

TIPS:

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Molded (expanded) polystyrene foam-plastic board insulation.
2. Graphite-polystyrene foam-plastic board insulation.

B. Related Requirements:

1. Section 04-20-00 "Unit Masonry" for insulation installed in masonry cells.
2. Section 06-16-00 "Sheathing" for foam-plastic board sheathing installed directly over wood or steel framing.
3. [Section 07-13-26 "Self-Adhering Sheet Waterproofing"] [Section 07-13-53 "Elastomeric Sheet Waterproofing"] [Section 07-13-54 "Thermoplastic Sheet Waterproofing"] [Section 07-14-13 "Hot Fluid-Applied Rubberized Asphalt Waterproofing"] [Section 07-14-16 "Cold Fluid-Applied Waterproofing"].
4. [Section 09-23-00 "Gypsum Plastering"] [Section 09-24-00 "Portland Cement Plastering"] [Section 09-26-13 "Gypsum Veneer Plastering"] [Section 09-29-00 "Gypsum Board"].

1.3 SUBMITTALS

A. Product Data: For the following:

1. Molded (expanded) polystyrene foam-plastic board insulation.
2. Graphite-polystyrene foam-plastic board insulation.

B. Product Test Reports: For each product, for tests performed by a qualified testing agency.

C. Research Reports: For foam-plastic insulation, from ICC-ES.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
- B. Protect foam-plastic board insulation as follows:
 - 1. Do not expose to sunlight except to necessary extent for period of installation and concealment.
 - 2. Protect against ignition at all times. Do not deliver foam-plastic board materials to Project site until just before installation time.
 - 3. Quickly complete installation and concealment of foam-plastic board insulation in each area of construction.

PART 2 - PRODUCTS

2.1 MOLDED (EXPANDED) POLYSTYRENE FOAM-PLASTIC BOARD INSULATION

- A. Molded (Expanded) Polystyrene Board Insulation, Type I <Insert drawing designation>: [ASTM C578, Type I] [CAN/ULC S701, Type 1] 10-psi (69-kPa) minimum compressive strength.
 - 1. Alleguard; EnviroSheet 12 (EN12)
 - 2. Fire-Resistance Rating: Tested in accordance with [ASTM E84] [CAN/ULC S102].
 - a. Flame-Spread Index: [≤25] [≤250].
 - b. Smoke-Developed Index: [≤450] [≥500].
 - 3. Vapor Permeance: 5 perm (286 ng/Pa x s x m²) per inch (25.4mm).
 - 4. Thermal Resistance: R3.9 (RSI 0.69) per inch (25.4mm).
- B. Molded (Expanded) Polystyrene Board Insulation, Type I, Faced <Insert drawing designation>: [ASTM C578, Type I] [CAN/ULC S701, Type 1] 10-psi (69-kPa) minimum compressive strength.
 - 1. Alleguard; SilverBoard 12 (SB12)
 - 2. Fire-Resistance Rating: Tested in accordance with [ASTM E84] [CAN/ULC S102].
 - a. Flame-Spread Index: [≤25] [≤250].
 - b. Smoke-Developed Index: [≤450] [≥500].
 - 3. Vapor Permeance: 0.15 perm (8.6 ng/Pa x s x m²) per inch (25.4mm).
 - 4. Thermal Resistance: R4.1 (RSI 0.72) per inch (25.4mm).
- C. Molded (Expanded) Polystyrene Board Insulation, Type II, <Insert drawing designation>: [ASTM C578, Type II] [CAN/ULC S701, Type 2] 15-psi (69-kPa) minimum compressive strength.

