Federal Specification TT-S-00227E, Type II, Class A:
    - a. Sonolastic NP 2 by Sonneborn Sealant Systems
    - b. Or equal
  
- C. Silicone or latex sealant:
  - 1. Silicone or latex sealant shall conform to ASTM C-834-95 or Federal Specification TT-S-001543A, Class A:
    - a. Pecora Corporation "AC-20 + Silicone"
    - b. Dow Corning 790
    - c. General Electric Company "Silpruf"

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d. Or equal

D. Other materials:

1. All other materials not specifically described but required for a complete and proper installation of the work of this Section, shall be new, first quality of their respective kinds, and as selected by the Contractor subject to approval of the Architect/Engineer.

**PART THREE - EXECUTION**

**3.01 SURFACE CONDITIONS**

- A. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.

**3.02 APPLICATION**

A. Workmanship:

1. Caulking shall be uniformly smooth and free of wrinkles.
2. Repair and correct defects in caulking work due to faulty materials methods, or workmanship; also make good any adjacent work damaged by such defects or by renewal of caulking.

B. Temperature:

1. Sealant shall be applied only when air and substrate temperatures are within the ranges recommended by the sealant manufacturers.

C. Preparation of joints:

1. Surface conditions:
  - a. Examine all joints and surfaces, which are to be caulked.
  - b. Report any unsatisfactory conditions to the Architect/Engineer before starting any work.
2. Cleaning:
  - a. Clean joints thoroughly.
  - b. Remove all dirt, dust, loose mortar or other materials, oil, grease, or other foreign matter, and make sure joints are dry and free of dew and frost before starting the work.
  - c. Joints filled with mortar shall be cleanly raked out to a depth sufficient to receive the proper amount of backup material and sealant.
  - d. Apply no sealant to masonry walls until masonry mortar has cured and dried.
  - e. All surfaces to come in contact with sealant shall be perfectly clean at the time sealant is applied.
  - f. Clean ferrous metals of all rust, mill scale and coatings.
  - g. Remove temporary coatings from all aluminum surfaces, against which, sealant will to be placed.

D. Sealant application:

1. Caulk joints under pressure.
2. Force sealant into joints and grooves with sufficient pressure to expel all air and to fill joints and grooves completely.
3. Use gun nozzles of proper size to fit the joint widths as required for neat smooth beads.

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3.03 CLEANING

- A. Immediately after completion of the work of this Section, remove all smears and soiling of surfaces adjoining caulked joints.

**END OF SECTION**