



SECTION 07210

BUILDING INSULATION

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Provide stone wool fiber insulation at locations indicated on the Drawings for the following applications:
  - 1. Commercial Building Products:
    - a. Exterior cavity walls.
    - b. Building foundations.
    - c. Curtain wall systems.
    - d. General all purpose board.
    - e. Exterior walls, steel stud.
    - f. Sandwich panel systems.
    - g. Exterior walls, metal buildings.
  - 2. Acoustic and Fire Insulation Products:
    - a. Interior acoustic and fire-rated partitions.
    - b. Interior firestopping.
    - c. Fire wall (metal buildings).
    - d. Sandwich panel systems.
  - 3. Roofing Products:
    - a. Low-slope roofing insulation.
    - b. Low-slope cover board for roofing.
  - 4. Industrial Products.
    - a. High-temperature high-compression applications.
    - b. Pipe and tank insulation.
    - c. Steam and process piping insulation.
    - d. High-temperature steam and process piping insulation.
    - e. Blanket insulation.
  - 5. Marine Products:
    - a. Thermal and fire protection insulation.
    - b. Pipe insulation.
  - 6. Residential Building Products:
    - a. Interior partitions (acoustic).
    - b. Exterior walls.
    - c. Floors and ceilings.

- d. Building foundations.

## 1.2 RELATED SECTIONS

- A. Section 02620 - Subdrainage; insulated drainage panels.
- B. Section 04800 - Masonry Assemblies; cavity wall and masonry cell insulation.
- C. Section 04850 - Stone Assemblies; cavity wall insulation.
- D. Section 06100 - Rough Carpentry.
- E. Section 07600 - Flashing and Sheet Metal.
- F. Section 07724 - Roof Hatches.
- G. Section 07100 - Dampproofing and Waterproofing; insulation installed with waterproofing systems.
- H. Section 07412 - Metal Wall Panels; insulation installed with wall panels.
- I. Section 07480 - Exterior Wall Assemblies ; exterior insulation and finish systems (EIFS).
- J. Section 07500 - Membrane Roofing; insulation in low-slope roofing applications.
- K. Section 07800 - Fire and Smoke Protection; insulation installed in conjunction with firestopping or smoke containment systems.
- L. Section 08600 - Skylights.
- M. Section 08900 - Glazed Curtain Wall.
- N. Section 09200 - Plaster and Gypsum Board.
- O. Section 11500 - Industrial and Process Equipment.
- P. Section 13900 - Fire Protection Basic Materials and Methods.
- Q. Section 15430 - Plumbing Specialties.

## 1.3 REFERENCES

- A. ASTM International (ASTM):
  1. ASTM C165 - Standard Test Method for Measuring Compressive Properties of Thermal Insulations.
  2. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded Hot Plate Apparatus.
  3. ASTM C209 - Standard Test Methods for Cellulosic Fiber Insulating Board.
  4. ASTM C356 - Standard Test Method for Linear Shrinkage of Preformed High-Temperature Thermal Insulation Subjected to Soaking Heat.
  5. ASTM C411 - Standard Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation.
  6. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
  7. ASTM C447 - Standard Practice for Estimating the Maximum Use Temperature of Thermal Insulation.

8. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
  9. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications.
  10. ASTM C547 - Standard Specification for Mineral Fiber Pipe Insulation.
  11. ASTM C585 - Standard Practice for Inner and Outer Diameter of Rigid Thermal Insulation for Nominal Sizes of Pipe and Tubing.
  12. ASTM C612 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation.
  13. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
  14. ASTM C726 - Standard Specification for Mineral Fiber Roof Insulation Board.
  15. ASTM C795 - Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel.
  16. ASTM C1104 - Standard Test Method for Determining the Water Vapor Sorption of Unfaced Mineral Fiber Insulation.
  17. ASTM C1338 - Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings.
  18. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
  19. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
  20. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
  21. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degreesC.
- B. Underwriters' Laboratories of Canada:
1. CAN/ULC-S702 - Standard for Thermal Insulation, Mineral Fibre for Buildings.
  2. CAN4 S114 - Standard Method of Test for Determination of Non-Combustibility in Building Materials.
  3. CAN/ULC S102 - Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
  4. CAN/ULC S107 - Standard Methods of Fire Tests of Roof Coverings.
  5. CAN/ULC S115 - Standard Test Method of Firestop Systems.
  6. CAN/ULC S126 - Test for Fire Spread Under Roof Deck Assemblies.
  7. CAN/ULC S129 - Standard Method of Test For Smoulder Resistance of Insulation
- C. Underwriters' Laboratories:
1. UL 181 - Maximum Air Velocity.
  2. UL Standard 263 Fire Resistance Classification.
  3. UL Standard 790 Classification.
  4. UL Standard 2218 Impact Resistance of Prepared Roof Covering Materials.
- D. Factory Mutual:
1. FM Approvals 4450/4470 Class 1 - NCC (Noncombustible Core) rated roof insulation, Class 1-90 for BUR, Modified Bitumen and Single-Ply Systems.
  2. FM Approvals 4473 ñ Impact Resistance by Impacting with Freezer Ice Balls.
- E. Marine Certificates of Approval:
1. U.S. Coast Guard - 164.109/26/0, 164.107/16/0 & 164.107/17/0.
  2. Transport Canada - T.C. 261.F1.322, T.C. 261.A1 282 & T.C. 261.A1.283.
  3. Lloyd's Register - SAS F04368/M1, SAS F040366 & SAS F040365.
  4. European Certification - 1408/08.
  5. Steel Bulkhead & Steel Deck Divisions - Non-Combustible & Class A-60.

#### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Manufacturer's specifications and installation instructions for insulation.
  - 2. Preparation instructions and recommendations.
  - 3. Storage and handling requirements and recommendations.
- C. Verification Samples: For each product specified, provide two samples minimum 6 by 6 inches (150 by 150 mm) representing the actual product.
- D. USGBC LEED Submittals: Submit manufacturer's documentation of the following items.
  - 1. EA Credit 1: Thermal value of insulation, contributing to overall energy performance of the building.
  - 2. MR Credit 4.1 and 4.2: Recycled content of insulation, indicating percentages by weight of preconsumer and postconsumer recycled content.
  - 3. MR Credit 5.1 and 5.2: Location where insulation is extracted, processed and manufactured.
- E. CaGBC LEED Submittals: Submit manufacturer's documentation of the following items.
  - 1. EA Credit 1: Thermal value of insulation, contributing to overall energy performance of the building.
  - 2. MR Credit 4.1 and 4.2: Recycled content of insulation, indicating percentages by weight of preconsumer and postconsumer recycled content.
  - 3. MR Credit 5.1 and 5.2: Location where insulation is extracted, processed and manufactured.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturer: Minimum of 10 years experience in manufacturing of stone wool insulation.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials and products in original packaging, containers, or bundles stating the manufacturer's identification, brand name, thermal value, size and product code. Sequence product deliveries to avoid time delays and to minimize on-site storage.
- B. Store products in manufacturer's original packaging, containers, or bundles until ready for installation. Locate materials in dry locations free from moisture or sufficiently protected from moisture in such a manner to permit access for ease of handling and inspection. Provide supplementary protection to stored materials onsite, in addition to original manufacturer's packaging.
- C. Handle materials in such a way to avoid damage to the products. When installing or otherwise handling Roxul insulation products, ensure proper personal protection equipment is used.
- D. When stored outside, stack insulation minimum 4 inches above ground or roof level and cover with tarpaulin or other suitable covering. Insulation shall be packaged with a plastic shroud to protect the material during shipping only.

#### 1.7 PROJECT CONDITIONS

- A. Anticipate environmental conditions (temperature, humidity) within limits

recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

- B. Product should not be exposed to moisture during shipment, storage and/or installation. Any insulation that has become wet or damaged during shipment, storage or installation shall be removed and replaced with new insulation.

## 1.8 WARRANTY

- A. Provide manufacturer's standard warranty against manufacturing defects in materials.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: ROXUL Inc., which is located at: 420 Bronte St. S. Suite 105 ; Milton, ON, Canada L9T 0H9; Toll Free Tel: 800-265-6878; Tel: 905-878-8474; Email: [request info \(contactus@roxul.com\)](mailto:request_info(contactus@roxul.com)); Web: [www.roxul.com](http://www.roxul.com)
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

### 2.2 COMMERCIAL BUILDING PRODUCTS

- A. Exterior Cavity Walls: Provide stone wool fiber insulation with the following characteristics.
  1. Product: CavityRock MD by ROXUL Inc.
  2. Product: CavityRock DD by ROXUL Inc.
  3. Compliance: ASTM C612 Type IVB and CAN/ULC-S702 Type 1 mineral fiber insulation.
  4. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.
  5. Fire Performance, Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread 0 and smoke developed 0.
  6. Water Vapor Transmission: ASTM E96, CavityRock MD 33.1 perms (1895 mg Pa.s.m<sup>2</sup>). CavityRock DD 27.2 perms (1555 mg Pa.s.m<sup>2</sup>).
  7. Moisture Resistance: ASTM C1104, moisture sorption of CavityRock MD 0.03 percent and CavityRock DD 0.07percent
  8. Thermal Resistance: ASTM C518 (C177), CavityRock MD R-value of 4.2 per inch at 75 degrees F (RSI value 0.74 m<sup>2</sup>K/W at 24 degrees C). CavityRock DD R-value of 4.3 per inch at 75 degrees F (RSI value 0.76 m<sup>2</sup>K/W at 24 degrees C).
  9. Corrosive Resistance: ASTM C665, Corrosiveness to Steel - Pass, ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
  10. Density: ASTM C612, CavityRock MD 4.4 lbs/ft<sup>3</sup> (70 kg/m<sup>3</sup>) or CavityRock DD 6.2 lbs/ft<sup>3</sup> (100 kg/m<sup>3</sup>) outer layer and 4.1 lbs/ft<sup>3</sup> (65 kg/m<sup>3</sup>) inner layer
  11. Dimensions: 16 inches x 48 inches (406 mm x 1219 mm), 24 inches x 48 inches (610 mm x 1219 mm).
- B. Building Foundations: Provide stone wool fiber insulation with the following characteristics.
  1. Product: Drainboard by ROXUL Inc.
  2. Compliance: CAN/ULC-S702 Type 1 mineral fiber insulation.
  3. CCMC Evaluation Listing: Master Format 02622: Foundation Drainage

