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ADDENDUM

ADDENDUM No.: 3
DATE: June 21, 2024
RE: NORTHWOOD TECHNICAL COLLEGE
NEW RICHMOND MEDICAL LABORATORY EDUCATION CENTER
821 WEST EIGHTH STREET
NEW RICHMOND, WISCONSIN 54017
PROJECT NO. 23082

FROM: HSR Associates, Inc
100 Milwaukee Street
La Crosse, WI 54603
(608) 784-1830

TO: Prospective Bidders

This addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated May 2022. Acknowledge receipt of this Addendum in the space provided on the bid form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of: 1 page, 0 documents, 1 section, and 0 drawings.

CHANGES TO SPECIFICATIONS:

1. Section 07 21 19 Foamed-In-Place Insulation
    a. See the revised section included in this addendum. Disregard the previous version.
    b. Added paragraphs 1.01 B., 1.04 C.5, 1.04 D.4, 2.02 E. and 3.04 E. These paragraphs describe requirements for applying an intumescent protective coating over interior foamed-in-place insulation.

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SECTION 07 21 19
FOAMED-IN-PLACE INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Foamed-in-place insulation.
   1. In underside of roofs.

B. Protective intumescent coating.

1.02 RELATED REQUIREMENTS

A. Applicable provisions of Division 1 govern the work of this section.

B. Sections 07 21 00 Thermal Insulation.

1.03 REFERENCE STANDARDS

A. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2021.

B. ASTM D2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics; 2019.

C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

D. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2023.

E. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials; 2021a.

F. ASTM E2357 - Standard Test Method for Determining Air Leakage of Air barrier Assemblies.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for procedures.

B. Review Submittals - Preparatory:
   1. Product Data: Provide product description, insulation properties, overcoat properties, and preparation requirements.
   2. Documentation that applied product is compatible with all substrates installed on the project.

C. Information Submittals - Preparatory:
   1. Certificates: Certify that products of this section meet or exceed specified requirements.
   2. Manufacturer's Installation Instructions: Indicate special procedures, [<>] and perimeter conditions requiring special attention.
   3. Manufacturer Qualification: Submit documentation of current evaluation of proposed manufacturer and materials.
   4. Installer Qualification: Submit documentation of current contractor accreditation and current installer certification. Keep copies of all contractor accreditation and installer certification on site during and after installation. Present on-site documentation upon request.
   5. Code evaluation report showing the submitted components for insulation and protective coating comply with the code requirements including IBC 2015 2603.9.

D. Information Submittals - During Execution:
   1. ABAA Field Quality Control Submittals: Submit third-party reports of testing and inspection as required by ABAA QAP.
   2. Field Quality Assurance: Implement the site Quality Assurance Program requirements used by ABAA. Cooperate with ABAA Auditors and any independent testing and inspection agencies engaged by the Owner. Do not cover the air barrier assembly until it has been inspected, tested and accepted.
   3. Daily work record reports.
   4. Manufacturer's report of inspection of protective coating.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section, with not less than three years of documented experience.
   1. Obtain primary ABAA Evaluated Materials from a single ABAA Evaluated Manufacturer regularly engaged in manufacturing specified closed cell, medium density spray polyurethane foam. Obtain secondary materials from a source acceptable to the primary materials manufacturer.

B. Air Barrier Subcontractor Qualifications: Air barrier Subcontractor(s) shall be accredited at the time of bidding and during the complete installation period by the Air Barrier Association of America (ABAA) whose Installer(s) are certified in accordance with the site Quality Assurance Program used by ABAA.
   1. Closed cell, medium density sprayed polyurethane foam air barrier Installer(s) shall be certified by BPQI (Building Performance Quality Institute) for the ABAA Quality Assurance Program in accordance with the requirements outlined in the QAP program used by ABAA. Installers shall have their photo-identification air barrier certification cards in their possession and available on the project site, for inspection upon request.

1.06 PRECONSTRUCTION MEETING

A. Preconstruction Meeting: Convene a minimum of two weeks prior to commencing Work of this Section. Agenda shall include, at a minimum, construction and testing of mock-up, sequence of construction, coordination with substrate preparation, air barrier materials approved for use, compatibility of materials, coordination with installation of adjacent and covering materials including weatherproofing of top of wall at the end of each day of insulation application, use of scaffolding, lifts and staging and details of construction and chemical/fire safety plans. Attendance is required by representatives of related trades including covering materials, substrate materials and adjacent materials.

1.07 REGULATORY REQUIREMENTS

A. Conform to applicable code for flame and smoke limitations.

1.08 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to Project site in original packages with seals unbroken, labeled with the material manufacturer's name, product, date of manufacture, and directions for storage.

