

## PERMAROOF® MB SMOOTH

### Notes To Specifier

**SPECIFIED SYSTEM:** This section is a “narrow scope section” specifying a PERMAROOF® MB Modified roofing system manufactured by Republic Powdered Metals. Utilize this section specifically for hot and cold applied system or base ply over rigid roof insulation. This specific system is adhered using cold adhesive or a Type IV hot asphalt application. Additional “narrow scope sections” are available from Republic Powdered Metals, which suit other specific material systems and construction conditions.  
Selection And Editing Requirements:

**EDITING:** Since this “narrow scope section” has been specifically written for one (1) type of installation, the section requires only minor editing. Additional notes to the specifier that follow identify such specific editing requirements. In the event additional material components or accessories are required, consult the manufacturer prior to adding specific information to the section.

**TITLE:** Use the specific section and number title as stated, which is in accordance with the CSI Masterformat.

**1.01 - RELATED SECTIONS:** Add or delete references to specific sections as necessary to suit project manual contents.

**1.03 - CONFORMANCE STANDARDS:** Select appropriate wind resistance requirements, either “I-60” or “I-90” and UL Class A, B or C. Republic recommends perimeter metal gauge and attachment that conforms to FM 1-49.

**1.10 - WARRANTY:** Select appropriate warranty option.

**2.01 - ROOF INSULATION:** Specific substrate and project conditions determine the type and thickness of insulation required. Consult with manufacturer for approved insulations.

**2.02 - VAPOR RETARDER:** Consult project architect or consultant if applicable.

**2.03 - ADHESIVE FOR MEMBRANE:** Select PERMAROOF MB Cold Adhesive or Type IV hot asphalt.

**3.03 - ROOF INSULATION:** Specify installation method either utilizing Republic Insulation Adhesive, hot asphalt with recommended primer, or a mechanically fastened system as recommended by the manufacturer for each substrate condition.

**3.05 - INSTALLATION OF ROOFING MEMBRANE:** Select PERMAROOF MB Cold Adhesive or Type IV hot asphalt.

### Drawing Coordination:

**MANUFACTURER’S RECOMMENDED STANDARD DETAILS:** Republic Powdered Metals, Inc. will provide standard recommended details for use by the design professional, either in hard copy or CAD electronic media. Utilize and edit such details as required to suit specific project criteria.

**END OF NOTES TO SPECIFIER**

## SECTION 07531

### PERMAROOF® MB Smooth Smooth Surfaced Modified Bitumen Roofing

#### PART 1 GENERAL

##### 1.01 RELATED SECTIONS

- A. Section 07620 – Sheet Metal Flashing and Trim.
- B. Section 07710 – Prefabricated Roofing Specialties.
- C. Section 07720 – Roof Accessories.
- D. Section 07920 – Sealants and Caulking.

##### 1.02 REFERENCES

##### 1.02 REFERENCES

- A. Factory Mutual (FM Global) Approval Guide
  - 1. Factory Mutual Standard 4470 Approval Standard for Class I Roof Covers
- B. Underwriters Laboratories (UL) Roofing Systems & materials Guide
- C. American Society for testing and Materials (ASTM) Annual Book of ASTM Standards
  - 1. ASTM C-208 Standard Specifications for Cellulosic Fiber Insulation Board
  - 2. ASTM C-728 Standard Specification for Perlite Thermal Insulation Board
  - 3. ASTM C-1289 Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
  - 4. ASTM D-6163, Type I, Grade G Standard Specification for Modified Bitadiene Styrene (SBS)
  - 5. ASTM D-41 Standard Specification for Asphalt Primer used in Roofing, Dampproofing & Waterproofing
  - 6. ASTM D-4601 Standard Specification for Asphalt-Coated Glass-Fiber base Sheet used in roofing
  - 7. ASTM D-4897 Standard Specification for Asphalt-Coated Glass-Fiber Venting base Sheet used in roofing
  - 8. ASTM D-4586 Standard Specification for Asphalt Roof Cement, Asbestos Free
- D. Sheet Metal and Air Conditioning Contractor s National Association (SMACNA)
- E. Asphalt Roofing Manufacturers Association (ARMA)

- F. American Society of Civil Engineers (ASCE)
  - 1. ASCE-7 Minimum Design Loads to Buildings and other Structures

#### 1.03 REGULATORY REQUIREMENTS

- A. Work shall be performed in a safe professional manner, conforming to all federal, state, and local code requirements.
- B. Factory Mutual (FM)
  - 1. Fire Rating: "Class I"
  - 2. Wind Resistance: ["I-90"] OR ["I-60"]
- C. Underwriters Laboratory (UL)
  - 1. Fire Rating: "Class [A] [B] or [C]"
- D. Provide and install a roofing membrane and flashing system that will meet the local code/design requirements of the most current revision of ASCE 7.

