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This MANU-SPEC® utilizes the Construction Specifications Institute (CSI) *Project Resource Manual* (PRM), including *MasterFormat™*, *SectionFormat™* and *PageFormat™*. It has been numbered to meet the recommendation of the *MasterFormat 2004* classification system. 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 exterior insulation and finish systems in a standard configuration and in a water management configuration. These products are manufactured by ENERGEX Wall Systems. 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 24 00
EXTERIOR INSULATION AND FINISH SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

Specifier Note: Select attachment method below. If both are being used, coordinate with drawings.

1. [Adhesively] [Mechanically] attached, PB (Polymer Based) system.

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers and titles per CSI *MasterFormat* and specifier's practice.

B. Related Sections:

1. Drainage Wrap and House Wrap: Division 07 weather barrier sections.
2. Joint Sealants: Division 07 joint sealants sections.

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 Section 01 42 19 - Reference Standards 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. Retain only those reference standards to be used within the text of this Section. Add and delete as required for specific project.

1.02 REFERENCES

A. ASTM International (ASTM):

1. ASTM B117 Standard Practice for Operating Salt Spray (Fog) Apparatus.
2. ASTM C578 Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
3. ASTM C1397 Standard Practice for Application of Class PB Exterior Insulation and Finish Systems.
4. ASTM D897 Standard Test Method for Tensile Properties of Adhesive Blocks.

5. ASTM E72 Standard Test Methods of Conducting Strength Tests of Panels for Building Construction.
 6. ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials.
 7. ASTM E108 Standard Test Methods for Fire Tests of Roof Coverings.
 8. ASTM E330 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
 9. ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
 10. ASTM G23 Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials.
 11. ASTM G53 Practice for Operating Light- and Water-Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Nonmetallic Materials.
- B. Federal Standards (FS):
1. TT-C-555B Coating, Textured (For Interior and Exterior Masonry Surfaces) - Wind Driven Rain.
- C. Federal Test Methods:
1. Standard 141, Method 6201, Humidity Test.
- D. State of New York:
1. Impact Load Test.
- E. University of Pittsburgh (UPITT):
1. Test for Combustion Product Toxicity.

1.03 PERFORMANCE REQUIREMENTS

Specifier Note: Verify that framing is being designed with a deflection limit of L/240 or less.

- A. EPS Insulation Board Resistance to Heat Flow (ASTM C177): R-value of 3.85 (0.68) per inch, minimum.
- B. Wind Driven Rain (FS TT-C-555B): No dampness on rear panel.
- C. Negative Wind Load resistance (ASTM E330): 150 psf (7182 Pa), minimum.
- D. Impact Resistance (ASTM E72): Passes.
- E. Structural Performance (ASTM E330):
 1. Negative Pressure: 195 psf (9337 Pa), minimum.
 2. Positive Pressure: 175 psf (8379 Pa), minimum.
- F. Tensile Bond Strength (ASTM D897): Passes.
- G. Humidity Resistance (Federal Test Method 141, Method 6201): No change.
- H. Accelerated Weathering (ASTM G23 and G53): Passed after 2000 hours.
- I. Water Vapor Transmission (ASTM E96): Exceeds requirements.
- J. Salt Spray/Fog Resistance (ASTM B117): No deleterious effects after 300 hours.
- K. Combustion Product Toxicity (UPITT): Exceeds requirements.
- L. Water Penetration (ASTM E331): No penetration of substrate plane.
- M. Impact Load (New York State Impact Load Test): Complies with requirements.

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 Section 01 33 00 - Submittal Procedures.

1.04 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Section [01 33 00 - Submittal Procedures] [_____].

- B. Product Data: Submit product data, including manufacturer's SPEC-DATA sheet and application instructions, for specified products.
- C. Shop Drawings: Submit drawings showing joint layout and joint details.
- D. Samples: Submit 8 1/2 inch by 11 inch samples of specified finish coating to show specified color and texture.
- E. Warranty: Manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

1.05 DELIVERY, STORAGE & HANDLING

- A. General: Comply with [01 61 00 - Common Product Requirements] [_____].
- B. Delivery, Storage and Protection:
 - 1. Deliver, store and handle in accordance with Section [01 61 00 - Common Product Requirements] [_____].
 - 2. Deliver, store and handle materials in accordance with manufacturer's written instructions.
 - 3. Deliver in original packaging with labels and identification intact.
 - 4. Inspect items upon delivery to ensure that specified products have been received.
 - 5. Store items in secure dry location, protected from weather until ready for installation.
- C. Waste Management and Disposal:

Specifier Note: Environment: The disposal of packaging waste into landfill site demonstrates an inefficient use of natural resources and consumes valuable landfill space.

- 1. Separate waste materials for [reuse] [and] [recycling] [_____] in accordance with Section [01 74 19 - Construction Waste Management and Disposal] [_____].
- 2. Remove packaging materials from site and dispose of at appropriate recycling facilities.
- 3. Collect and separate for disposal [paper] [plastic] [polystyrene] [corrugated cardboard] [_____] packaging material [in appropriate onsite bins] [_____] for recycling.

Specifier Note: Coordinate article below with Conditions of the Contract and with Section [01 78 36 - Warranties] [_____].

