DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 07210 – BUILDING INSULATION
DEPARTMENT OF HEALTH: ELDRA SHULTERBRANDT FACILITY
GRANT NO. D12AP00349 (VI-CIP-2012-3)
St. Thomas, U. S. Virgin Islands

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes the following:
   1. Building insulation in batt form.
   2. Vapor retarders installed under slabs on grade and on exterior walls.

B. Related Sections: The following sections contain requirements that relate to this section:
   1. Division 7 Roofing Section indicated below for roof insulation specified as part of roofing construction:
   2. "Single Ply Membrane Roofing."
   3. Division 9 Section indicated below for thermal insulation and sound attenuation insulation installed as part of metal-framed wall and partition assemblies:
      a. "Lath and Plaster."
      b. "Veneer Plaster."
      c. "Gypsum Drywall."

1.03 DEFINITIONS

A. Thermal Resistivity: Where the thermal resistivity of insulation products are designated by "r-values," they represent the reciprocal of thermal conductivity (k-values). Thermal conductivity is the rate of heat flow through a homogenous material exactly 1 inch thick. Thermal resistivities are expressed by the temperature difference in degrees F between the two exposed faces required to cause one BTU to flow through one square foot per hour at mean temperatures indicated.

1.04 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Product data for each type of insulation product specified.

C. Samples of exposed insulation for initial selection purposes consisting of actual units or sections of units showing full range of colors available for each type of exposed insulation indicated.

D. Samples for verification purposes in full-size units of each type of exposed insulation indicated for each color specified.

E. Product test reports from and based on tests performed by qualified independent testing laboratory evidencing compliance of insulation products with requirements including r-values (aged values for plastic foam insulations), fire performance characteristics, perm ratings, water absorption ratings, and other properties, based on comprehensive testing of current products.

F. Research reports or evaluation reports of the model code organization acceptable to authorities having jurisdiction that evidence compliance of plastic foam insulations with building code in effect for Project.

1.05 QUALITY ASSURANCE

A. Fire Performance Characteristics: Provide insulation materials identical to those whose indicated fire performance characteristics have been determined per the ASTM test method indicated below, by UL or other

testing and inspecting organizations acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing and inspecting organization.

1. Surface Burning Characteristic: ASTM E 84.
2. Fire Resistance Ratings: ASTM E 119.
   Combustion Characteristics: ASTM E 136.

B. Single-Source Responsibility for Insulation Products: Obtain each type of building insulation from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's recommendations for handling, storage, and protection during installation.

B. Protect plastic insulation as follows:
   1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
   2. Protect against ignition at all times. Do not deliver plastic insulating materials to project site ahead of installation time.
   3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering insulation products that may be incorporated in the work include, but are not limited to, the following:
   1. Manufacturers of Glass Fiber Insulation:
      a. CertainTeed Corp.
      b. Knauf Fiber Glass GmbH.
      c. Manville: Building Insulations Div., Manville Sales Corp.
      d. Owens/Corning Fiberglas Corp.

2.02 INSULATING MATERIALS

A. General: Provide insulating materials that comply with requirements and with referenced standards.
   1. Preformed Units: Sizes to fit applications indicated, selected from manufacturer's standard thicknesses, widths, and lengths.

B. Unfaced Mineral Fiber Blanket/Batt Insulation (07210.A1): Thermal insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 for Type I (blankets without membrane facing); and as follows:
   1. Mineral Fiber Type: Fibers manufactured from glass.
      Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50, respectively.

C. Faced Mineral Fiber Blanket/Batt Insulation (07210.A2): Thermal insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 for Type III, Class A (blankets with reflective vapor-retarder membrane facing with flame spread of 25 or less); foil-scrim-kraft or foil-scrim-polyethylene vapor-retarder membrane on one face, and as follows:
   1. Mineral Fiber Type: Fibers manufactured from glass.
      Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50, respectively.

2. Flanged Units: Provide blankets/batts fabricated with facing incorporating 4-inch-wide flanges along their edges for attachment to framing members.

