**OWENS CORNING INSULATING SYSTEMS CANADA LP**

**FOAMULAR CODEBORD EXTERIOR AIR BARRIER SYSTEM**

**07 27 23 BOARD PRODUCT AIR BARRIERS**

**INTRODUCTION - TECHNICAL SPECIFICATIONS**

This specification Section is used to describe an extruded polystyrene rigid (XPS) insulation board forming the primary exterior air barrier by sealing joints and as required connecting to interior air barriers, fabricated by ***Owens Corning Insulating Systems Canada LP (Owens Corning Canada)***in its Valleyfield, Quebec; Rockford, Illinois; Tallmadge, Ohio; and Gresham Oregon manufacturing facilities and distributed under the following brand names:

**FOAMULAR CodeBord Exterior Air Barrier System**

**Filing, Organization and Formatting**

This Section has been classified and numbered in accordance with the latest MasterFormat classification system for the construction industry. Its number and title is:

**07 27 23 – BOARD PRODUCT AIR BARRIERS**

**Professional Responsibility of the Specifications Writer**

Owens Corning Canada LP publishes this document for information only and cannot in any way assume the role or the professional responsibility of the architect who must sign and seal their Drawings and Specifications.

This document, although written by experienced professionals, must not be copied in whole. It must be adapted or modified to suit particular needs of each project. Our Regional Technical Support Representatives will be pleased and honoured to assist you with this.

SPEC NOTE: This master specification section includes OWENS CORNING SPEC NOTEs for information purposes and to assist the editor in making appropriate decisions. OWENS CORNING SPEC NOTEs always immediately precede the text to which it is referring. The section serves as a guideline only and should be edited with deletions and additions to meet specific project requirements.

SPEC NOTE: This specification section follows the recommendations of the Construction Specifications Canada, Manual of Practice including MasterFormat, SectionFormat, and PageFormat. Optional text is indicated by square brackets [ ]; delete the optional text including the brackets in the final copy of the specification. Delete all SPEC NOTEs in the final copy of the specification.

SPEC NOTE: This specification includes materials and installation procedures for FOAMULAR CodeBord Air Barrier System, a rigid insulation board forming the primary air barrier by sealing all joints, in accordance with the requirements of the NBC for the building envelope. FOAMULAR C-200 is applied direct to sheathing, studs and FoamSealR Gasket, complete with JointSealR Foam Joint Tape, to provide water resistive barrier and an air and vapour-tight membrane. Penetration and termination sealant is used to seal around any openings, penetrations and at perimeter edge of insulation terminations at window and door frames. This specification should be adapted to suit the requirements of individual projects.

*SPEC NOTE: This Section specifies environmentally responsible material choices. The inclusion of recycled content provides efficient use of natural resources and diverts materials from the waste system.*

*SPEC NOTE: The extruded polystyrene insulation board that compose Owens Corning’s FOAMULAR CodeBord Air Barrier System are produced from a minimum of 20% "post-industrial" certified recycled polystyrene materials content in FOAMULAR brand products.*

*SPEC NOTE: FOAMULAR C-200 extruded polystyrene rigid insulation and FOAMULAR CodeBord Air Barrier System are GREENGUARD GOLD Certified to meet stringent indoor air quality standard. For up-to-date Certification information, visit www.il.com/gg.*

*SPEC NOTE: Environmental Product Declaration for FOAMULAR Extruded Polystyrene (XPS) Insulation can be obtained from your local Regional Technical Support Representative.*

1. General
	1. GENERAL REQUIREMENTS
		1. The General Conditions, the Supplementary Conditions, the Instructions to Bidders and Division 1 General Requirements shall be read in conjunction with and govern this section.
		2. The Specification shall be read as a whole by all parties concerned. Each Section may contain more or less than the complete work of any trade. The Contractor is solely responsible to make clear to the Subcontractors the extent of their work.
	2. SUMMARY
		1. This section includes requirements for supply and installation of the following rigid insulation exterior air barrier system, as required for complete and proper installation:
			1. Polyethylene Gasket;
			2. Extruded Polystyrene Rigid Insulation direct to wood studs or intermediate sheathing;
			3. Fasteners;
			4. Foam Joint Tape;
			5. Flashing Tape;
			6. Termination Sealant.
			7. Exterior Wall Stud Cavity Glass Fibre Blanket-Type Insulation.
	3. RELATED REQUIREMENTS