B. Store materials in their original undamaged packages in a clean, dry, protected location and within temperature range required by material manufacturer. Protect stored materials from direct sunlight and other sources of ultra-violet light.

C. Handle materials in accordance with material manufacturer’s recommendations.

1.09 FIELD CONDITIONS

A. Sequence work to ensure timely placement of insulation within construction spaces.

B. Do not apply foam when the temperature is below that specified by the manufacturer for ambient air and substrate or when temperature is within 5 degrees F of dew point.

C. Sequencing. Do not install air barrier material before the roof assembly has been sufficiently installed to prevent a buildup of water in the interior of the building.

1.10 WARRANTY

A. Material Warranty: Provide primary material manufacturer’s standard product warranty, from date of Substantial Completion.

B. Subcontractor (approved by ABAA and Manufacturer) Installation Warranty: Provide a two (2) year installation warranty from date of Substantial Completion, including all accessories and materials of the air barrier assembly, against failures including loss of air tight seal, loss of watertight seal, loss of attachment, loss of cohesion/adhesion and failure to cure properly.

PART 2 PRODUCTS

2.01 MATERIALS

A. Foamed-In-Place Insulation: Medium-density, closed cell polyurethane foam; foamed on-site, using blowing agent of water or non-ozone-depleting gas.
   1. Aged Thermal Resistance: R-value of 6.5 (deg F hr sq ft)/Btu, minimum, when tested at 1 inch thickness in accordance with ASTM C518 after aging for 180 days at 41 degrees F.
   2. Water Vapor Permeance: Vapor retarder; 2 perms, maximum, when tested at intended thickness in accordance with ASTM E96/E96M, desiccant method.
   3. Water Absorption: Less than 2 percent by volume, maximum, when tested in accordance with ASTM D2842.
   4. Air Permeance: 0.04 cfm per square foot, maximum, when tested at intended thickness in accordance with ASTM E2178 at 1.57 psf.
   5. Assembly Performance: Provide a continuous air barrier in the form of an assembly that has an air leakage not to exceed 0.04 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.04 cfm/ft2 @ 1.57 psf) [0.2 liters per square meter per second under a pressure differential of 75 Pa (0.2 L/(s·m2) @ 75 Pa)] when tested in accordance with ASTM E2357. The assembly shall accommodate movements of building materials by providing expansion and control joints as required. Expansion / control joints, changes in substrate and perimeter conditions shall have appropriate accessory materials at such locations.
      a. The air barrier assembly shall be capable of withstanding combined design wind, fan and stack pressures, both positive and negative on the envelope without damage or displacement, and shall transfer the load to the structure.
      b. Closed cell, medium density spray polyurethane foam air barriers shall not displace adjacent materials in the assembly under full load.
      c. The air barrier assembly shall be joined in an airtight and flexible manner to the air barrier materials of adjacent assemblies, allowing for the relative movement of assemblies due to thermal and moisture variations, creep, and anticipated seismic movement.
   6. Closed Cell Content: At least 90 percent.
   7. Surface Burning Characteristics: Flame spread/smoke developed index of 25/450, maximum, when tested in accordance with ASTM E84.
   8. Connections to Adjacent Materials: Provide connections to prevent air leakage at the following locations:
      a. Foundation and walls, including penetrations, ties and anchors.
      b. Walls, windows, curtain walls, storefronts, louvers and doors.
      c. Different assemblies and fixed openings within those assemblies.
      d. Wall and roof connections.
      e. Floors over unconditioned space.
      f. Walls, floor and roof across construction, control and expansion joints.
      g. Walls, floors and roof to utility, pipe and duct penetrations.
      h. All other potential air leakage pathways in the building envelope.
   9. Manufacturers:
      a. BASF Corporation; WALLTITE US: www.spf.basf.com.
      b. CertainTeed Corporation; CERTASPRAY CC. www.certainteed.com.
      c. Demilic (USA) Inc.: Demilic XT-w. www.demilic.com.
      d. Gaco Western; GacoOnePass F1850R: www.gaco.com.
      e. Henry Company; Permax 0.5: www.henry.com.
      f. Huntsman Building Solutions; ProSeal HFO; Icynene ProSeal: www.huntsmanbuildingsolutions.com.
      g. Johns Manville; JM Corbond III Closed Cell Spray Polyurethane Foam: www.jm.com.
      h. NCFI Polyurethanes; ThermalStop or InsulStar. www.ncfi.com.
      i. Rhino Linings Corporation; ThermalGuard CC2: www.rhinolinings.com.
      j. SWD Urethane: Quik-shield 118. www.swdyrethane.com.
      k. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.

