



SECTION 07 21821 13

CONTINUOUS INSULATION XCI FOIL WALL PANELS

This specification is based on the exterior continuous insulation products of Hunter Panels, located at:

15 Franklin Street
Portland, Maine 04101
Phone: (207) 761-5678
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As an industry leader in Polyiso Roof insulation panels for over 15 years – Hunter is proud to present our line for Commercial Wall Applications – Hunter XCI products are designed for use in commercial wall applications to provide “ci” continuous insulation within the building envelope.

This specification includes XCI Foil, a high thermal resistive rigid insulation panel composed of a closed cell polyisocyanurate foam core bonded on-line during the manufacturing process to an impermeable foil facing material on both sides. It is designed for use as exterior continuous insulation in a wall assembly.

Follow the instructions listed in the **SPECIFIER INSTRUCTIONS** included throughout the specification. Edit carefully to suit project requirements. Modify as necessary and delete paragraphs that are not applicable. Note that the **SPECIFIER INSTRUCTIONS** are included as “Hidden Text” in MS-Word. Display hidden notes to specifier by using “Tools”/”Options”/”View”/”Hidden Text”.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Continuous Insulation XCI Foil wall panels.

1.2 RELATED SECTIONS

- A. Section 03300 - Cast In Place Concrete: Concrete base wall.
- B. Section 03400 - Pre-Cast Concrete: Pre-cast concrete base wall.
- C. Section 04210 - Clay Masonry: Brick facing.

- D. Section 04800 - Masonry Assemblies: Masonry base wall.
- E. Section 04850 - Stone Facing.
- F. Section 05400 - Cold Formed Metal Framing.
- G. Section 07260 - Vapor Retarders: Vapor retarder materials over insulation to adjacent insulation.
- H. Section 07270 - Air Barriers: Air seal materials over insulation to adjacent insulation.
- I. Section 09110 - Non-Structural Metal Framing.
- J. Section 09200 - Plaster and Gypsum Board.
- K. Section 09220 - Stucco.

1.3 REFERENCES

- A. ASTM C 209 – Methods of Testing Insulating Board, Structural and Decorative.
- B. ASTM C 518 – Steady State Thermal Transmission by Means of the Heat Flow Meter Apparatus (R Value)
- C. ASTM C 1289 – Specifications for Faced Rigid Cellular Polyisocyanurate Thermal Insulating Board.
- D. ASTM D 1621 – Test Methods for Compressive Properties of Rigid Cellular Plastics.
- E. ASTM D 2126 - Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging.
- F. ASTM D 3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
- G. ASTM E 84 (UL 723) - Standard Test Method for Surface Burning Characteristics of Building Materials
- H. ASTM E 96 - Test Method for Water Vapor Transmission of Materials.
- I. ASHRAE 90.1-2010 - Energy Standard for Buildings Except Low-Rise Residential Buildings.
- J. IBC Chapter 26 – Foam Plastic Insulation.
- K. Miami-Dade County FL NOA No: 14-0501.01.
- L. ICC-ES Evaluation Report - ICC-ESR-3174
- M. DRJ Technical Evaluation Report #1402-02
- N. NFPA 285 - Standard Fire Test Method For Evaluation Of Fire Propagation Characteristics Of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components.

