## ADDENDUM NUMBER 03 TO THE BID DOCUMENTS

To all general contract bidders of record on the Bid Proposal:

## BID DOCUMENT: 17/18 MB5 Building 11 Roof Replacement #I50-35613 College of Marin – Indian Valley

Addendum Date: Oct. 9th, 2017

- A. This addendum shall be considered part of the bid documents for the above mentioned project as though it had been issued at the same time and shall be incorporated integrally therewith. Where provisions of the following supplementary data differ from those of the original bid documents, this Addendum shall govern and take precedence.
- B. Bidders are hereby notified that they shall make any necessary adjustments in their estimates as a result of this Addendum. It will be construed that each bidder's proposal is submitted with full knowledge of all modifications and supplemental data specified herein.

The bid documents are modified and clarified, as follows:

<u>ltem #1:</u>	Section 07 21 00, 1.3 ADD "C. Wind uplift calculation: per CBC Chapter 15, signed and sealed by a California licensed structural engineer. "
<u>ltem #2:</u>	<ul> <li>Section 07 21 00, 2.2, A.</li> <li>DELETE "GAF Energy Guard or equal, as approved by the District. Each board to be 2.6" thick." ADD "Bottom board to be 2.6" thick under CDX Plywood/Rigid polyisocyanurate roof insulation."</li> <li>ADD "1. Base layer of insulation shall be thermal and top layer of insulation shall be CDX plywood laminate. <ul> <li>a. CDX plywood top face rigid polyisocyanurate roof insulation; ASTM C1289:</li> <li>i. Qualities: Rigid, closed cell polyisocyanurate foam core bonded to heavy duty class fiber mat facers.</li> <li>ii. Foam insulation thinckness: 3"</li> <li>iii. CDX plywood thickness: 19/32"</li> <li>iv. Compliances: UL, WH or FM listed under Roofing Systems Federal Specifications HH-I-1972 ,Class 1.</li> <li>v. Wood Fastener: 7" wood fastener with 1" min. penetration into plywood deck and T&amp;G members</li> <li>vi. Acceptable products:</li> <li>1. AC Foam Nailbase by Atlas</li> <li>2. Approved equal by the District.</li> </ul> </li> </ul>

- *Item #3:* Section 07 25 00, 2.3 DELETE A. Add "A. Sheet: Self-adhered roofing underlayment: Garland R-mer Seal by The Garland Company or equal approved by District "
- Item #4: Section 07 25 00, 2.3, A. DELETE 10. ADD "10. Primer: R-mer Seal SA Primer."
- *Item #5:* Section 07 25 00, 2.4 DELETE B. ADD "B. Termination mastic: Tuff Flash by The Garland Company."
- *Item #6:* Section 07 31 13, 2.2, DELETE B. ADD "Wind Speed: provide roofing to withstand 120 MPH wind speed, Exposure Category C, per CBC 2016."
- Item #7: Section 07 31 13, 2.2, C. DELETE 2. ADD "2. Color: IMETCO (415 971 2739) Irish Mist."

Item #8: DRAWINGS Sheet A2.3

Detail 2

DELETE Detail 2 ROOF PLAN -BLOCKING LAYOUT

Sheet A8.1

Detail 1

DELETE "3/8" PLYWOOD SHEATHING (SEE 7/-)" ADD "5/8" laminated OSB"

Detail 2

- DELETE "3/8" PLYWOOD SHEATHING" ADD "5/8" laminated OSB"
- DELETE (N) PLYWD W? 10D NAILS @ 12" O.C."
- DELETE "2X6 SHAPED WD BLOCKING @ 48" O.C."
- DELETE "SIMPSON STRONGTIE CLIP ANGLE A38 BOTH SIDES OF BLOCKING @ 24"O.C."
- DELETE "SHAPED LOCKING" ADD "SHAPED BLOCKING"
- DELETE "(E) REMOUNTED GUTTER, PROVIDE GUTTER SCREEN STRIP 18' O.C. INSTALL PER MANUF." ADD "INSTALL GUTTER. PROVIDE STRAPS AT 18" O.C. AND CONTINUOUS GUTTER SCREEN. INSTALL S.S. WIRE BULB STRAINER IN DROP OUTLET."
- DELETE "24GA GSM DRIP EDGE FLASHING" ADD "ALUMINUM DRIP EDGE FLASHING".

Detail 7

- DELETE "FOR PLYWOOD NAILING SEE S1.1"
- DELETE "3/8" PLYWOOD SHEATHING S.S.D." ADD "5/8" laminated OSB"
- DELETE "SEE 2/A8.1 FOR BLOCKING ATTACHMENT INFO."

Detail 11

- DELETE "3/8" PLYWOOD SHEATHING S.S.D." ADD "5/8" laminated OSB"
- DELETE "SEE 2/A8.1 FOR BLOCKING ATTACHMENT INFO."

