



Mar-flex Waterproofing and Basement Products
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This specification utilizes the Construction Specifications Institute (CSI) Manual of Practice, including MasterFormat™, SectionFormat™ and PageFormat™. This is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets []; delete optional text in final copy of specification. Specifier Notes typically precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text. Metric conversion, where used, is soft metric conversion.

This specification specifies **Mar-flex 5000™WB Waterproofing Membrane**. This product is manufactured by Mar-flex Waterproofing and Basement Products. Revise section number and title below to suit project requirements, specification practices and section content. Refer to CSI MasterFormat for other section numbers and titles.

SECTION 07140 FLUID-APPLIED WATERPROOFING

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Fluid-Applied Waterproofing.

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section.

- B. Related Sections:
1. Section 02320 – Backfill
 2. Section 02620 – Subdrainage
 3. Section 07212 – Board Insulation: perimeter and horizontal insulation

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
1. ASTM C-719 Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle).
 2. ASTM C-836 Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course.
 3. ASTM D-2939 Standard Test Methods for Emulsified Bitumens Used as Protective Coatings.
 4. ASTM E-96 Standard Test Method for Water Vapor Transmission of Materials.
 5. ASTM D-466 Standard Test Method for Films Deposited from Bituminous Emulsions
 6. ASTM D-412 Standard Test Method for Vulcanized Rubber and Thermoplastic Elastomers-Tension
 7. ASTM D-3274 Standard Test Method for Emulsified Bitumens Used as Protective Coatings
 8. ASTM D-2196 Standard Test Method for Rheological Properties of Non-Newtonian Materials by Rotational (Brookfield type) Viscometer

1.03 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit manufacturer's product data and installation instructions.
- C. Quality Assurance/Control Submittals: Submit the following:
1. Certificates: Submit certificate that applicator complies with requirements of this section.

Specifier Note: Article below should include prerequisites, standards, limitations and criteria that establish an overall level of quality for products and workmanship for this section. Coordinate article below with Division 1 Quality Assurance Section.

1.04 QUALITY ASSURANCE

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Conditions of the Contract and Division 1 Regulatory Requirements Section. Repetitive statements should be avoided.

- A. Applicator Qualifications: Utilize an applicator trained and approved by the waterproofing manufacturer.
- B. Regulatory Requirements and Approvals: Comply with requirements of the following:
 - 1. ICC Evaluation Service, Inc. (ICC-ES)
 - a. Legacy Report NER-658

Specifier Note: Article below should include special and unique requirements. Coordinate article below with Division 1 Product Requirements Section.

1.05 DELIVERY, STORAGE & HANDLING

- A. General: Comply with Division 1 Product Requirement Section.
- B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

1.06 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: Comply with application temperature range of 0 - 130°F (-18 - 55°C).

1.07 WARRANTY

- A. Manufacturer's material warranty may be available.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.01 FLUID-APPLIED WATERPROOFING

Specifier Note: Paragraph below is an addition to CSI SectionFormat. Retain or delete paragraph below per project requirements and specifier's practice.

- A. Manufacturer: Mar-flex Waterproofing and Basement Products
 - 1. Contact: 6866 Chrisman Lane, Middletown, OH 45042; Telephone: (800) 498-1411, (513) 422-7285; Fax: (513) 422-7282; E-mail: keepdry@mar-flex.com; website: www.mar-flex.com
- B. Proprietary Products/Systems should be purchased through an Authorized Dealer of Mar-flex Products.
- C. Fluid-Applied Waterproofing and related products, including the following:

Specifier Note: Select method of application to suit project requirements and specify below.

- 1. Mar-flex 5000™ WB Waterproofing Membrane:
 - a. Material: Emulsion
 - b. Color: Black
 - c. Total Solids: 60-70%
 - d. Application Method: [Spray] [Brush] [Roll]
 - e. Coverage Rate: 5-gal/100 ft²
 - f. Film Thickness, Dry: 60 mil (1.5 mm) min.
 - g. Total Cure Time: 24 hours
 - h. Weight/Gallon: 7.6 lb (3.4 kg)
 - i. Elongation at 70°F (21°C) (ASTM D-412 Die C): 1725%
 - j. Tensile Strength (ASTM C-719): 48 psi (331 kPa)
 - k. Low Temperature Flexibility at -15°F (ASTM C 719): No cracking
 - l. Crack Bridging (ASTM C-836): 10 cycles without bond failure

- m. Viscosity/Centipoise: (ASTM D-2196): 3600 centipoise
- n. Resistance to Water Flow (ASTM D-466): Bond strength not affected
- o. Water Solubility (ASTM D-2939): No blistering or re-emulsion
- p. Resistance to Hydrostatic Pressure (Federal Spec TT-C-555B, Par.4.4.7.):
 - i. Water Leaks: None
 - ii. Weight Gain: None
- Permeability: 0.23 perms (13 ng/(Pa × s × m²).
- q. Water Vapor (ASTM E-96):
 - i. Transmission: 0.11 grains/sf/h.
 - ii. Permeability: 0.23 perms (13 ng/(Pa × s × m²).
- 2. 1" or 2" Shockwave by Mar-flex™:
 - a. Material: Closed Cell Foam Board
 - b. Foundation Drainage Rate: Up to 101.11 gal/hr/lin.ft.
- 3. Geo-Mat™ Plus Drainage Roll:
 - a. Material: High Density Polyethylene (HDPE) drainage rolls with attached polypropylene geotextile mat.
 - b. Foundation Drainage Rate: 30.1 gal/min/ft²
- 4. Type II™ Drainage Board:
 - a. Material: Polystyrene compressed into a moderate-duty dimpled core bonded to a single layer of non-woven filter fabric.
 - b. Foundation Drainage Rate: 18 gpm/ft width
- 5. 1-3/8" or 2-3/4" QuickSilver™ Foundation Insulation/Drainage Board:
 - a. Material: Expanded Polystyrene with a 1-mil metallic polypropylene laminate on one side and a 1-mil clear laminate on the other side.
 - b. Thermal Resistance: R 2.8 – 10.2
 - c. Foundation Drainage Rate: 11.7 gal/hr/lin.ft.