2.03 SAFING INSULATION AND ACCESSORIES

A. Semi-Refractory Fiber Board Safing Insulation (07210.B): Semi-rigid boards designed for use as a fire stop at openings between edge of slab and exterior wall panels, produced by combining semi-refractory mineral fiber manufactured from slag with thermosetting resin binders to comply with ASTM C 612, Class 1 and 2; nominal density of 4.0 pcf; passing ASTM E 136 for combustion characteristics; r-value of 4.0 at 75 deg F (23.9 deg C).

B. Caulking Compound: Material approved by manufacturer of safing insulation for sealing joint between foil backing of safing insulation and edge of concrete floor slab against penetration of smoke.

C. Safing Clips: Galvanized steel safing clips approved by manufacturer of safing insulation for holding safing insulation in place.

2.04 VAPOR RETARDERS

A. Polyethylene Vapor Retarder (07210.C): ASTM D 4397, 6.0 mils thick, with a maximum permeance rating of 0.13 perms.

B. Tape for Vapor Retarder: Pressure sensitive tape of type recommended by vapor retarder manufacturer for sealing joints and penetrations in vapor retarder.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine substrates and conditions with Installer present, for compliance with requirements of the Sections in which substrates and related work are specified and to determine if other conditions affecting performance of insulation are satisfactory. Do not proceed with installation of insulation until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean substrates of substances harmful to insulations or vapor retarders, including removal of projections that might puncture vapor retarders.

B. Close off openings in cavities receiving poured-in-place insulation to prevent the escape of insulation. Provide bronze or stainless steel screen (inside) where openings must be maintained for drainage or ventilation.

3.03 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's instructions applicable to products and application indicated. If printed instructions are not available or do not apply to project conditions, consult manufacturer's technical representative for specific recommendations before proceeding with installation of insulation.

B. Extend insulation full thickness as indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections that interfere with placement.

C. 6Apply a single layer of insulation of required thickness, unless otherwise shown or required to make up total thickness.

3.04 INSTALLATION OF GENERAL BUILDING INSULATION (07210.A)

A. Apply insulation units to substrate by method indicated, complying with manufacturer's recommendations. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Seal joints between closed-cell (nonbreathing) insulation units by applying adhesive, mastic, or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic, or sealant as recommended by insulation manufacturer.

C. Set vapor retarder faced units with vapor retarder to warm side of construction, except as otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.
   1. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to surrounding construction to ensure airtight installation.

D. Set reflective, foil-faced units accurately with not less than 0.75-inch air space in front of foil as indicated.

3.05 INSTALLATION OF SAFING INSULATION (07210.B)

A. Install safing insulation to fill gap between edge of concrete floor slab and back of exterior spandrel panels on safing clips spaced as needed to support insulation but not further apart then 24 inches o.c. Cut safing insulation wider than gap to be filled to ensure compression fit and seal joint between insulation and edge of slab with calking approved by safing insulation manufacturer for this purpose. Leave no voids in completed installation.

3.06 INSTALLATION OF PERIMETER AND UNDER-SLAB VAPOR RETARDER (07210.C1)

A. On vertical surfaces, set units in adhesive applied in accordance with manufacturer's instructions. Use type of adhesive recommended by manufacturer of vapor retarder.

B. Protect below-grade vapor retarder on vertical surfaces. Set in adhesive in accordance with recommendations of manufacturer of insulation.

3.07 INSTALLATION OF VAPOR RETARDERS IN EXTERIOR WALL (07210.C2)

A. General: Extend vapor retarder to extremities of areas to be protected from vapor transmission. Secure in place with adhesives or other anchorage system as indicated. Extend vapor retarder to cover miscellaneous voids in insulated substrates, including those filled with loose fiber insulation.

B. Seal vertical joints in vapor retarders over framing by lapping not less than 2 wall studs. Fasten vapor retarders to framing at top, end, and bottom edges, at perimeter of wall openings, and at lap joints; space fasteners 16 inches o.c.