SPEC NOTE: Include in this paragraph only those sections and documents that directly affect the work of this section. Do not include Division 00 Documents or Division 01 Sections since it is assumed that all technical sections are related to all project Division 00 Documents and Division 01 Sections to some degree. Refer to other documents with caution since referencing them may cause them to be considered a legal part of the Contract. Edit the following paragraphs to suit specific project conditions.

* + 1. Section 05 40 00 - Cold-Formed Metal Framing
		2. Section 06 10 00 - Rough Carpentry
		3. Section 07 21 00 - Thermal Insulation
		4. Section 07 62 00 - Sheet Metal Flashing and Trim
		5. Section 07 92 00 - Joint Sealants
		6. Section 08 11 00 - Metal Doors and Frames
		7. Section 08 41 00 - Entrances and Storefronts
		8. Section 08 44 00 - Curtain Wall and Glazed Assemblies
		9. Section 08 50 00 - Windows
		10. Section 09 21 16 - Gypsum Board Assemblies
	1. REFERENCES

*SPEC NOTE: Edit list to suit standards specified in project specification.*

* + 1. Specification American Society for Testing and Materials (ASTM):
			1. ASTM C177, Standard Test Method for Stead-State Heat Flux Measures and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
			2. ASTM C203, Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation
			3. ASTM C518, Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
			4. ASTM C665, Specification for Mineral-Fibre Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing (Corrosion Resistance Criteria)
			5. ASTM C1338, Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings
			6. ASTM D696, Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30 deg C and 30 deg C with a Vitreous Silica Dilatometer
			7. ASTM D1621, Standard Test Method for Compressive Properties of Rigid Cellular Plastics
			8. ASTM D2126, Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
			9. ASTM D2842, Standard Test Method for Water Absorption of Rigid Cellular Plastics
			10. ASTM E96, Standard Test Methods for Water Vapor Transmission of Materials
		2. Underwriters Laboratories of Canada (ULC):
			1. CAN/ULC-S701, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Coverings
			2. CAN/ULC-S102.2, Standard Method of Test for Surface Burning Characteristics of Flooding, Floor Covering and Miscellaneous Materials and Assemblies
		3. Canadian General Standards Board (CGSB):
			1. CGSB 71-GP-24M, Adhesive, Flexible, for Bonding Cellular Polystyrene Insulation
		4. Canadian Construction Materials Centre (CCMC):
			1. Evaluation Report CCMC 12935-R; FOAMULAR CodeBord Exterior air barrier system (CABS)
			2. Evaluation Report CCMC 14003-R; JointSealR Foam Joint Tape and FlashSealR Foam Flashing Tape
	1. ADMINISTRATIVE REQUIREMENTS
		1. Coordination: Coordinate the Work of this Section with the installation of exterior substrate; Sequence work so that installation of rigid insulation board and gaskets coincides with installation of substrate preparation without causing delay to the Work.
		2. Pre-Construction Conference: Arrange a site meeting attended by the Contractor, the Subcontractor, the framing contractor, the [engineer] [architect] [consultant], materials supplier(s), and other relevant personal before commencement of work for this Section; as indicated in Section [01 31 13 Project Meetings].
			1. Review methods and procedures related to installation, including manufacturer's written instructions;
			2. Examine substrate conditions for compliance with manufacturers installation requirements;
			3. Review temporary protection measures required during and after installation.
	2. SUBMITTALS
		1. Provide requested information in accordance with Section [01 33 00 Submittals Procedures].
		2. Action Submittals: Provide the following submittals before starting any work of this Section:
			1. Product Data: Submit manufacturer’s data sheets covering the care and recommended maintenance procedures for incorporation into maintenance manuals.
			2. Certifications:
				1. Submit documentation from an approved independent testing laboratory certifying that the air leakage rates of the exterior air barrier system, including rigid insulation, gaskets, joint tape, termination sealants and flashing have been tested.
				2. Submit documentation from an approved independent testing laboratory certifying that the air leakage rates of the exterior air barrier system, exceed the requirements of the National or Provincial Building Code.
			3. Submit manufacturers’ complete set of standard details for the exterior air barrier system showing a continuous plane of air tightness throughout the building envelope.
			4. Provide material checklist complete with application rates and fastening pattern.
	3. QUALITY ASSURANCE
		1. Qualifications: Provide proof of qualifications when requested by [engineer] [architect] [consultant]:
			1. Submit in writing, a document stating that the applicator of the exterior air barrier system specified in this section is recognized by the manufacturer as suitable for the execution of the Work.
			2. Perform Work in accordance with the manufacturer’s written instructions of the exterior air barrier system and this specification.
			3. Maintain one copy of manufacturer's written instructions on site.
			4. At the beginning of the Work and at all times during the execution of the Work, allow access to Work site by the air barrier system manufacturers' representative.
			5. Components used in this section shall be sourced from one manufacturer, including rigid insulation, gaskets, joint tape. Termination sealants and flashing may be sourced from another manufacture.

