

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 07210

BUILDING INSULATION

PART 1: GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this Section.
- B. Related Sections:
 - 1. 01001 - Basic Requirements

1.02 SECTION INCLUDES

- A. Sprayed Polyurethane Foam (SPF) for exterior walls.
- B. Sprayed Polyurethane Foam (SPF) for attic spaces.
- C. Sprayed Polyurethane Foam (SPF) for Interior Walls Indicated on Plans to have insulation.
- D. Intumescent Paint Ignition Barrier.
- E. Thermal Barrier tested with system applied.

PART 2: PRODUCTS

2.01 INSULATION MATERIALS

- A. Insulation Manufacturers: Equal to DEMILEC (USA) LLC, Arlington, TX – *SELECTION 500*
 - 1. Sprayed Polyurethane Foam (SPF): Class 1 surface spread of flame rating. Open cell foam with core density of .4 to 1.2 pounds per sq. ft.. R-Values from 3.5 to 3.6 per inch. Required R Value for exterior walls and roof is R-21 Min..
 - 2. All foam insulation shall have an ignition barrier and a thermal barrier protecting it according to IBC building guidelines. Protection may be applied as follows:
 - a. Gypsum board finish (Concealed spaces)
 - b. Intumescent Paint Coating and thermal barrier (Exposed spaces)

2.02 INTUMESCENT PAINT IGNITION BARRIER

- A. An Intumescent Paint Ignition Barrier shall be applied to all exposed foam areas in walls, attics, & crawlspaces, etc.
 - 1. Apply according to manufactures instructions. Protect area from moisture and high humidity during the entire application and drying period, until it has completely dried and has been coated with any subsequent materials. Ambient air and surface temperatures must not be less than 50 degrees F (10 degrees C). Heat and moisture control may be required to maintain acceptable conditions.
 - 2. Do not apply any materials that have been frozen or have come into contact with contaminants prior to use.
 - 3. All surfaces to be coated must be clean, cured, firm, dry and free of dust, dirt, oil, wax, grease, mildew, loose flaking paint or other foreign matter that would impair bond of the intumescent coating.
 - 4. Manufacturers:
 - a. Flame Seal Products, Inc. 'Flame Seal' (TB)
 - b. TPR2, Corp. 'Fire Shell' (F10E)
 - c. Flame Control Systems, LLC (50-50A)
 - d. International Fire Resistant Systems, Inc. 'Fire Free' (88)

PART 3: EXECUTION

3.01 EXAMINATION AND PREPARATION

- A. Verify that substrate, adjacent materials, and insulation boards are dry and ready to receive insulation and adhesive.

3.02 INSTALLATION

- A. Install insulation in accordance with insulation manufacturer's instructions.
- B. Install in exterior walls and ceiling spaces without gaps or voids.
- C. Fit insulation tight in spaces. Leave no gaps or voids.

3.03 SCHEDULES

- A. Interior Walls: Open Cell Spray foam minimum of 3.5 inches expandable foam between studs for mechanical room walls, offices, toilet rooms and all other walls as shown on plans. Sprayed Polyurethane Foam (SPF). R value to equal (R3.5 per inch X 3.5 inches = Total R-12). Extend walls of mechanical rooms up to bottom chord of roof trusses.
- B. Exterior Walls: Spray minimum of 6 inches expandable Open Cell foam between studs. Sprayed Polyurethane Foam (SPF). R value to equal (R3.5 per inch X 6 inches = Total R-21)
- C. Attic Space: Spray minimum of 8 inches expandable Open Cell foam between top chord of wood trusses and roof deck. Sprayed Polyurethane Foam (SPF). R value to equal (R3.5 per inch X 8 inches = Total R-28) Apply ignition barrier and thermal barrier coating over all exposed insulation
- D. Insulation and insulation assemblies shall meet the requirements of Section 719, Standard Building Code, 1997 Edition.
 - 1. Concealed insulation shall have a flame spread of 0-75 and a smoke developed of 0-450 except that in combustible (wood frame) construction, facing may comply with SBC 719.2.2.
 - 2. Exposed insulation shall have a flame spread of 0-25 and a smoke developed of 0-450.
- F. Blanket Insulation for Metal Buildings. Supplied by Manufacturer

END OF SECTION – 07210

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION – 07211

EXTERIOR WALL SHEATHING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work in this section includes, but is not limited to: wall, ceiling and soffit sheathing and shaftwalls, and area separation walls.
 - 1. Related work specified elsewhere:
 - 2. Metal Siding
 - 3. Joint sealers
 - 4. Cold-formed metal framing
 - 5. Light-gauge metal framing
 - 6. Rough carpentry
 - 7. Painting
 - 8. Finish carpentry

1.02 SUBMITTALS

- A. Product data: Submit manufacturer's descriptive literature indicating material composition, thickness, sizes and fire resistance.
- B. Certificates: If applicable for shaftwall, stairwells and area separation wall liners submit manufacturer's written certification that product meet specified requirements.

1.03 QUALITY ASSURANCE

- A. Fire-resistance ratings: Where applicable, provide materials and construction that are identical to those of assemblies whose fire-resistance ratings are indicated.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver materials to the job site in manufacturer's original packaging, containers and bundles with manufacturer's brand name and identification intact and legible.
- B. Storage and handling: Store level and handle materials to protect against contact with damp and wet surfaces, exposure to weather, breakage and damage to edges. Provide air circulation under covering and around stacks of materials.

1.05 LIMITATIONS

- A. Sheathing is not intended for immersion in water. Cascading roof/floor water should be directed away from the sheathing until appropriate drainage is installed.
- B. The use of forced air heaters creates volumes of water vapor which, when not properly vented, can condense on building materials. The use of these heaters and any resulting damage is not the responsibility of the manufacturer. Consult heater manufacturer for proper use and ventilation. Avoid any condition that will create moisture in the air and condensation on the exterior walls during periods when the exterior temperature is lower than the interior.
- C. When sheathing panels are used in slanted wall applications, that portion of the wall must be temporarily

protected from the elements by the use of a weather resistant barrier prior to application of the cladding. Do not allow water to pond or settle on sheathing. Also, exposed wall ends such as those

that may be found in parapets must be covered to prevent water from infiltrating the cavity.

- D. The suitability and compatibility of the sheathing system is the responsibility of the system manufacturer or design authority.
- E. Do not laminate sheathing to masonry surfaces; use furring strips or framing.
- F. Sheathing is not intended for roof applications.
- G. Sheathing is not intended for tile applications.
- H. Sheathing should not be used in lieu of plywood where required.
- I. Do not apply sheathing below grade.
- J. For all installations, design details such as fasteners, sealants and control joints per system specifications must be properly installed. Openings and penetrations must be properly flashed and sealed. Failure to do so will void the warranty.
- K. Do not use sheathing as a base for nailing or mechanical fastening. Fasteners should be flush to the face of the board, not counter sunk.