- System and Master Format 07212: Mineral Fibre Insulation Board.
4. Fire Performance: ASTM E84 (UL 723) and CAN/ULC S102, flame spread 0 and smoke developed 5.
  5. Moisture Resistance: ASTM C1104, moisture sorption of 0.04 percent.
  6. Compressive Resistance: ASTM C165, 10 percent deformation, 355 pounds per square foot (17 kPa) and 25 percent deformation 731 pounds per square foot (35 kPa).
  7. Corrosive Resistance: ASTM C665, Corrosiveness to Steel - Pass, ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
  8. Thermal Resistance: ASTM C518 (C177), R-value of 4.3 per inch at 75 degrees F (RSI value 0.76 m2K/W at 24 degrees C).
  9. Density: 8 lbs/ft3 (128 kg/m3).
  10. Dimensions: 36 inches x 48 inches (914 mm x 1219 mm), 48 inches x 72 inches (1219 mm x 1829 mm).
- C. Curtain Wall Systems: Provide stone wool fiber insulation with the following characteristics.
1. Product: CurtainRock by ROXUL Inc.
  2. Product: CurtainRock 40 by ROXUL Inc.
  3. Product: CurtainRock 80 by ROXUL Inc.
  4. Compliance: ASTM C612 Type IVB mineral fiber insulation, UL Design Numbers (CurtainRock 40 & 80) and ASTM E2307/E119: Perimeter Fire Barrier Systems (CurtainRock 40 and 80).
  5. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.
  6. Fire Performance, Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread 0 and smoke developed 0.
  7. Water Vapor Transmission: ASTM E96, 31.6 perms (1807 mg/Pa.s.m2).
  8. Moisture Resistance: ASTM C1104, CurtainRock moisture sorption of 0.01 percent. CurtainRock 40 moisture sorption of 0.01 percent CurtainRock 80 moisture sorption of 0.04 percent
  9. Thermal Resistance: R-value of 4.2 per inch at 75 degrees F (RSI value 0.74 m2K/W at 24 degrees C).
  10. Corrosive Resistance: ASTM C665, Corrosiveness to Steel - Pass, ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
  11. Dimensions: 24 inches x 48 inches (610 mm x 1219 mm), 36 inches x 48 inches (914 mm x 1219 mm), 36 inches x 60 inches (914 mm x 1524 mm), 48 inches x 72 inches (1219 mm x 1829 mm) as applicable.
- D. General All Purpose Board: Provide stone wool fiber insulation with the following characteristics.
1. Product: RockBoard 35 by ROXUL Inc.
  2. Product: RockBoard 40 by ROXUL Inc.
  3. Product: RockBoard 60 by ROXUL Inc.
  4. Product: RockBoard 80 by ROXUL Inc.
  5. Compliance: ASTM C612 Type IVA mineral fiber insulation.
  6. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.
  7. Moisture Resistance: ASTM C1104, Rockboard 40 moisture sorption of 0.03 percent. Rockboard 60 moisture sorption of 0.07 percent Rockboard 80 moisture sorption of 0.05 percent
  8. Fungi Resistance: ASTM C1338, passes.
  9. Thermal Resistance: Rockboard 40 R-value of 4.1 per inch at 75 degrees F (RSI value 0.72 m2K/W at 24 degrees C). Rockboard 60 R-value of 4.2 per inch at 75 degrees F (RSI value 0.74 m2K/W at 24 degrees C). Rockboard 80 R-value of 4.1 per inch at 75 degrees F (RSI value 0.72 m2K/W at 24 degrees

- C).
10. Compressive Resistance: ASTM C165, (RockBoard 40) 10 percent deformation 90 lbs/ft<sup>2</sup> (4.3 kPa) and 25 percent deformation 226 lbs/ft<sup>2</sup> (10.8 kPa), (RockBoard 60) 10 percent deformation 196 lbs/ft<sup>2</sup> (9.4 kPa) and 25 percent deformation 547 lbs/ft<sup>2</sup> (26.2 kPa), (RockBoard 80) 10 percent deformation 353 lbs/ft<sup>2</sup> (16.9 kPa) and 25 percent deformation 794 lbs/ft<sup>2</sup> (38 kPa),
  11. Corrosive Resistance: ASTM C665, Corrosiveness to Steel - Pass, ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
  12. Air Erosion: UL 181, (RockBoard 40) Maximum air velocity 1000 fpm (5.08 m/s)
  13. Density: ASTM C612, (RockBoard 40) 4.0 lbs/ft<sup>3</sup> (64 kg/m<sup>3</sup>), (RockBoard 60) 6.0 lbs/ft<sup>3</sup> (96 kg/m<sup>3</sup>), (RockBoard 80) 8.0 lbs/ft<sup>3</sup> (128 kg/m<sup>3</sup>)
  14. Fire Performance, Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread 5 and smoke developed 10.
  15. Dimensions: 24 inches x 48 inches (610 mm x 1219 mm), 36 inches x 48 inches (914 mm x 1219 mm).
- E. Exterior Walls, Steel Stud: Provide stone wool fiber insulation with the following characteristics.
1. Product: ROXULPlus 9.5 by ROXUL Inc.
  2. Product: ROXULPlus 13 by ROXUL Inc.
  3. Product: ROXULPlus 22.5 by ROXUL Inc.
  4. Compliance: CAN/ULC-S702 Type 1 mineral fiber insulation.
  5. CCMC Evaluation Listing: 07210: Mineral Fibre Batt Insulation.
  6. Fire Performance: CAN4 S114, non-combustible.
  7. Fire Performance, Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread 0 and smoke developed less than 5.
  8. Thermal Resistance: R-value of 9.5 (RSI 1.68) for 2.5 inches (64 mm), R-value of 13 (RSI 2.3) for 3.5 inches (89 mm), R-value of 22 (RSI 3.96) for 6 inches (152 mm).
  9. Certification: Greenguard indoor air quality certified.
  10. Density: (RoxulPlus R9.5) 2.25 lbs/ft<sup>3</sup> (36 kg/m<sup>3</sup>), (RoxulPlus R13) 2.00 lbs/ft<sup>3</sup> (32 kg/m<sup>3</sup>), (RoxulPlus R22.5) 1.88 lbs/ft<sup>3</sup> (30 kg/m<sup>3</sup>).
  11. Dimensions: 16.25 inches x 48.25 inches (412 mm x 1225 mm), 24.25 inches x 48.25 inches (615mm x 1225mm),
- F. Exterior Metal Sandwich Walls: Provide stone wool fiber insulation with the following characteristics.
1. Product: Roxul Plus metal building insulation .
  2. Compliance: ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications.
  3. Fire Performance: CAN4 S114, non-combustible.
  4. Fire Performance, Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread 0 and smoke developed less than 5.
  5. Thermal Resistance: R-value 4.0 hr.ft<sup>2</sup>.F/Btu (RSI 0.71 m<sup>2</sup>K/W).
  6. Dimensions: 24 inches width x 48 inches length (610 mm width x 1219 mm length); : 32 inches width x 48 inches length (821 mm width by 1219 mm length).
- G. Sandwich Panel Systems: Provide stone wool fiber board insulation with the following characteristics.
1. Product: ConRock insulation by ROXUL Inc.
  2. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.
  3. Fire Performance, Surface Burning Characteristics: ASTM E84 (UL 723),