#### 1.04 QUALITY ASSURANCE

- A. Certify approval of applicator in the form of an affidavit written and submitted by the manufacturer.
- B. If requested by contractor, provide on-site instruction and inspection by the manufacturer's Technical Service Department.
- C. Upon completion, provide an inspection by the manufacturer to assure installation is in accordance with manufacturer's requirements.

#### 1.05 SUBMITTALS

- A. Submit eleven (11) inch by eight and one-half (8-1/2) inch samples of roofing membrane and accessories, with manufacturer's identification labels attached.
- B. Submit manufacturer's spec data.
- C. Submit shop drawings showing details, fabrication and fastening devices for each condition encountered.
- D. Submit test data illustrating compliance with each conformance standard and criteria listed.

#### 1.06 PRE-INSTALLATION CONFERENCE

- A. Prior to ordering materials and commencing roofing, conduct a pre-installation conference to discuss the specified roofing system and its proper application. Notify the manufacturer's representative when the prerooting conference is scheduled.

#### 1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver roofing materials, insulation, and accessories in manufacturer's original protective containers with labels in tact and legible. Comply with the Manufacturers published instructions for storage and handling.

- B. Remove manufacturer supplied plastic shrink wrap from pallets and store membranes with secured breathable type weather proof covering on clean, raised platforms.
- C. Store flammable products away from sparks or open flames.

#### 1.08 ENVIRONMENTAL REQUIREMENTS

- A. Proceed with Granule Surfaced Modified Bitumen roofing work only when weather conditions comply with the manufacturer's recommendations. Do not exceed temperature limitations recommended by roofing manufacturer.
- B. Prior to application of Granular Surfaced Modified Bitumen roofing, provide clean surfaces, free from moisture.

#### 1.09 PROTECTION

- A. Protect roof deck and insulation from moisture by providing water cut-offs at the end of each day's work or when the weather is threatening. Failure to protect the deck and roofing from moisture will result in the removal of damaged materials or materials containing excessive moisture. Remove water cut-offs prior to start of new work.
- B. Protect building and adjacent surfaces from bitumen spillage.
- C. Do not permit traffic or material storage on completed roof surfaces. When unavoidable, provide walktreads or insulation boards.

#### 1.10 WARRANTY

- A. Provide manufacturer's standard ten (10) year material warranty.
- B. Provide manufacturer's standard ten (10) year warranty covering materials and workmanship.
- C. Provide manufacturer's standard fifteen (15) year warranty covering materials and workmanship.

### PART 2 PRODUCTS

#### 2.01 ROOF INSULATION

- A. Isocyanurate, Fiberglass.
- B. Woodfiber, Dens Deck, Perlite.

#### 2.02 ROOFING MEMBRANE AND ACCESSORIES

- A. Approved manufacturer: Republic Powdered Metals, Inc.
- B. Roof Membrane: PERMAROOF MB Smooth Modified Bitumen (SBS)
  - 1. Composition: SBS Modified Bitumen with a glass reinforcing mat
  - 2. Thickness: 0.080 in. (2.00 mm) (80 mils)
  - 3. ASTM D 6163, Type I, Grade S.

### C. Approved Base Sheets

1. PERMAROOF MB High Tensile Base – Smooth surfaced modified base, tr laminate reinforced 0.060 in. (3.0 mm) (120 mils)
2. Republic 28# Glass Ply (Hot or Cold Applications) – Glass ply sheet, exceeds ASTM D 4601-91, Type II.
3. PERMAROOF MB Type IV (Hot Asphalt Applications) – Glass ply sheet, exceeds ASTM D 2178, Type IV.
4. PERMAROOF MB Type VI (Hot Asphalt Applications) – Glass ply sheet, exceeds ASTM D 2178, Type VI.

### D. Flashing Membranes (NOTE: 2 plies required)

1. PERMAROOF MB Smooth – Black smooth surfaced .080 in. (2.0 mm) (80 mils) modified bitumen glass reinforced used for top flashing ply.
2. PERMAROOF MB Mineral – White granular surfaced .120 in. (3.0 mm) (120 mils) modified bitumen glass reinforced used for top flashing ply.
3. PERMAROOF MB High Tensile Base – Smooth surfaced 0.060 in. (1.50 mm) (60 mils) modified bitumen, polyester reinforced. Used as bottom flashing ply.
4. PERMAROOF MB HE FR – White granule surfaced 4.0 mm modified bitumen, polyester reinforced. Used as top flashing ply. Meets ASTM 6164, Type I.
5. PERMAROOF MB HE Base – Smooth surfaced .094 in. (2.39 mm) (94 mils) modified bitumen, polyester reinforced. Used as bottom flashing ply. Meets ASTM 6164, Type I.

