

QUIK-THERM NOTE: This master specification section includes QUIK-THERM NOTES identified as “QUIK-THERM NOTE” for information purposes and to assist the specification writer in making appropriate decisions. The QUIK-THERM NOTE always immediately precedes 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.

QUIK-THERM 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 the QUIK-THERM NOTES in the final copy of the specification. Trade/brand names with appropriate product model numbers, styles and types are used in QUIK-THERM NOTES and in the specification text Article or Paragraph titled Acceptable Material. The Section is written for the Canadian industry with units of measurement shown in SI Metric and Imperial measurement following in parentheses.

Part 1 General

1.1 SECTION INCLUDES

- .1 Board insulation with embedded plywood batten and drainage cap, for cavity wall and roofing construction.
- .2 Related Accessories.

QUIK-THERM NOTE: In following Article, include in the paragraph only those sections and documents that directly affect the work of this section.

1.2 RELATED REQUIREMENTS

- .1 [Section 03 30 00 – Cast-In-Place Concrete.]
- .2 [Section 04 20 00 – Unit Masonry.]
- .3 [Section 07 26 00 – Vapour Retarders.]
- .4 [Section 07 27 00 – Air Barriers.]
- .5 [Section 07 46 46 – Fibre Cement Siding.]
- .6 [Section 07 61 00 – Sheet Metal Roofing.]
- .7 [Section 07 62 00 – Sheet Metal Flashing.]
- .8 [Section 07 92 00 – Joint Sealants.]
- .9 [Section 09 21 00 – Gypsum Board Assemblies.]

QUIK-THERM NOTE: In the following Article, include only those reference standards which appear in the finished version of the project specification.

1.3 REFERENCES

- .1 CAN/ULC S102.2 - Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, And Miscellaneous Materials And Assemblies.
- .2 CAN/ULC S701-05 - Thermal Insulation of Polystyrene, Panels and Piping Coatings.
- .3 CAN/ULC S705 - Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density – Material.
- .4 ASTM C203 - Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation.

- .5 ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
- .6 ASTM C1363 – Standard Test Method for Thermal Performance and Building Materials and Envelope Assemblies.
- .7 ASTM D1621 - Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
- .8 ASTM D1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics.
- .9 ASTM D2126 - Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging.
- .10 ASTM D2863 - Standard Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index).
- .11 ASTM D3816 - Standard Test Method for Water Penetration Rate of Pressure-Sensitive Tapes.
- .12 ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.

1.4 SUBMITTALS

- .1 Section 01 33 00: Submission procedures.
- .2 Product Data: Provide data on product characteristics, performance criteria, limitations [and [____]].
- .3 Installation Data: Indicate special environmental conditions required for installation, installation techniques [and [____]].
- .4 [Shop Drawings: Indicate material, thickness, fastening methods, terminations, roof assembly components and installation details. Shop drawings shall bear the seal of an engineer registered in the Province of [_____] for review prior to fabrication.]

1.5 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section [01 61 00 - Common Product Requirements] [with manufacturer's written instructions].
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials in a covered area, away from the elements, direct sunlight and extreme heat.
 - .2 Store and protect product from damage. Caution to be taken with corners and edges from damage during transport, storage and installation.
 - .3 Replace defective or damaged materials with new.
 - .4 Do not walk on product.
 - .5 Keep away from extreme heat.

- .4 Packaging and Waste Management:
 - .1 Separate and recycle waste packaging materials in accordance with [Section 01 74 19 – Construction Waste Management and Disposal.]
 - .2 Remove waste packaging materials from site and dispose of packaging materials at appropriate recycling facilities.

Part 2 Products

2.1 MANUFACTURER

- .1 Acceptable Manufacturer: Quik-Therm located at 1680 Sargent Ave., Unit 3 Winnipeg, MB Canada, R3H 0C2; Toll Free: 1-888-735-3012, Telephone: 204-736-3012; Email; info@quiktherm.com, Website; www.quiktherm.com.

2.2 EXPANDED POLYSTYRENE INSULATION – FACED WITH EMBEDDED PLYWOOD BATTEN

- .1 Expanded Polystyrene Insulation (Faced): Quik-Therm Air Dry Connect.

