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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 that uses 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 a metal wall panel assembly that consists of cold-formed steel framing and expanded polystyrene insulation. This product is manufactured by Accelerated Building Technologies, LLC, a Dietrich Metal Framing/Nova Chemicals Joint Venture. 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 42 63
FABRICATED WALL PANEL ASSEMBLIES

PART 1 GENERAL

1.01 SUMMARY

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

- A. Section Includes:
 - 1. Wall panel assemblies consist of cold-formed steel framing and expanded polystyrene insulation.
- B. Related Sections:

Specifier Note: Include in this Paragraph only those sections that directly affect the work of this section. Do not include Division 00 or Division 01 sections since it is assumed that all technical sections are related to all project Division 00 and Division 01 sections to some degree.

- 1. Sheathing: Division [06] [09] sheathing sections.
- 2. Plaster: Division 09 plastering sections.
- 3. Gypsum Board: Division 09 gypsum board 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.

1.02 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM A370 Standard Test Methods and Definitions for Mechanical Testing of Steel Products.



2. ASTM A1003 Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members.
3. ASTM C1363 Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus.
4. ASTM E72 Standard Test Methods of Conducting Strength Tests of Panels for Building Construction.
5. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
6. ASTM E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
7. ASTM E119 Standard Test Methods for Fire Tests of Building Construction and Materials.
8. ASTM E283 Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
9. ASTM E330 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

1.03 SYSTEM DESCRIPTION

A. Performance Requirements:

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

1. 5 1/2 Inch (140 mm) Thick Panel:
 - a. Sound Transmission Class (STC), ASTM E90: 41/51/55.
 - b. Outside Inside Transmission Class (OITC), ASTM E90: 30/34/37.
 - c. Rate of Air Leakage, ASTM E283: < 0.01 cfm/ft².
 - d. Surface Burning Characteristics, ASTM E84:
 - 1) Flamespread: < 25, maximum.
 - 2) Smoke developed: < 450, maximum.
 - e. Allowable Bending Moment, Safety Factor of 1.95, ASTM E72: 25,750 inch-pounds.
 - f. Allowable Axial Load for 8 Foot High Panel, Safety Factor of 1.95, ASTM E72: 6836 lb.
 - g. Allowable End Reaction, Safety Factor of 1.95, ASTM E72: 706 lb.
 - h. Ultimate Racking Shear, 7/16 Inch OSB + 1/2 Inch Gypsum, ASTM E72: 679 lb/ft.
 - i. Ultimate Racking Shear, 4 Inch 16 ga 50 ksi X-Brace, ASTM E72: 3776 lb/brace.
 - j. Ultimate Wind Load, ASTM E330: 58 psf (~ 155 mph).
2. 8 Inch (203 mm) Thick Panel:
 - a. Sound Transmission Class, STC, ASTM E90: 45/54/57.
 - b. Outside Inside Transmission Class, OITC, ASTM E90: 31/36/40.
 - c. Rate of Air Leakage, ASTM E283: < 0.01 cfm/ft².
 - d. Surface Burning Characteristics, ASTM E84 and ASTM E119:
 - 1) Flamespread: < 25, maximum.
 - 2) Smoke Developed: < 450, maximum.
 - e. Allowable Bending Moment, Safety Factor of 1.95, ASTM E72: 42,780 inch-pounds.
 - f. Allowable Axial Load for 8 Foot High Panel, Safety Factor of 1.95, ASTM E72: 7864 lb.
 - g. Allowable End Reaction, Safety Factor of 1.95, ASTM E72: 722 lb.
 - h. Ultimate Racking Shear, 7/16 Inch OSB + 1/2 Inch Gypsum, ASTM E72: 751 lb/ft.
 - i. Ultimate Racking Shear, 4 Inch 16 ga 50 ksi X-Brace, ASTM E72: 4304 lb/brace.
 - j. Ultimate Wind Load, ASTM E330: 112.5 psf (~ 238 mph).

