

# ADDENDUM

<b>PROJECT</b>	Madison County Memorial Hospital – Roof Repairs	<b>PROJECT #</b>	21049
<b>OWNER</b>	Madison County Memorial Hospital	<b>DATE</b>	04/16/2021
<b>LETTING DATE</b>	04/20/2021	<b>ADDENDUM #</b>	02

## TO ALL HOLDERS OF DRAWINGS AND PROJECT MANUALS

This addendum is issued to incorporate the following changes in the drawings and project manual. For bids to be considered, this addendum must be acknowledged by so indicating on the Form of Bid.

Bidders shall make the following corrections or additions to the bidding documents. These items shall supersede, modify, and/or change all statements or drawings to the contrary in the drawings and project manual and shall take precedence over these documents. Bidders shall base their bid on the drawings and project manual and as modified by the changes herein stated.

### This addendum consists of (# of pages)

Text	Supplemental Drawings		Project Manual	Total Pages
	8.5" x 11"	Other		
2			5	7

## REVISIONS

### 1 Prior Addenda

Item #	Add #	Add Item #	Attachment	Description of Change
1.1				NA

### 2 Architectural

#### Project Manual Changes

Item #	Sheet/ Section	Detail/ Paragraph	Attachment	Description of Change
2.1				NA

#### Drawing Changes

Item #	Sheet/ Section	Detail/ Paragraph	Attachment	Description of Change
2.2				NA

### 3 Mechanical

#### Project Manual Changes

Item #	Sheet/ Section	Detail/ Paragraph	Attachment	Description of Change
3.1	23 07 13	ALL	23 07 13	<b>REPLACE</b> section with revised Ductwork Insulation section

#### Drawing Changes

Item #	Sheet/ Section	Detail/ Paragraph	Attachment	Description of Change
3.2				

**4 Substitution Requests**

Item #	Sheet/ Section	Detail/ Paragraph	Attachment	Description of Change
4.1				

**End of Addendum**

**Submitted By**



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David Hofmann AIA

**SECTION 23 07 13**  
**DUCTWORK INSULATION**

**PART 1 - GENERAL**

**1.1 SCOPE**

- A. Perform all Work required to provide and install the following Ductwork Insulation indicated by the Contract Documents with supplementary items necessary for proper installation.
- B. Equipment Included in This Section
  - 1. Insulation
  - 2. Fasteners
  - 3. Jacketing
  - 4. Sealants

**1.2 REFERENCES**

- A. Ductwork schedules located on Drawings.
- B. All materials, installation and workmanship shall comply with the applicable requirements and standards addressed in the following references:
  - 1. NFPA 90
  - 2. ASTM
- C. Abbreviations
  - 1. K: Thermal Conductivity, in Btu per inch thickness per hour per square foot.
  - 2. PVC: Polyvinylchloride

**1.3 SUBMITTALS**

- A. Product Data
  - 1. Manufacturer's catalog sheets and specifications for insulation materials and jacket materials.
  - 2. Materials Schedule: Itemize insulation materials and thicknesses for each specified application in Insulation Material Schedules in Part 3 of this Section. Where optional materials are specified, indicate option selected. Schedule should be similar to Ductwork schedule on Drawings.

## 1.4 QUALITY ASSURANCE

- A. Qualifications: The persons installing the Work of this Section and their Supervisor shall be personally experienced in mechanical insulation work and shall have been regularly employed by a company installing mechanical insulation for a minimum of five (5) years.
- B. Regulatory Requirements
  - 1. Insulation installed inside buildings, including duct lining materials, laminated jackets, mastics, sealants and adhesives shall have a Fire Spread/Smoke Developed Rating of 25/50 or less based on ASTM E 84.

## PART 2 - PRODUCTS

### 2.1 ADHESIVES

- A. For indoor applications, use adhesive that has a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- B. Calcium Silicate Adhesive: fibrous, sodium-silicate-based adhesive with a service temperature range of 50° F - 800° F (10° C - 427° C).
- C. Cellular-Glass, Phenolic, Polyisocyanurate, and Polystyrene Adhesive: Solvent-based resin adhesive, with a service temperature range of -75° F to +300° F (-59° C to +149° C).
- D. Flexible Elastomeric and Polyolefin Adhesive: Comply with MIL-A-24179A, Type II, Class I.
- E. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, class 2, Grade A.
- F. ASJ Adhesive, and FSK and PVDC Jacket Adhesive: comply with MIL-A-3316C, Class 2, Grade A for bonding insulation jacket lap seams and joints.
- G. PVC Jacket Adhesive: Compatible with PVC jacket.

### 2.2 MASTICS

- A. For indoor applications, use mastics that have a VOC content of 420 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- B. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-C-19565C, Type II.