### E. PERMAROOF MB Cold Adhesive

1. Adhesive for cold applications of PERMAROOF MB Mineral, PERMAROOF MB Smooth, PERMAROOF MB HT Base and Republic 28# Glass Ply.

### F. PERMAROOF Patching Cement

1. Adhesive used for 2 ply base, curb wall flashings as well as corners, pipe, drain and edge flashings.

### G. PERMAROOF MB MESH

1. Available in 4" and 6' widths for three coursing with PERMAROOF Patching Cement.

### H. Drain and Pipe Flashing Lead

1. Minimum 27" x 27" lead flashing for roof drain require 4 lb. lead.
2. Pipe or vent jacket lead is required to be a minimum of 3 lb.

### I. Cant Strip Installation

1. Install non-combustible cant strips at all vertical flashings i.e. walls and curbs. Perlite or wood fiber cant strips factory cut to a 45 degree angle are acceptable.

J. Backer Rod

1. Extruded closed cell polyurethane foam rod for use with elastomeric sheet roofing.

K. Granules

1. White #11 Granules - Used at areas of asphalt or cold adhesive bleed out.

L. Pitch Pans

1. Chem curb by Chemlink or equal.

M. Approved Primers

1. REPUBLIC WB Primer
2. PERMAPRIMER

2.03 ADHESIVE FOR MEMBRANE INSTALLATION

A. PERMAROOF MB Cold Adhesive

B. Type IV Roofing Asphalt.

C. Conformance criteria: ASTM D 312, Type IV.

D. Use only that asphalt which has all of the following information printed on the asphalt packages or on the bills of lading covering bulk asphalt.

1. Softening point range. The temperature ranges of the asphalt determined in accordance with ASTM D 312 and ASTM D 36.
2. Flash point: The flash point of the asphalt as determined by ASTM D 92.
3. Equiviscous temperature range. The temperature range, plus or minus twenty-five (25) degrees Fahrenheit, at which a viscosity of one hundred twenty-five (125) centistokes is attained.
4. Finishing blowing temperature: The temperature at which the blowing of the asphalt has been completed.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify proper placement of all roof openings, pipes, curbs, sleeves, ducts, vents, drains and other penetrations.
- B. Verify proper securement of penetrating or roof mounted equipment, with fastening devices flush with surfaces.

3.02 SUBSTRATE PREPARATION

- A. Comply with manufacturer's published instructions for preparation of substrates to receive Modified Bitumen roofing. Clean substrate of dust,

debris, and other substances detrimental to roofing work.

### 3.03 ROOF INSULATION

- A. Neatly fit insulation to all penetrations, projections, and nailers. Install tapered or feathered insulation around roof drains in such a way as to provide proper slope (maximum 3:12 pitch) for drainage.
- B. Install no more insulation than can be covered with roofing membrane and completed before the end of the day's work, or before the onset of inclement weather.
- C. Adhere insulation with Republic's Insulation Adhesive, hot asphalt, or mechanically fasten per manufacturer's recommendations.

### 3.04 ASPHALT

- A. Do not heat at extreme temperatures for long periods of time.
- B. Do not heat to or above the flash point.
- C. Do not heat asphalt hotter than five hundred twenty-five (525) degrees Fahrenheit.
- D. Do not heat and hold above the finished blowing temperature for more than four (4) hours.
- E. Control the temperatures so that the equiviscous temperature, plus or minus twenty-five (25) degrees Fahrenheit, at the point of application attains a viscosity of one hundred twenty-five (125) centistokes = three hundred seventy-five (375) degrees Fahrenheit.

### 3.05 INSTALLATION OF MODIFIED BITUMEN ROOFING SYSTEM IN COLD ADHESIVE

- A. Prior to placement of PERMAROOF MB High Tensile Base, PERMAROOF MB Smooth or PERMAROOF MB Mineral sheets cut into 15 to 20' lengths. Allow cut lengths to relax.
- B. Embed all PERMAROOF MB sheets into uniform and continuous application of the PERMAROOF MB Cold Adhesive. Broom membrane into adhesive to assure full adhesion. Avoid walking on PERMAROOF MB sheets during placement and on completed roof system until adhesive has cured.
- C. Plan placement of PERMAROOF MB High Tensile Base Sheet or Republic 28# Glass Ply to ensure that water will flow over or along, but not against, exposed edges and install in PERMAROOF MB Cold Adhesive in strict accordance with manufacturer's published instructions and as directed by the manufacturer's field service representative.
  - 1. Over woodfiber or Dens Deck insulation using PERMAROOF MB Cold Adhesive use a squeegee or airless spray equipment: Apply PERMAROOF MB Cold Adhesive @ 1 ½ gallons per one hundred (100) square feet to the insulation and install PERMAROOF MB High Tensile Base Sheet in a one ply application. Followed by the PERMAROOF MB Smooth Sheet adhered @ 1 ½ gallons per one hundred (100) square feet.
  - 2. Over woodfiber or Dens Deck insulation using PERMAROOF MB Cold Adhesive use a squeegee or airless spray equipment: Apply PERMAROOF MB Cold Adhesive @ 1 ½ gallons per one hundred (100) square feet to the insulation and install Republic