1.06 WARRANTY

- A. Project Warranty: Refer to Conditions of the Contract and Section [01 78 36 - Warranties] [_____] for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.
 - 1. Warranty Period: 5 years commencing on Date of Substantial Completion.

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 EXTERIOR INSULATION AND FINISH SYSTEMS

- A. Manufacturer: ENERGEX Wall Systems.
 - 1. Contact: 2690 Woodridge Avenue, Edison, NJ 08837-3406; Telephone: (888) 343-7462; E-mail: info@energexwallsystems.com; website: www.energexwallsystems.com.

Specifier Note: Select system(s) below to conform to project requirements.

- B. Energex Standard System:

Specifier Note: Select basecoat below; see manufacturer's SPEC-DATA® sheet.

1. Basecoat: [Enermix] [Enerdry] [NON CEM].
2. Insulation: Expanded polystyrene, ASTM C578, Type 1.

Specifier Note: Insert thickness below if not indicated on drawings; 3/4 inch (19.1 mm) is minimum.

- a. Thickness: [__ inches (__ mm)] [As indicated on the drawings].
- b. Surface Burning Characteristics, ASTM E108: Flamespread/smoke developed of 25/450.

Specifier Note: Select mesh below. If more than one is selected, create designators and coordinate with the drawings.

3. Reinforcing Mesh: [Standard - Enermite 4.5] [Intermediate - Enermite 10.0] [High Impact - Enermite 15.0] [Ultra High Impact - Enermite 20.0].

Specifier Note: Select finish below and indicate color and texture. If more than one is selected, create designators and coordinate with the drawings.

4. Finish: [Ener Blast 0.75] [Ener Blast 1.0] [Ener Sand 1.5] [Ener Sand 2.0] [Ener Free 1.0] [Ener Free 1.0] [Ener Free 1.5] [Ener Free 2.0] [Ener Style].
 - a. Color: [_____] [As indicated on the drawings].
 - b. Texture: [_____] [As indicated on the drawings].

C. Energex Water Management System:

Specifier Note: Retain type below to conform to project requirements.

1. Type: [Grooved back EPS board mechanically attached over weather barrier] [Flat EPS board mechanically attached over weather barrier] [Flat EPS board adhesively attached over roll-on weather barrier].

Specifier Note: Retain below only for adhesively attached system.

2. Roll-On Weather Barrier: Enershield.
3. Insulation: Expanded polystyrene, ASTM C578, Type 1.

Specifier Note: Retain type below to conform to project requirements.

- a. Back: [Grooved] [Flat].

Specifier Note: Insert thickness below if not indicated on drawings; 3/4 inch (19.1 mm) is minimum.

- b. Thickness: [__ inches (__ mm)] [As indicated on the drawings].
- c. Surface Burning Characteristics (ASTM E108): Flamespread/smoke developed of 25/450.

Specifier Note: Select mesh below. If more than one is selected, create designators and coordinate with the drawings.

4. Reinforcing Mesh: [Standard - Enermite 4.5] [Intermediate - Enermite 10.0] [High Impact - Enermite 15.0] [Ultra High Impact - Enermite 20.0].

Specifier Note: Select basecoat below, see manufacturer's SPEC-DATA® sheet.

5. Basecoat: [Enermix] [Enerdry] [NON CEM].

Specifier Note: Select finish below; and indicate color and texture. If more than one is selected, create designators and coordinate with the drawings.

6. Finish: [Ener Blast 0.75] [Ener Blast 1.0] [Ener Sand 1.5] [Ener Sand 2.0] [Ener Free 1.0] [Ener Free 1.5] [Ener Free 2.0] [Ener Style].
 - a. Color: [_____] [As indicated on the drawings].

- b. Texture: [_____] [As indicated on the drawings].

2.02 ACCESSORIES

- A. Mechanical Fasteners:

Specifier Note: Retain fastener(s) below to conform to project requirements.

1. Concrete and Masonry: Nylon or polyolefin washer with expanding shaft anchor.
 2. Framing: Self-drilling corrosion resistant screws.
- B. Finishing Tracks: Extruded, exterior grade, UV-resistant rigid vinyl in configurations to encase insulation board at terminations, form straight, crisp edges and provide flat, uniform surfaces for sealant application.
- C. Sheathing Tape: Energex Sheathing Tape.

Specifier Note: Retain primer only if Water Management System is retained.

- D. Primer: Energex Primer.

2.03 PRODUCT SUBSTITUTIONS

- A. Substitutions: Substitutions in accordance with Section [01 25 13 - Product Substitution Procedures] [No substitutions permitted] [_____] .

PART 3 EXECUTION**3.01 MANUFACTURER'S INSTRUCTIONS**

Specifier Note: Article below is an addition to the CSI *SectionFormat* and a supplement to MANU-SPEC. Revise article below to suit project requirements and specifier's practice.

- A. Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalog installation instructions, product carton installation instructions and [company name] SPEC-DATA® sheets for [product name].

3.02 EXAMINATION

- A. Site Verification of Conditions:
1. Verify substrate conditions are acceptable for product installation in accordance with manufacturer's instructions.

3.03 INSTALLATION

- A. In accordance with ASTM C1397.

3.04 CLEANUP

- A. Proceed in accordance with Section [01 74 23 - Final Cleaning] [_____] .
- B. Upon completion and verification of performance of installation, remove surplus materials, rubbish, tools and equipment.

END OF SECTION