C. Seal overlapping joints in vapor retarders with adhesives or tape per vapor retarder manufacturer's printed directions. Seal butt joints and fastener penetrations with tape of type recommended by vapor retarder manufacturer. Locate all joints over framing members or other solid substrates.

D. Firmly attach vapor retarders to substrates with mechanical fasteners or adhesives as recommended by vapor retarder manufacturer.

E. Seal joints caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with tape of type recommended by vapor retarder manufacturer to create an airtight seal between penetrating objects and vapor retarder.

F. Repair any tears or punctures in vapor retarders immediately before concealment by other work. Cover with tape or another layer of vapor retarder.

3.07 PROTECTION

A. General: Protect installed insulation and vapor retarders from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation will be subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION

SECTION 07410 – MANUFACTURED ROOF AND WALL PANELS
DEPARTMENT OF HEALTH: ELDRA SHULTERBRANDT FACILITY
GRANT NO. D12AP00349 (VI-CIP-2012-3)
St. Thomas, U. S. Virgin Islands

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes manufactured roof and wall panels of the following types:
   1. Roof panels with lapped seam, C-panel type.

B. Related Sections: The following sections contain requirements that relate to this Section:
   1. Division 7 Section "Flashing and Sheet Metal" for roof and/or wall flashing and other sheet metal work.
   2. Division 7 Section "Joint Sealants" for field-applied panel sealants.

C. Wood framing and decking are specified in a Division 6 section.

1.3 SYSTEM PERFORMANCE REQUIREMENTS

A. Provide certified test results by a recognized testing laboratory or agency in accordance with specified test methods for each system.

B. Air Infiltration: Provide roof panel system with no air leakage when tested in accordance with ASTM E 283 at pressure differentials up to 1.57 psf.

C. Water Penetration: Provide panel systems with no water penetration as defined in the test method when tested in accordance with ASTM E 331 at an inward static air pressure differential of not less than 6.24 psf and not more than 12.0 psf.

1.4 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Product data including manufacturer's product specifications, standard details, certified product test results, installation instructions, and general recommendations, as applicable to materials and finishes for each component and for total panel system.

C. Samples for initial selection purposes in form of manufacturer's color charts or chips showing full range of colors, textures, and patterns available for roof and wall panels with factory-applied finishes.

D. Shop Drawings showing layouts of panels on walls and roofs, details of edge conditions, joints, corners, panel profiles, supports, anchorages, trim, flashings, closures, and special details. Distinguish between factory and field assembly work.

1.5 QUALITY ASSURANCE

A. Fire Resistance Rating: Provide panel systems that have been tested and listed by design no. in UL "Fire Resistance Directory" for 2-hr. assembly rating.

B. Wind Uplift: Provide roof panel system including supports meeting requirements of Underwriters Laboratories, Inc. for Class 90 wind uplift resistance. Design wind speed to be 140 miles per hour, Exposure D, and Seismic Zone 4.

C. Field Measurements: Where possible, prior to fabrication of panels, take field measurements of structure or substrates to receive panel system. Allow for trimming panel units where final dimensions cannot be established prior to fabrication.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver panels and other components so they will not be damaged or deformed. Package wall and roof panels for protection against transportation damage.

B. Handling: Exercise care in unloading, storing, and erecting wall and roof covering panels to prevent bending, warping, twisting, and surface damage.

C. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weathertight ventilated covering. Store metal wall and roof panels so that they will not accumulate water. Do not store panels in contact with other materials that might cause staining, denting, or other surface damage.