Attachments: Drawing sheet A2.3

Drawing sheet A8.1

COLLEGE OF MARIN – INDIAN VALLEY CAMPUS BUILDING 11 ROOF REPLACEMENT #126 ADDENDUM #03 DATE: October 9, 2017

Spec. section 07 21 00 Building Insulation Spec section 07 25 00 Weather Barriers Spec. section 07 31 13 Asphalt Shingles Cutsheet for AC Form Nail Base Cutsheet for Atlas Nail Base Fastener

Name of Architect or Engineer in General Responsible Charge

Signature of Architect or Structural Engineer Date

End of Addendum #03

DATE: October 9, 2017

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## SECTION 07 21 00

## **BUILDING INSULATION**

## PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. Section Includes:
  - 1. Glass-fiber blanket insulation and Sound Attenuation Blankets.
  - 2. Rigid insulation at the roof.
- B. Related Sections:
  - 1. Section 07 25 00 "Weather Barriers."
  - 2. Section 07 31 13 "Asphalt Shingles."

## 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Plans and Elevations indicating extent of each type of exterior insulation.
- C. Wind uplift calculation: Per CBC Chapter 15, signed and sealed by a California licensed structural engineer.
- 1.4 INFORMATIONAL SUBMITTALS
  - A. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each product.

## 1.5 QUALITY ASSURANCE

- A. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- 1.6 DELIVERY, STORAGE, AND HANDLING
  - A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

## PART 2 - PRODUCTS

INDIAN VALLEY CAMPUS BUILDING 11 RENOVATION

## 2.1 GLASS-FIBER BLANKET INSULATION

A. Unfaced, Glass-Fiber Blanket Insulation and Sound Attenuation Blankets: Provide type as shown on Drawings. ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics. Johns Manville or accepted equal. R-value as indicated on drawings.

## 2.2 RIGID INSULATION

- A. Roof Insulation: Polyisocyanurate Insulation: ASTM C1289, Type II, Class 1, Grade 2 (20 psi). GAF "EnergyGuard" insulation, or equal, as approved by the District. Each Bottom board to be 2.6" thick under CDX plywood/Rigid polyisocyanurate roof insulation.
  - 1. Base layer of insulation shall be thermal and top layer of insulation shall be CDX plywood laminate.
    - a. CDX plywood top face rigid polyisocyanurate roof insulation; ASTM C1289: i. Qualities: Rigid, closed cell polyisocyanurate foam core bonded to heavy
      - duty class fiber mat facers.
      - ii. Foam insulation thinckness: 3"
      - iii. CDX plywood thickness: 19/32"
      - iv. Compliances: UL, WH or FM listed under Roofing Systems Federal Specifications HH-I-1972 ,Class 1.
      - v. Wood Fastener: 7" wood fastener with 1" min. penetration into plywood deck and T&G members
      - vi. Acceptable products:
        - 1. AC Foam Nailbase by Atlas
        - 2. Approved equal by the District.

## 2.3 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and applications indicated.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to rain at any time.
- C. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

## 2.4 INSTALLATION OF INSULATION FOR FRAMED CONSTRUCTION

- A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. 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. Glass-Fiber Blanket Insulation: Install in cavities formed by framing members according to the following requirements:
  - 1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.

- 2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
- 3. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
- 4. For metal-framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.
- 2.5 INSTALLATION OF RIGID INSULATION AT ROOF
  - A. Fasten in accordance with wind uplift requirements for the roof system. Stagger end joints and tightly abut insulation units.

## END OF SECTION

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## SECTION 07 25 00

#### WEATHER BARRIERS

#### PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS
  - A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes self-adhering sheet air and water barriers for walls and roofs.
- B. Related Requirements:
  - 1. Section 07 31 13 "Asphalt Shingles."
  - 2. Section 07 62 00 "Sheet Metal Flashing and Trim."
  - 3. Section 07 92 00 "Joint Sealants".

#### 1.3 DEFINITIONS

- A. Air-Barrier Material: A primary element that provides a continuous barrier to the movement of air.
- B. Air-Barrier Accessory: A transitional component of the air barrier that provides continuity.
- C. Air-Barrier Assembly: The collection of air-barrier materials and accessory materials applied to an opaque wall, including joints and junctions to abutting construction, to control air movement through the wall.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include manufacturer's written instructions for evaluating, preparing, and treating substrate; technical data; and tested physical and performance properties of products.
- B. Shop Drawings: For air-barrier assemblies.
  - 1. Show locations and extent of air barrier. Include details for substrate joints and cracks, counterflashing strips, penetrations, inside and outside corners, terminations, and tie-ins with adjoining construction.
  - 2. Include details of interfaces with other materials that form part of air barrier.
  - 3. Details shall be project specific beyond those typically published by the product manufacturer showing intended substrates and integrations with adjacent systems.
  - 4. Submit shop drawings to manufacturer for review and approval prior to submitting to College of Marin Representative.
  - 5. Provide plans and elevations to indicate extent of materials and location of details.