PART 2 - PRODUCTS

2.01 SHEATHING BOARD

- A. Acceptable products but not limited to the following upon proof that product meets the following specifications:
 - 1. 1/2" DensGlass Gold Exterior Sheathing
 - 2. 5/8" DensGlass Gold Fireguard Exterior Sheathing
- B. Characteristics:
 - 1. Size:
 - a. DensGlass Gold Exterior Sheathing: 1/2" (12.7mm) thick by 4' by 8', 9' or 10' (1.9 lb. per square foot).
 - b. DensGlass Gold Fireguard Exterior Sheathing: 5/8" (15.9mm) thick x 4' x 8', 9' or 10' (2.5 lb. per square foot).
 - 2. Composition:
 - a. Gypsum sheathing manufactured in accordance with ASTM C 1177 with glass mats both sides and long edges, water-resistant treated core.
 - 3. Fire resistance:
 - a. Noncombustible when tested in accordance with ASTM E 136.
 - b. 1/2" or 5/8" DensGlass Gold Exterior Sheathing: Flame spread 10, smoke developed 0, when tested in accordance with ASTM E 84.
 - c. 5/8" DensGlass Gold Fireguard® Exterior Sheathing is rated Type X as defined in ASTM C 36 when tested according to ASTM E 119 and can be used as a replacement to any other generic assembly utilizing a 5/8" Type X gypsum board (see GA-600 for numeric assemblies). DensGlass Gold Fireguard Exterior Sheathing is UL classified, Type DGG, in UL designs N501, N502, N505, U301, U302, U305, U309, U337, U342, U354, U355, U365, U411, U425, U467, U473, U475, U617, V417, V419, X508, X516.

2.02 BUILDING PAPER FOR SHEATHING APPLICATION

- A. If required by local building code, #15, nonperforated, asphalt saturated felt complying with ASTM D 226, Type 1 or equivalent building wraps.

2.03 ACCESSORIES FOR BUILDING SHEATHING

- A. Joint tape: 2" wide 10 x 10 glass mesh tape.
- B. Joint compound: Tough Rock setting-type joint compound.
- C. Nails, wood framing: Hot dip, 11-gauge galvanized nails with 7/16" head, 1 1/2" min. length.
- D. Screws, metal framing:
 - 1. Bugle head, self-tapping, rust-resistant, fine thread for heavy-steel gauge.
 - 2. Bugle head, rust-resistant sharp point, fine thread for light-gauge metal framing or furring.
- E. Screws, metal or wood framing:
 - 1. Rust-resistant, bugle head, coarse thread, sharp point for wood; or wafer head, rust-resistant screws, drill or sharp point.
 - 2. Hot dip 11-gauge, galvanized 7/16" head nail or equivalent to wood framing.
- F. Sealants, caulk and tape:
 - 1. Dow Corning 795 or equivalent; Pecora 895 or equivalent.
 - 2. Pecora AC-20 acrylic latex sealant; GE Silicone Silpruf Sealant; Tremco Dymonic or equivalent
 - 3. 2" wide 10 x 10 fiberglass mesh

PART 3 - EXECUTION

3.01 PREPARATION

- A. Examine subframing: verify that surface of framing and furring members to receive sheathing does not vary more than 1/4" from the placement of faces of adjacent members.

3.02 SHEATHING

- A. Provide Exterior Sheathing where indicated on drawings. Install sheathing in accordance with manufacturer's instructions and applicable instructions in GA-253 and ASTM C 1280.
- B. Install Exterior Sheathing with manufacturer's recommended side out.
- C. Use maximum lengths possible to minimize number of joints.
- D. Wood framing: Attach Exterior Sheathing to wood framing with nails spaced 4" o. c. at perimeter for racking shear resistance; 8" o. c. at perimeter where there are framing supports and where racking shear resistance is not required; and 8" o. c. along intermediate framing in field for both conditions.
- E. Metal framing: Attach Exterior Sheathing to metal framing with screws spaced 8" o. c. at perimeter where there are framing supports; and 8" o. c. along intermediate framing in field.
- F. Drive fasteners to bear tight against and flush with surface of sheathing. Do not countersink.
- G. Locate fasteners minimum 3/8" from edges and ends of sheathing panels.
- H. Weather-resistant barrier: If a weather barrier is required by the local building code, design professional, owner or cladding manufacturer over sheathing, one of the following procedures

may be used. Consult building code designing authority for proper application selection.

1. Entire exterior face of gypsum sheathing covered with asphalt impregnated felt or synthetic fiberwrap such as Tyvek® Commercial Wrap.
2. Joints and fasteners covered using Dow Corning 795 Building Sealant, Pecora 895 or equivalent.
3. Joints covered with 2" wide fiberglass mesh tape and Pecora AC20+ Silicone, GE Silicone Silpruf Sealant, Tremco Dymonic or equivalent.
4. Fasteners covered with sealant.
5. Entire exterior face of gypsum sheathing covered with a "peel and stick" self adhesive type membrane or liquid applied membranes.

I. Precaution: This product contains continuous filament fiberglass. Fiberglass release during normal handling of this product can cause skin, eye and respiratory irritation. Avoid breathing dust and contact with skin and eyes. Follow standard work practices:

1. Wear long-sleeved, loose-fitting clothing, gloves and eye protection.
2. Use a respirator, such as a 2M Model 9900 or equivalent.
3. Wash exposed areas with soap and warm water after handling.
4. Wash work clothes separately from other clothing; rinse washer thoroughly. Operations that generate high airborne fiber concentrations (over 10 fibers/cc) require additional respiratory protection.

3.03 CEILINGS AND SOFFITS

A. Joint treatment and finish preparation:

1. Painted ceilings and soffits
 - a. Apply fiberglass mesh joint tape over joints and embed in setting-type joint compound specified.
 - b. Skim coat surface with setting-type joint compound for smooth finish.
 - c. Prime and paint with exterior grade, good quality paint.

END OF SECTION - 07211

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 07250 WEATHER BARRIERS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Weather barrier membrane shall be equal to (DuPont™ Tyvek® CommercialWrap®)
- B. Seam Tape shall be equal to (DuPont™ Tyvek® Tape)
- C. Flashing (DuPont™ FlexWrap™, DuPont™ StraightFlash™ and/or DuPont™ StraightFlash™ VF)
- D. Fasteners (DuPont™ Tyvek® Wrap Caps)

1.2 REFERENCES

- A. ASTM International
 - 1. ASTM C920; Standard Specification for Elastomeric Joint Sealants
 - 2. ASTM C1193; Standard Guide for Use of Joint Sealants
 - 3. ASTM D882; Test Method for Tensile Properties of Thin Plastic Sheeting
 - 4. ASTM D1117; Standard Guide for Evaluating Non-woven Fabrics
 - 5. ASTM E84; Test Method for Surface Burning Characteristics of Building Materials
 - 6. ASTM E96; Test Method for Water Vapor Transmission of Materials
 - 7. ASTM E1677; Specification for Air Retarder Material or System for Framed Building Walls
 - 8. ASTM E2178; Test Method for Air Permeance of Building Materials
- B. AATCC – American Association of Textile Chemists and Colorists
 - 1. Test Method 127 Water Resistance: Hydrostatic Pressure Test
- C. TAPPI
 - 1. Test Method T-410; Grams of Paper and Paperboard (Weight per Unit Area)
 - 2. Test Method T-460; Air Resistance (Gurley Hill Method)

1.3 SUBMITTALS

- A. Refer to Section 01001 Basic Requirements
- B. Product Data: Submit manufacturer current technical literature for each component.
- C. Samples: Weather Barrier Membrane, minimum 8-1/2 inches by 11 inch.
- D. Quality Assurance Submittals
 - 1. Design Data, Test Reports: Provide manufacturer test reports indicating product compliance with indicated requirements.
 - 2. Manufacturer Instructions: Provide manufacturer's written installation instructions.
 - 3. Manufacturer's Field Service Reports: Provide site reports from authorized field service representative, indicating observation of weather barrier assembly installation.
- E. Closeout Submittals
 - 1. Refer to Section 01001 Basic Requirements.
 - 2. Weather Barrier Warranty: Manufacturer's executed warranty form with authorized signatures and endorsements indicating date of

A New FFA Conference Center

Coco & Company

Project # 0225

Substantial Completion.