1.7 WARRANTY

A. Finish Warranty: Furnish panel manufacturer's written warranty covering failure of the factory-applied exterior finish on metal wall and roof panels within the warranty period. This warranty shall be in addition to and not a limitation of other rights the Owner may have against the Contractor under the Contract Documents.
   1. Warranty period for factory-applied exterior finishes on wall and roof panels is 20 years after the date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering metal roof or wall panel systems that may be incorporated in the work include but are not limited to the following:
   1. Steel Roof and Wall Panels:
      a. AEP-Span.
      b. Allied Roof System.
      c. Architectural Panels, Inc.
      d. ASC Pacific, Inc.
      e. Atas Aluminum Corp.
      f. Berridge Manufacturing Co.
      g. Butler Manufacturing Co.
      h. Cheney Flashing Company.
      i. ECI Building Components, Inc.
      j. Fashion, Inc.

k. Flexospan.
l. Inryco Architectural Product
m. Metal Buidling Components, Inc. (MBCI)
n. Merchant & Evans, Inc. ("Zip-Rib").
o. Molenco.
p. Morin Building Products Co., Inc.
q. MM Systems Corp.
r. Petersen Aluminum Corp.
s. H.H. Robertson Company.
t. E.G. Smith Construction Products, Inc.
u. Steelite, Inc.
v. Vincent Metals.
w. Vin-Cor Steel Corp.

2.2 SHEET MATERIALS

A. Structural Quality Galvanized Steel Sheet: Hot-dip zinc-coated steel sheet complying with ASTM A 446 with G90 coating complying with ASTM A 525, Grade C or to suit manufacturer's standards.

B. Commercial Quality Galvanized Steel Sheet: Comply with ASTM A 526 with G90 coating complying with ASTM A 525.

2.3 METAL FINISHES

A. General: Apply coatings either before or after forming and fabricating panels, as required by coating process and as required for maximum coating performance capability. Protect coating either by application of strippable film or by packing plastic film or other suitable material between panels in a manner to properly protect the finish. Furnish air-drying spray finish in matching color for touch-up.
   1. Color: As selected by the Architect from the manufacturer's standard colors.

B. Fluoropolymer Coating: Manufacturer's standard two-coat, thermo-cured, full-strength 70 percent "Kynar 500" coating consisting of a primer and a minimum 0.75-mil dry film thickness with a total minimum dry film thickness of 0.9 mil and 30 percent reflective gloss when tested in accordance with ASTM D 523.
   1. Durability: Provide coating that has been field tested under normal range of weathering conditions for minimum of 20 years without significant peel, blister, flake, chip, crack, or check in finish; without chalking in excess of No. 8 in accordance with ASTM D 659; and without fading in excess of 5 NBS units.

2.4 THERMAL INSULATION

A. Polyisocyanurate Board Insulation: Unfaced, preformed, rigid, cellular, polyurethane thermal insulation complying with ASTM C 591, Type 2 with aged r-values of 6.2 at 75 deg F (23.9 deg C).

2.5 MISCELLANEOUS MATERIALS

A. Gypsum Board: Type X fire rated, UL-labeled board of thicknesses indicated, complying with ASTM C 442 or ASTM C 36.

B. Fasteners: Self-tapping screws, bolts, nuts, self-locking rivets, self-locking bolts, end-welded studs, and other suitable fasteners designed to withstand design loads.
   1. Use aluminum, corrosion-resistant steel, or stainless steel fasteners for exterior application and galvanized or cadmium-plated fasteners for interior applications.
   2. Provide exposed fasteners with heads matching color of roof or wall panel by means of plastic caps or factory-applied coating.
   3. Provide metal-backed neoprene washers under heads of exposed fasteners bearing on weather side of panels.
   4. Locate and space exposed fasteners in true vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of neoprene washer.

C. Felts: Provide asphalt-saturated organic felts conforming to the requirements of ASTM D 226, Type II (No. 30).

D. Accessories: Except as indicated as work of another specification section, provide components required for a complete roof or wall panel system, including trim, copings, fascias, gravel stops, mullions, sills, corner units, ridge closures, clips, seam covers, battens, flashings, gutters, louvers, sealants, gaskets, fillers, closure strips, and similar items. Match materials and finishes of panels.
   1. Closure Strips: Closed-cell, self-extinguishing, expanded cellular rubber or cross-linked polyolefin foam flexible closure strips. Cut or premold to match configuration of roof and wall panels. Provide closure strips where indicated or necessary to ensure weathertight construction.
   2. Sealing Tape: Pressure-sensitive 100 percent solids polyisobutylene compound sealing tape with release paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.
   3. Joint Sealant: One-part elastomeric polyurethane, polysulfide, or silicone rubber sealant as recommended by the building manufacturer.