- flame spread 0 and smoke developed 5.
- 4. Moisture Resistance: ASTM C1104, moisture sorption of 0.05 percent.
- 5. Thermal Resistance: ASTM C518 (C177), R-value of 4.0 per inch at 75 degrees F (RSI value 0.70 m2K/W at 24 degrees C).
- 6. Compressive Resistance: ASTM C165, 10 percent deformation 956.2 lbs/ft2 (45.8 kPa).
- 7. Corrosive Resistance: ASTM C665, Corrosiveness to Steel - Pass, ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
- 8. Density: 8.5 lbs/ft3 (136 kg/m3).

## 2.3 ACOUSTIC AND FIRE INSULATION PRODUCTS

- A. Interior Acoustic and Fire-Rated Partitions (Commercial): Provide stone wool fiber insulation with the following characteristics.
  - 1. Product: ROXUL AFB Acoustical Fire Batts by ROXUL Inc.
  - 2. Compliance: ASTM C612 Type 1, ASTM C665 Type 1, CAN/ULC-S702 Type 1, UL and ULC Design Numbers.
  - 3. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.
  - 4. Fire Performance Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread 0 and smoke developed 0.
  - 5. CAN/ULC S129 Smolder Resistance 0.09 percent.
  - 6. Air Erosion: UL 181, maximum air velocity 1000 fpm (5.08 m/s).
  - 7. Thermal Resistance: R-value of 4.1 per inch at 75 degrees F (RSI value 0.72 m2K/W at 24 degrees C).
  - 8. Acoustic Performance: ASTM E90, ASTM E413, ASTM C423, ASTM E1050.
  - 9. Corrosive Resistance: ASTM C665, Corrosiveness to Steel - Pass, ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
  - 10. Certification: Greenguard Indoor air quality certified.
  - 11. Density: ASTM C612, 2.8 lbs/ft3 (45 kg/m3).
  - 12. Dimensions: 16.25 inches x 48 inches (412 mm x 1219 mm), 24.25 inches x 48 inches (615 mm x 1219 mm).
  
- B. Interior Acoustic Partitions (Residential - Wood Framed Construction): Provide stone wool fiber insulation with the following characteristics.
  - 1. Product: ROXUL Safe ' n ' Sound by ROXUL Inc.
  - 2. Compliance: ASTM C665 Type 1, CAN/ULC-S702 Type 1.
  - 3. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.
  - 4. Fire Performance Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread 0 and smoke developed 0.
  - 5. CAN/ULC S129 Smolder Resistance 0.09 percent.
  - 6. Certification: Greenguard Indoor air quality certified.
  - 7. Density: ASTM C612, 2.5 lbs/ft3 (40 kg/m3).
  - 8. Dimensions: 16.25 inches x 48 inches (412 mm x 1219 mm), 24.25 inches x 48 inches (615mm x 1219mm), 15.25 inches x 47 inches (387 mm x 1193 mm), and 23 inches x 47 inches (584 mm x 1193 mm) as applicable.
  
- C. Interior Firestopping: Provide stone wool fiber insulation with the following characteristics.
  - 1. Product: Roxul Safe by ROXUL Inc.
  - 2. Compliance: ASTM C612 Type IVA mineral fiber insulation, CAN4-S115M firestopping and UL Design Numbers.
  - 3. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.
  - 4. Fire Performance, Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread 0 and smoke developed 0.



5. Smolder Resistance: CAN/ULC-S129 0.01 percent.
  6. Moisture Resistance: ASTM C1104, moisture sorption of 0.04 percent.
  7. Corrosive Resistance: ASTM C665, Corrosiveness to Steel - Pass, ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
  8. Compressive Resistance: ASTM C165, 10 percent deformation 144 lbs/ft<sup>2</sup> (6.9kPa).
  9. Density: 4.5 lbs/ft<sup>3</sup> (72 kg/m<sup>3</sup>).
  10. Dimensions: 24 inches x 48 inches (610 mm x 1219 mm)
- D. Exterior Fire Walls for Metal Buildings (1 hour and 2 hour): Provide stone wool fiber insulation with the following characteristics.
1. Product: Roxul FireWall 605 by ROXUL Inc.
  2. Product: Roxul FireWall 606 by ROXUL Inc.
  3. Product : Ceramic Fiber strip by ROXUL Inc.
  4. Compliance: ASTM C612 Type IVB, UL and ULC Design Numbers.
  5. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.
  6. Fire Performance, Surface Burning Characteristics: CAN/ULC S102, flame spread 0 and smoke developed 0.
  7. Moisture Resistance: ASTM C1104, moisture sorption of 0.04 percent.
  8. Thermal Resistance: ASTM C518 (C177), FIREWALL 605 R-value of 4.2 per inch at 75 degrees F (RSI value 0.74 m<sup>2</sup>K/W at 24 degrees C). FIREWALL 605 R-value of 4.3 per inch at 75 degrees (RSI value 0.76 m<sup>2</sup>K/W at 24 degrees C).
  9. Corrosive Resistance: ASTM C665, Corrosiveness to Steel - Pass, ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
  10. Density: ASTM C612, (FireWall 605) 6 lbs/ft<sup>3</sup> (96kg/m<sup>3</sup>), (FireWall 606) 4.5 lbs/ft<sup>3</sup> (72 kg/m<sup>3</sup>). Actual densities
  11. Density: Ceramic fiber strip - 128 kg/m<sup>3</sup> density, minimum 100 mm wide x 13 mm thick strips, attached to Z-bar sub-girt with stick pins spaced 250 mm on center.
  12. Dimensions: 24 inches x 48 inches (610 mm x 1219 mm), 31.5 inches x 48 inches (800mm x 1219 mm), 32 inches x 48 inches (812mm x 1219 mm).