## 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Certificates: From air-barrier manufacturer, certifying compatibility of air barriers and accessory materials with Project materials that connect to or that come in contact with air barrier.
- C. Product Test Reports: For each air-barrier assembly, for tests performed by a qualified testing agency.
- D. Warranties: Special warranties specified in this Section.
- 1.6 QUALITY ASSURANCE
  - A. Installer Qualifications: An entity specializing in the installation of air barrier systems with a minimum 5 years documented experience that employs installers and supervisors who are trained and approved by manufacturer.
    - 1. Installer shall be licensed by ABAA according to ABAA's Quality Assurance Program and shall employ ABAA-certified installers and supervisors on Project.
  - B. Manufacturer Qualifications: Company specializing in production of waterproofing and air barrier systems with minimum 10 years documented continuous experience in the manufacture of permeable water-resistive air barrier products and employing experienced in-house technical and field observation personnel qualified to provide expert technical support.
  - C. Preinstallation Conference: Conduct conference at Project site after approval of complete submittal. Review requirements for air barrier, including surface preparation specified under other Sections, substrate condition and pretreatment, temporary weather protection, forecasted weather conditions, special details and sheet flashings, installation procedures, testing and inspection procedures, and protection and repairs.
- 1.7 DELIVERY, STORAGE, AND HANDLING
  - A. Deliver materials to Project site in original containers with seals unbroken, wrapped in a polythene sleeve, labeled with manufacturer's name, and product brand name.
  - B. Remove and replace liquid materials that cannot be applied within their stated shelf life.
  - C. Protect stored materials from direct sunlight.

## 1.8 FIELD CONDITIONS

- A. Environmental Limitations: Apply air barrier within the range of ambient and substrate temperatures recommended by air-barrier manufacturer.
  - 1. Protect substrates from environmental conditions that affect air-barrier performance.
  - 2. Do not apply air barrier to a damp or wet substrate or during snow, rain, fog, or mist.

## 1.9 WARRANTY

- A. Contractor's Labor and Material Guarantee: Correct defective Work at no cost to the College of Marin.
  - 1. Warranty Period: 1 year from the date of Final Completion in accordance with Document 00 65 36 Warranty Form Contractor's Guarantee.

- B. Special Manufacturer's Warranty: Warranty all work under this section in a written document endorsed by the Manufacturer:
  - 1. Warranty Period: 10 years from date of Final Completion.

## PART 2 - PRODUCTS

- 2.1 MATERIALS, GENERAL
  - A. Source Limitations: Obtain primary air-barrier materials and air-barrier accessories from single source from single manufacturer.
- 2.2 PERFORMANCE REQUIREMENTS
  - A. General: Air barrier shall be capable of performing as a continuous weather barrier and as a liquid-water drainage plane flashed to discharge to the exterior incidental condensation or water penetration. Air-barrier assemblies shall be capable of accommodating substrate movement and of sealing substrate expansion and control joints, construction material changes, penetrations, tie-ins to installed waterproofing, and transitions at perimeter conditions without deterioration and air leakage exceeding specified limits.

## 2.3 ROOF UNDERLAYMENT

- A. Sheet: Self-adhered roofing underlayment. GCP Applied Technologies "Ice & Water Shield", or equal as approved by the District. Garland R-mer Seal by The Garland Company or equal approved by the District.
  - 1. Material: Cold applied, self adhering membrane composed of a high strength polyethylene film coated on one side with a layer of rubberized asphalt adhesive and interwound with a disposable release sheet. An embossed, slip resistant surface is provided on the polyethylene.
  - 2. Color: Gray-black.
  - 3. Membrane Thickness: 40 mil (1.02 mm) ASTM D3767 procedure A (Section 9.1).
  - 4. Tensile Strength, Membrane: 250 psi (1720 kN/m2) ASTM D412 (Die C modified).
  - 5. Elongation, Membrane: 250% ASTM D412 (Die C modified).
  - 6. Low Temperature Flexibility: Unaffected @ -20°F (-29°C) ASTM D1970.
  - 7. Adhesion to Plywood: 3.0 lbs/in. width (525 N/m) ASTM D903.
  - 8. Permeance (Max): 0.05 Perms (2.9 ng/m2s Pa) ASTM E96.
  - 9. Material Weight Installed (Max): 0.3 lb/ft2 (1.3 kg/m2) ASTM D461.
  - 10. Primer: Water-based Perm-A-Barrier WB Primer by GCP Applied Technologies, Inc. R-mer Seal SA Primer.

## 2.4 ACCESSORY MATERIALS

- A. General: Accessory materials recommended by air-barrier manufacturer to produce a complete air-barrier assembly and compatible with primary air-barrier membrane.
- B. Termination Mastic: Air-barrier manufacturer's standard cold fluid-applied elastomeric liquid; trowel grade. Grace Bituthene Liquid Membrane, or equal as approved by the District. Tuff Flash by The Garland Company or equal as approved by the District.
- C. Adhesive and Tape: Air-barrier manufacturer's standard adhesive and pressure-sensitive adhesive tape.