O. UL 723 - Test for Surface Burning Characteristics of Building Materials

1.4 SYSTEM DESCRIPTION

- A. NFPA 285 Exterior Wall Assembly – Concrete Masonry:
1. Base Wall System: Concrete Masonry Wall.
 2. Approved Exterior Finish:
 - a. Masonry: Brick veneer anchors, standard types, installed maximum 24 inches (610 mm) o.c. vertically. Maximum 2 inch (51 mm) air gap between exterior insulation and brick. Standard nominal 4 inches (102 mm) thick or greater, clay brick.
 - b. Stucco: Minimum 3/4 inch (19 mm) thick, Exterior Cement Plaster and Lath.
 - c. Limestone or Natural Stone: Minimum 2 inch (51 mm) thick, Limestone or Natural Stone Veneer or minimum 1-1/2 inches (38 mm) thick Cast Artificial Stone Veneer. Any standard installation technique, including shiplap can be used.
 - d. Terra Cotta Cladding: Use any Terra Cotta Cladding System in which Terra Cotta is minimum 9/16 inch (14 mm). Any standard installation technique, including shiplap can be used.
 3. Panel Thickness: 3.5 inches (89 mm) maximum.
 4. Stud Cavity: Not Applicable.
 5. Exterior Sheathing: 1/2 inch (12.5 mm) or 5/8 inch (16 mm) thick exterior type gypsum sheathing.
 6. Floorline Firestopping: 4 lb/cu ft mineral fiber based safing Insulation at each floor line, attached with Z Clips or equivalent.
 7. Weather Resistive Membrane Applied to Base Wall: Acceptable products are:
 - a. Carlisle:
 - 1) Fire Resist Barritech VP or VP LT
 - 2) Fire Resist Barritech NP
 - 3) Fire Resist 705 FR-A
 - 4) Fire Resist 705 VP
 - b. DuPont:
 - 1) Tyvec ComercialWrap or Commercial Wrap D
 - 2) Tyvec Fluid Applied WB
 - c. GE:
 - 1) Momentive SEC 2500 SilShield
 - d. Henry:
 - 1) Air Bloc 17
 - 2) Air Bloc 21S
 - 3) Air Bloc 31
 - 4) Air Bloc 33
 - e. PolyGuard:
 - 1) Air Lok Flex VP
 - 2) Flexguard
 - 3) Air Lok Flex (Please contact Hunter XCI for cladding options)
 - f. Prosoco:
 - 1) R Guard Spray Wrap
 - 2) R Guard MVP
 - 3) R Guard CAT-5
 - 4) R Guard VB
 - g. StoCorp:
 - 1) EmeraldCoat
 - 2) GoldCoat
 - 3) StoGuard Vapor Shield

- h. VaproShield:
 - 1) Wrap Shield SA
 - 2) Reveal Shield SA
 - i. WR Grace:
 - 1) Perm-a-barrier VPS
 - 2) Perm-a-barrier NPL
 - 3) Perm-a-barrier VPL
 - 4) Perm-a-barrier NP 20
 - 5) Perm-a-barrier Aluminum Wall Membrane
 - j. 3M:
 - 1) 3015 (with Hold Fast adhesive at a 6 mil thickness)
 - k. None
8. Weather Resistive Membrane Applied to Exterior Insulation: Acceptable products are:
- a. Carlisle:
 - 1) Fire Resist Barritech VP or VP LT
 - 2) Fire Resist Barritech NP
 - 3) Fire Resist 705 FR-A
 - 4) Fire Resist 705 VP
 - b. DuPont:
 - 1) Tyvec ComercialWrap or Commercial Wrap D
 - c. GE:
 - 1) Momentive SEC 2500 SilShield
 - d. Henry:
 - 1) Air Bloc 17
 - 2) Air Bloc 21S
 - 3) Air Bloc 31
 - 4) Air Bloc 33
 - e. PolyGuard
 - 1) Air Lok Flex VP
 - 2) Flexguard
 - 3) Air Lok Flex (Please contact Hunter XCI for cladding options)
 - f. Prosoco:
 - 1) R Guard Spray Wrap
 - 2) R Guard MVP
 - 3) R Guard CAT-5
 - 4) R Guard VB
 - g. VaproShield:
 - 1) Wrap Shield SA
 - 2) Reveal Shield SA
 - h. WR Grace:
 - 1) Perm-a-barrier NPL
 - 2) Perm-a-barrier VPL
 - 3) Perm-a-barrier NP 20
 - 4) Perm-a-barrier Aluminum Wall Membrane
 - i. None.
- B. NFPA 285 Exterior Wall Assembly – Cast-in-Place or Precast Concrete:
- 1. Base Wall System: Concrete Masonry Wall.
 - 2. Approved Exterior Finish:
 - a. Masonry: Brick veneer anchors, standard types, installed maximum 24 inches (610 mm) o.c. vertically. Maximum 2 inch (51 mm) air gap between exterior insulation and brick. Standard nominal 4 inch (102 mm) thick or greater, clay brick.
 - b. Stucco: Minimum 3/4 inch (19 mm) thick, Exterior Cement Plaster and Lath.