## 2.4 ROOFING PRODUCTS

- A. Low-Slope Roofing Insulation: Provide stone wool fiber insulation with the following characteristics.
1. Product: TopRock/Æ DD Plus by ROXUL Inc., rigid monolithic dual-density mineral wool board insulation impregnated with a bitumen top layer which is compatible with torch, mop-applied or cold adhered roof membranes.
  2. Product: TopRock/Æ DD by ROXUL Inc., rigid monolithic dual-density mineral wool board insulation intended for use with mechanically fastened or ballasted single ply roof membranes.
  3. Compliance: ASTM C726 for mineral fiber roof insulation boards, and FM Approvals 4450/4470 Class 1 - NCC (Noncombustible Core) rated roof insulation, Class 1-90 for BUR, Modified Bitumen and Single-Ply Systems.
  4. Fire Performance: CAN/ULC S114, Test for non-combustibility.
  5. Fire Performance: CAN/ULC S107, Method of Fire Test of Roof Covering - Class A.
  6. Fire Performance: CAN/ULC S126, Fire Spread Under Roof Deck Assemblies - Construction C7, C18, C28 and C38.
  7. Fire Performance: Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread 0 and smoke developed 0.15.
  8. Fire Performance: UL Standard 790 and UL Standard 263.

9. Water Vapor Transmission: ASTM E96, 41.25 perms (2362 ng Pa.s.m<sup>2</sup>).
10. Moisture Resistance: ASTM C1104, moisture sorption of 0.03 percent, ASTM C209 water absorption of less than 1 percent.
11. Thermal Resistance: ASTM C518 (C177), (TopRock DD), (TopRock DD Plus) R-value of 3.7 per inch at 75 degrees F (RSI value 0.65 m<sup>2</sup>K/W at 24 degrees C), (MonoBoard) (MonoBoard Plus) R-value of 3.5 per inch at 75 degrees F (RSI value 0.62 m<sup>2</sup>K/W at 24 degrees C).
12. Hail Damage Resistance: FM 4470 Class 1-SH (Severe Hail Damage Resistant)
13. Impact Resistance: FM 4473 Class 4 & UL 2218 Class 4
14. Corrosive Resistance: ASTM C665, Corrosiveness to Steel - Pass, ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
15. Compressive Resistance: ASTM C165, (TopRock DD) (TopRock DD Plus) 10 percent deformation 1483 lbs/ft<sup>2</sup> (71 kPa) and 25 percent deformation 2160 lbs/ft<sup>2</sup> (103.5 kPa), (MonoBoard) (MonoBoard Plus) 10 percent deformation 1742 lbs/ft<sup>2</sup> (84 kPa).
16. Density: ASTM C612 (TopRock DD) (TopRock DD Plus) Top Layer 13.75 lbs/ft<sup>3</sup> (160 kg/m<sup>3</sup>) Bottom Layer 10.00 lbs/ft<sup>3</sup> (220 kg/m<sup>3</sup>), (MonoBoard) (MonoBoard Plus) 11.00 lbs/ft<sup>3</sup> (176 kg/m<sup>3</sup>).
17. Dimensions: 48 inches x 48 inches (1219 mm x 1219 mm).
18. Thickness: TopRock DD & TopRock DD Plus.
  - a. 2 inch, R 7.4, RSI 1.3.
  - b. 2.5 inch, R 9.25, RSI 1.63.
  - c. 3.25 inch, R 12, RSI 2.11.
  - d. 3.5 inch, R 12.95, RSI 2.28.
  - e. 4 inch, R 14.8, RSI 2.6.
  - f. 4.5 inch, R 16.65, RSI 2.93.
  - g. 5 inch, R 18.5, RSI 3.25.
  - h. 5.5 inch, R 20.35, RSI 3.58.
  - i. 6 inch, R 22.2, RSI 3.9.

- B. Low-Slope Coverboard for Roofing Insulation: Provide stone wool fiber insulation with the following characteristics.
1. Product: MonoBoard Plus by ROXUL Inc., rigid mono-density mineral wool insulating cover board with a top layer of bitumen and compatible with torch or mop-applied membrane.
  2. Product: MonoBoard by ROXUL Inc., rigid mono-density mineral wool insulating cover board
  3. Compliance: ASTM C726 for mineral fiber roof insulation boards, and FM Approvals 4450/4470 Class 1fi NCC (Noncombustible Core) rated roof insulation, Class 1-90 for BUR, Modified Bitumen and Single-Ply Systems.
  4. Fire Performance: CAN/ULC S114, Test for non-combustibility.
  5. Fire Performance: CAN/ULC S107, Method of Fire Test of Roof Covering - Class A.
  6. Fire Performance: CAN/ULC S126, Fire Spread Under Roof Deck Assemblies - Construction C7, C18, C28 and C38.
  7. Fire Performance: Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread 0 and smoke developed 0.15.
  8. Fire Performance: UL Standard 790 and UL Standard 263.
  9. Water Vapor Transmission: ASTM E96, 41.25 perms (2362 ng Pa.s.m<sup>2</sup>).
  10. Moisture Resistance: ASTM C1104, moisture sorption of 0.03 percent, ASTM C209 water absorption of less than 1 percent.
  11. Thermal Resistance: ASTM C518 (C177), (TopRock DD), (TopRock DD Plus) R-value of 3.7 per inch at 75 degrees F (RSI value 0.65 m<sup>2</sup>K/W at 24 degrees C), (MonoBoard) (MonoBoard Plus) R-value of 3.5 per inch at 75 degrees F