### 2.3 LAGGING ADHESIVES

- A. For indoor applications, use adhesive that has a VOC content of 420 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- B. Description: Comply with MIL-A-3316C Class I, Grade A and shall be compatible with insulation materials, jackets, and substrates.

## 2.4 JACKETS

### A. PVC Jackets

1. ~~PVC Jacket: High impact resistant, UV resistant PVC complying with ASTM D 1784, Class 16354-C; thickness as scheduled; roll stock ready for shop or field cutting and forming. Thickness is indicated in field-applied jacket schedules.~~
2. ~~Adhesive: As recommended by jacket material manufacturer.~~
3. ~~3. Color: [White] [Color-code jackets based on system. Color as selected by Architect].~~

### Paragraph 2.4.A - Deleted (Add. #2)

### B. Aluminum Jackets:

1. ~~Aluminum Jacket: Comply with ASTM B 209 (ASTM B 209M), Alloy 3003, 3005, 3105, or 5005, Temper H-14.~~
2. ~~Moisture Barrier for Outdoor Applications: 3 mil thick, heat bonded polyethylene.~~

### Paragraph 2.4.B - Deleted (Add. #2)

### C. Self-Adhesive Outdoor Jackets:

1. ~~Self-Adhesive Outdoor Jacket: 60-mil~~ **6-mil (Add. #2)** thick, laminated vapor barrier and waterproofing membrane for installation over insulation located aboveground outdoors; consisting of a rubberized bituminous resin on a crosslaminated polyethylene film covered with **stucco-embossed (Add. #2)** aluminum-foil facing.

## 2.5 SEALANTS

- A. For indoor applications, use sealants that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

## 2.6 INSULATION

### A. Ductwork Insulation Types

1. Type A: Semi-rigid fiberglass board wrap. Minimum density 3.0 #/ft<sup>3</sup>, K of 0.23 at 75° F; ASTM C 553, Type III.

- B. All insulation densities listed are minimum densities. Contractor shall be responsible for verifying the required insulation thickness & density to meet the minimum installed insulation R-values as listed in the ductwork schedules on the drawings.

## PART 3 - EXECUTION

### **3.1 DUCT INSULATION SCHEDULE**

- A. Refer to Ductwork Application Schedule on Drawings for insulation requirements.

### **3.2 PREPARATION**

- A. Perform the following before starting insulation work.
  1. Install hangers, supports and appurtenances in their permanent locations.
  2. Complete testing of piping, ductwork, and equipment.
  3. Clean and dry surfaces to be insulated.

### **3.3 INSTALLATION, GENERAL**

- A. Install the work of this section in accordance with the manufacturer's printed installation instructions unless otherwise specified.

### **3.4 INSTALLATION AT HANGERS AND SUPPORTS**

- A. Reset and realign hangers and supports if they are displaced while installing insulation.
- B. Insulation inserts for use with fibrous glass insulation:
  1. Ductwork: Install 6 #/ft<sup>3</sup> density jacketed fibrous glass board, same thickness as adjoining insulation, sized for full bearing on supporting trapeze member, and as required to enable abutting to adjoining insulation and overlapping of jacketing.

### **3.5 INSTALLATION OF DUCTWORK INSULATION**

- A. Exterior to Ductwork
  1. Cut insulation to stretch-out dimensions as recommended by insulation manufacturer.
  2. Remove two (2) inch wide strip of insulation material from the jacketing on the longitudinal and circumferential joint edges to form an overlapping staple/tape flap.
  3. Install insulation with jacketing outside so staple/tape flap overlaps insulation and jacketing on other end.
  4. Butt ends of insulation tightly together.
    - a. Rectangular and Square Ductwork: Do not compress insulation at duct corners.
  5. Staple longitudinal and circumferential joints with outward clinching staples minimum six (6) inches on center, and seal with pressure sensitive sealing tape.
  6. Cut off protruding ends of fasteners flush with insulation surface and seal with pressure sensitive sealing tape.
  7. Install duct insulation fasteners on bottom side of horizontal duct runs, when bottom dimension of the duct is in excess of 24 inches in width.

8. Install duct insulation fasteners on sides of duct risers having a dimension over 24 inches in size.
9. Seal tears, punctures, and penetrations of insulation jacketing with sealing tape.

### **3.6 FIELD QUALITY CONTROL**

- A. Field Samples: The Director's Representative, may at his discretion, take field samples of installed insulation for the purpose of checking materials and application. Reinsulate sample cut areas.

### **3.7 DUCTWORK SERVICE INSULATION SCHEDULE**

- A. Insulate all ductwork except where otherwise specified. See Ductwork schedule on Drawings.

**END OF SECTION**