*SPEC NOTE: The GREENGUARD Environmental Institute (GEI) is a third-party, industry-independent, non-profit organization that certifies various characteristics of products submitted by manufacturers. The GEI oversees the GREENGUARD Certification Program to establish, among others, the low-emissivity of toxic chemical products and volatile particles from extruded polystyrene insulation installed inside a building. Product performances are measured following standardized procedures, test methods, allowable emissions levels, product sample collection and handling, testing type and frequency, and program application processes and acceptance.*

* + 1. Environmental certification by an independent agency:

*SPEC NOTE: The GREENGUARD Environmental Institute (GEI) is a third-party, industry-independent, non-profit organization that certifies various characteristics of products submitted by manufacturers. The GEI oversees the GREENGUARD Certification Program to establish, among others, the low-emissivity of toxic chemical products and volatile particles from extruded polystyrene insulation installed inside a building. Product performances are measured following standardized procedures, test methods, allowable emissions levels, product sample collection and handling, testing type and frequency, and program application processes and acceptance.*

* + - 1. Submit the "GREENGUARD Gold Standard for Chemical Emissions for Building Materials, Finishes and Furnishings" certificate issued by the GREENGUARD Environmental Institute (GEI) certifying that the prescribed extruded polystyrene board insulation meets low VOC emission requirements contained in the tested product; web site: [www.greenguard.org](http://www.greenguard.org).

*SPEC NOTE: SCS (Scientific Certification Systems) is an independent third-party certification agency. The Environmental Claims Certification program was initiated by the SCS; this program’s objective is to measure the recycled materials content in manufactured products. When a submitted product meets the various procedures imposed by the program, the SCS issues a “Certificate of Achievement” for a limited duration. This certificate permits designers to confidently choose an Owens Corning manufactured acoustic insulation to add to accumulative credits in order to obtain the desired LEED Canada certification.*

*SPEC NOTE: FOAMULAR CodeBord XPS met the necessary qualifications to be certified for the following claim: Average 20% Pre-Consumer Recycled Polystyrene Content.*

* + - 1. Submit the certificate issued by the Scientific Certification Systems (SCS) certifying that the prescribed extruded polystyrene board insulation meets the minimum claimed recycled materials content; web site: www.scscertifed.com.
				1. The certificates shall include the following details: certificate number, duration of the certification and all restrictions issued by the certification agency for the product, as applicable.
		1. *SPEC NOTE:* The Cradle to Cradle Certified Product Standard guides designers and manufacturers through a continual improvement process that looks at a product through five quality categories; material health, material reutilization, renewable energy and carbon management, water stewardship, and social fairness. A product receives an achievement level in each category; Basic, Bronze, Silver, Gold, or Platinum, with the lowest achievement level representing the product’s overall mark.

