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 at cavity wall construction, perimeter foundation wall, exterior walls.

.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 11 00 – Dampproofing.

.4 Section 07 13 00 – Sheet Waterproofing.

.5 Section 07 26 00 – Vapour Retarders.

.6 Section 07 27 00 – Air Barriers.

.7 Section 07 62 00 – Sheet Metal Flashing.

.8 Section 07 92 00 – Joint Sealants.

.9 Section 09 21 00 – Plaster and 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 S101-14 - Standard Methods of Fire Endurance Tests of Building Construction and Materials.

.2 CAN/ULC S102.2 - Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, And Miscellaneous Materials And Assemblies.

.3 CAN/ULC S701-05 - Thermal Insulation of Polystyrene, Panels and Piping Coatings.

.4 CAN/ULC S705 - Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density – Material.

.5 ASTM C203 - Standard Test Methods for Breaking Load and Flexural Properties of Block-Type Thermal Insulation.

.6 ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.

.7 ASTM C1363 – Standard Test Method for Thermal Performance and Building Materials and Envelope Assemblies.

.8 ASTM D1621 - Standard Test Method for Compressive Properties of Rigid Cellular Plastics.

.9 ASTM D1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics.

.10 ASTM D2126 - Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging.

.11 ASTM D2863 - Standard Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index).

.12 ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.

.13 FSC – Foam Sheathing Coalition.

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 [____]].

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.

.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

.1 Expanded Polystyrene Insulation (Faced): Quik-Therm Solar Dry Insulation (SDI).

QUIK-THERM NOTE: Solar Dry (SDI) is a vented and perforated outboard continuous rigid insulation technology. It has been designed, tested and engineered for framed hybrid (batt and continuous rigid insulation combined) and empty cavity walls. (SDI) is permeable, it manages vapour diffusion and channels bulk water to the outside. As a result (SDI) reduces the risk of mold and building material degradation.

.2 Description:

.1 Type II closed cell expanded polystyrene (EPS) with perforated metallic polymer facers. Inboard facer includes [<5 mm><<3/16”>>] deep by [<330 mm><<13”>>] wide drainage channels for 75% panel surface area. Outboard facer includes shallow depressions [<90 mm><<3.5”>>] wide located <[400] [600] mm> <<[16] [24] inch>> on centre to identify areas where furring strips to be installed. Board edges comes with tongue and groove connections. Board Size; [<1.2 m><<4’>>] x [<2.4 m><<8’>], Thickness; <[38] [50] [75] [100] [125] [150] mm> <<[1.5] [2] [3] [4] [5] [6] inch>>.

.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	perms	<1.0	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)	136 (19.7)	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)	$m^2 \cdot K/W$ ($ft^2 \cdot °F \cdot h/BTU$)	0.74 (4.2)	ASTM C518

.4 Performance Criteria:

QUIK-THERM NOTE: R-value will very dependant on the type of framing i.e. wood or steel. Higher Eff. R-values will be achieved with wood vs. steel.

.1 Effective [<RSI> <<R-value>>] tested to ASTM C1363.

.2 Passes as a secondary weather resistive barrier tested to ASTM E96.

QUIK-THERM NOTE: Maximum [<50 mm><<2”>>] thick, special fasteners and installation details apply.

.3 Up to Six story wood frame tested to CAN/ULC S101-14.

.4 In accordance with CAN/ULC S701.

.5 Nominal [<RSI> <<R-value>>] Standard Test ASTM C518.

2.3 ACCESSORIES

.1 Furring Strips: [Plywood strips, Thickness; [<19 mm> << ¾”>>] [as indicated], Width; [<50 mm><<2 inch>>] minimum, [Metal Furring, Finish; G90 galvanized, Thickness; as indicated.]

.2 Tape: [Polyethylene] [Polyester] self-adhering type, [<50 mm><<2 inch>>] wide.

.3 Adhesive: Gun grade, mastic type, compatible with insulation and substrate. [In accordance with Section 07 92 00 – Joint Sealants.]

.4 Flashing: [<0.61 mm><<24 gauge>>] thick pre-coated galvanized steel flashing to profiles indicated. [In accordance with Section 07 62 00 – Sheet Metal Flashing and Trim.]

.5 Spray Foam: CAN/ULC-S705.1 Portable, self-contained two component open cell, low density 0.75 lb/ft3 polyurethane foam insulation.

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 walls being insulated have been inspected.

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

QUIK-THERM NOTE: General instructions apply to wood frame buildings up to three (3) stories. For wood frame buildings from four (4) to six (6) stories, additional instructions apply.

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

QUIK-THERM NOTE: (SDI) is engineered for vertical furring strip applications. For horizontal applications, consult a design professional.

.2 Insulation board to be installed vertically.

.3 Align furring channels over framing members.

QUIK-THERM NOTE: Shallow depressions “furring channels” on the outboard surface identify furring locations and allow a code compliant rain screen to be achieved using the proper furring thickness.

.4 Mechanically fasten furring through insulation board at furring channels to wall framing members. Furring strips centered into [<5 mm><<3/16”>>] furring channels <[400] [600] mm> <<[16] [24] inch>> on centre.

QUIK-THERM NOTE: For screw length and penetration depth relative to insulation board and fastener type required for framing substrate, refer to FSC. In some instances (Costal climates) treated fasteners and or furring may be required. Consult a design professional.

.5 Secure insulation board and furring strips to framing members using sufficient length fasteners. Screws ensure penetrate the wall studding as per FSC guidelines.

.6 Where furring channels do not align with wall framing members, apply furring over insulation board and secure using sufficient fasteners to compress drainage plane channel.

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

.7 Apply foam in board groove. Push tongue of next board securely into groove of fastened board.

QUIK-THERM NOTE: For best R-value performance, convection looping between (SDI) and substrate must be controlled. Apply horizontal bead of spray foam or compatible sealant (minimum [13 mm] [1/2”] to the top of (SDI) panels located at the top of walls and the bottom of window framing. Consult Quik-Therm representative if further information is required.

.8 Vertical and horizontal joints to be foamed and or taped. Use spray foams and/or adhesives compatible with polystyrene foam insulation. For cold weather applications, use cold weather spray foams and adhesives.

.9 Use a spatula to apply uniform pressure to ensure a seal between tape and insulation board.

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