1. Alleguard; Envirosheet 16 (EN16)
 2. Fire-Resistance Rating: Tested in accordance with [ASTM E84] [CAN/ULC S102].
 - a. Flame-Spread Index: [≤ 25] [≤ 250].
 - b. Smoke-Developed Index: [≤ 450] [≥ 500].
 3. Vapor Permeance: 3.2 perm (183 ng/Pa x s x m²) per inch (25.4mm).
 4. Thermal Resistance: R4.0 (RSI 0.70) per inch (25.4mm).
- D. Molded (Expanded) Polystyrene Board Insulation, Type II <Insert drawing designation>: [ASTM C578, Type II] [CAN/ULC S701, Type 2] 15-psi (69-kPa) minimum compressive strength.
1. Alleguard; Envirosheet 20 (EN20)
 2. Fire-Resistance Rating: Tested in accordance with [ASTM E84] [CAN/ULC S102].
 - a. Flame-Spread Index: [≤ 25] [≤ 250].
 - b. Smoke-Developed Index: [≤ 450] [≥ 500].
 3. Vapor Permeance: 3.2 perm (183 ng/Pa x s x m²) per inch (25.4mm).
 4. Thermal Resistance: R4.2 (RSI 0.74) per inch (25.4mm).
- E. Molded (Expanded) Polystyrene Board Insulation, Type II, Faced <Insert drawing designation>: [ASTM C578, Type II] [CAN/ULC S701, Type 2] 15-psi (104-kPa) minimum compressive strength.
1. Alleguard; SilveRboard 20 (SB20)
 2. Fire-Resistance Rating: Tested in accordance with [ASTM E84] [CAN/ULC S102].
 - a. Flame-Spread Index: [≤ 25] [≤ 250].
 - b. Smoke-Developed Index: [≤ 450] [≥ 500].
 3. Vapor Permeance: 0.21 perm (12 ng/Pa x s x m²) per inch (25.4mm).
 4. Thermal Resistance: R4.3 (RSI 0.76) per inch (25.4mm).
- F. Molded (Expanded) Polystyrene Board Insulation, Type IX <Insert drawing designation>: [ASTM C578, Type IX] [CAN/ULC S701, Type 3] 25-psi (173-kPa) minimum compressive strength.
1. Alleguard; Envirosheet 30 (EN30)
 1. Fire-Resistance Rating: Tested in accordance with [ASTM E84] [CAN/ULC S102].
 - a. Flame-Spread Index: [≤ 25] [≤ 250].
 - b. Smoke-Developed Index: [≤ 450] [≥ 500].
 2. Vapor Permeance: 2.27 perm (130 ng/Pa x s x m²) per inch (25.4mm).
 3. Thermal Resistance: R4.4 (RSI 0.77) per inch (25.4mm).

- G. Molded (Expanded) Polystyrene Board Insulation, Type IX, Faced <Insert drawing designation>: [ASTM C578, Type IX] [CAN/ULC S701, Type 3] 25-psi (173-kPa) minimum compressive strength.
1. Alleguard; SilveRboard 25 (SB25)
 1. Fire-Resistance Rating: Tested in accordance with [ASTM E84] [CAN/ULC S102].
 - a. Flame-Spread Index: [≤25] [≤250].
 - b. Smoke-Developed Index: [≤450] [≥500].
 2. Vapor Permeance: 0.21 perm (12 ng/Pa x s x m²) per inch (25.4mm).
 3. Thermal Resistance: R4.43 (RSI 0.77) per inch (25.4mm).
- H. Molded (Expanded) Polystyrene Board Insulation, Type IX, Faced <Insert drawing designation>: [ASTM C578, Type IX] [CAN/ULC S701, Type 3] 25-psi (173-kPa) minimum compressive strength.
1. Alleguard; SilveRboard 35 (SB35)
 2. Fire-Resistance Rating: Tested in accordance with [ASTM E84] [CAN/ULC S102].
 - a. Flame-Spread Index: [≤25] [≤250].
 - b. Smoke-Developed Index: [≤450] [≥500].
 3. Vapor Permeance: 0.08 perm (4.8 ng/Pa x s x m²) per inch (25.4mm).
 4. Thermal Resistance: R5.0 (RSI 0.88) per inch (25.4mm).
- I. Molded (Expanded) Polystyrene Board Insulation, Type IX, Faced, Perforated <Insert drawing designation>: [ASTM C578, Type IX] [CAN/ULC S701, Type 3] 25-psi (173-kPa) minimum compressive strength.
1. Alleguard; SilveRboard 35 XS (SB35XS)
 2. Fire-Resistance Rating: Tested in accordance with [ASTM E84] [CAN/ULC S102].
 - a. Flame-Spread Index: [≤25] [≤250].
 - b. Smoke-Developed Index: [≤450] [≥500].
 3. Vapor Permeance: 3.79 perm (217 ng/Pa x s x m²) per inch (25.4mm).
 4. Thermal Resistance: R5.0 (RSI 0.88) per inch (25.4mm).
- J. Molded (Expanded) Polystyrene Board Insulation, Type XIV <Insert drawing designation>: [ASTM C578, Type XIV] [CAN/ULC S701, Type 3] 40-psi (276-kPa) minimum compressive strength.
1. Alleguard; EnviroSheet 40 (EN40)
 2. Vapor Permeance: 2.27 perm (130 ng/Pa x s x m²) per inch (25.4mm).
 3. Thermal Resistance: R4.4 (RSI 0.77) per inch (25.4mm).