28# Glass Ply sheet in a two ply application followed by the PERMAROOF MB Smooth adhered @ 1 ½ gallons per one hundred (100) square feet.

3. Lap the selvage a minimum of 4" and end laps a minimum of 6". Offset the PERMAROOF MB laps from the base sheet laps. Stagger the end laps 36" minimum. To ensure complete and uniform adhesion, the adhesive should extend past lap edges. Use a rounded trowel to test the lap security. Install flashings as specified. Full broom base sheet and membrane to ensure positive contact. For smooth surfaced PERMAROOF MB, apply a flood coat with aggregate or an asphalt emulsion with reflective coating.
- D. For flashing, run the sheets horizontally with the use of cap nails every 12" or the use of a flat termination bar fastened every 12" is required to ensure wall adhesive against sufficient "green strength." Use additional cap nails or flat bars for every additional 42" flashing sheet.

### 3.06 INSTALLATION OF MODIFIED BITUMEN ROOFING SYSTEM IN HOT ASPHALT

- A. Embed PERMAROOF MB Mineral, PERMAROOF MB Smooth, PERMAROOF MB High Tensile Base, Republic 28# Glass Ply, PERMAROOF MB Type IV or Type VI in a uniform and continuous mopping of Type IV hot asphalt. Temperature of bitumen must be at the EVT or 425°F minimum at the point of application - whichever is greater. Hot mop no more than 8' ahead of each roll and mop the selvage or seam area last to assure it receives the hottest asphalt. Immediately broom the PERMAROOF MB sheets into the hot Type IV asphalt to assure full adhesion. Avoid walking on the PERMAROOF MB System during placement until bitumen has cooled.
1. Install one or more ply of PERMAROOF MB High Tensile Base Sheet to the insulation using Type IV hot asphalt at a rate of 25 lbs per 100 square feet to the insulation followed by installing the PERMAROOF MB Smooth adhered at a minimum of 25 lbs per 100 square feet.
  2. Over woodfiber or Dens Deck insulation using Type IV hot asphalt: Apply a minimum of 25 lbs. Type IV hot asphalt per 100 square feet to insulation and install PERMAROOF MB Type IV or PERMAROOF MB Type VI ply sheet in a two ply application. Followed by the PERMAROOF MB Smooth adhered @ min. 25lbs per 100 square feet.
  3. Lap the selvage a minimum of 4" and end laps a minimum of 6". Offset the PERMAROOF MB laps from the base sheet laps. Stagger the end laps 36" minimum. To ensure complete and uniform adhesion, the adhesive should extend past lap edges. Use a rounded trowel to test the lap security. Install flashings as specified. For smooth surfaced PERMAROOF MB, apply a flood coat with aggregate or an asphalt emulsion with reflective coating.

### 3.07 SURFACING OPTIONS

- A. Allow PERMAROOF MB Smooth to weather a minimum of 14 days then apply Alumanation 301 at a rate of 2 gallons per one hundred (100) square feet or 32 wet mils.
- B. Allow PERMAROOF MB Smooth to weather a minimum of 25 to 30 days then apply WB Primer at a rate of 1 gallon per one hundred (100) square feet followed by Solargard Ultra at a rate of 2 to 3 gallons per one hundred (100) square feet or 48 wet mils.
- C. Flood coat and gravel in hot asphalt.
- D. Flood coat and gravel in PERMAROOF MB Adhesive.

END OF SECTION

**SPECIFICATION DISCLAIMER:**

This "narrow scope" specification provides general guidelines and details only regarding the installation of solely PERMAROOF MB materials. Republic has not been employed or retained to prepare specifications tailored to this particular project. The specifier using this "narrow scope" specification is responsible for editing or modifying the specifications to suit specific project conditions. Neither the issuance of this specification nor any information contained herein implies the acceptance by Republic of any particular roof design, installation procedure or roof component.



2628 Pearl Road ■ Medina, Ohio 44256  
800-551-7081 ■ 800-382-1218 Fax