1.4 QUALITY ASSURANCE

A. Qualifications

1. Installer shall have experience with installation of commercial weather barrier assemblies under similar conditions.
2. Installation shall be in accordance with weather barrier manufacturer's installation guidelines and recommendations.
3. Source Limitations: Provide commercial weather barrier and accessory materials produced by single manufacturer.

B. Mock-up

1. Install mock-up using approved weather barrier assembly including fasteners, flashing, tape and related accessories per manufacturer's current printed instructions and recommendations.
 - a. Mock-up size: 10 feet by 10 feet.
 - b. Mock-up Substrate: Match wall assembly construction, including window opening.
 - c. Mock-up may **not** remain as part of the work.
2. Contact manufacturer's designated representative prior to weather barrier assembly installation, to perform required mock-up visual inspection and analysis as required for warranty.

C. Pre-installation Meeting

1. Refer to Section 01001 Basic Requirements for Project Meetings
2. Hold a pre-installation conference, two weeks prior to start of weather barrier installation. Attendees shall include Contractor, Architect, Engineer, Installer, Owner's Representative, and Weather Barrier Manufacturer's Designated Representative.
3. Review all related project requirements and submittals, status of substrate work and preparation, areas of potential conflict and interface, availability of weather barrier assembly materials and components, installer's training requirements, equipment, facilities and scaffolding, and coordinate methods, procedures and sequencing requirements for full and proper installation, integration and protection.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Refer to Section 01001 Basic Requirements.
- B. Deliver weather barrier materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Store weather barrier materials as recommended by weather barrier manufacturer.

1.6 SCHEDULING

- A. Review requirements for sequencing of installation of weather barrier assembly with installation of windows, doors, louvers and flashings to provide a weather-tight barrier assembly.
- B. Schedule installation of weather barrier materials and exterior cladding within nine months of weather barrier assembly installation.

1.7 WARRANTY

- A. Refer to Section 01001 Warranties
- B. Special Warranty

1. Special weather-barrier manufacturer's warranty for weather barrier assembly for a period of ten (10) years from date of final weather barrier installation.
2. Approval by weather barrier manufacturer for warranty is required prior to assembly installation.

Joe Webb Memorial Branch Library

Haynesville, Louisiana

Coco & Company

Project # 0524

3. Warranty Areas: All areas where product is to be used.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. The product information is proprietary to DuPont Tyvek Commercial Wrap. DuPont Building Innovations; 4417 Lancaster Pike, Chestnut Run Plaza 721, Wilmington, DE 19805; 1.800.44TYVEK (8-9835); <http://construction.tyvek.com>

2.2 MATERIALS

- A. Basis of Design: High-performance, spunbonded polyolefin, non-woven, non-perforated, weather barrier is based upon DuPont™ Tyvek® CommercialWrap® and related assembly components.
- B. Performance Characteristics:
1. Air Penetration: 0.001 cfm/ft² at 75 Pa, when tested in accordance with ASTM E2178. Type I per ASTM E1677.
 2. Water Vapor Transmission: 28 perms, when tested in accordance with ASTM E96, Method B.
 3. Water Penetration Resistance: 280 cm when tested in accordance with AATCC Test Method 127.
 4. Basis Weight: 2.7 oz/yd², when tested in accordance with TAPPI Test Method T-410.
 5. Air Resistance: Air infiltration at >1500 seconds, when tested in accordance with TAPPI Test Method T-460.
 6. Tensile Strength: 38/35 lbs/in., when tested in accordance with ASTM D882, Method A.
 7. Tear Resistance: 12/10 lbs., when tested in accordance with ASTM D1117.
 8. Surface Burning Characteristics: Class A, when tested in accordance with ASTM E 84. Flame Spread: 10, Smoke Developed: 10.

2.3 ACCESSORIES

- A. Seam Tape: 3 inch wide, DuPont™ Tyvek® Tape for commercial applications.
- B. Fasteners:
1. For Steel Framed Construction: DuPont™ Tyvek® Wrap Cap Screws, as manufactured by DuPont Building Innovations: 1-5/8 inch rust resistant screw with 2-inch diameter plastic cap or manufacturer approved 1-1/4" or 2" metal gasketed washer
- AND/OR
2. For Wood Frame Construction (If Applicable): Tyvek® Wrap Caps, as manufactured by DuPont Building Innovations: #4 nails with large 1-inch plastic cap fasteners.
- AND/OR
3. For Masonry Construction (If applicable): Masonry tap-con fasteners with Tyvek® Wrap Caps as manufactured by DuPont Building Innovations: 2-inch diameter plastic cap fasteners.
- C. Sealants
1. Provide sealants that comply with ASTM C920, elastomeric polymer sealant to maintain watertight conditions.
 2. Products:
 - a. Tremco 830
 - b. Tremco Butyl
 - c. Sealants recommended by the weather barrier manufacturer.
- D. Adhesives:
1. Provide adhesive recommended by weather barrier manufacturer.

Joe Webb Memorial Branch Library

Haynesville, Louisiana

Coco & Company

Project # 0524

2. Products:

- a. Liquid Nails® LN-109
- b. Polyglaze® SM 5700
- c. Denso Butyl Liquid
- d. 3M High Strength 90
- e. SIA 655
- f. Adhesives recommend by the weather barrier manufacturer.

E. Primers:

- 1. Provide flashing manufacturer recommended primer to assist in adhesion between substrate and flashing.
- 2. Products: (If required for specific conditions)
 - a. 3M High Strength 90
 - b. Denso Butyl Spray
 - c. SIA 655
 - d. Permagrip 105
 - e. ITW TACC Sta' Put SPH
 - f. Primers recommended by the flashing manufacturer

F. Flashing (Use of the following flashing products are to be used as required for conditions that may apply)

- 1. DuPont™ FlexWrap™, as manufactured by DuPont Building Innovations: flexible membrane flashing materials for window openings and penetrations.

AND/OR

- 2. DuPont™ StraightFlash™, as manufactured by DuPont Building Innovations: straight flashing membrane materials for flashing windows and doors and sealing penetrations such as masonry ties, etc.

AND/OR

- 3. DuPont™ StraightFlash™ VF, as manufactured by DuPont Building Innovations: dual-sided straight flashing membrane materials for brick mold and non-flanged windows and doors.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify substrate and surface conditions are in accordance with weather barrier manufacturer recommended tolerances prior to installation of weather barrier and accessories.

3.2 INSTALLATION – WEATHER BARRIER

- A. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturer recommendations.
- B. Install weather barrier prior to installation of windows and doors.
- C. Start weather barrier installation at a building corner, leaving 6-12 inches of weather barrier extended beyond corner to overlap.
- D. Install weather barrier in a horizontal manner starting at the lower portion of the wall surface with subsequent layers installed in a shingling manner to overlap lower layers. Maintain weather barrier plumb and level.
- E. Sill Plate Interface: Extend lower edge of weather barrier over sill plate interface 3-6 inches. Secure to foundation with elastomeric sealant

Joe Webb Memorial Branch Library

Haynesville, Louisiana

Coco & Company

Project # 0524

as recommended by weather barrier manufacturer.

F. Window and Door Openings: Extend weather barrier completely over openings.

G. Overlap weather barrier

1. Exterior corners: minimum 12 inches.
2. Seams: minimum 6 inches.

H. Weather Barrier Attachment:

1. For Steel or Wood Framed Construction: Attach weather barrier to studs through exterior sheathing. Secure using weather barrier manufacturer recommended fasteners, space 12 -18 inches vertically on center along stud line, and 24 inch on center, maximum horizontally.