- K. Molded (Expanded) Polystyrene Board Insulation, Type XIV, Faced <Insert drawing designation>: [ASTM C578, Type XIV] [CAN/ULC S701, Type 3] 40-psi (276-kPa) minimum compressive strength.
 - 1. Alleguard; SilveRboard 40 (SB40)
 - 2. Vapor Permeance: 0.03 perm (1.6 ng/Pa x s x m²) per inch (25.4mm).
 - 3. Thermal Resistance: R5.0 (RSI 0.88) per inch (25.4mm).

- L. Molded (Expanded) Polystyrene Board Insulation, Type XV <Insert drawing designation>: [ASTM C578, Type XV] [CAN/ULC S701, Type 3] 60-psi (414-kPa) minimum compressive strength.
 - 1. Alleguard; EnviroSheet 60 (EN60)
 - 2. Vapor Permeance: 2.27 perm (130 ng/Pa x s x m²) per inch (25.4mm).
 - 3. Thermal Resistance: R4.4 (RSI 0.78) per inch (25.4mm).

2.2 GRAPHITE-POLYSTYRENE FOAM-PLASTIC BOARD

- A. Graphite-Polystyrene Foam-Plastic Board, Type I, Faced <Insert drawing designation>: [ASTM C578, Type I] [CAN/ULC S701, Type 1] 10-psi (69-kPa) minimum compressive strength.
 - 1. Alleguard; SilveRboard Graphite (SBG)
 - 2. Fire-Resistance Rating: Tested in accordance with [ASTM E84] [CAN/ULC S102].
 - a. Flame-Spread Index: [≤25] [≤250].
 - b. Smoke-Developed Index: [≤450] [≥500].
 - 3. Vapor Permeance: 0.15 perm (8.6 ng/Pa x s x m²) per inch (25.4mm).
 - 4. Thermal Resistance: R4.7 (RSI 0.83) per inch (25.4mm).

- B. Graphite-Polystyrene Foam-Plastic Board, Type I, Faced <Insert drawing designation>: [ASTM C578, Type I] [CAN/ULC S701, Type 1] 10-psi (69-kPa) minimum compressive strength.
 - 1. Alleguard; SilveRboard Graphite XS (SBGXS)
 - 2. Fire-Resistance Rating: Tested in accordance with [ASTM E84] [CAN/ULC S102].
 - a. Flame-Spread Index: [≤25] [≤250].
 - b. Smoke-Developed Index: [≤450] [≥500].
 - 3. Vapor Permeance: 2.74 perm (157 ng/Pa x s x m²) per inch (25.4mm).
 - 4. Thermal Resistance: R4.7 (RSI 0.83) per inch (25.4mm).

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean substrates of substances that are harmful to insulation, including removing projections capable of puncturing insulation or vapor retarders, or that interfere with insulation attachment.

3.2 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.
- C. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise indicated or required to make up total thickness or to achieve R-value.

3.3 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes.
- B. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 07-21-00