- c. Limestone or Natural Stone: Minimum 2 inches (51 mm) thick Limestone or Natural Stone Veneer or minimum 1-1/2 inches (38 mm) thick Cast Artificial Stone Veneer. Any standard installation technique, including shiplap can be used.
- d. Terra Cotta Cladding: Use any Terra Cotta Cladding System in which Terra Cotta is minimum 9/16 inches (14 mm). Any standard installation technique, including shiplap can be used.
3. Panel Thickness: 3.5 inches (89 mm) maximum.
4. Stud Cavity: Not Applicable.
5. Exterior Sheathing: 1/2 inch (12.5 mm) or 5/8 inch (16 mm) thick exterior type gypsum sheathing.
6. Floorline Firestopping: 4 lb/cu ft mineral fiber based safig insulation at each floor line, attached with Z Clips or equivalent.
7. Weather Resistive Membrane Applied to Base Wall: Acceptable products are:
 - a. Carlisle:
 - 1) Fire Resist Barritech VP or VP LT
 - 2) Fire Resist Barritech NP
 - 3) Fire Resist 705 FR-A
 - 4) Fire Resist 705 VP
 - b. DuPont:
 - 1) Tyvek ComercialWrap or Commercial Wrap D
 - 2) Tyvek Fluid Applied WB
 - c. GE:
 - 1) Momentive SEC 2500 SilShield
 - d. Henry:
 - 1) Air Bloc 17
 - 2) Air Bloc 21S
 - 3) Air Bloc 31
 - 4) Air Bloc 33
 - e. PolyGuard:
 - 1) Air Lok Flex VP
 - 2) Flexguard
 - 3) Air Lok Flex (Please contact Hunter XCI for cladding options)
 - f. Prosoco:
 - 1) R Guard Spray Wrap
 - 2) R Guard MVP
 - 3) R Guard CAT-5
 - 4) R Guard VB
 - g. StoCorp:
 - 1) EmeraldCoat
 - 2) GoldCoat
 - 3) StoGuard Vapor Shield
 - h. VaproShield:
 - 1) Wrap Shield SA
 - 2) Reveal Shield SA
 - i. WR Grace:
 - 1) Perm-a-barrier VPS
 - 2) Perm-a-barrier NPL
 - 3) Perm-a-barrier VPL
 - 4) Perm-a-barrier NP 20
 - 5) Perm-a-barrier Aluminum Wall Membrane
 - j. 3M:
 - 1) 3015 (with Hold Fast adhesive at a 6 mil thickness)
 - k. None

8. Weather Resistive Membrane Applied to Exterior Insulation: Acceptable products are:
 - a. Carlisle:
 - 1) Fire Resist Barritech VP or VP LT
 - 2) Fire Resist Barritech NP
 - 3) Fire Resist 705 FR-A
 - 4) Fire Resist 705 VP
 - b. DuPont:
 - 1) Tyvek ComercialWrap or Commercial Wrap D
 - c. GE:
 - 1) Momentive SEC 2500 SilShield
 - d. Henry:
 - 1) Air Bloc 17
 - 2) Air Bloc 21S
 - 3) Air Bloc 31
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 - e. PolyGuard
 - 1) Air Lok Flex VP
 - 2) Flexguard
 - 3) Air Lok Flex (Please contact Hunter XCI for cladding options)
 - f. Prosoco:
 - 1) R Guard Spray Wrap
 - 2) R Guard MVP
 - 3) R Guard CAT-5
 - 4) R Guard VB
 - g. VaproShield:
 - 1) Wrap Shield SA
 - 2) Reveal Shield SA
 - h. WR Grace:
 - 1) Perm-a-barrier NPL
 - 2) Perm-a-barrier VPL
 - 3) Perm-a-barrier NP 20
 - 4) Perm-a-barrier Aluminum Wall Membrane
 - i. None.
- C. NFPA 285 Exterior Wall Assembly – Steel Stud:
 1. Base Wall System: Steel Stud, 1 layer 5/8 inch (16 mm) thick Type X or 1/2 inch (12.5 mm) thick Type X Gypsum wallboard on interior, installed over steel studs: minimum 3-5/8 inches (92 mm) depth, minimum 22 gauge at a maximum of 24 inches (610 mm) o.c. with lateral bracing every 4 foot (1220 mm) vertically.
 2. Approved Exterior Finish:
 - a. Masonry: Brick veneer anchors, standard types, installed maximum 24 inches (610 mm) o.c. vertically on each stud. Maximum 2 inch (51 mm) air gap between exterior insulation and brick. Standard nominal 4 inches (102 mm) thick or greater, clay brick.
 - b. Stucco: Minimum 3/4 inch (19 mm) thick, Exterior Cement Plaster and Lath.
 - c. Limestone or Natural Stone: Minimum 2 inch (51 mm) thick Limestone or Natural Stone Veneer or minimum 1-1/2 inches (38 mm) thick Cast Artificial Stone Veneer. Any standard installation technique, including shiplap can be used.
 - d. Terra Cotta Cladding: Use any Terra Cotta Cladding System in which Terra Cotta is minimum 9/16 inches (14 mm). Any standard installation technique, including shiplap can be used.
 3. Panel Thickness: 3.5 inches (89 mm) maximum.
 4. Stud Cavity: Any non-combustible insulation or none.