*SPEC NOTE: FOAMULAR Extruded Polystyrene Foam Insulation met the necessary qualifications to be certified for the following claim:*

Submit the certificate issued by the Cradle to Cradle Products Innovation Institute certifying that Owens Corning Foamular has received the Cradle to Cradle Products Innovation Institute’s Silver Level Material Health Certificate; website: <http://www.c2ccertified.org/get-certified/product-certification>

* + - * 1. The certificates shall include the following details: certificate number, duration of the certification and all restrictions issued by the certification agency for the product, as applicable.
		1. Contribution of the thermal insulation to the LEED v4 certification of the building Project:

*SPEC NOTE: Canada Green Building Council (CaGBC) has now implemented the new LEED v4 Green Building Rating System in Canada, as of November 1st, 2016. LEED is the acronym of Leadership in Energy and Environmental Design.*

*SPEC NOTE: As a design guideline and a third-party certification tool, LEED aims to improve occupant comfort, environmental performance and economical efficiency of buildings by the use of proven and innovative procedures, standards and technologies. It furnishes a definition generally recognized in the industry of what constitutes a “green building”. The LEED Green Building Rating System comprises a set of explicit performance criteria organized into eight (8) principal categories: Location and Transportation, Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, Innovation, and Regional Priority. The LEED Rating System states the fundamental objective and the necessary documentation to be submitted to meet each compulsory condition and to obtain each voluntary “credit”. Projects are awarded one or more points for their certification by meeting or exceeding each credit’s technical requirements. All compulsory conditions must be met before the project may be admissible to the certification. The points are then accumulated into a final total corresponding to one of the possible LEED certification levels: CERTIFIED, SILVER, GOLD or PLATINUM.*

* + - 1. Categories and performance criteria to obtain credits, as established by the Canadian Green Building Council Rating System LEEDv4 for BD+C; New Construction and Major Renovation:
				1. Energy and Atmosphere (EAp2): Prerequisite 2 Minimum Energy Performance.
				2. Energy and Atmosphere (EAc2): Credit 2 Optimized Energy Performance.
				3. Materials and Resources (MRc1): Credit 1 Building Life-Cycle Impact Reduction.
				4. Materials and Resources (MRc2): Credit 2 Building Product Disclosure and Optimization - Environmental Product Declarations.
				5. Materials and Resources (MRc3): Credit 3 Building Product Disclosure and Optimization - Sourcing of Raw Materials.
				6. Materials and Resources (MRc5): Credit 5 Construction and Demolition Waste Management.
				7. Indoor Environmental Quality (EQc2): Credit 2 Low-Emitting Materials.
				8. Indoor Environmental Quality (EQc5): Credit 5 Thermal Comfort.

SPEC NOTE: Mock-ups establish quality of the work for the materials indicated in this Section. Delete the following paragraph if the scope of work in this Section is minimal and a mock-up is not required.