D. Joint Sealant: ASTM C 920, single-component, neutral-curing silicone; Class 100/50 (low modulus), Grade NS, Use NT related to exposure, and, as applicable to joint substrates indicated, Use O. Comply with Section 079200 "Joint Sealants."

## PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
  - 1. Verify that substrates are sound and free of oil, grease, dirt, excess mortar, or other contaminants.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 SURFACE PREPARATION

- A. Clean, prepare, and treat substrate according to manufacturer's written instructions. Provide clean, dust-free, and dry substrate for air-barrier application.
- B. Mask off adjoining surfaces not covered by air barrier to prevent spillage and overspray affecting other construction.
- C. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.
- D. Prepare, fill, prime, and treat joints and cracks in substrates. Remove dust and dirt from joints and cracks according to ASTM D 4258.
  - 1. Install modified bituminous strips and center over treated construction and contraction joints and cracks exceeding a width of 1/16 inch.
- E. At changes in substrate plane, apply sealant or termination mastic beads at sharp corners and edges to form a smooth transition from one plane to another.
- F. Cover gaps in substrate plane and form a smooth transition from one substrate plane to another with stainless-steel sheet mechanically fastened to structural framing to provide continuous support for air barrier.

## 3.3 INSTALLATION

- A. General: Install modified bituminous sheets and accessory materials according to air-barrier manufacturer's written instructions and according to recommendations in ASTM D 6135.
  - When ambient and substrate temperatures range between 25 and 40 deg F, install selfadhering, modified bituminous air-barrier sheet produced for low-temperature application. Do not install low-temperature sheet if ambient or substrate temperature is higher than 60 deg F.
- B. Corners: Prepare, prime, and treat inside and outside corners according to ASTM D 6135.
  - 1. Install modified bituminous strips centered over vertical inside corners. Install 3/4-inch fillets of termination mastic on horizontal inside corners.

- C. Prepare, treat, and seal vertical and horizontal surfaces at terminations and penetrations with termination mastic and according to ASTM D 6135.
- D. Apply primer to substrates at required rate and allow it to dry. Limit priming to areas that will be covered by air-barrier sheet on same day. Reprime areas exposed for more than 24 hours.
  - 1. Prime glass-fiber-surfaced gypsum sheathing with number of prime coats needed to achieve required bond, with adequate drying time between coats.
- E. Apply and firmly adhere modified bituminous sheets horizontally over area to receive air barrier. Accurately align sheets and maintain uniform 2-1/2-inch- minimum lap widths and end laps. Overlap and seal seams, and stagger end laps to ensure airtight installation.
  - 1. Apply sheets in a shingled manner to shed water without interception by any exposed sheet edges.
  - 2. Roll sheets firmly with a manufacturer approved hand roller to enhance adhesion to substrate.
- F. Apply continuous modified bituminous sheets over modified bituminous strips bridging substrate cracks, construction, and contraction joints.
- G. Seal top of through-wall flashings to air-barrier sheet with an additional 6-inch- wide, modified bituminous strip.
- H. Seal exposed edges of sheet at seams, cuts, penetrations, and terminations not concealed by metal counterflashings or ending in reglets with compatible sealant.
- I. Install air-barrier sheet and accessory materials to form a seal with adjacent construction and to maintain a continuous air barrier.
  - 1. Coordinate air-barrier installation with installation of roofing membrane and base flashing to ensure continuity of air barrier with roofing membrane.
  - 2. Install modified bituminous strip on roofing membrane or base flashing so that a minimum of 3 inches of coverage is achieved over each substrate.
- J. Connect and seal exterior wall air-barrier membrane continuously to roofing-membrane air barrier, concrete below-grade structures, floor-to-floor construction, exterior glazing and window systems, glazed curtain-wall systems, storefront systems, exterior louvers, exterior door framing, and other construction used in exterior wall openings, using accessory materials.
- K. Wall Openings: Prime concealed, perimeter frame surfaces of windows, curtain walls, storefronts, and doors. Apply modified bituminous transition strip so that a minimum of 3 inches of coverage is achieved over each substrate. Maintain 3 inches of full contact over firm bearing to perimeter frames with not less than 1 inch of full contact.
  - 1. Modified Bituminous Transition Strip: Roll firmly with a manufacturer approved hand roller to enhance adhesion.
- L. At end of each working day, seal top edge of air-barrier material to substrate with termination mastic.
- M. Apply joint sealants forming part of air-barrier assembly within manufacturer's recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