5. Exterior Sheathing: 1/2 inch (12.5 mm) or 5/8 inch (16 mm) thick exterior type gypsum sheathing.
6. Floorline Firestopping: 4 lb/cu ft mineral fiber based safig insulation in each stud cavity and at each floor line, attached with Z Clips or equivalent.
7. Weather Resistive Membrane Applied to Base Wall: Acceptable products are:
 - a. Carlisle:
 - 1) Fire Resist Barritech VP or VP LT
 - 2) Fire Resist Barritech NP
 - 3) Fire Resist 705 FR-A
 - 4) Fire Resist 705 VP
 - b. DuPont:
 - 1) Tyvek ComercialWrap or Commercial Wrap D
 - 2) Tyvek Fluid Applied WB
 - c. GE:
 - 1) Momentive SEC 2500 SilShield
 - d. Henry:
 - 1) Air Bloc 17
 - 2) Air Bloc 21S
 - 3) Air Bloc 31
 - 4) Air Bloc 33
 - e. PolyGuard:
 - 1) Air Lok Flex VP
 - 2) Flexguard
 - 3) Air Lok Flex (Please contact Hunter XCI for cladding options)
 - f. Prosoco:
 - 1) R Guard Spray Wrap
 - 2) R Guard MVP
 - 3) R Guard CAT-5
 - 4) R Guard VB
 - g. StoCorp:
 - 1) EmeraldCoat
 - 2) GoldCoat
 - 3) StoGuard Vapor Shield
 - h. VaproShield:
 - 1) Wrap Shield SA
 - 2) Reveal Shield SA
 - i. WR Grace:
 - 1) Perm-a-barrier VPS
 - 2) Perm-a-barrier NPL
 - 3) Perm-a-barrier VPL
 - 4) Perm-a-barrier NP 20
 - 5) Perm-a-barrier Aluminum Wall Membrane
 - j. 3M:
 - 1) 3015 (with Hold Fast adhesive at a 6 mil thickness)
 - k. None
8. Weather Resistive Membrane Applied to Exterior Insulation: Acceptable products are:
 - a. Carlisle:
 - 1) Fire Resist Barritech VP or VP LT
 - 2) Fire Resist Barritech NP
 - 3) Fire Resist 705 FR-A
 - 4) Fire Resist 705 VP
 - b. DuPont:
 - 1) Tyvek ComercialWrap or Commercial Wrap D
 - c. GE:

- 1) Momentive SEC 2500 SilShield
- d. Henry:
 - 1) Air Bloc 17
 - 2) Air Bloc 21S
 - 3) Air Bloc 31
 - 4) Air Bloc 33
- e. PolyGuard
 - 1) Air Lok Flex VP
 - 2) Flexguard
 - 3) Air Lok Flex (Please contact Hunter XCI for cladding options)
- f. Prosoco:
 - 1) R Guard Spray Wrap
 - 2) R Guard MVP
 - 3) R Guard CAT-5
 - 4) R Guard VB
- g. VaproShield:
 - 1) Wrap Shield SA
 - 2) Reveal Shield SA
- h. WR Grace:
 - 1) Perm-a-barrier NPL
 - 2) Perm-a-barrier VPL
 - 3) Perm-a-barrier NP 20
 - 4) Perm-a-barrier Aluminum Wall Membrane
- i. None.

1.5 DESIGN REQUIREMENTS

- A. Perform work in accordance with all federal, state and local codes.
- B. Physical properties (Foam Core):
 - 1. Water Absorption: ASTM C 209, less than 0.05 percent by volume.
 - 2. Compressive Strength: ASTM D 1621; Type I; Grade 1, 16 psi (110 kPa) minimum; Grade 2, 20 psi (138 kPa) minimum and Grade 3, 25 psi (172 kPa).
 - 3. Dimensional Stability: ASTM D 2126, 2 percent linear change (7 days).
 - 4. Moisture Vapor Permeance: ASTM E 96, less than 0.05 perm (2.875ng/(Pa•s•m2)).
 - 5. Service Temperature: Minus 100 degrees to 250 degrees F (Minus 73 degrees C to 122 degrees C).
- C. Continuous Insulation XCI Foil wall panels shall meet the continuous insulation standards of ASHRAE 90.1-2010, IECC 2012 and IBC Chapter 26.
- D. Hunter Panels XCI Foil evaluated and listed under ESR-3174. Tests includes the following:
 - 1. Foam core flame spread index of 75 or less and smoke developed of 450 or less when tested in accordance with ASTM E 84 or UL 723.
 - 2. Classified as Type I, Class 2 in accordance with ASTM C 1289.
 - 3. DRJ Technical Evaluation Report #1402-02.
- E. Hunter Panels XCI Foil evaluated and listed under Miami Dade Product Control – Notice of Acceptance NOA No. 14-0501.01

1.6 SUBMITTALS

- A. Submit under provisions of Section 01300.