QUIK-THERM NOTE: Air Dry Connect is an alternative to conventional rigid insulation products and strapping methods with its built-in plywood nailing strips. Air Dry Connect is durable and does not easily chip crack or break. There is no thermal drift and R-value will remain stable over its entire service life.

Air Dry Connect is a hybrid version of Quik-Therm T&G Connect and Solar Dry. Shallow, free air, unobstructed venting encourages outward drying and drainage. Engineered perforations manage vapour diffusion.

Matrix insulated roofing system consists of two or more layers of Air Dry Connect running perpendicular to each other. When used in a sheet metal roofing assembly, Matrix offers significantly higher effective R-value performance than clip and rail and continuous steel z-girt systems, virtually 100% thermal bridge free. Matrix's plywood battens and fasteners are covered by or encapsulated within in its EPS foam core. As a result, fastener condensation and dripping are effectively eliminated.

- .2 Description:
 - .1 Type II closed cell expanded polystyrene (EPS) with perforated metalized polymer facers. Inboard facer includes [$5\text{ mm} \ll 3/16'' \gg$] deep by [$330\text{ mm} \ll 13'' \gg$] wide drainage channels for 75% panel surface area. Outboard facer includes [$19\text{ mm} \ll 3/4'' \gg$] thick x [$60\text{ mm} \ll 2-3/8'' \gg$] wide machined plywood battens embedded into the insulation panels, and hermetically sealed in place with permeable metalized polymer facer. Embedded plywood battens spaced [400] [600] mm \ll [16] [24] inch \gg on centre. Board edges [$13\text{mm} \ll 1/2'' \gg$] x [$13\text{mm} \ll 1/2'' \gg$] tongue and groove connection. Board Size; [$1.2\text{ m} \ll 4' \gg$] x [$2.4\text{ m} \ll 8\text{ feet} \gg$], Thickness; [50] [75] [100] [125] [150] mm \ll [2] [3] [4] [5] [6] inch \gg .
 - .2 Does not contain dyes, formaldehyde or blowing agents. It may contain up to 15% recycled (EPS).

.3 Physical Properties:

CHARACTERISTIC	UNITS	NOMINAL VALUE	TEST METHOD
Dimensional Stability – Maximum Linear Change	%	1.5	ASTM D2126
Length Tolerance	mm (in)	+/- 3.2 (+/- 0.125)	-
Width Tolerance	mm (in)	+/- 1.6 (+/- 0.63)	-
Water Vapour Transmission	ng	>87	ASTM E96
Density	Kg/m ³ (lbs/ft ³)	23 (1.4)	ASTM 1622-03
Compressive Strength (Type 2)	kPa (psi)	136 (19.7)	ASTM D1621-04a
Long Term Thermal Resistance	Thermal Resistance Remains Stable Over Life of Service		
Flexural Strength (Type 2)	KPa (psi)	257 (37.3)	ASTM C203-05
Limiting Oxygen Index	%	26	ASTM D2863-97
Flame Spread Index	-	250	CAN/ULC-S102.2
Smoke Density Index	-	410	CAN/ULC-S102.2
Nominal RSI (R-value)	-	4.18	ASTM C518

.4 Performance Criteria:

QUIK-THERM NOTE: Air Dry Connect battens are mechanically connected through insulation panels directly to wall framing studs / members, concrete, concrete masonry units or to another layer of Air Dry Connect. Cladding materials such as cement board, standing seam roofing are fastened directly to the furring strips. For alternative roof cladding materials, another layer of wood sheathing may be required. Sheathing is mechanically fastened to the furring strips.

- .1 Effective [\langle RSI \rangle $\langle\langle$ R-value $\rangle\rangle$] tested to ASTM C1363.
- .2 Nominal [\langle RSI \rangle $\langle\langle$ R-value $\rangle\rangle$] Standard Test ASTM C518.
- .3 In accordance with CAN/ULC S701.