2.02 ACCESSORIES

A. Primers, Mastics and Sealants for Transition Membranes and Counter-flashing for Through-Wall Flashing: A material deemed acceptable to the manufacturer of that material.

B. Membrane at Transitions in Substrate and Connections to Adjacent Elements: Including, but not limited to one of the following as acceptable to the Spray Polyurethane Foam Air Barrier Manufacturer:
   1. HENRY Blueskin SA - Self Adhesive Air/Vapor Barrier Membrane.
   2. HENRY Blueskin SA LT - Low Temp SA Air/Vapor Barrier Membrane.
   3. Perm-A-Barrier Flashing by Grace Construction Products.
   4. CCW-705 TWF by Carlisle Coatings and Waterproofing.
   5. Poly Wall Self Adhering Flashing by Polyguard Products, Inc.
   6. ExoAir 110 by Tremco, Inc.
   7. Air Shield by W R Meadows, Inc.

C. Transition Membrane between Air Barrier Membrane and Roofing and Other Adjacent Materials: Comply with both air barrier manufacturer's recommendations and material manufacturer's recommendations.

D. Substrate Joint Treatment Materials: Prepare the substrate joints with the following materials:
   1. Air Shield by W. R. Meadows, Inc.
   2. Blueskin SA by Henry.
   3. CCW-705 TWF by Carlisle Coatings and Waterproofing.
   4. ExoAir 110 by Tremco, Inc.
   5. Perm-A-Barrier Flashing by Grace Construction Products.
   6. Poly Wall Self Adhering Flashing by Polyguard Products, Inc.

E. Protective Coating: Intumescent coating of type recommended by insulation manufacturer and as required to comply with applicable codes.
   1. Coating Type: Single component, water-based.
   2. Protected Insulation Type: Spray polyurethane foam (SPF).
   3. Application: Apply using brush, roller, or airless sprayer.
   4. Surface Burning Characteristics: Flame spread/smoke developed index of 25/450, maximum, when tested in accordance with ASTM E84.
   5. Products:
      a. International Fireproof Technology Inc; DC315 Intumescent Coating: www.painttoprotect.com.
      b. International Coatings Group; FBL-100 Fire Barrier Latex: www.internationalcoatingsgroup.com.
      c. No-Burn, Inc; Plus ThB Intumescent Coating: www.noburn.com.
      d. Substitutions: See Section 01 25 00 - Substitution Procedures for requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. The ABAA Certified Air Barrier Contractor shall examine substrates, areas, and conditions under which the air barrier assembly will be installed, with Lead Contractor, ABAA Certified Installer present, for compliance with the following requirements.
   1. Confirm site access logistics and scheduling requirements.

B. Verify work within construction spaces or crevices is complete before insulation application.

C. Verify that surfaces are clean, dry, and free of excess mortar or other matter that may inhibit insulation adhesion.
   1. Inspect substrates to be smooth without large voids or sharp protrusions. Inform Lead Contractor if substrates are not acceptable and need to be repaired by the concrete sub-trade.
   2. Inspect masonry joints to be reasonably flush and completely filled, and ensure all excess mortar sitting on masonry ties has been removed. Inform Lead Contractor if masonry joints are not acceptable and need to be repaired by the mason sub-trade.

3. Verify substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D4263 and take suitable measures until substrate passes moisture test.
4. Verify sealants are compatible with membrane proposed for use. Perform field peel-adhesion test on materials to which sealants are adhered.
5. Notify Lead ContractorConstruction Manager in writing of anticipated problems using closed cell, medium density spray polyurethane foam over substrate prior to proceeding.

3.02 PREPARATION

A. Provide all personal protective equipment for duration of product application.

B. Mask and protect adjacent surfaces from over spray or dusting.

C. Erect barriers, isolate area and post warning signs to advise non-protected personnel to avoid the spray area.

D. Confirm installation of blocking at opening perimeters by other trades to allow installation of air barrier transition membranes.

E. Apply primer in accordance with manufacturer's instructions. Confirm application rate on sheathing to determine effective rate of application.
1. Prime masonry, concrete substrates with primers.
2. Prime glass-fiber surfaced gypsum sheathing with an adequate number (if applicable) of coats to achieve required bond, with adequate drying time between coats.
3. Prime wood, metal, aluminum, structural steel, sheet metal, and painted substrates with primer.
4. Clean galvanized metal of oil residue.
5. Prepare, treat, and seal vertical and horizontal surfaces at terminations and penetrations through air barrier and protrusions.