AND/OR

2. For Masonry Construction (If applicable): Attach weather barrier to masonry. Secure using weather barrier manufacturer recommended fasteners, spaced 12-18 inches vertically on center and 24 inches maximum horizontally. Weather barrier may be temporarily attached to masonry using recommended adhesive, placed in vertical strips spaced 24 inches on center, when coordinated on the project site.

I. Apply 4 inch by 7 inch piece of DuPont™ StraightFlash™ to weather barrier membrane prior to the installation cladding anchors if recommended by manufacturer for specific conditions.

3.3 SEAMING

- A. Seal seams of weather barrier with seam tape at all vertical and horizontal overlapping seams.
- B. Seal any tears or cuts as recommended by weather barrier manufacturer.

3.4 OPENING PREPARATION (for use with non-flanged windows – all cladding types) (If Applicable)

- A. Flush cut weather barrier at edge of sheathing around full perimeter of opening.
- B. Cut a head flap at 45-degree angle in the weather barrier at window head to expose 8 inches of sheathing. Temporarily secure weather barrier flap away from sheathing with tape.

3.5 FLASHING (for use with non-flanged windows – all cladding types) (If Applicable)

- A. Cut 9-inch wide DuPont™ FlexWrap™ a minimum of 12 inches longer than width of sill rough opening. Apply primer as required by manufacturer.
- B. Cover horizontal sill by aligning DuPont™ FlexWrap™ edge with inside edge of sill. Adhere to rough opening across sill and up jambs a minimum of 6 inches. Secure flashing tightly into corners by working in along the sill before adhering up the jambs.
- C. Fan DuPont™ FlexWrap™ at bottom corners onto face of wall. Firmly press in place. Mechanically fasten fanned edges.
- D. Apply 9-inch wide strips of DuPont™ StraightFlash™ at jambs. Align flashing with interior edge of jamb framing. Start DuPont™ StraightFlash™ at head of opening and lap sill flashing down to the sill.
- E. Spray-apply primer to top 6 inches of jambs and exposed sheathing.
- F. Install DuPont™ FlexWrap™ at opening head using same installation procedures used at sill. Overlap jamb flashing a minimum of 2 inches.
- G. Coordinate flashing with window installation.
- H. On exterior, install backer-rod in joint between window frame and flashed rough framing. Apply sealant at jambs and head, leaving sill unsealed. Apply sealants in accordance with sealant manufacturer's instructions and ASTM C 1193.
- I. Position weather barrier head flap across head flashing. Adhere using 4-inch wide DuPont™ StraightFlash™ over the 45-degree seams.

Joe Webb Memorial Branch Library

Haynesville, Louisiana

Coco & Company

Project # 0524

- J. Tape top of window in accordance with manufacturer recommendations.
- K. On interior, install backer rod in joint between frame of window and flashed rough framing. Apply sealant around entire window to create air seal. Apply sealant in accordance with sealant manufacturer's instructions and ASTM C 1193.

3.6 OPENING PREPARATION (for use with flanged windows) (As Required)

- A. Cut weather barrier in a modified "I-cut" pattern.
 - 1. Cut weather barrier horizontally along the bottom of the header.
 - 2. Cut weather barrier vertically 2/3 of the way down from top center of window opening.
 - 3. Cut weather barrier diagonally from bottom of center vertical cut to the left and right corners of the opening.
 - 4. Fold side and bottom weather barrier flaps into window opening and fasten.
- B. Cut a head flap at 45-degree angle in the weather barrier at window head to expose 8 inches of sheathing. Temporarily secure weather barrier flap away from sheathing with tape.

3.7 FLASHING (for use with flanged windows)

- A. Cut 9-inch wide DuPont™ FlexWrap™ a minimum of 12 inches longer than width of sill rough opening.
- B. Cover horizontal sill by aligning DuPont™ FlexWrap™ edge with inside edge of sill. Adhere to rough opening across sill and up jambs a minimum of 6 inches. Secure flashing tightly into corners by working in along the sill before adhering up the jambs.
- C. Fan DuPont™ FlexWrap™ at bottom corners onto face of wall. Firmly press in place. Mechanically fasten fanned edges.
- D. On exterior, apply continuous bead of sealant to wall or backside of window mounting flange across jambs and head. Do not apply sealant across sill.
- E. Install window according to manufacturer's instructions.
- F. Apply 4-inch wide strips of DuPont™ StraightFlash™ at jambs overlapping entire mounting flange. Extend jamb flashing 1-inch above top of rough opening and below bottom edge of sill flashing.
- G. Apply 4-inch wide strip of DuPont™ StraightFlash™ as head flashing overlapping the mounting flange. Head flashing should extend beyond outside edges of both jamb flashings.
- H. Position weather barrier head flap across head flashing. Adhere using 4-inch wide DuPont™ StraightFlash™ over the 45-degree seams.
- I. Tape head flap in accordance with manufacturer recommendations.
- J. On interior, install backer rod in joint between frame of window and flashed rough framing. Apply sealant around entire window to create air seal. Apply sealant in accordance with sealant manufacturer's instructions and ASTM C 1193.

3.8 FIELD QUALITY CONTROL

- A. Notify manufacturer's designated representative to obtain [required] periodic observations of weather barrier assembly installation.

3.9 PROTECTION

- A. Protect installed weather barrier from damage.

END OF SECTION - 07250

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 07261

UNDER-SLAB VAPOR BARRIER

PART 1 – GENERAL

1.1 SUMMARY

- A. Products supplied under this section:
 - 1. Vapor barrier and installation accessories for installation under concrete slabs.
- B. Related sections:
 - 1. Section 03300 Cast-in-Place Concrete

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM E1745- 11 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.
 - 2. ASTM E1643- 11 Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.
- B. Technical Reference - American Concrete Institute (ACI):
 - 1. ACI 302.2R-06 Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials.

1.3 SUBMITTALS

- A. Quality control/assurance:
 - 1. Summary of test results per paragraph 9.3 of ASTM E 1745.
 - 2. Manufacturer's samples and literature.
 - 3. Manufacturer's installation instructions for placement, seaming and penetration repair instructions.
 - 4. All mandatory ASTM E1745 testing must be performed on a single production roll per ASTM E1745 Section 8.1.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Vapor barrier shall have all of the following qualities:
 - 1. Maintain permeance of less than 0.01 Perms [grains/(ft² · hr · inHg)] as tested in accordance with mandatory conditioning tests per ASTM E1745 Section 7.1 (7.1.1-7.1.5).
 - 2. Other performance criteria:
 - a. Strength: ASTM E1745 Class A.
 - b. Thickness: 15 mils minimum
- B. Vapor barrier products:
 - 1. Basis of Design: Stego Wrap Vapor Barrier (15-mil) by Stego Industries LLC., (877) 464-7834 www.stegoindustries.com.
 - 2. Approved Alternate: Vaporguard by Reef Industries, 713-507-4250. www.reefindustries.com.
 - 3. Approved Alternate: Sundance 15 mil Vapor Barrier by Sundance Inc., (855) 300-7156 www.sundancepolymertech.com.
 - 4. No substitutions.

2.2 ACCESSORIES

- A. Seams :
 - 1. Stego Tape by Stego Industries LLC.
- B. Penetrations of Vapor barrier:
 - 1. Stego Mastic by Stego Industries LLC.
 - 2. Stego Tape by Stego Industries LLC.