* 1. MOCK-UPS
		1. Mock-ups: Construct mock-ups to verify selections made under submittals and to set quality standards for materials and execution in accordance with Section [01 45 00 Quality Control] for mock-ups and as follows:
			1. Where directed by [engineer] [architect] [consultant], construct typical exterior wall section, 2m x 2m, incorporating [Foamular CodeBord] rigid insulation, [FoamSealR] gaskets, [JointSealR] joint tape, [FlashSealR] flashing tape, termination sealants, and adjacent materials including flashing, door frame, window frame, and [ ]; showing exterior air barrier system application details.
		2. Notify [engineer] [architect] [consultant] a minimum seven (7) days prior to mock-up construction.
		3. Review and acceptance of mock-ups does not constitute approval of deviations from the Contract Documents contained in mock-ups unless [engineer] [architect] [consultant] specifically notes such deviations in writing.
		4. Once reviewed by [engineer] [architect] [consultant], acceptable mock-up can form a permanent part of the Work, and will form the basis for acceptance for the remainder of the project.
		5. Remove and replace materials found not acceptable at no additional cost to Owner.
	2. DELIVERY, STORAGE AND HANDLING
		1. Delivery: At the time of delivery, visually inspect all materials for damage. Note any damage to materials on the receiving ticket and immediately report to the shipping company and the material manufacturer.
			1. Remove damaged materials from the site immediately.
		2. Storage:
			1. Store materials as recommended by manufacturer and conforming to applicable safety regulatory agencies. Refer to all applicable data including but not limited to Safe Use Instruction Sheets, Product Data sheets, product labels, and specific instructions for personal protection.
			2. Store materials in original packaging.
			3. Store adhesives and sealants at temperatures of 5 deg C (41 deg F) and above to facilitate handling.
		3. Handling: Material shall be handled in accordance with sound material handling practices and in accordance with manufacturer's written instructions.
	3. COORDINATION
		1. Ensure continuity of the air seal throughout the scope of this section.
		2. Ambient Conditions:
			1. Install materials outlined in this Section after completion of work by other Sections is complete; to provide adequate dry, clean, level, and plumb surfaces for installation and adhesion.
			2. Apply when ambient air and substrate temperatures are above temperature range indicated by exterior air barrier system manufacturer, during time of install, and for a minimum of forty-eight (48) hours after installation, unless otherwise indicated.
			3. Ensure surfaces are sound, dry, clean and free of oil, grease, dirt, excess mortar or other contaminants.
1. Products
	1. MATERIALS MANUFACTURER
		1. Components and auxiliary materials must be obtained as a single-source from the assembly manufacturer to ensure total system compatibility and integrity.
		2. Materials and accessories specified herein are manufactured or labelled by:

Owens Corning Canada LP

3450 McNicoll Avenue,

Scarborough, Ontario, Canada, M1V 1Z5

(800) 438 7465

[www.owenscorning.ca](http://www.owenscorning.com)

* 1. MATERIALS
		1. Principal Exterior Air Barrier System Component:
			1. Extruded polystyrene rigid insulation board, having the following properties:
				1. Colour: Pink
				2. Thickness: [20mm (0.8”)][25mm (1")][38mm (1-1/2")][51mm (2")] [76mm (3")]
				3. Water Vapour Permeance (ASTM E96, Method A): 45 - 55 ng/Pa.m2.s., (0.79 – 0.96perms)
				4. Air Permeability at 75 Pa: 0.001 L/s.m2
				5. Water Absorption (ASTM D2842): 0.70
				6. Greenguard Gold certification
				7. SCS recycled content: 20%
				8. Water Affinity: Hydrophobic
				9. Compressive Strength (ASTM D1621): 140 kPa (20 psi)
				10. Thermal Resistance (ASTM C518 or C177):

