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This MANU-SPEC® utilizes the Construction Specifications Institute (CSI) *Project Resource Manual* (PRM), including *MasterFormat*™, *SectionFormat*™ and *PageFormat*™. A MANU-SPEC is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets []; delete optional text in final copy of specification. Specifier Notes typically precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text. Metric conversion, where used, is soft metric conversion.

This MANU-SPEC specifies fiber glass insulation products. These products are manufactured by Knauf Insulation. Revise MANU-SPEC section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat* for other section numbers and titles.

SECTION 07 21 00 THERMAL INSULATION

PART 1 GENERAL

1.01 SUMMARY

Specifier Note: Revise paragraphs below to suit project requirements.

- A. Section Includes: Fiber glass batt insulation.
- B. Related Sections:
 - 1. Division 07 Section: Thermal and Moisture Protection.
 - 2. Division 23 Section: Duct Insulation.

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 01 References Section may establish the edition date of standards. This article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section.

1.02 REFERENCES

- A. ASTM International:
 - 1. ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 - 2. ASTM C665 Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
 - 3. ASTM C1104/C1104M Standard Test Method for Determining the Water Vapor Sorption of Unfaced Mineral Fiber Insulation.
 - 4. ASTM C1338 Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings.
 - 5. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 6. ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials.

1.03 SYSTEM DESCRIPTION



A. Performance Requirements:

Specifier Note: Edit below to conform to project requirements. Delete below if unfaced and FSK faced batts are not required.

1. Surface burning characteristics of unfaced and FSK faced batts and blankets when tested in accordance ASTM E84:
 - a. Flamespread: 25, maximum.
 - b. Smoke Developed: 450, maximum.

Specifier Note: Edit below to conform to project requirements. Delete below if kraft-faced, FSK foil-faced and foil-faced batts are not required.

2. Permeance of Facing Materials (ASTM E96):
 - a. Kraft-Facing: 1.0 or less.
 - b. FSK Foil-Facing: 0.04 or less.
 - c. Foil-Facing: 0.05 or less.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 01 Submittal Procedures Section.

1.04 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 01 Submittal Procedures Section.
- B. Product Data: Submit product data, including manufacturer's SPEC-DATA® sheet, for specified products.

Specifier Note: Article below should include prerequisites, standards, limitations and criteria that establish an overall level of quality for products and workmanship for this section. Coordinate article below with Division 01 Quality Assurance Section.

1.05 QUALITY ASSURANCE

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Conditions of the Contract and Division 01 Regulatory Requirements Section. Repetitive statements should be avoided.

- A. Regulatory Requirements and Approvals: [Specify applicable requirements of regulatory agencies].
 1. [Code agency name].
 - a. [Report or approval number].

Specifier Note: Article below should include special and unique requirements. Coordinate article below with Division 01 Product Requirements Section.

- B. Qualifications:
 1. Manufacturer Qualifications: Minimum of 10 years experience in manufacturing building insulation products.

1.06 DELIVERY, STORAGE & HANDLING

- A. General: Comply with Division 01 Product Requirements Section.
- B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Handling: Handle materials to prevent bending, warping, twisting and surface damage.
- D. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause

ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.01 FIBER GLASS INSULATION

Specifier Note: Paragraph below is an addition to CSI *SectionFormat* and a supplement to MANU-SPEC. Retain or delete paragraph below per project requirements and specifier's practice.

A. Manufacturer: Knauf Insulation.

1. Contact: One Knauf Dr., Shelbyville, IN 46176; Telephone: (800) 825-4434, (317) 398-4434; Fax: (317) 398-3675; website: www.KnaufInsulation.us.

Specifier Note: Edit Paragraph below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 01 Project Requirements (Product Substitutions Procedures) Section.

B. Substitutions: No substitutions permitted.

2.02 MATERIALS

A. General: Fiber Glass Insulation: ASTM C665.

Specifier Note: R-values are normally indicated on the drawings; if not, then indicate them below under each insulation type.

1. R-Value: As indicated when tested in accordance with ASTM C518.
2. Water Vapor Absorption (ASTM C1104): 5% maximum by weight.
3. Corrosion: No greater than sterile cotton.
4. Microbial Growth: Does not support microbial growth when tested in accordance with ASTM C1338.

- B. Unfaced Batts and Blankets: ASTM C665, Type I, Class A.
C. Foil-Faced Batts and Blankets: ASTM C665, Type III, Class B.
D. Kraft-Faced Batts and Blankets: ASTM C665, Type II, Class C.
E. FSK-25 Foil-Faced Batts and Blankets: ASTM C665, Type III, Class A.
F. Basement Wall Insulation:

Specifier Note: Select size below.

- G. Sill Sealer: [1 1/4 inches × 4 inches (32 × 102 mm)] [1 1/4 inches × 6 inches (32 × 152 mm)].

Specifier Note: QuietTherm batts are designed for improved sound control.

- H. Unfaced QuietTherm Batts: ASTM C665, Type I, Class A.
I. Kraft-Faced QuietTherm Batts: ASTM C665, Type II, Class C.

Specifier Note: HD (high density) batts have higher R-values per inch of thickness than standard batts.

- J. Unfaced HD Batts: ASTM C665, Type I, Class A.
K. Kraft-Faced HD Batts: ASTM C665, Type II, Class C.

PART 3 EXECUTION

Specifier Note: Paragraph below is an addition to CSI *SectionFormat* and a supplement to MANU-SPEC. Retain or delete paragraph below per project requirements and specifier's practice.

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions for installation.

3.02 EXAMINATION

- A. Site Verification of Conditions: Verify that substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

3.03 INSTALLATION

- A. Fit insulation to form a complete, tight-fitting thermal barrier around required areas.

3.04 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch up, repair or replace damaged products prior to Substantial Completion.

END OF SECTION