- C. Perimeter/edge seal:
 - 1. Stego Crete Claw by Stego Industries LLC.
 - 2. Stego Term Bar by Stego Industries LLC.
 - 3. StegoTack Tape (double sided) by Stego Industries LLC.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Ensure that subsoil is approved by Architect or Geotechnical Engineer.
 - 1. Level and compact base material.

3.2 INSTALLATION

- A. Install vapor barrier in accordance ASTM E1643.
 - 1. Unroll vapor barrier with the longest dimension parallel with the direction of the concrete placement and face laps away from the expected direction of the placement whenever possible.
 - 2. Extend vapor barrier over footings and grade beams to a distance acceptable to the architect/engineer or stop at impediments such as dowels and waterstops.
 - 3a. Seal vapor barrier to slab perimeter/edge using Stego Crete Claw and remove dirt, debris, and mud from Crete Claw prior to concrete placement.
 - OR
 - 3b. Seal vapor barrier to footing/grade beam with double sided tape, termination bar, or both.
 - 4. Overlap joints 6 inches and seal with manufacturer's tape.
 - 5. Apply tape/Crete Claw to a clean and dry vapor barrier.
 - 6. Seal all penetrations (including pipes) per manufacturer's instructions.
 - 7. No penetration of the vapor barrier is allowed except for reinforcing steel and permanent utilities.
 - 8. Repair damaged areas by cutting patches of vapor barrier, overlapping damaged area 6 inches and taping all sides with tape.

END OF SECTION - 07261

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 07270

FIRESTOPPING

PART 1: GENERAL

1.01 SECTION INCLUDES

- A. Fireproof firestopping and firesafing materials and accessories.

1.02 SYSTEM DESCRIPTION

- A. Firestopping Materials: ASTM E119, ASTM E814, UL 263, UL 1479 to achieve a fire rating as noted on Drawings.
- B. Surface Burning: ASTM E84 with a flame spread value of less than 25 and smoke-developed value of less than 450.
- C. Firestop all interruptions to fire rated assemblies, materials and components.

1.03 SUBMITTALS

- A. Product Data: Provide data on product characteristics, performance and limitation criteria.
- B. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

PART 2: PRODUCTS

2.01 FIRESTOPPING GENERAL

- A. Compatibility: Provide firestopping composed of components that are compatible with each other, the substrate forming openings and the items if any penetrating the firestopping under conditions of service and application, as demonstrated by firestopping manufacturer based on testing and field experience.
- B. Accessories: Provide components for each firestopping system that is needed to install fill materials and to comply with "System Performance Requirements" article in Part 1. Use only components specified by the firestopping manufacturer and approved by the qualified testing and inspecting agency for the designated fire-resistance -rated systems. Accessories include but are not limited to the following:
 - 1. Permanent forming/damming/backing materials including the following:
 - a. Semirefractory fiber (mineral wool) insulation.
 - b. Ceramic fiber.
 - c. Sealants used in combination with other forming/damming materials to prevent leakage of fill materials in liquid state.
 - d. Fire-rated foamboard.
 - e. Joint fillers for joint sealants.
 - 2. Temporary forming materials.
 - 3. Substrate primers.
 - 4. Collars.
 - 5. Steel sleeves.
- C. Applications: provide firestopping systems composed of material specified in this Section that comply with system performance and other requirements.

2.02 FILL MATERIALS FOR THROUGH-PENETRATION FIRESTOP SYSTEMS

- A. Ceramic-Fiber and Mastic Coating: Ceramic fibers in bulk form formulated for use with mastic coating and ceramic fiber manufacturer's mastic coating.
- B. Endothermic, Latex Compound Sealant: Single component.
- C. Intumescent, Latex Sealant: Single component.
- D. Intumescent Putty: Nonhardening, dielectric, water resistant containing no solvent, inorganic fibers, or silicone compounds.
- E. Intumescent Wrap Strips: Single Component elastomeric sheet with aluminum foil on one side.
- F. Job-Mixed Vinyl Compound: Meeting ASTM E 136, with flame spread and smoke developed ratings of zero per ASTM E84.
- G. Mortar: Prepackaged dry mix composed of a blend of inorganic binders, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a nonshrinking, homogeneous mortar.
- H. Pillows/ Bags: Re-usable, heat expanding pillow/bags composed of glass-fiber cloth cases filled with a combination of mineral fiber, water-insoluble expansion agents and fire retardant additives.
- I. Silicone Sealant: Moisture-curing, single-component graded as follows:
 - 1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces and nonsag formulation for openings in vertical and other surfaces requiring a nonslumping/gunnable sealant, unless indicated firestop system limits use to nonsag grade for both opening conditions.
- J. Solvent Release Curing Intumescent Sealant: Single component, synthetic-polymer based sealant of following grade:
 - 1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces and nonsag formulation for openings in vertical and other surfaces requiring a nonslumping/gunnable sealant, unless indicated firestop system limits use to nonsag grade for both opening conditions.

2.03 FIRE-RESTIVE ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealant Standard: Provide manufacturer's standard chemical curing, elastomeric sealants of base polymer indicated that complies with ASTM C 920 requirements.
- B. Sealant Colors: Provide color of exposed joint sealants to comply with the following:
 - 1. To be selected by Architect.
- C. Single-Component, Neutral-Curing Silicone Sealant: Type S; Grade NS; Class 25; exposure-related Use NT, and joint substrate-related Uses M, G, A and O (as required).
 - 1. Additional Movement Capability: Provide sealant with capability to withstand the following percentage changes in joint width existing at time of installation, when tested for adhesion and cohesion under maximum cyclic movement per ASTM C 719, and remain in compliance with other requirements of ASTM C 920 for uses indicated:
 - a. 100% movement in extension and 50% movement in compression for a total of 150% movement.
- D. Single-Component, Nonsag, Urethane Sealant: Type S; Grade NS; Class 25; and Uses NT, M, A, and (as applicable to joint substrates indicated) O.

2.04 MIXING

- A. For those products requiring mixing prior to application, comply with firestopping manufacturer's directions.

PART 3: EXECUTION

3.01 EXAMINATION AND PREPARATION

- A. Verify openings are ready to receive the work of this section.
- B. Clean substrate surfaces of matter that may affect bond of firestopping material.
- C. Install backing materials to arrest liquid material leakage.

3.02 APPLICATION

- A. Apply primer and materials in accordance with manufacturer's instructions.
- B. Apply fire-stopping material in sufficient thickness to achieve rating to uniform density and texture.
- C. Install material at walls or partition openings that contain penetrating sleeves, piping, ductwork, conduit and other items, requiring firestopping.
- D. Remove dam material after firestopping material has cured.

3.03 CLEANING

- A. Clean off excess fill material and sealants adjacent to openings and joints as work progresses with cleaning materials and methods approved by manufacturer of firestopping products.
- B. Protect fire-stopping during and after curing period from contaminating substances or from damage. Cut out and remove damaged or deteriorated firestopping and install new materials complying with specified requirements.

3.04 SCHEDULE

- A. Fire-stopping or fire-caulking is to be used in all of the following conditions:
 - 1. At the tops and bottoms continuous of all existing or new fire rated walls and assemblies.
 - 2. Around all column enclosures at all joints continuous.
 - 3. At the perimeter edges of all new slabs at wall edges continuous.
 - 4. At all fire rated walls or partitions penetrations.
 - 5. At all joints in existing walls where new work or demolition work is involved and need to be rated.
 - 6. At all shafts and chases that are required to be rated continuous caulking at all joints and connections.
 - 7. At all penetrations through fire rated walls or smoke walls.