E. Bituminous Coating: Cold-applied asphalt mastic, SSPC paint 12, compounded for 15 mil dry film thickness per coat.

2.6 PANEL FABRICATION

A. General: Fabricate and finish panels and accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes, as required to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and dimensional requirements and with structural requirements.

B. Sound Control: Where sound absorption requirement is indicated, fabricate interior liner panels with approximately 1,000 uniformly spaced 1/8-inch-diameter holes per sq. ft. Cover insulation with polyethylene film and provide inserts of wire mesh to form acoustical spacer grid.

C. Apply bituminous coating or other permanent separation materials on concealed panel surfaces where panels would otherwise be in direct contact with substrate materials that are noncompatible or could result in corrosion or deterioration of either material or finishes.

D. Fabricate panel joints with captive gaskets or separator strips, which provide a tight seal and prevent metal-to-metal contact in a manner that will minimize noise from movements within panel system.

2.7 ROOF AND WALL PANELS

A. Face Sheets: Fabricate wall and roof panel face sheets to the profile or configuration indicated from 0.040-inch-thick 3003 or 3004 Alclad alloy embossed finish aluminum sheets.

B. Standing Seam Roof Panels: Manufacturer's standard factory-formed standing-seam roof panel system designed for mechanical attachment of panels to roof purlin using a concealed clip. Form panels of 0.040-inch-thick 3003 or 3004 Alclad alloy embossed finish aluminum sheets.
   1. Clips: Provide 16-gage (0.0598-inch) panel clips designed to meet negative load requirements.
   2. Cleats: Factory-calked, mechanically seamed cleats formed from 24-gage (0.0239-inch), Grade C, zinc-coated steel sheets.

2.8 PANEL SUPPORTS AND ANCHORAGE

A. Secondary Framing: Provide the following secondary framing members:
   1. Roof Purlin and Wall Girts: "C"- or "Z"-shaped sections fabricated from 16-gage (0.0598-inch) shop-painted, roll-formed steel. Purlin spacers shall be fabricated from 14-gage (0.0747-inch) cold-formed galvanized steel sections.
   2. Eave Struts: Unequal flange "C"-shaped sections formed to provide adequate backup for both wall and roof panels. Fabricate from 16-gage (0.0598-inch) shop-painted, roll-formed steel.
   3. Flange and Sag Bracing: 1-5/8- by 1-5/8-inch angles fabricated from 16-gage (0.0598-inch) shop-painted, roll-formed steel.
   4. Base or Sill Angles: Fabricate from 14-gage (0.0747-inch) cold-formed galvanized steel sections.
   5. Secondary structural members, except columns and beams, shall be the manufacturer's standard sections fabricated from 14-gage (0.0747-inch) cold-formed galvanized steel.

PART 3 - EXECUTION

3.1 PANEL SUPPORTS AND ANCHORAGE

A. Girts, purlin, and other secondary structural panel support members and anchorage shall be installed in accordance with AISC Manual of Steel Construction "Code of Standard Practice."

3.2 PANEL INSTALLATION

A. General: Comply with manufacturers' instructions and recommendations for installation, as applicable to project conditions and supporting substrates. Anchor panels and other components of the work securely in place, with provisions for thermal and structural movement.
   1. Field cutting of exterior panels by torch is not permitted.
   2. Install panels with concealed fasteners.
   3. Install panels with exposed exterior and interior fasteners, prefinished to match panel finishes.
   4. Install roof panels over minimum 3:12 pitch solid substrate with one ply of felt installed from lower edge up with at least 3-inch side laps and 4-inch end laps.

B. Accessories: Install components required for a complete roof or wall panel system, including trim, copings, fascias, gravel stops, mullions, sills, corner units, ridge closures, clips, seam covers, battens, flashings, gutters, louvers, sealants, gaskets, fillers, closure strips, and similar items.

C. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of panel systems. Provide types of gaskets, sealants, and fillers indicated or, if not otherwise indicated, types recommended by panel manufacturer.
   1. Provide weatherseal under ridge cap. Flash and seal roof panels at eave and rake with rubber, neoprene, or other closures to exclude weather.
   2. Refer to other sections of these specifications for product and installation requirements applicable

to indicated joint sealers.

D. Joint Sealers: Refer to other sections of these specifications for post-installation requirements on joint sealers; not work of this section.

E. Lap-Seam Roof Panels: Provide sealant tape at lapped joints of ribbed or fluted roof sheets and between roof sheets and protruding equipment, vents, and accessories.
1. Apply a continuous ribbon of sealant tape to clean, dry surface of the weather side of fastenings on end laps, and on side laps of corrugated nesting-type, ribbed, or fluted panels and elsewhere as needed to make roof sheets weatherproof to driving rains.

F. Standing Seam Roof Panel System: Fasten roof panels to supports with concealed clip in accordance with the manufacturer's instructions.
1. Install clips at each support with self-drilling/self-tapping fasteners.
2. At end laps of panels, install tape caulk between panels.
3. Install factory-calked cleats at standing-seam joints. Apply snap-on batten to the panels to provide a weathertight joint.
4. Seaming: Complete seaming of panel joints by operation of portable power-driven equipment of type recommended by panel manufacturer to provide a weathertight joint.

G. Wall Panels: Apply elastomeric sealant continuously between metal base channel (sill angle) and concrete and elsewhere as necessary for waterproofing. Handle and apply sealant and backup in accordance with the sealant manufacturer's recommendations.
1. Align bottom of wall panels and fasten panels with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
2. Install screw fasteners with power tools having controlled torque adjusted to compress neoprene washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.
3. Provide weatherproof escutcheons for pipe and conduit penetrating exterior walls.

H. Installation Tolerances: Shim and align panel units within installed tolerance of 1/4 inch in 20'-0" on level/plumb/slope and location/line as indicated, and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.3 CLEANING AND PROTECTION

A. Damaged Units: Replace panels and other components of the work that have been damaged or have deteriorated beyond successful repair by means of finish touch-up or similar minor repair procedures.

B. Cleaning: Remove temporary protective coverings and strippable films (if any) as soon as each panel is installed. Upon completion of panel installation, clean finished surfaces as recommended by panel manufacturer, and maintain in a clean condition during construction.

END OF SECTION

SECTION 07620 – FLASHING AND SHEET METAL
DEPARTMENT OF HEALTH: ELDRA SHULTERBRANDT FACILITY
GRANT NO. D12AP00349 (VI-CIP-2012-3)
St. Thomas, U. S. Virgin Islands

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this Section.

1.02 SUMMARY

A. This Section includes the following:
   a. Metal counter flashing and base flashing (if any).
   b. Metal wall flashing and expansion joints.
   c. Built-in metal valleys, gutters, and scuppers.
   d. Gutters and downspouts (rain drainage).
   e. Exposed metal trim/fascia units.
   f. Miscellaneous sheet metal accessories.
   g. Elastic expansion joints.

B. Integral masonry flashings are specified as masonry work in sections of Division 4.

C. Roofing accessories installed integral with roofing membrane are specified in roofing system sections as roofing work.

D. Roof accessory units of premanufactured, set-on type are specified in Division 7 Section "Roof Accessories."

1.03 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Product data, Flashing, Sheet Metal, and Accessories: Manufacturer's technical product data, installation instructions and general recommendations for each specified sheet material and fabricated product.

C. Samples of the following flashing, sheet metal, and accessory items:
   a. 12-inch-long samples of factory-fabricated products exposed as finished work. Provide complete with specified factor finish.

1.04 PROJECT CONDITIONS

A. Coordinate work of this section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of work and protection of materials and finishes.