2.3 ACCESSORIES

- .1 Tape: Sheathing tape for polyethylene (PE) vapour barriers tested to ASTM E96 and ASTM D3816 water penetration rate.
 - .1 Acceptable Manufacturers;
 - .1 Technical Tape Limited; Tuck Tape 202.
 - .2 Berry Plastic Corporation; Flex Fit.
 - .2 Adhesive: Premium one component, polyurethane, moisture curing adhesive. Compatible with insulation and substrate. [In accordance with Section 07 92 00 – Joint Sealants.]
 - .1 [Acceptable Manufacturer;
 - .1 Lepage; PL-3000.]
 - .3 Spray Foam: CAN/ULC-S705.1 Portable, self-contained two component open cell, low density 0.75 lb/ft³ polyurethane foam insulation.
 - .4 Fasteners: [#8 to #14 Teks Wood to Metal Screws] [Galvanized steel] [Stainless steel] [To suit application.]

Part 3 Execution

3.1 EXAMINATION

- .1 Section 01 70 00: Verify existing conditions before starting work.
- .2 Verify insulation boards are unbroken, free of damage, with face membrane intact.
- .3 Verify surfaces within roofing substrate being insulated have been inspected.
- .4 Verify substrate surface is flat, free of honeycomb, fins, irregularities, materials or substances that may impede installation.

3.2 PREPARATION

- .1 Clean surface of substances that are harmful to insulation includes removing projections capable of puncturing insulation or vapour retarders, or that interfere with insulation attachment.

3.3 INSTALLATION – MATRIX ROOFING INSULATION ASSEMBLY

- .1 Install in accordance with Manufacturer’s written instructions.

QUIK-THERM NOTE: Typically, the bottom layer runs peak to eave (high to low) and the top layer runs gable to gable (side to side). General instructions apply to application over a wood or fluted metal substrate with surrounding “C” channels. For other scenarios, please contact a building professional.

- .2 Where applicable, the thickest layer to be installed as the bottom layer.
- .3 Insulation board to be installed perpendicular to each other.
- .4 Panel edges to fit snuggle together. Cut perimeter panels to fit snugly against metal “C” channels.

QUIK-THERM NOTE: Tongue and groove connections allow for proper panel alignment and sealing at the joints.

- .5 Apply foam in board groove. Push tongue of next board securely into groove of fastened board. Use spray foams and/or adhesives compatible with polystyrene foam insulation. For cold weather applications, use cold weather spray foams and adhesives.
- .6 Tape all seams on the bottom layer of panel. Taping of top layer of panel not required.
- .7 Use a spatula to apply uniform pressure to ensure a seal between tape and insulation board.
- .8 Fastener spacing is <[400] [600] mm> <<[16] [24] inch>> on centre/ Location of fasteners from the upper layer to fasteners in the lower layer to coincide closely to each other (within [<150 mm><<6”>]).
- .9 Battens require fastener approximately [<25 mm><1”>] at all batten ends.
- .10 Top layer panel joints/connections to be staggered. Seams from top layer panels must not align directly over seams of bottom layer panels.
- .11 Top layer batten ends to be fastened to lower layer battens. Top layer fasteners must fasten through top layer battens to bottom layer battens. Do not remove misplaced fasteners. Install another fastener in close proximity to the misplaced fastener.

- .12 Apply a liberal continuous bead of sealant at the end of all top panel edges. Air channels are to be completely sealed. As well, seal any other top edge transitions.

3.4 CLEANING

- .1 Progress Cleaning: clean in accordance with Section [01 74 00 - Cleaning].
 - .1 Leave Work area clean at end of each day.
- .2 Waste Management:
 - .1 Coordinate recycling of waste materials with [01 74 19 – Construction Waste Management and Disposal].
 - .2 Collect recyclable waste and dispose of or recycle field generated construction waster created during construction or final cleaning related to work of this section.
 - .3 Remove recycling and waste containers from site and dispose of materials at appropriate facility.

3.5 PROTECTION

QUIK-THERM NOTE: This product is combustible. Protect from high heat sources. A protective barrier or thermal barrier may be required as specified in the appropriate building code. Consult a design professional.

- .1 Protect installed panels until completion of project.
- .2 Touch-up, repair or replace damaged products.

END OF SECTION