3.05 VERIFICATION OF INSTALLATION

- A. The Contractor will document in photograph form verification that fire caulking has been used in all conditions applicable and shall inform the Architect for a visual inspection prior to covering or enclosing such work.

END OF SECTION - 07270

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 07460

FIBER-CEMENT BOARD SIDING, TRIM AND SOFFIT PANELS (IF CALLED FOR)

PART 1 – GENERAL

- A. Work under this section is subject to the provisions of the contract documents that in any way affect the work specified herein.

1.1 Scope

- A. Furnish and install Hardiplank fiber-cement siding or equivalent where shown on drawings or as specified herein.
- B. Coordinate this section with interfacing and adjoining work for proper sequence of installation.
- C. Work in other sections affecting this work.
 - 1. Wood framing and bracing 06100

1.2 Quality Assurance

- A. Submittals: within sixty (60) days of owner's notice
 - 1. Submit three 6 inch X 6 inch pieces of claddings in texture and widths shown and specified herein.
 - 2. Submit three copies of specifications, installation data and other pertinent manufacturer's literature.

1.3 Product Handling

- A. Stack cladding on edge or lay flat on a smooth, level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.

1.4 Job Conditions

- A. Nominal framing as indicated on the drawings at gables only selected for minimal shrinkage and complying with local building codes, including the use of weather-resistive barriers and/or vapor barriers where required. Minimum 1 ½ inch face and straight, true, of uniform dimensions and properly aligned.
- B. Install weather-resistive barriers and claddings to dry surfaces.
- C. Repair any punctures or tears in the weather-resistive barrier prior to the installation of the siding.
- D. Protect siding from other trades.

1.5 Warranty

- A. 50 year limited product warranty against manufacturing defects.
- B. Workmanship: Application limited warranty for one year.

PART 2 - PRODUCTS

- 1.6 Fiber –cement Siding (Hardiplank cladding: Hardiplank cladding is listed here in order to establish product industry standards only. Equivalent products meeting these standards may be used upon approval of the architect and owner.)

- A. Non-asbestos fiber-cement siding to comply with ASTM Standard Specification C 1186 Grade II, Type A.
- B. Siding to meet the following building code compliance National Evaluation Report No. NER 405 (BOCA, ICBO, SBCCI); City of Los Angeles, Research Report No. 24862; Metro Dade County, Florida Acceptance No. 94-1234.04; US Department of Housing and Urban Development Materials Release 1263a; California DSA PS-019; and City of New York MEA 223-93-M. Non-asbestos fiber-cement siding to be non-combustible when tested in accordance with ASTM test method E136.
- C. Type: (Smooth 6 ¼" w / 5" EXP)
- D. Provide all exterior wall and window trim pieces and soffit panels as shown on drawings.

1.7 Fasteners

- A. Wood framing: 0.121" shank x 0.371" head x 1 ¼" corrosion resistant siding nails.
- B. Concrete Walls: Erico Stud Nail, ET&F ASM No.144-125, 0.14" shank x 0.30" head x 2" corrosion resistant nail.

PART 3 - EXECUTION

1.8 Surface Conditions

- A. Correct conditions detrimental to timely and proper completion of work.

1.9 Installation – Fiber-cement Siding

- A. Starting: Install a minimum ¼ inch thick lath starter strip at the bottom course of the wall. Apply planks horizontally with minimum 1 ¼ inch wide laps at the top. The bottom edge of the first plank overlaps the starter strip.
- B. Allow minimum 1 inch vertical clearance between roofing and bottom edge of siding.
- C. Align vertical joints of the planks over framing members.
- D. Maintain clearance between siding and adjacent finished grade.
- E. Locate splices at least one stud cavity away from window and door openings.
- F. Use off-stud metal joiner when vertical joints occur between framing members. Position metal joiner so that the bottom lip is resting on the solid course of planks. Fasten plank to the framing. Position and fasten abutting plank into place insuring that the lower edges of the two planks align. Locate metal joiner centrally behind the joint. Locate off-stud splices a minimum 24 inch intervals when located in the same wall cavity.
- G. Wind resistance: Where a specified level of wind resistance is required Hardiplank lap siding is installed to framing members and secured with fasteners described in Table No. 2 in National Evaluation Service Report No. NER-405.
- H. Install all fiber cement siding, trim and soffit panels over minimum ½” treated exterior plywood sheathing.

1.10 Finishing

- A. Finish unprimed siding with minimum one coat high quality, alkali-resistant primer and one coat of either 100% acrylic or latex or oil based, exterior grade topcoat or two coats high quality, alkali-resistant, 100% acrylic or latex, exterior grade topcoat within 90 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.

END OF SECTION - 07460

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 07620

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Pre Coated Galvanized Steel Gutters and downspouts.
- B. Counterflashings over base flashings and vent stacks.

1.02 QUALITY ASSURANCE

- A. Perform Work in accordance with the following:
 - 1. NRCA (National Roofing Contractors Association) - Roofing Manual.

1.03 STORAGE AND HANDLING

- A. Stack preformed and prefinished material to prevent twisting, bending, or abrasion, and to provide ventilation.

PART 2 PRODUCTS

2.01 SHEET MATERIALS (As required for conditions indicated on plans)

- A. Pre-coated Galvanized Steel: ASTM A446, Grade A, G90 gage core steel, shop pre-coated with modified silicone coating of selected color.
- B. Galvanized Steel: (If used) ASTM A446, Grade A, G90; 24 gage core steel.
- C. Aluminum Sheet: ASTM B209, 3003 alloy, H14 temper; mill embossed shop precoated in color selected by Architect.
- D. Copper: (If used) ASTM B370, cold rolled ; 16 oz/sq ft thick; natural finish.
- E. Stainless Steel: (If used) AISI Type 302/304, complying with ASTM A 167, 2D annealed finish, soft, except where harder temper required for forming performance; 0.0156 inch thick (28 gage) except as otherwise indicated.

2.02 ACCESSORIES

- A. Fasteners: Same material and finish as flashing metal, with soft neoprene washers.
- B. Gutter and Downspout Anchorage Devices: SMACNA requirements.
- C. Gutter Supports: Brackets, Straps, Spikes and ferrules.
- D. Downspout Supports: [(See plans for Downspout decorative copper straps, match original historic design as indicated.)]
- E. Underlayment: No. 15 asphalt saturated roofing felt.
- F. Metal Primer: As called for by manufacturer.

- G. Protective Backing Paint: Zinc chromate alkyd.
- H. Slip Sheet: Rosin sized building paper.
- I. Sealant: Acrylic type, specified in Section 07900.
- J. Bedding Compound: Rubber-asphalt type.
- K. Plastic Cement: Asphaltic base cement.
- L. Reglets: Surface mounted; face and ends covered with plastic tape.

2.03 COMPONENTS

- A. Gutters: Profile as called for in plans.
- B. Downspouts: Profile as called for in plans.
- C. Accessories: Profiled to suit gutters and downspouts.

2.04 FABRICATION

- A. Form components true to shape, accurate in size, square, and free from distortion or defects. Form pieces in longest practical lengths.
- B. Fabricate cleats and starter strips of same material as sheet in widths as required, interlockable with sheet.
- C. Hem exposed edges on underside 1/2 inch; miter and seam corners. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.
- D. Fabricate flashings to allow toe to extend 2 inches over roofing gravel. Return and brake edges.
- E. Form material with standing seam.
- F. Fabricate corners in one piece, in proper leg lengths; seam for rigidity, seal with sealant.
- G. Form sheet metal pans with upstand, and flanges. Fill pans watertight with plastic cement.