- (RSI value 0.62 m<sup>2</sup>K/W at 24 degrees C).
12. Hail Damage Resistance: FM 4470 Class 1-SH (Severe Hail Damage Resistant)
  13. Impact Resistance: FM 4473 Class 4 & UL 2218 Class 4
  14. Corrosive Resistance: ASTM C665, Corrosiveness to Steel - Pass, ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
  15. Compressive Resistance: ASTM C165, (TopRock DD) (TopRock DD Plus) 10 percent deformation 1483 lbs/ft<sup>2</sup> (71 kPa) and 25 percent deformation 2160 lbs/ft<sup>2</sup> (103.5 kPa), (MonoBoard) (MonoBoard Plus) 10 percent deformation 1742 lbs/ft<sup>2</sup> (84 kPa).
  16. Density: ASTM C612 (TopRock DD) (TopRock DD Plus) Top Layer 13.75 lbs/ft<sup>3</sup> (160 kg/m<sup>3</sup>) Bottom Layer 10.00 lbs/ft<sup>3</sup> (220 kg/m<sup>3</sup>), (MonoBoard) (MonoBoard Plus) 11.00 lbs/ft<sup>3</sup> (176 kg/m<sup>3</sup>).
  17. Dimensions: 48 inches x 48 inches (1219 mm x 1219 mm).
  18. Thickness: MonoBoard, 1 inch R 3.5, RSI 0.62.

## 2.5 INDUSTRIAL PRODUCTS

- A. High-Temperature, High-Compression Applications: Provide stone wool fiber insulation with the following characteristics.
  1. Product: RHT 40 Industrial Board by ROXUL Inc.
  2. Product: RHT 60 Industrial Board by ROXUL Inc.
  3. Product: RHT 80 Industrial Board by ROXUL Inc.
  4. Product: RHT 100 Industrial Board by ROXUL Inc.
  5. Product: RHT 120 Industrial Board by ROXUL Inc.
  6. Compliance: ASTM C612 Type IVB mineral fiber insulation.
  7. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.
  8. Fire Performance, Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread 0 and smoke developed 0.
  9. Maximum Service Temperature: ASTM C411, hot surface performance in compliance with ASTM C612 at 1200 degrees F (649 degrees C).
  10. Moisture Resistance: ASTM C1104, moisture sorption of 0.04 percent.
  11. Thermal Resistance: RHT 40, RHT 60 and RHT 80 R-value of 4.2 per inch at 75 degrees F (RSI value 0.74 m<sup>2</sup>K/W at 24 degrees C). RHT 100 and RHT 120 R-value of 4.0 per inch at 75 degrees F (RSI value 0.71 m<sup>2</sup>K/W at 24 degrees C).
  12. Corrosive Resistance: ASTM C665, Corrosiveness to Steel - Pass, ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
  13. Compressive Resistance: ASTM C165, (RHT 40) 10 percent deformation 63 lbs/ft<sup>2</sup> (3 kPa) and 25 percent deformation 146 lbs/ft<sup>2</sup> (7 kPa), (RHT 60) 10 percent deformation 104 lbs/ft<sup>2</sup> (5 kPa) and 25 percent deformation 230 lbs/ft<sup>2</sup> (11 kPa), (RHT 80) 10 percent deformation 167 lbs/ft<sup>2</sup> (8 kPa) and 25 percent deformation 334 lbs/ft<sup>2</sup> (16 kPa), (RHT 100) 10 percent deformation 313 lbs/ft<sup>2</sup> (15 kPa) and 25 percent deformation 626 lbs/ft<sup>2</sup> (30 kPa), (RHT 120) 10 percent deformation 418 lbs/ft<sup>2</sup> (20 kPa) and 25 percent deformation 877 lbs/ft<sup>2</sup> (42 kPa),
  14. Density: Nominal (RHT 40) 4.0 lbs/ft<sup>3</sup> (64 kg/m<sup>3</sup>), (RHT 60) 6.0 lbs/ft<sup>3</sup> (96 kg/m<sup>3</sup>), (RHT 80) 8.0 lbs/ft<sup>3</sup> (128 kg/m<sup>3</sup>), (RHT 100) 10.0 lbs/ft<sup>3</sup> (160 kg/m<sup>3</sup>), (RHT 120) 12.0 lbs/ft<sup>3</sup> (192 kg/m<sup>3</sup>).
  15. Dimensions: 48 inches x 48 inches (1219 mm x 1219 mm).
- B. Fabrication Board: Provide stone wool fiber insulation with the following characteristics.
  1. Product: FabRock LT Industrial Board by ROXUL Inc.