- N. Repair punctures, voids, and deficient lapped seams in air barrier. Slit and flatten fishmouths and blisters. Patch with air-barrier sheet extending 6 inches beyond repaired areas in all directions.
- O. Do not cover air barrier until it has been tested and inspected by College of Marin's testing agency.
- P. Correct deficiencies in or remove air barrier that does not comply with requirements; repair substrates and reapply air-barrier components.
- 3.4 CLEANING AND PROTECTION
  - A. Protect air-barrier system from damage during application and remainder of construction period, according to manufacturer's written instructions.
    - 1. Protect air barrier from exposure to UV light and harmful weather exposure as required by manufacturer. If exposed to these conditions for more than 30 days, remove and replace air barrier or install additional, full-thickness, air-barrier application after repairing and preparing the overexposed membrane according to air-barrier manufacturer's written instructions.
    - 2. Protect air barrier from contact with incompatible materials and sealants not approved by air-barrier manufacturer.
  - B. Clean spills, stains, and soiling from construction that would be exposed in the completed Work, using cleaning agents and procedures recommended by manufacturer of affected construction.

## END OF SECTION

## SECTION 07 31 13

## ASPHALT SHINGLES

#### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- 1.2 SUMMARY
  - A. Section Includes:
    - 1. Asphalt shingles.
    - 2. Roof cover board.
  - B. Related Requirements:1. Section 07 25 00 "Weather Barriers" for roofing underlayment.

#### 1.3 DEFINITION

- A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.
- 1.4 PREINSTALLATION MEETINGS
  - A. Preinstallation Conference: Conduct conference at Project site.

## 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples for Verification: For the following products, of sizes indicated:
  - 1. Asphalt Shingles: Full size.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Test Reports: For each type of asphalt shingle and underlayment product indicated, for tests performed by manufacturer and witnessed by a qualified testing agency.

C. Sample Warranty: For manufacturer's warranty.

## 1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For asphalt shingles to include in maintenance manuals.

## 1.8 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Asphalt Shingles: 100 sq. ft. of each type, in unbroken bundles.

## 1.9 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.
- 1.10 DELIVERY, STORAGE, AND HANDLING
  - A. Store roofing materials in a dry, well-ventilated location protected from weather, sunlight, and moisture according to manufacturer's written instructions.
  - B. Store underlayment rolls on end on pallets or other raised surfaces. Do not double stack rolls.
  - C. Protect unused roofing materials from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.
  - D. Handle, store, and place roofing materials in a manner to prevent damage to roof deck or structural supporting members.

## 1.11 FIELD CONDITIONS

A. Environmental Limitations: Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended in writing by manufacturer.

## 1.12 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace asphalt shingles that fail within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Manufacturing defects.
  - 2. Material Warranty Period: 30 years from date of Substantial Completion.

- B. Roofing Installer's Warranty: On warranty form at end of this Section, signed by Installer, in which Installer agrees to repair or replace components of asphalt-shingle roofing that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: Two years from date of Substantial Completion.

## PART 2 - PRODUCTS

## 2.1 ASSEMBLY

- A. GAF Timberline HD 'Birchwood', or equal as approved by District. Provide complete shingle roof system, including, but not limited to: starter shingles and ridge cap shingles.
  - 1. Class A fire rated per UL 790.
  - 2. Passes ASTM D 7158, Class H.
  - 3. ASTM D 3018, Type 1.
  - 4. ASTM D 3161, Class F.

## 2.2 PERFORMANCE REQUIREMENTS

- A. Exterior Fire-Test Exposure: Provide asphalt shingles and related roofing materials identical to those of assemblies tested for Class A fire resistance according to ASTM E 108 or UL 790 by Underwriters Laboratories or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.
- B. Wind Speed: Provide roofing system to withstand 115 120 mph window wind speed, Exposure Category C, per CBC 2016.
- C. Must meet 2016 California Building Code Chapter 7A.
- D. Color: IMETCO (415-971-2739) Irish Mist.

## 2.3 ACCESSORIES

- A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.
- B. Roofing Nails: ASTM F 1667; aluminum, stainless-steel, copper, or hot-dip galvanized-steel wire shingle nails, minimum 0.120-inch-diameter, sharp-pointed, with a minimum 3/8-inch-diameter flat head and of sufficient length to penetrate 3/4 inch into solid wood decking or extend at least 1/8 inch through OSB or plywood sheathing.
  - 1. Shank: Barbed.
  - 2. Where nails are in contact with metal flashing, use nails made from same metal as flashing.
- C. Roof Cover Board: Georgia-Pacific "Densdeck", or equal, as approved by the District.

## 2.4 METAL FLASHING AND TRIM

A. General: Comply with requirements in Section 07 62 00 "Sheet Metal Flashing and Trim."

## **PART 3 - EXECUTION**

#### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
  - 1. Examine roof sheathing to verify that sheathing joints are supported by framing and blocking or metal clips and that installation is within flatness tolerances.
  - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored; and that provisions have been made for flashings and penetrations through asphalt shingles.
- B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 UNDERLAYMENTS

- A. Install roof insulation in accordance with Section 07 21 00 "Building Insulation."
- B. Install underlayment in accordance with Section 07 25 00 "Weather Barriers."