RSI: 0.88 m2 C/W

R-5/Inch: ft2 hr F/BTU

* + - * 1. Basis of Design Product: FOAMULAR (CodeBord or EASI) Extruded Polystyrene Rigid Insulation by Owens Corning Canada LP.
		1. Auxiliary Materials:
			1. Polyethylene Gasket: Multi-purpose rigid gasket made from polyethylene foam; a flexible, durable and moisture resistant gasket to eliminate air leakage.
				1. Thickness: 3.175mm (1/8")
				2. Width: [89mm (3-1/2")][139mm (5-1/2")]
				3. Length: 15.2m (50')
				4. Basis of Design Product: FoamSealR Gasket by Owens Corning Canada LP.
			2. Foam Joint Tape: Self-adhering seam tape for vertical and horizontal applications, for sealing joints between panels of extruded polystyrene rigid insulation board; complete with durable backing coated with an aggressive acrylic adhesive and release liner backing.
				1. Thickness (mils): 9.9 (0.25mm)
				2. Width: 89mm (3-1/2")
				3. Length: 27.4m (90')
				4. Service Temperature Range: -40 - 74 deg C (-40-165 deg F)
				5. Application Temperature Range: -18 - 49 deg C (0-120 deg F)
				6. Air Permeance (tested at 75 Pa) (ASTM E2178): 0.00017 L/s m2
				7. Basis of Design Product: JointSealR Foam Joint Tape by Owens Corning Canada LP.
			3. Flashing Tape: Flexible, durable and tear-resistant, self-adhering flashing tape, recommended for use with extruded polystyrene rigid insulation board, to seal around sills, jambs and heads of window and door openings. Seals around wall protrusions, nails and staples to prevent moisture intrusion, complete with split release liner.
				1. Thickness (mils): 9.9 (0.25mm)
				2. Width: [102mm (4")][152mm (6")][229mm (9")]
				3. Length: 27.4m (90')
				4. UV Exposure: Up to 180 days.
				5. Nail Sealability (AAMA 711, Section 5.2): Pass
				6. Flame Spread (ASTM E84): 5
				7. Smoke Development (ASTM E84): 25
				8. Water Vapour Transmission: 11 ng/Pa.m².s (0.19 perms) to ASTM E96, Method B.
				9. Service Temperature Range: -40 - 74 deg C (-40-165 deg F)
				10. Application Temperature Range: -18 - 49 deg C (0-120 deg F)
				11. Air Permeance (tested at 75 Pa) (ASTM E2178): 0.00017 L/s m2
				12. Basis of Design Product: FlashSealR Foam Flashing Tape by Owens Corning Canada LP.
			4. Termination Sealants: As recommended by exterior air barrier system manufacturer, compatible with extruded polystyrene rigid insulation board.
			5. Fasteners: Cap nail complete with minimum 25mm (1”) diameter (plastic or metal) head, with nail penetration depth of at least 25mm (1”) into wood stud. **Maximum spacing of cap nails is 6-8” on-center around perimeter of foam board and 8-12” on-center on interior of foam board.**
			6. Exterior Wall Cavity Glass Fibre Insulation:
				1. To CAN/ULC-S702, type 1, pre-formed unfaced glass fibre batt thermal batt insulation.
				2. Surface burning characteristics to CAN/ULC-S102:

Flame Spread: 0

Smoke Developed: 0

* + - * 1. Surface burning characteristics to CAN/ULC-S102.2:

Flame Spread: 0

Smoke Developed: 0

* + - * 1. Smoulder Resistance: to ULC S-129.
				2. Non-combustible: to CAN/ULC-S114.
				3. Formaldehyde-free formulation.
				4. Fungi Resistance: Meets fungal resistance criteria in ASTM C1338.
				5. Corrosiveness: Meets corrosion resistance criteria in ASTM C665.
				6. Greenguard Gold certification
				7. SCS recycled content 73%
				8. Basis of Design Product: EcoTouch PINK Fiberglas Thermal Batt Insulation by Owens Corning Canada LP.
1. Execution
	1. EXAMINATION
		1. Verification of Conditions:
			1. Examine substrates to receive work and surrounding adjacent surfaces for conditions affecting installation.
			2. Sheathing panels, if required, must be securely fastened and installed flush to ensure a continuous substrate in accordance with manufacturer published literature.
			3. Fastener penetrations must be set flush with sheathing and fastened into solid backing.
			4. Notify [engineer] [architect] [consultant] in writing of any discrepancies. Commencement of the work or any parts thereof shall mean acceptance of the prepared substrate.
		2. Notify Contractor in writing of any conditions that are not acceptable.
		3. The installing contractor shall examine and determine that surfaces and conditions are ready to accept the Work of this section in accordance with published literature. Commencement of Work or any parts thereof shall mean installers acceptance of the substrate.
	2. PREPARATION
		1. All surfaces must be sound, dry, clean and free of oil, grease, dirt or other contaminants.
	3. INSTALLATION

SPEC NOTE: Select one of the following two (2) options to install FOAMULAR CodeBord; Installation method direct to studs, or installation method onto wood sheathing.

SPEC NOTE: Delete the following paragraphs if FOAMULAR CodeBord is applied direct to wood sheathing.