PART 2 – PRODUCTS

2.01 SHEET METAL FLASHING AND TRIM MATERIALS

A. Stainless Steel **(07620.A)**: AISI Type 302/304, complying with ASTM A 167, 2D annealed finish, soft, except where harder temper required for forming or performance; (20 gage) except as otherwise indicated.

B. Extruded Aluminum **(07620.B)**: Manufacturer's standard extrusions of sizes and profiles indicated, 60063-T52, AA-C22A41 clear anodized finish; 0.080-inch minimum thickness for primary legs of extrusions.

2.02 FABRICATED UNITS

A. General Metal Fabrication: Shop-fabricate work to greatest extent possible. Comply with details shown and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather-resistant performance, with expansion provisions for running work, sufficient to permanently prevent leakage, damage, or deterioration of the work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling, and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.

B. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. For metal other than aluminum, tin edges to be seamed, form seams, and solder. Form aluminum seams with epoxy seam sealer; rivet joints for additional strength where required.

C. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

D. Sealant Joints: Where movable, nonexpansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.

E. Separations: Provide for separation of metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.

F. Aluminum Extrusion Units: Fabricate extruded aluminum running units with formed or extruded aluminum joint covers for installation behind main members where possible. Fabricate mitered and welded corner units.

2.03 ELASTIC EXPANSION JOINTS

A. General: Provide factory-fabricated units of size and profile indicated complete with prefabricated corner units, intersection units, and splicing materials. Provide complete with elastic sheet flashing forming the primary joint membrane, in a supported, "bellows" arrangement designed for securement to both sides of expansion joints. Underside of bellows insulated with adhesively applied, flexible, closed-cell rubber or plastic not less than 3/8-inch thick.

B. Type: Metal flanged edges, 3 to 4 inches wide, formed to profiles as indicated to fit curbs and designed for nailing to curb substrate. Provide metal flanges in the following thicknesses:
   a. Zinc-coated steel: 22 or 24 gage.
   b. Looped Bellows Width: 5 to 6 inches, exclusive of flanges.

C. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:
   Afco Products, Inc.
   a. Celotex Corporation
   b. International Permalite/Roofing Components Group.
   c. Manville/Roofing Systems Division.
   d. Phoenix Building Products, Inc.
   e. York Manufacturing, Inc.

PART 3 – EXECUTION

3.01 INSTALLATION REQUIREMENTS

A. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations and with SMACNA "Architectural Sheet Metal Manual." Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weatherproof.

B. Underlayment: Where stainless steel or aluminum is to be installed directly on cementitious or wood substrates, install a slip sheet of red rosin paper and a course of polyethylene underlayment.

C. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.

D. Install reglets to receive counterflashing in manner and by methods indicated. Where shown in concrete, furnish reglets to trades of concrete work for installation as work of Division 3 sections. Where shown in masonry, furnish reglets to trades of masonry work, for installation as work of Division 4 sections.

E. Install counterflashing in reglets, either by snap-in seal arrangement or by welding in place for anchorage and filling reglet with mastic or elastomeric sealant, as indicated and depending on degree of sealant exposure.

F. Install elastic flashing in accordance with manufacturer's recommendations. Where required, provide for movement at joints by forming loops or bellows in width of flashing. Locate cover or filler strips at joints to facilitate complete drainage of water from flashing. Seam adjacent flashing sheets with adhesive, seal and anchor edges in accordance with manufacturer's recommendations.

G. Nail flanges of expansion joint units to curb nailers, at maximum spacing of 6 inches o.c. Fabricate seams at joints between units with minimum 3-inch overlap, to form a continuous, waterproof system.

H. Install continuous gutter guards on gutters, arranged as hinged units to swing open for cleaning gutters. Install "beehive"-type strainer-guard at conductor heads, removable for cleaning downspouts.

3.02 CLEANING AND PROTECTION

A. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.

B. Protection: Advise contractor of required procedures for surveillance and protection of flashings and sheet metal work during construction to ensure that work will be without damage or deterioration other than natural weathering at time of Substantial Completion.

END OF SECTION