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor, either 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 - Submittals 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 installation instructions, for specified products.
- C. Structural Calculations: Submit structural calculations prepared, stamped and signed by the design engineer.
 - 1. Description of design criteria.
 - 2. Engineering analysis depicting stress and deflection (stiffness) requirements for each framing application.
 - 3. Selection of framing components, accessories and welded connection requirements.
 - 4. Verification of attachments to structure and adjacent framing components.
- D. Shop Drawings:
 - 1. Submit drawings that show the arrangement and orientation of panels, and include details of panel joints and openings.
 - 2. Show plans, sections, elevations, layouts, profiles and product component locations, including anchorage, bracing, fasteners, accessories and finishes.
 - 3. Show connection details with screw types and locations, weld lengths and locations and other fastener requirements.

Specifier Note: Where shop finished panels are to be provided, provide drawings depicting panel configurations, dimensions and locations.

- 4. Have shop drawings prepared, stamped and signed by the design engineer.

Specifier Note: Include the following for projects obtaining LEED® certification.

- E. Sustainable Design Submittals:
 - 1. Certificate of verification of recycled content.

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 Section 01 41 00 - Regulatory Requirements. Repetitive statements should be avoided.

- A. Design Engineer Qualifications: Engineer shall be licensed in the state in which the project is located and shall have a minimum of 5 years experience with projects of similar scope.
- B. Regulatory Requirements: In accordance with Section [01 41 00 - Regulatory Requirements] [_____].

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

1.06 DELIVERY, STORAGE & HANDLING

Specifier Note: Environment: The disposal of packaging waste into landfill site demonstrates an inefficient use of natural resources and consumes valuable landfill space. Specifying appropriate packaging and construction waste management and disposal procedures may contribute to points required for LEED® construction project certification.

- 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. Storage and Protection: Store materials protected from exposure to harmful environmental conditions.

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 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 WALL PANEL ASSEMBLIES

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: Accelerated Building Technologies, LLC, a Dietrich Metal Framing/Nova Chemicals Joint Venture.
 - 1. Contact: 1550 Corapolis Heights Road, Moon Township, PA 15108; Telephone: (888) 9accelE, (888) 922-2353; Fax: (412) 490-5066; E-mail: info@accel-E.com; website: www.accbt.com.
- B. accel-E S.T.E.P. Wall System:

Specifier Note: Select panel thickness and width below to suit project requirements.

- 1. Overall Panel Thickness: [5 1/2 inches (140 mm)] [6 inches (152 mm)] [8 inches (203 mm)].
- 2. Overall Panel Width: 4 feet (1.22 m).

Specifier Note: Insert height required below. Heights are limited only by the mode of transport required for delivery.

- 3. Panel Height: [_____] [As indicated on drawings].
- 4. EPS Thickness: [2 3/4 inches (70 mm)] [3 1/4 inches (83 mm)] [4 3/8 inches (111 mm)].
- 5. Open Cavity Dimension: [2 3/4 inches (70 mm)] [3 5/8 inches (92 mm)].

2.02 COMPONENTS

- A. Steel Stud Properties (Nominal):
 - 1. UltraSTEEL Base Metal Thickness: 0.038 inch (0.97 mm).
 - 2. Non-UltraSTEEL Base Metal Thickness: 0.038 inches - 0.068 inches (0.97 - 1.72 mm).
 - 3. Galvanized Coating, ASTM A1003: G60.
 - 4. Minimum Yield, ASTM A370: 40 ksi.
 - 5. Flange Width: 1 5/8 inches (41.3 mm).
- B. EPS (Expanded Polystyrene) Properties (Nominal):
 - 1. Density: 1.5 pcf (24 kg/m³).
 - 2. R-Value Per Inch of Thickness, ASTM C1363: 4.3.
 - 3. Color: Gray.

2.03 FABRICATION

Specifier Note: Select panel type below to conform to project requirements.

- A. Fabricate wall panel assemblies with exterior stud flange [flush with foam] [embedded with foam].

2.04 PRODUCT SUBSTITUTIONS

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

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 conditions of substrates previously installed under other sections are acceptable for product installation in accordance with manufacturer's instructions.

3.03 PREPARATION

- A. Prepare surfaces using the methods recommended by the manufacturer in order to achieve the best result for the substrate under the project conditions.

END OF SECTION