2.05 FINISH

- A. Backpaint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil .

PART 3 EXECUTION

3.01 EXAMINATION AND PREPARATION

- A. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, cant strips and reglets in place, and nailing strips located.
- B. Verify membrane termination and base flashings are in place, sealed, and secure.

3.02 INSTALLATION

- A. Conform to drawing details and typical details included in NRCA manual.

- B. Install starter and edge strips, and cleats.
- C. Install surface mounted reglets. Seal top of reglets with sealant. Insert flashings to form tight fit. Seal flashings into reglets with sealant.
- D. Secure flashings, gutters and downspouts in place using concealed fasteners.
- E. Apply plastic cement compound between metal work and felt flashings.
- F. Fit components tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- G. Slope gutters 1/4 inch per foot minimum.
- H. Connect downspouts to downspout boots and storm sewer system. Grout or Seal connection watertight.
- I. Set splash pans under downspouts called for on plans and set as required.
- J. Seal metal joints watertight.

END OF SECTION - 07620

DIVISION 7- THERMAL AND MOISTURE PROTECTION

SECTION 07652

THRU-WALL FLASHING AT OPENINGS

Part 1 GENERAL

1.01 SCOPE

- A. Provide all self-adhering rubberized asphalt flashing as indicated on drawings at all openings (windows, doors, transoms, etc).

1.02 RELATED SECTIONS

- A. 07315 Interlocking Metal Wall Panels
- B. 07620 Flashing and Sheet Metal
- C. 08411 Aluminum Entrances and Storefronts

1.03 REFERENCE STANDARDS

- A. ASTM-D-781 – Puncture Resistance (Film).
- B. ASTM-E-154 – Puncture Resistance of Composite.
- C. ASTM-D-412 – (Modified) – Tensile Strength of Composite.
- D. ASTM-D-882 (Modified) – Elongation of Rubberized Asphalt.
- E. ASTM-E-96 (Method B) – Water Vapor Transmission.
- F. ASTM-D-36 Softening Point of Rubberized Asphalt.

1.04 DELIVERY, STORAGE, HANDLING:

- A. Deliver materials in original, unopened manufacturers containers.
- B. Protect all materials from weather. Assure that all lids remain tight.
- C. Protect all material from exposure to fire and excessive heat.
- D. Installer to maintain all MSDS forms on site during installation.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. POLYGUARD
- B. W.R. GRACE
- C. IPCO (Illinois Products Corporation)

2.02 MATERIALS

- A. Provide adhesive back thru wall flashing, 40 mils thick with laminated facer and release sheet backing.

2.03 ACCESSORIES

- A. Provide the following accessories to be provided by the flashing manufacturer to maintain a single source warranty for materials.
 - 1. Adhesive Back 40 mil preformed end dams and corners.
 - 2. Liquid adhesive or primer.
 - 3. Detailing sealant or mastic.
 - 4. Mechanical termination device and horizontal or vertical cavity drain.

PART 3 – EXECUTION

3.01 PREPARATION

- A. Clean all surfaces of dust, dirt, and scale or rust.
- B. Remove sharp protrusions such as concrete, brick, mortar, or plaster.

3.02 APPLICATION

- A. Apply liquid adhesive to all surfaces to receive flashing membrane by brush or roller at recommended square feet per gallon by manufacturer.
- B. Cut pieces of flashing as needed and apply to substrate 30-60 minutes after adhesive has been applied. Remove release sheet and carefully positing flashing. Do not allow it to come in contact with substrate until final placement. Lap flashing 2” minimum in shingle fashion or parallel to water flow. Prime overlaps in cold weather as recommended by manufacturer.
- C. Press flashing firmly into place by hand or with roller.
- D. Apply preformed end dams and corners by priming surface. Apply pressure to material by hand to assure proper contact. Insure that dams and corners are positioned to block water flow from entering the structure.
- E. Use detailing sealant or mastic to seal all top horizontal terminating edges of the flashing.
- F. Seal top terminations of flashing to pipes and other protrusions using detailing sealing or mastic.
- G. Install the horizontal or vertical cavity drain per the manufacturers installation instructions.

END OF SECTION – 07652

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 07900

JOINT SEALERS

PART 1: GENERAL

1.01 SECTION INCLUDES

- A. Furnish and install sealant and backing materials, including cleaning and preparation of joint surfaces, for the following applications:
 - 1. Pavement and sidewalk joints.
 - 2. Concrete construction, expansion and contraction joints.
 - 3. Masonry Expansion joints.
 - 4. Exterior wall control joints.
 - 5. Wall and floor joints in tile work.
 - 6. Joints between plumbing fixtures and walls.
 - 7. Miscellaneous caulking and sealing not specified as work of other sections.

1.02 RELATED SECTIONS

- A. Section 03300 – Cast-In-Place Concrete: Concrete construction, expansion and contraction joints.
- B. Section 04300 – Unit Masonry Systems: Exterior wall joints.
- C. Section 07270 – Firestopping: Firestopping materials and accessories.
- D. Section 07620 – Sheet Metal Flashing and Trim: Sealants used in conjunction with metal flashings for roofing.
- E. Section 09300 – Tile: Expansion, contraction and control joints.
- F. Division 15 – Mechanical: Installation of silicone sanitary sealant between plumbing fixtures and walls.

1.03 REFERENCES

- A. ASTM C790 – Recommended Practices for Use of Latex Sealing Compounds.
- B. ASTM C804 – Recommended Practice for Use of Solvent-Release Type Sealants.
- C. ASTM C834 – Latex Sealing Compounds.
- D. ASTM C920 – Elastomeric Sealants.
- E. ASTM C1193 – Standard Guide for Use of Joint Sealants.

1.04 SUBMITTALS

- A. Material and Equipment Submittals: Submit the following under provisions of Section 01001:
 - 1. Product Data: Submit sealant manufacturer's technical data. Include manufacturer's recommendations for joint size; joint preparation; back-up material; sealant storage, mixing and application instructions; and specific instructions for use of primer on this project.
 - 2. Samples: Submit samples of sealant colors for color selection of SLNT-1, SLNT-2, SLNT-3, SLNT-5.

- B. Closeout Submittals: Submit the following under provisions of Section 01001.
 - 1. Warranty.

1.05 ENVIRONMENTAL CONDITIONS

- A. Do not apply joint sealing materials at temperatures above or below manufacturer's recommendations, during rain or snow, or to damp or frosted surfaces.

1.06 WARRANTY

- A. Provide 2-year warranty under provisions of Section 01700, for sealants SLNT-1 and SLNT-2.
- B. Warranty: Warranty to include labor and material required to replace sealants that fail because of loss of cohesion or adhesion, or do not cure.