#### 3.3 METAL FLASHING INSTALLATION

- A. General: Install metal flashings and other sheet metal to comply with requirements in Section 07 62 00 "Sheet Metal Flashing and Trim."
  - 1. Install metal flashings according to recommendations in ARMA's "Residential Asphalt Roofing Manual" and NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."
- B. Apron Flashings: Extend lower flange over and beyond each side of downslope asphalt shingles and up the vertical surface.
- C. Rake Drip Edges: Install rake drip-edge flashings over underlayment and fasten to roof deck.
- D. Pipe Flashings: Form flashing around pipe penetrations and asphalt shingles. Fasten and seal to asphalt shingles as recommended by manufacturer.

#### 3.4 ASPHALT-SHINGLE INSTALLATION

- A. General: Install asphalt shingles according to manufacturer's written instructions, recommendations in ARMA's "Residential Asphalt Roofing Manual," and recommendations in NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."
- B. Install starter strip along lowest roof edge, consisting of an asphalt-shingle strip with self-sealing strip face up at roof edge.
  - 1. Install starter strip along rake edge.

- C. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.
- D. Install asphalt shingles by single-strip column or racking method, maintaining uniform exposure. Install full-length first course followed by cut second course, repeating alternating pattern in succeeding courses.
- E. Fasten asphalt-shingle strips with a minimum number of roofing nails located according to manufacturer's written instructions.

## 3.5 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS **<Insert name>** of **<Insert address>**, herein called the "Roofing Installer," has performed roofing and associated work ("the work") on the following project:
  - 1. Owner: < Insert name of Owner>.
  - 2. Address: <**Insert address**>.
  - 3. Building Name/Type: <**Insert information**>.
  - 4. Address: <**Insert address**>.
  - 5. Area of the Work: <Insert information>.
  - 6. Acceptance Date: <**Insert date**>.
  - 7. Warranty Period: <Insert time>.
  - 8. Expiration Date: <Insert date>.
- B. AND WHEREAS Roofing Installer has contracted to warrant the work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of the work as are necessary to correct faulty and defective work and as are necessary to maintain the work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
  - 1. Specifically excluded from this Warranty are damages to the work and other parts of the building, and to building contents, caused by:
    - a. Lightning;
    - b. Peak gust wind speed exceeding 115 mph;
    - c. Fire;
    - d. Failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
    - e. Vapor condensation on bottom of roofing; and
    - f. Activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by College of Marin.
  - 2. When the work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by College of Marin or by another responsible party so designated.

- 3. Roofing Installer is responsible for damage to the work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of the work.
- 4. During Warranty Period, if College of Marin allows alteration of the work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of the alterations, but only to the extent the alterations affect the work covered by this Warranty. If College of Marin engages Roofing Installer, before starting the alterations, notified College of Marin in writing, showing reasonable cause for claim, that the alterations would likely damage or deteriorate the work, thereby reasonably justifying a limitation or termination of this Warranty.
- 5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a use or service more severe than originally specified, this Warranty shall become null and void on date of the change, but only to the extent the change affects the work covered by this Warranty.
- 6. College of Marin shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect the work and to examine evidence of such leaks, defects, or deterioration.
- 7. This Warranty is recognized to be the only warranty of Roofing Installer on the work and shall not operate to restrict or cut off College of Marin from other remedies and resources lawfully available to College of Marin in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of the work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with College of Marin or a subcontract with College of Marin's General Contractor.
- E. IN WITNESS THEREOF, this instrument has been duly executed this <**Insert day**> day of <**Insert month**>, <**Insert year**>.
  - 1. Authorized Signature: < Insert signature>.
  - 2. Name: <Insert name>.
  - 3. Title: <**Insert title**>.