F. Install polyethylene or similar bond break at piping and other protrusions.

G. Transition Strip Installation: Coordinate installation of rigid foam specified in 0721 00 to protect membrane flashings. Install air barrier accessories and closed cell, medium density spray polyurethane foam to provide continuity throughout the building envelope. Install materials in accordance with manufacturer's instructions and the following:
1. Position subsequent sheets of membrane applied above so that it overlaps the membrane sheet below by a minimum of 2.0 inches (50 mm), unless greater overlap is recommended by material manufacturer. Roll into place with roller ensuring all transition membranes are free of fish-mouths, wrinkles, delaminations, bubbles and voids.
2. Overlap horizontally adjacent pieces of membrane a minimum of 2.0 inches (50 mm), unless greater overlap is recommended by material manufacturer. Roll all areas of membrane including seams with roller.
3. Connect air barrier in exterior wall assembly continuously to the air barrier of the roof, to concrete below-grade structures, to windows, curtain wall, storefront, louvers, exterior doors and other intersection conditions and perform sealing of penetrations, using accessory materials and in accordance with the manufacturer’s recommendations.
4. Provide transition membrane, sealant, mastic, membrane counter-flashing or other material recommended by spray polyurethane foam manufacturer at 90 degree inside or outside corners. Follow spray polyurethane foam manufacturer’s instructions for instructions on how to treat interlocked CMU or structurally-attached 90 degree cast-in place concrete corners.
5. Provide mechanically fastened non-corrosive metal sheet to span gaps greater than 1.0 inch (25 mm) in substrate plane and to make a smooth transition from one plane to the other. Membrane shall be continuously supported by substrate.
6. At through-wall flashings, provide an additional 6.0 inch (150mm) wide strip of manufacturer’s recommended membrane counter-flashing to seal top of through-wall flashing to membrane. Seal exposed top edge of strip with bead of mastic or as recommended by manufacturer.
7. At deflection and control joints, provide backup for the membrane to accommodate anticipated movement.
8. Install extruded insulation strips at perimeter of openings to prevent overspray to frames.
9. Ensure that membranes at terminations have a pull adhesive of 16 psi or greater.

3.03 APPLICATION

A. Apply insulation in accordance with manufacturer's instructions.

B. Apply insulation by spray method, to a uniform monolithic density without voids.

C. Apply to a minimum cured thickness of 2 inch. An additional pass of 2.0 inches (50 mm) shall only be done after the first pass has had time to cool down. At no time shall more than 4.0 inches (100 mm) be installed in a single day. There are no exceptions to this requirement as it is a health and safety requirement.

D. Install within material manufacturer’s tolerances, but not more than minus ¼ inch (6 mm).

E. Finished surface of foam insulation to be free of voids and embedded foreign objects.

F. Complete connections to other air barrier components and repair any gaps, holes or other damage using material in a manner approved by primary air barrier material manufacturer.

G. Inspect installation prior to enclosing assembly and repair damaged areas with closed cell, medium density spray polyurethane foam as recommended by manufacturer.

H. Where applied to voids and gaps, ensure space for expansion to avoid pressure on adjacent materials that may bind operable parts.

I. Trim excess away for applied trim or remove as required for continuous sealant bead.

3.04 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for related requirements.

B. Air Barrier Association of America Installer Audits: Cooperate with ABAA’s testing agency. Allow access to work areas and staging. Notify ABAA in writing of schedule for Work of this Section to allow sufficient time for testing and inspection. Do not cover Work of this Section until testing and inspection is accepted. Arrange and pay for site audit by ABAA to verify conformance with the material Manufacturer’s instructions, the site Quality Assurance Program used by ABAA, and this section of the project specification.
   1. Audits and subsequent testing shall be carried out at the following rate:
      a. Up to 10,000 s.f. of air barrier contract requires one (1) audit.
      b. This project shall have one audit. Additional may be required by A/E or Owner.
   2. Forward written audit reports to the Architect within 10 working days of the audit and test being performed.
   3. If the audit reveals any defects, promptly remove and replace defective work at no additional cost to the Owner.

C. Insulation applicator shall perform the following tests:
   1. Adhesion.
   2. Cohesion.
   3. Thickness.
   4. Density.

D. Insulation applicator shall complete daily inspection reports as required by ABAA using approved work record forms.

E. Provide inspection of the protective coating by a representative of the protective manufacturer to include verification of insulation and overcoat thickness and density.

3.05 PROTECTION AND CLEANING

A. Remove masking materials and over spray from adjacent areas immediately after foam surface has hardened. Ensure cleaning methods do not damage work performed by other sections.

B. Do not permit subsequent construction work to disturb applied insulation.

C. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction and acceptable to the primary material manufacturer.

END OF SECTION