* + 1. Installation - Rigid Insulation Exterior Air Barrier System (Direct to Studs):
			1. Foundation Connection to Rigid Insulation Board:
				1. Install polyethylene gasket under sill plate and on vertical face of sill plate. Gasket held in place with staples. Place rigid insulation board on top and fasten to form a compression seal with cap nail spaced every 6-8” on-center around perimeter and 8-12” on-center for remainder of board.
			2. First Floor Header Connection to Above Grade Wall:
				1. Install joint tape to horizontal joint between header rigid insulation board and first floor wall rigid insulation board.
			3. Ship Lap Joints:
				1. Fasten rigid insulation board with cap nail maximum spacing 6-8” on-center around perimeter and 8-12” on-center for remainder of board.
				2. Install joint tape to ship lap joint. (optional)
				3. Tape all butt edge joints with joint tape
			4. Windows:
				1. Install polyethylene gasket on entire face of rough window opening; Fasten rigid insulation board with cap nail spaced every 6-8” on-center around window perimeter.

Air seal from rigid insulation board to window is achieved when sealant and backer rod or low expansion spray foam insulation is installed around entire interior perimeter of window.

Install FlashSealR tape or sealant and backer rod or low expansion spray foam insulation to exterior vertical and exterior top horizontal window frame. Bottom horizontal of window frame shall be left open to permit drainage. OR

* + - * 1. Apply flashing tape to entire window perimeter, on top of rigid insulation board, connecting to wood stud.

Air seal from rigid insulation board to window is achieved when sealant and backer rod or low expansion spray foam insulation is installed around entire interior perimeter of window.

Install FlashSealR tape or sealant and backer rod or low expansion spray foam insulation too exterior vertical and exterior top horizontal window frame. Bottom horizontal of window frame shall be left open to permit drainage.

* + - 1. Second Floor Header:
				1. Install joint tape to horizontal joint between header rigid insulation board and second floor wall rigid insulation board.
			2. Second Floor Top Plate:
				1. Install polyethylene gasket to second floor top plate with staple; Fasten rigid foam board to form a compression seal with cap nail every 6-8” on-center.
			3. Interior Ceiling:
				1. Tape or apply sealant from ceiling vapour and air barrier to second floor top plate. Tape or apply sealant to all ceiling vapour and air barrier joints, and any penetrations. OR
				2. Install rigid insulation board to entire ceiling surface with cap nail spaced 6-8” on-center around perimeter and 8-12” on-center for remainder of board, taping all joints and connection to second floor top plate taped or sealed. Seal all penetrations.

SPEC NOTE: Delete the following paragraphs if FOAMULAR CodeBord is applied direct to studs.

* + 1. Installation - Rigid Insulation Exterior Air Barrier System (Direct to Intermediate Sheathing):
			1. Foundation Connection to Rigid Insulation Board:
				1. Install polyethylene gasket under sill plate and on vertical face of sill plate, and between intermediate sheathing and rigid insulation board. Fasten to form a compression seal with cap nail spaced 6-8” on-center around perimeter and 8-12” on-center for remainder of board.
			2. First Floor Header Connection to Above Grade Wall:
				1. Install joint tape to horizontal joint between header rigid insulation board and first floor wall rigid insulation board.
			3. Ship Lap Joints:
				1. Fasten rigid insulation board with cap nail maximum spacing 6-8” on-center around perimeter and 8-12” on-center for remainder of board.
				2. Install joint tape to ship lap joint (optional).
				3. Tape all butt edge joints.
			4. Windows:
				1. Install polyethylene gasket on entire face of rough window opening and between rigid insulation board and intermediate sheathing; Fasten to form a compression seal with cap nail spaced every 6-8” on-center around perimeter and 8-12” on-center for remainder of board.

Air seal from rigid insulation board to window is achieved when sealant and backer rod or low expansion spray foam insulation is installed around entire interior perimeter of window.