2. Compliance: LT- ASTM C612 Type IVA mineral fiber insulation. HT- ASTM C612 Type IVB mineral fiber insulation.
  3. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.
  4. Fire Performance, Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread Pass and smoke developed Pass.
  5. Maximum Service Temperature: ASTM C411, hot surface performance in compliance with ASTM C612 at 1200 degrees F (649 degrees C).
  6. Moisture Resistance: ASTM C1104, moisture sorption of 0.04 percent.
  7. Thermal Resistance: R-value of 4.1 per inch at 75 degrees F (RSI value 0.72 m<sup>2</sup>K/W at 24 degrees C).
  8. Corrosive Resistance: ASTM C665, Corrosiveness to Steel - Pass, ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
  9. Dimensions: 24 inches x 48 inches (610 mm x 1219 mm).
- C. Pipe and Tank Insulation: Provide stone wool fiber insulation with the following characteristics.
1. Product: Enerwrap 80 by ROXUL Inc.
  2. Compliance: ASTM C553 Type VII and CAN/ULC-S702 Type 1 mineral fiber insulation.
  3. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.
  4. Fire Performance, Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread Passed and smoke developed - Passed.
  5. Maximum Service Temperature: ASTM C411, hot surface performance in compliance with ASTM C at 1200 degrees F (649 degrees C).
  6. Moisture Resistance: ASTM C1104, moisture sorption of 0.01 percent.
  7. Thermal Resistance: R-value of 4.2 per inch at 75 degrees F (RSI value 0.74 m<sup>2</sup>K/W at 24 degrees C).
  8. Corrosive Resistance: ASTM C665, Corrosiveness to Steel - Pass, ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
  9. Density: Nominal 8.0 lbs/ft<sup>3</sup> (128 kg/m<sup>3</sup>).
- D. Steam and Process Piping Insulation: Provide stone wool fiber insulation with the following characteristics.
1. Product: Tecton 1200 by ROXUL Inc.
  2. Compliance: ASTM C547 Type I, II, IV mineral fiber preformed pipe insulation.
  3. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.
  4. Fire Performance, Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread passed and smoke developed passed.
  5. Hot Surface Performance: ASTM C411, hot surface performance in compliance with ASTM C547 at 1200 degrees F (649 degrees C).
  6. Maximum Surface Performance: ASTM C447, hot surface performance in compliance with ASTM C547 at 1200 degrees F (649 degrees C).
  7. Corrosive Resistance: ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
  8. Dimensional Stability: ASTM C356 linear shrinkage less than 1.3 percent at 1200 degrees F (649 degrees C).
  9. Moisture Resistance: ASTM C1104, moisture sorption of 0.1 percent.
  10. Wicking: ASTM C800, Zero.
- E. High-Temperature Steam and Process Piping Insulation: Provide stone wool fiber insulation with the following characteristics.
1. Product: SturdiRock by ROXUL Inc.
  2. Compliance: ASTM C547 Type V mineral fiber preformed pipe insulation.
  3. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.

4. Fire Performance, Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread passed and smoke developed passed.
5. Hot Surface Performance: ASTM C411, hot surface performance in compliance with ASTM C547 at 1400 degrees F (760 degrees C).
6. Maximum Surface Performance: ASTM C447, hot surface performance in compliance with ASTM C547 at 1400 degrees F (760 degrees C).
7. Moisture Resistance: ASTM C1104, moisture sorption of 0.1 percent.
8. Corrosive Resistance: ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
9. Compressive Resistance: ASTM C165, SturdiRock 10 percent deformation 1102 lbs/ft<sup>2</sup> (58 kPa) and 25 percent deformation 1906 lbs/ft<sup>2</sup> (91.3 kPa),
10. Dimensional Stability: ASTM C356 linear shrinkage less than 0.60 percent at 1200 degrees F (649 degrees C).
11. Wicking: ASTM C800, Zero.

F. Blanket Insulation: Provide stone wool fiber insulation with the following characteristics.

1. Product: RW 40 Blanket by ROXUL Inc.
2. Product: RW 60 Blanket by ROXUL Inc.
3. Product: RW 80 Blanket by ROXUL Inc.
4. Compliance: ASTM C553 Type VII.
5. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.
6. Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread 0 and smoke developed 0.
7. Maximum Surface Performance: ASTM C411, hot surface performance in compliance with ASTM C553 at 1200 degrees F (649 degrees C).
8. Dimensional Stability: ASTM C356 linear shrinkage less than 1.49 percent at 1200 degrees F (649 degrees C).
9. Moisture Resistance: ASTM C1104, moisture sorption of 0.05 percent.
10. Thermal Resistance: RW 40 R-value of 4.0 per inch at 75 degrees F (RSI value 0.74 m<sup>2</sup>K/at at 24 degrees C). RW 60 and RW 80 R-value of 4.3 per inch at 75 degrees F (RSI value 0.76 m<sup>2</sup>K/at at 24 degrees C).
11. Corrosive Resistance: ASTM C665, Corrosiveness to Steel - Pass, ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
12. Density: Nominal (RW 40) 4.0 lbs/ft<sup>3</sup> (64 kg/m<sup>3</sup>), (RW 60) 6.0 lbs/ft<sup>3</sup> (96 kg/m<sup>3</sup>), (RW 80) 8.0 lbs/ft<sup>3</sup> (128 kg/m<sup>3</sup>).
13. Dimensions: 24 inches x 48 inches (610 mm x 1219 mm).

## 2.6 MARINE PRODUCTS

A. Thermal and Fire Protection Insulation: Provide stone wool fiber insulation with the following characteristics.

1. Product: RHM 30A Board.
2. Product: RHM 40A Board.
3. Product: RHM 60A Board.
4. Product: RHM 70A Board.
5. Product: RHM 80A Board.
6. Product: RHM 1000A Board.
7. Product: RHM 60AC Roller Crushed Marine Board.
8. Compliance: U.S. Coast Guard - 164.109/26/0, 164.107/16/0 & 164.107/17/0.
9. Compliance: Transport Canada - T.C. 261.F1.322, T.C. 261.A1 282 and T.C. 261.A1.283.
10. Compliance: Lloyd's Register - SAS F04368/M1, SAS F040366 & SAS F040365.
11. Compliance: European Certification - 1408/08.