PART 2: PRODUCTS

2.01 SEALANT MATERIALS

- A. SLNT-1: Two-component, non-sag, polyurethane sealant with movement capability of ± 50 percent and conforming to ASTM C920, Type M, Grade NS, Class 25; non-staining. Color: As selected by Architect; provide custom colors as required.
 - 1. Mameco International, "Vulkem 227".
 - 2. Pecora Corporation, "Dynatrol 11".
 - 3. Sonneborn Building Products, "Sonolastic NP2".
 - 4. Tremco, "Dymeric".
- B. SLNT-2: Self-leveling, two component, non-staining, non-bleeding polyurethane sealant with movement capability of ± 25 percent and conforming to ASTM C920, Type M, Grade P, Class 25. Color: As selected by the Architect.
 - 1. Pecora Corporation, "Urexpan NR-200".
 - 2. Sonneborn Building Products, "Sonolastic SL2".
 - 3. Tremco, "THC-900".
- C. SLNT-3: One-part, non-sag, skinning, paintable acrylic latex sealant capable of ± 7.5 percent minimum movement and conforming to ASTM C834. Color: As selected by Architect.
 - 1. Pecora Corporation, "AC-20 Siliconized".
 - 2. Sonneborn Building Products, "Sonolac".
 - 3. Tremco, "Acrylic Latex 834".
- D. SLNT-4: Silicone Sanitary Sealant; ASTM C920, Type S, Grade NS; mildew resistant. Color: White.
 - 1. Dow Corning Corporation, "786 Mildew Resistant Silicone Sealant".
 - 2. General Electric Company, "GE Silicone Sanitary 1700 Sealant".
 - 3. Sonneborn Building Products, "Omniplus".
- E. SLNT-5: Silicone building and Glazing Sealant (non structural); ASTM C920, Type S, NS, Class 25, single component, chemical curing. Color: As selected by Architect.
 - 1. Dow Corning Corp., "Dow Corning 999-A".
 - 2. General Electric Co., "Silglaze II".
 - 3. Pecora Corporation; "863".
- F. SLNT-6: Acoustical Sealant; Non-hardening, non-skinning acoustical sealant for concealed joints.
 - 1. Tremco, "Acoustical Sealant".
 - 2. United States Gypsum, "Acoustical Sealant".

- G. SLNT-7: Expandable Form Sealer.
 - 1. EM-Seal Corporation, "Gray-Flex".
 - 2. Illbruck Corporation, "Will-Seal Tape Type 150".
- H. SLNT-8: Foam Sealer:
 - 1. Preformed closed cell polyvinyl chloride or butyl rubber based foam tape, minimum 30% compression. Resistant to weathering, U.V., mildew, fungi and oxidation. Pressure sensitive adhesive on the non-liner side of tape roll. Provide tape width and thickness recommended by manufacturer for joint conditions.
 - a. Norton Performance Plastics, Granville, NY, Tel. 1-800-724-0883. "Norseal V-740".
 - b. Fuller, "Architectural Sealant Tape No. 606".
- I. SLNT-9: Setting Bed;
 - 1. One-part butyl rubber, aluminum/stone color:
 - a. Pecora "BC-158".
 - b. Tremco "Butyl Sealant".
- J. SLNT-10: Ultra-Low Modulus Silicone Sealant. (EIFS)
 - 1. Ultra Low-Modulus Silicone Rubber Sealant: Silicone rubber based, 1 part neutral cure elastomeric sealant with plus 100 percent to minus 50 percent movement.
 - 2. Color: To match EIFS topcoat color. If painted topcoat color, match color specified under Section 07183.
 - a. Acceptable manufacturers and product:
 - 1) Dow Corning Corporation: 790 Building Sealant
 - 2) Tremco Construction Division: Spectrum 1.

2.02 PRIMER

- A. Non-staining type, as recommended by sealant manufacturer to suit application.

2.03 JOINT BACKING

- A. Backer Rod: Provide pre-formed, compressible, non-staining, closed cell polyethylene or open cell expanded polyurethane foam rod compatible with the sealant used and acceptable by the sealant manufacturer for the specified application, except as follows:
 - 1. Provide closed cell backer rod with self-leveling sealant (SLNT-2) horizontal applications.
- B. Provide round rod, size as recommended by manufacturer based on width and depth of joint and condition located.
 - 1. Joints up to 1/2" wide, rod shall equal width of joint plus 1/8".
 - 2. Joints 1/2" wide and larger, rod shall be equal to the joint width plus 1/4".
 - 3. Provide bond breaker tape where joint depth does not allow space for backer rod as recommended by sealant manufacturer to suit application.
- C. Do not use joint backing impregnated with oil, tar or asphalt.

2.04 ACCESSORIES

- A. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- B. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

2.05 WORKING TIME

- A. Use two-component sealants within maximum period of time after mixing recommended by sealant manufacturer for specific material and job conditions, and discard sealant not used within this time.

PART 3: EXECUTION

3.01 INSPECTION

- A. Verify joint dimensions, physical and environmental conditions are acceptable to receive work of this Section.
- B. Beginning of installation means acceptance of existing conditions.

3.02 PREPARATION

- A. Clean, prepare and design joints in accordance with manufacturer's instructions. Remove any loose materials and other foreign matter that might impair adhesion of sealant.
- B. Verify that joint shaping materials and release tapes are compatible with sealant.
- C. Examine joint dimensions and size materials to achieve required width/depth ratios.
- D. Use joint filler to achieve required joint depths, to allow sealants to perform properly.
- E. Use bond breaker where required.

3.03 INSTALLATION

- A. Perform installation in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Install joint backing according to manufacturer's instructions in joints to receive sealant and as indicated on Drawings. Use proper size and shape pieces so installed joint backing is compressed approximately 30% and face of foam is at required depth. Do not twist or braid rod stock. Do not puncture skin of rod stock. Carefully roll rod stock into joint without stretching.
- C. Joints to receive SLNT-1 shall be not less than ¼" and not exceed 2" in width. Depth of sealant shall be as follows:

<u>Joint Width</u>	<u>Min. Depth</u>	<u>Max. Depth</u>
¼" to ½"	¼"	Equal to Width
½" to 2"	½"	5/8"
- D. Perform installation in accordance with ASTM C1193.
- E. Apply sealant within recommended temperature ranges. Consult manufacturer when sealant cannot be applied within recommended temperature ranges.
- F. Tool joints to form smooth, uniform beads, with slightly concave surfaces. Do not use tooling agents, unless specifically recommended by sealant manufacturer.
- G. Form joints free of air pockets, foreign embedded matter, ridges and sags.

3.04 CLEANING

- A. Clean excess sealant, primer or bond breaker with cleaning solutions as recommended by primary sealant manufacturer. Do not use acidic cleaning materials.

3.05 SEALANT SCHEDULE

<u>Type</u>	<u>Location</u>
SLNT-1	Concrete construction, expansion and contraction joints. Exterior wall joints and control joints. Perimeter of storefront, door frames and louvers. Miscellaneous exterior caulking and sealing.
SLNT-2	Joints in floor tilework. Exterior sidewalks adjacent to building. Interior exposed joints in slabs where subject to foot or vehicular traffic. Interior exposed perimeter joints in slabs abutting walls and other vertical surfaces.
SLNT-3	Miscellaneous interior and exterior joints subject to moderate movement and joints to be painted.
SLNT-4	Joints between plumbing fixtures and walls. Joints surrounding plastic laminate vanities and counter tops, fixtures and equipment requiring sanitary sealant.
SLNT-5	Where indicated on Drawings, and for interior and exterior sealing of metal to metal. Refer to Section 08800 for installation requirements in glazing.
SLNT-6	Joints at sound-proofed partitions. Refer to Section 09250 for installation requirements in gypsum board partitions.
SLNT-7	Backer for exterior wide joints subject to dynamic movements.
SLNT-8	Backer for rough substrates on exterior walls
SLNT-9	Use for setting beds at exterior thresholds and sill plates.
SLNT-10	Use for EIFS joints. Refer to Section 07241 for installation requirements. Coordinate installation of sealant with EIFS manufacturer. (If applicable)

END OF SECTION - 07900