- B. Product Data: Manufacturer's data sheets on wall panels and fasteners to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. LEED Submittals: Provide documentation of how the requirements of Credit will be met:
 - 1. List of proposed materials with recycled content. Indicate post-consumer recycled content and pre-consumer recycled content for each product having recycled content.
 - 2. Product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content.
- D. Manufacturer's Certificate: Certify panels will conform to specified performance requirements.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer shall be a company that regularly manufactures and assembles specified insulation in house with no outside fabrication operations.
- B. Pre-Installation Meeting: Convene minimum one week prior to commencing Work of this section. Review installation procedures and coordination required with Related Work and include the following:
 - 1. Participants: Authorized representatives of the Contractor, Architect, Installer, and Manufacturer.
 - 2. Review wall assemblies for potential interference and conflicts and coordinate layout and support provisions for interfacing work.
 - 3. Review continuous insulation wall panels installation methods and procedures related to application, including manufacturer's installation guidelines.
 - 4. Review firestopping requirements and weather resistive membrane requirements and placement locations.
 - 5. Review field quality control procedures.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store products off the ground, in dry conditions, under cover and in manufacturer's unopened packaging until ready for installation.

1.9 SEQUENCING

- A. Coordinate with the installation of vapor retarders and air seal materials specified in Section 07260 and Section 07270.
- B. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.10 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Insulating panels shall be XCI products produced by Hunter Panels, 15 Franklin Street, Portland, Maine 04101. Phone: (207) 761-5678 or (888) 746-1114. Fax: (717) 960-1611. E-mail: info@hpanels.com.
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 BOARD INSULATION

- A. Board Insulation with Foil Facer: Hunter Panels XCI Foil complies with ASTM C 1289. Panels are a high thermal resistive rigid insulation panel composed of a closed cell polyisocyanurate foam core bonded to an impermeable foil facer.
 - 1. Type: ASTM C 1289, Type I, Class 1:
 - a. Grade 1 (16 psi).
 - b. Grade 2 (20 psi).
 - c. Grade 3 (25 psi).
 - 2. Panel Size:
 - a. 4 feet by 8 feet (1220 mm by 2440 mm).
 - 3. Thickness / R Value: ASTM C 518 at 75 degrees F (23.9 degrees C).
 - a. 1.0 inches (25 mm) / R Value 6.5
 - b. 1.5 inches (38 mm) / R Value 10.0
 - c. 2.0 inches (51 mm) / R Value 13.3
 - d. 2.5 inches (64 mm) / R Value 17.0
 - e. 3.0 inches (76 mm) / R Value 20.3
 - f. 3.5 inches (89 mm) / R Value 24.0
 - g. Provide to the thickness indicated on the Drawings.

2.3 PANEL FASTENERS

- A. Panel fasteners shall be corrosion resistant type as approved Hunter Panel fasteners. Length of fasteners shall be as recommended by the panel manufacturer

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until exterior walls have been properly prepared.
- B. Verify that all exterior wall assembly construction has been completed to the point where the insulation may correctly be installed.
- C. Verify that mechanical and electrical services in walls have been installed and tested and, if appropriate, verify that adjacent materials and finishes are dry and ready to receive insulation.
- D. If wall assembly preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install in exterior spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tight in spaces and tight to exterior side of mechanical and electrical services within plane of insulation.
- E. Fasten insulation as recommended by the Hunter Panel Installation Guide. Provide base support for the insulation panels as required for the exterior cladding to be installed over the panels.
- F. Exposed insulation must be protected from open flame and kept dry at all times.
- G. Install vapor retarders over insulation panels as specified in Section 07260.
- H. Install air barriers over insulation panels as specified in Section 07270.
- I. Exterior wall insulation is not intended to be left exposed for extended periods of time in excess of 45-60 days without adequate protection. If extended exposure is anticipated all exposed foam surfaces including corners, window and door openings, should be taped with a compatible waterproof tape.
- J. Install exterior cladding as recommended by the cladding manufacturer and as specified in other sections of this specification.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Cover the top and edges of unfinished roof panel work to protect it from the weather and to prevent accumulation of water in the cores of the panels.
- C. Do not leave panels exposed to moisture. Wet panels shall be removed or allowed to completely dry prior to application of vapor barrier and/or roof covering.
- D. Repair or replace damaged products before Substantial Completion.

END OF SECTION