12. Compliance: Steel Bulkhead & Steel Deck Divisions - Non-Combustible & Class A-60.
  13. Fire Performance: Part 1 in Annex 1 of IMO/FTPC MSC.61(67), IMO A.799, ASTM E136 and CAN4 S114, non-combustible.
  14. Maximum Surface Performance: ASTM C411, 1200 degrees F (649 degrees C).
  15. Moisture Resistance: ASTM C1104, moisture sorption of 0.1 percent.
  16. Corrosive Resistance: ASTM C665, Corrosiveness to Steel - Pass, ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
  17. Density: (RHM 30A) 3.0 lbs/ft<sup>3</sup> (48 kg/m<sup>3</sup>), (RHM 40A) 4.0 lbs/ft<sup>3</sup> (64 kg/m<sup>3</sup>), (RHM 60A) 6.0 lbs/ft<sup>3</sup> (96 kg/m<sup>3</sup>), (RHM 70A) 7.0 lbs/ft<sup>3</sup> (112 kg/m<sup>3</sup>), (RHM 80A) 8.0 lbs/ft<sup>3</sup> (128 kg/m<sup>3</sup>), (RHM 100A) 10.0 lbs/ft<sup>3</sup> (160 kg/m<sup>3</sup>).
  18. Dimensions: 24 inches x 48 inches (610 mm x 1219 mm), (RHM 60AC) 36 inches x 48 inches (914 mm x 1219 mm).
- B. Pipe Insulation: Provide stone wool fiber insulation with the following characteristics.
1. Product: Tecton 1200 Marine Pipe Insulation by ROXUL Inc.
  2. Compliance: ASTM C547 Type I, II, IV mineral fiber preformed pipe insulation.
  3. Compliance: CAN/CGSB 51.9-92, Mineral Fibre Thermal Insulation for Piping and Round Ducting, Type 1, Class 1, 2 & 3.
  4. Compliance: USCG Certificate No. 164.109/27/0, Transport Canada Certificate No. T.C. 261-F1.323, European Certificate No. 1408/08, Lloyd's Register Certificate No. SAS F040367/M1.
  5. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.
  6. Fire Performance, Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread passed and smoke developed passed.
  7. Hot Surface Performance: ASTM C411, hot surface performance in compliance with ASTM C447 at 1200 degrees F (649 degrees C).
  8. Maximum Surface Performance: ASTM C447, hot surface performance in compliance with ASTM C547 at 1200 degrees F (649 degrees C).
  9. Moisture Resistance: ASTM C1104, moisture sorption of 0.01 percent.
  10. Corrosive Resistance: ASTM C795, Stainless Steel Stress Corrosion Specification as per Test Methods C871 and C692.
  11. Dimensional Stability: ASTM C356 linear shrinkage less than 1.30 percent at 1200 degrees F (649 degrees C).
  12. Wicking: ASTM C800, Zero.

## 2.7 RESIDENTIAL PRODUCTS

- A. Semi-Rigid Batt Insulation (For Interior Wood Frame Walls): Provide stone wool fiber semi-rigid batt insulation with the following characteristics.
1. Product: Safe 'n' Sound
  2. Compliance: ASTM C665 Type I and CAN/ULC-S702 Type 1 mineral fiber insulation.
  3. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.
  4. Fire Performance, Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread passed and smoke developed passed.
  5. Compliance: ASTM C665 Type I and CAN/ULC-S702 Type 1 mineral fiber insulation.
  6. Density: 2.5lbs/ft<sup>3</sup> (40 kg/m<sup>3</sup>).
  7. Dimensions: 15.25 inches x 47 inches (387 mm x 1194 mm), 23 inches x 47 inches (584 mm x 1194 mm).
- B. Semi-Rigid Batt Insulation (For Exterior Wood Frame Walls): Provide stone wool fiber semi-rigid batt insulation with the following characteristics.

1. Product: ComfortBatt R14.
2. Product: ComfortBatt R15.
3. Product: ComfortBatt R22.
4. Product: ComfortBatt R23.
5. Compliance: ASTM C665 Type I and CAN/ULC-S702 Type 1 mineral fiber insulation.
6. Fire Performance: ASTM E136 and CAN4 S114, non-combustible.
7. Fire Performance, Surface Burning Characteristics: ASTM E84 (UL 723) and CAN/ULC S102, flame spread passed and smoke developed passed.
8. Compliance: ASTM C665 Type I and CAN/ULC-S702 Type 1 mineral fiber insulation.
9. Thermal Resistance: R14 (RSI 2.47), R15 (RSI 2.64), R22 (RSI 3.87) and R23 (RSI4.05).
10. Density: 2lbs/ft<sup>3</sup> (32 kg/m<sup>3</sup>).
11. Dimensions: 15.25 inches x 47 inches (387 mm x 1194 mm), 23 inches x 47 inches (584 mm x 1194 mm).

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Installer shall examine substrates, supports, and conditions under which work is to be performed and notify Architect and Contractor, of conditions detrimental to the proper completion of work. Do not proceed with work until unsatisfactory conditions are correct.

### 3.2 INSTALLATION

- A. Adhere to manufacturer's instructions for conditions of installation. If descriptive installations procedures are not available, refer to local building codes and/or contact the manufacturer's technical representative for specific recommendations prior to start of work.
- B. Install full thickness of insulation over the entire surface to be installed as indicated on the project documents. Ensure tight fit around penetrating elements and abutting construction. All voids and or gaps should be filled, minimizing the potential for thermal bridging.
- C. Apply a single or double layer of insulation required to make up the total thickness, unless otherwise indicated or shown on the construction documents.
- D. Install insulation boards in courses parallel to flutes with board ends staggered. Ensure insulation joints are flush and tightly butted together not allowing any gaps. In multi-layer installations, stagger joints in top and bottom layers.
- E. Install mechanical fastening as per the manufacturer's recommendations, industry standards and/or by the local building codes.
- F. At the completion of a day's work, all exposed edges should be temporary sealed and or lapped by a moisture retardant barrier.
- G. Coordinate insulation work with installation of other materials.

### 3.3 PROTECTION AND CLOSEOUT

- A. Installed insulation shall be protected from construction traffic during and after completion. Damaged work shall be corrected prior to completion of work. Damaged work shall be corrected prior to completion of work.

- B. Prior to project close out remove related rubbish, material, tools and equipment shall be removed from the site. Dispose of the waste material approved by the applicable jurisdictions.

END OF SECTION