Install FlashSealR tape or sealant and backer rod or low expansion spray foam insulation too exterior vertical and exterior top horizontal window frame. Bottom horizontal of window frame shall be left open to permit drainage.

* + - * 1. Apply flashing tape to entire window perimeter, on top of rigid insulation board, connecting to wood stud.

Air seal from rigid insulation board to window is achieved when sealant and backer rod or low expansion spray foam insulation is installed around entire interior perimeter of window.

Install FlashSealR tape or sealant and backer rod or low expansion spray foam insulation too exterior vertical and exterior top horizontal window frame. Bottom horizontal of window frame shall be left open to permit drainage.

* + - 1. Second Floor Header:
				1. Install joint tape to horizontal joint between header rigid insulation board and second floor wall rigid insulation board.
			2. Second Floor Top Plate:
				1. Install polyethylene gasket behind rigid insulation board and intermediate sheathing; Fasten to form a compression seal with cap nail spaced every 6-8” on-center.
			3. Ceiling:
				1. Tape or apply sealant from ceiling vapour and air barrier to second floor top plate. Tape or apply sealant to all ceiling vapour and air barrier joints, and any penetrations. OR
				2. Install rigid insulation board to entire ceiling surface with cap nail spaced 6-8” on-center around perimeter and 8-12” on-center for remainder of board, taping all joints and connection to second floor top plate taped or sealed. Seal all penetrations.
		1. Installation - Exterior Wall Stud Cavity Glass Fibre Blanket-Type Insulation:
			1. Install glass fibre blanket-type insulation full width and length, with tight joints, between wall framing and around penetrating electrical service boxes, piping, air ducts and frames.
			2. Exterior Wall Stud Cavity:
				1. Place [\_\_] thick glass fibre blanket-type insulation where indicated on the Drawings and to thickness required to fill stud cavity, ensuring at least one face is in full and continuous contact with sheathing or rigid insulation exterior air barrier system .
				2. Place glass fibre blanket-type insulation between studs ensuring friction fit, free of sags, folds or open joints that may let sound pass through. Do not compress fibre insulation to fit voids.
				3. Install glass fibre blanket-type insulation from the bottom up, tightly adjusted and trim accurately with a utility knife.

*SPEC NOTE: Ensure clearances meet local building safety regulations and code requirements. For electrical fixtures housed in a CSA-approved insulated enclosure, prescribed clearances are not required unless indicated otherwise by the fixture's manufacturer. Edit the following paragraph to suit.*

* + - 1. Keep insulation minimum 75 mm from heat-emitting devices, such as recessed light fixtures (which are not encased in thermally insulated boxes), and minimum 50 mm from sidewalls of chimneys as per CAN/ULC-S604 and CSA-B149.1 and CSA-B149.2 type B and L vents.
	1. FIELD QUALITY CONTROL
		1. Final Observation and Verification:
			1. Final inspection of rigid insulation exterior air barrier system shall be carried out by the Owner’s representative, and the contractor.
			2. Contact Manufacturer for warranty issuance requirements.
		2. Rigid insulation exterior air barrier system is not designed for permanent UV exposure. Refer to manufacturer published literature for product limitations.
	2. REPAIRS
		1. Damage to the air barrier system must be repaired to ensure optimal performance of the system and of the assembly.
			1. Small diameter holes or cracks may be sealed with joint tape or appropriate caulking (latex-based or silicone) or spray foam sealant.
		2. Large areas of damage to rigid insulation board will require a new piece cut and fit into space requiring repair. Seal new piece to existing piece with joint tape. If the fit between the replaced piece and existing piece results in any gap, fill with caulking or spray foam sealant prior to application of joint tape.
	3. CLEANING AND PROTECTION
		1. Progress Cleaning: Leave work area clean at the end of each work day, ensuring safe movement of passing pedestrians.
		2. Waste Management: Co-ordinate recycling of waste materials and packaging at appropriate facility, diverting waste from landfill. Certified installer shall be responsible for ensuring waste management efforts are practiced.

END OF SECTION 07 27 23.

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