END OF SECTION

# **ACFoam®** Nail Base Nailable Roof Insulation

- **DESCRIPTION:** Thermally efficient closed-cell ACFoam<sup>®</sup>-II or ACFoam<sup>®</sup>-III polyisocyanurate (polyiso) insulation board bonded to min. 7/16" APA/TECO rated OSB or min. 19/32" CDX plywood on the top face. ACFoam<sup>®</sup> Nail Base is offered in a variety of composite thicknesses, providing long-term thermal resistance (LTTR) values from 6.3 to 24.2. Made to order in 4ft x 8ft (1220mm x 2440mm) panels with a nominal thickness of 1.5" to 4.5". Manufactured in accordance with **ASTM C1289, Type V.**
- **ADVANTAGES:** ACFoam<sup>®</sup> Nail Base combines the benefits of a nailable roof substrate and thermally efficient polyiso insulation in an easy one-step installation. Available as a special order product with FSC<sup>®</sup> Certified, Fire-Treated, Preservative-Treated OSB or CDX. ACFoam<sup>®</sup> Nail Base is manufactured using CFC-, HCFC- and HFC-free foam blowing technology with zero ozone depletion potential (ODP) and virtually no (negligible) global warming potential (GWP). ACFoam<sup>®</sup> Nail Base contains between 52.9% and 28.9% recycled materials by weight (*Atlas Technical Bulletin: TB-2*).
- **APPLICATION:** Approved for use as a non-structural panel in new and re-roofing applications. ACFoam<sup>®</sup> Nail Base is typically installed over sloped solid-wood and metal roof decks. Deck slope must be appropriate for the type of roof system specified. Typical roof systems include asphalt shingles, standing seam metal, tile and slate. ACFoam<sup>®</sup> Nail Base is not designed or approved for vertical application. The architect, engineer or design professional is responsible for determining the need for and location of a vapor/air retarder.
- **INSTALLATION:** Atlas requires mechanical attachment of Atlas ACFoam<sup>®</sup> Nail Base with Atlas Nail Base Fasteners to approved structural roof decks. ACFoam<sup>®</sup> Nail Base shall be kept dry before, during and after installation. This product will burn if exposed to an ignition source of sufficient heat and intensity. Do not apply flame directly to ACFoam<sup>®</sup> Nail Base insulation. Refer to product packaging and *PIMA Technical Bulletin #109* for storage and handling recommendations. Suitable for multi-layer assemblies when installed over Atlas ACFoam<sup>®</sup>-II, or -III and through-fastened with Atlas Nail Base Fasteners. Refer to *Nailable Insulation Guide* for fastening guidelines and installation recommendations.

Prior to installation, Atlas Roofing Corporation recommends that you consult your local building codes, contract documents, professional engineer, FM Global, Miami-Dade County and membrane manufacturer for additional installation guidelines as well as design enhancements.

PROPERTY		TEST METHOD	RESULTS	
	DIMENSIONAL STABILITY	ASTM D2126	< 2%	
	COMPRESSIVE STRENGTH	ASTM D1621	20 psi (140 kPa) or 25 psi (172 kPa)	
	WATER ABSORPTION	ASTM C209 & D2842	< 1.0%, < 3.5%	
	WATER VAPOR TRANSMISSION	ASTM E96	< 1.0 perm (57.5ng/ (Pa•s•m²))	
	PRODUCT DENSITY	ASTM D1622	Nominal 2.0 pcf (32.04 kg/m³)	
	FLAME SPREAD	ASTM E84 (10 min.)	<sup>1</sup> 40-60	
	SMOKE DEVELOPMENT	ASTM E84 (10 min.)	<sup>1</sup> 50-170	
	TENSILE STRENGTH	ASTM D1623	> 730 psf (35 kPa)	
	SERVICE TEMPERATURE	-	-100° to +250°F	

# Numerical ratings are not intended to reflect performance under actual fire conditions. Flame spread index of $\leq$ 75 and smoke development $\leq$ 450 meet code requirements for foam plastic roof insulation. Codes exempt foam plastic insulation when used in FM 4450 or UL 1256. Physical properties listed above are presented as typical average values as determined by accepted ASTM test methods and are subject to normal manufacturing variation.

#### • ASTM C1289, Type V

- UL Standard 1256 Classification Construction No. 120, 123 & 458
- UL Standard 790 (ASTM E108) For use with Class A, B or C Shingles, Metal or Tile Roof Coverings
- UL Standard 263 (ASTM E119) Fire Resistance Classification
- FM Standard 4450/4470 Approved (1-90, 1-105) Approved for Class 1 Insulated Roof Deck Construction. Refer to FM Approvals<sup>®</sup> RoofNav for Specific System Details

	<b>4COMPOSITE THICKNESS</b>		30.01	FLUTE SPANABILITY		
LIIK VALUE	in	mm	, KOI	in	mm	
6.3	1.5	38.1	1.10	4.375	111.13	
9.1	2.0	50.8	1.60	4.375	111.13	
12.0	2.5	63.5	2.10	4.375	111.13	
15.0	3.0	76.2	2.63	4.375	111.13	
18.0	*3.5	88.9	3.16	4.375	111.13	
21.1	*4.0	101.6	3.70	4.375	111.13	
24.2	*4.5	114.3	4.25	4.375	111.13	

THERMAL DATA

<sup>2</sup>LTTR (long term thermal resistance) values were determined in accordance with CAN/ULC-S770-09. Test samples were third-party selected and tested by an accredited material testing laboratory. ACFoam Nail Base calculations based on 7/16° OSB (R-value 0.55) unless noted otherwise. <sup>3</sup>RSI is the metric expression of R-value (m<sup>2</sup> • K/W). <sup>4</sup>Composite thickness includes wood layer and ACFoam<sup>®</sup>-II polyiso insulation board.

\* To minimize the effects of thermal bridging. Atlas strongly recommends the use of multiple layers when the total desired or specified R-value requires an insulation thickness greater than 2.7" thick.

- IBC Chapter 26 & NBC Sections on Foam Insulation
- **California State** Insulation Quality Standards and Title 25 Foam Flammability Criteria (License #T 1231)
- Miami-Dade County Approved
- State of Florida Product Approval (FL17989)
- APA/TECO Rated OSB Nailing Surface
- U.S. Voluntary Product Standard PS 2 Compliant

Other than the aforementioned representations and descriptions, Atlas Roofing Corporation (hereafter, "Seller") makes no other representations or warranties as to the insulation sold herein. The Seller disclaims all other warranties, express or implied, including the warranty of merchantability and the warranty of fitness for a particular purpose. Seller does, however, have a limited warranty as to the LTTR-Value of the insulation, the terms of which are available upon request from the Seller. Seller shall not be liable for any incidental or consequential damages including but not limited to the cost of installation, removal, repair or replacement of this product. Buyer's remedies shall be limited exclusively to, at Seller's option, the repayment of the purchase price or resupply of product manufactured by Atlas in a quantity equal to that of the nonconforming product. Atlas distributors, agents, salespersons or other independent representatives have no authority to waive or alter the above limitation of liability and remedies.



# **Atlas** Nail Base Fastener Nailable Insulation Fastener

**DESCRIPTION:** Standard or Light Duty insulation fastener with #2 Light Duty Drill Point. Specially engineered for attaching Atlas ACFoam<sup>®</sup> Nail Base and ACFoam® CrossVent® to corrugated steel and wood deck substrates. Atlas Nail Base Fasteners are required for proper mechanical attachment of all ACFoam<sup>®</sup> Nailable Insulation Systems.

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MATERIAL:	Case hardened and Tempered Carbon Steel			
HEAD STYLE/DRIVE:	Pancake Head with T-30 Internal Drive			
HEAD DIAMETER:	0.625″			
SHANK DIAMETER:	0.190″			
THREAD LENGTH:	2.750″			
OVERALL LENGTH:	3" thru 18"			
POINT:	#2 (0.135″ dia.) Drill Point			
COATING:	Epoxy E-Coat (black)			
	Passes more than 15 cycles (Kesternich) in accordance with DIN 50018			

TENSILE STRENGTH	SHEAR STRENGTH	HEAD PULL-THRU VALUE (7/16″ OSB)
3,380 lbf	2,900 lbf	545 lbf

LATERAL LOAD RESISTANCE <sup>1</sup>						
MAIN MEMBER SIDE MEMBER LOAD						
22 Ga. Corrugated Steel	Nail Base	411 lbf				
7/16″ OSB	Nail Base	112 lbf				

WITHDRAWAL VALUES IN STEEL <sup>1</sup> (80 KSI MIN.)					
Type B Corrugated	22 Ga.	20 Ga.	18 Ga.		
lbf	510	645	920		

WITHDRAWL VALUES IN WOOD <sup>1</sup>							
Specific Gravity	0.67	0.55	0.50	0.46	0.43	0.36	0.31
lb/in.	1429	1173	1067	981	917	768	661

1"Head Pull-Thru", "Withdrawal" and "Lateral Load" data reflect average ultimate values.



## **PRODUCT SELECTION**

		-
IN	ММ	PKG. QTY.
3.0	76	500/PAIL
3.5	89	500/PAIL
4.0	102	500/PAIL
4.5	114	500/PAIL
5.0	127	500/PAIL
5.5	140	500/PAIL
6.0	152	500/PAIL
6.5	165	500/PAIL
7.0	178	500/PAIL
7.5	191	500/PAIL
8.0	203	500/PAIL
8.5	216	250/PAIL
9.0	229	250/PAIL
10.0	254	250/PAIL
11.0	279	250/PAIL
12.0	305	250/PAIL
13.0	330	250/BOX
14.0	356	250/BOX
15.0	381	250/BOX
16.0	406	250/BOX
18.0	//57	250/BOX

NOTE: Two T-30 Driver Bits included in each package



Note: All tests were conducted by an independent testing laboratory. Test results are offered only as a guide and are not guaranteed in any way by Atlas Roofing Corporation.

Other than the aforementioned representations and descriptions, Atlas Roofing Corporation (hereafter, "Seller") makes no other representations or warranties as to the insulation sold herein. The Seller disclaims all other warranties, express or implied, including the warranty of merchantability and the warranty of fitness for a particular purpose. Seller does, however, have a limited warranty as to the LTTR-Value of the insulation, the terms of which are available upon request from the Seller. Seller shall not be liable for any incidental or consequential damages including but not limited to the cost of installation, removal, repair or replacement of this product. Buyer's remedies shall be limited exclusively to, at Seller's option, the repayment of the purchase price or resupply of product manufactured by Atlas in a quantity equal to that of the nonconforming product. Atlas distributors, agents, salespersons or other independent representatives have no authority to waive or alter the above limitation of liability and remedies





						ARCHITECT brick. 1266 66th stree emeryville, ca 510.516.0167 www.brick-llp.o CLIENT marin commun 835 college av kentfield, ca 94	et, suite 1 94608 com hity college district enue 4904
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