Specifier Note: Edit Article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

2.02 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted.

2.03 ACCESSORY MATERIALS

- A. Provide proprietary accessory materials, including the following:

Specifier Note: Specify mastic below to patch cracks, voids and holes in the concrete or masonry walls, which are to receive waterproofing. Mar-flex Mastic's are made of fiberated, trowel grade, asphalt-based mastic, which is fortified with Bio fiber. These materials adhere tightly to form a strong, flexible bond. They may be used in any weather conditions, including applying to damp or cold surfaces, for patching tie holes and honeycombed areas in both rough and smooth masonry surfaces.

- 1. Mar-flex Mastic:
 - a. Material: Plastic or resin material compatible with the waterproofing membrane.

PART 3 EXECUTION

Specifier Note: Article below is an addition to the CSI SectionFormat. Revise article below to suit project requirements and specifier's practice.

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Comply with the most current written installation instructions and recommendations of the waterproofing manufacturer.

3.02 EXAMINATION

- A. Site Verification of Condition:
 - 1. Verify that site conditions are acceptable for application of the waterproofing system.
 - 2. Do not proceed with application until unacceptable conditions are corrected.

3.03 PREPARATION

- A. Surface Preparation:
 - 1. Ensure that the surfaces to receive waterproofing are structurally sound and free of moisture, dust, mud, loose mortar, fins, metal projections or any substances that would be detrimental to the bonding of the membrane to the surface.

2. Remove wall ties.
3. Patch cracks, voids and holes with nonshrink grout or mastic.

Specifier Note: Coordinate article below with manufacturer's recommended application requirements.

3.04 APPLICATION

- A. Spray apply a uniform coat of waterproofing to entire wall area. Obtain a seamless membrane free of entrapped gasses, with a minimum dry film thickness of 60 mil (1.5 mm).
- B. Apply fluid membrane onto footing area a minimum of 4" (102 mm) to prevent water pooling.
- C. Allow membrane to cure for 24 hours before placing any backfill against the wall.
- D. Follow the current installation instructions.

3.05 INSULATING/DRAINAGE PANEL INSTALLATION

Specifier Note: Edit, retain or delete paragraphs below to comply with project requirements and specifier practices.

- A. When using the Geo-Mat Plus roll, install after membrane has been applied. Place and secure to substrate according to manufacturer's current written instructions.
 1. While the membrane is still tacky, begin installation at a corner. Install horizontally against the waterproofing membrane with the polypropylene geotextile mat side facing out-ward.
 2. Install panels from top of footing extending to finish grade level. If there is overlapping off the membrane once you have reached the grade line, a utility knife or similar tool can be used to cut the rolls to the correct height.
 3. For good adherence, apply uniform pressure throughout the surface area, not just the edges and corners.
 4. When two edges come together from two separate pieces, overlap the dimples to create a continuous coverage of the wall.
 5. Secure the Geo-Mat Plus to the wall with Geo-Mat accessories.
- B. When using the Shockwave panels, install after membrane has been applied. Place and secure to substrate according to manufacturer's current written instructions.
 1. While the membrane is still tacky, install the Shockwave Drainage Board over the sprayed sections of the wall. The boards should be placed side by side, extending from the top of the footers to finished grade.
 2. Apply uniform pressure to the board throughout the surface area, not just the edges and corners. Note: If boards are stacked, maintain a factory-equivalent edge at all seams to ensure proper fit and drainage channel alignment. Using a Geo Clip, secure the Shockwave to the wall at corners and seems.
 3. When securing the Shockwave at the top of the boards, place a Geo Clip at each corner making sure that at least two prongs from the Geo Clip is placed in each board. When securing the Shockwave at the seems, place a Geo Clip in the middle of the boards making sure that there is one prong in each board.
 4. Once the Geo Clips are in place install them using a powder actuated mechanical fastener or concrete nail.
 5. If the board overlaps the membrane once you have reached the grade line, a utility knife or similar tool can be used to cut the boards to the correct height.
- C. When using the Type II, install after membrane has been applied. Place and secure to substrate according to manufacturer's current written instructions.
 1. While the membrane is still tacky, begin installation at a corner. Install horizontally against the waterproofing membrane with the non-woven filter fabric side facing out-ward.
 2. Install panels from top of footing extending to finish grade level. If there is overlapping off the membrane once you have reached the grade line, a utility knife or similar tool can be used to cut the rolls to the correct height.
 3. For good adherence, apply uniform pressure throughout the surface area, not just the edges and corners.
 4. When two edges come together from two separate pieces, overlap the dimples to create a continuous coverage of the wall.
 5. If needed, secure the panels to the wall using a powder actuated mechanical fastener or concrete nail.
- D. When using the QuickSilver begin installation of panels after membrane has been applied. Place and secure drainage panels to substrate according to manufacturer's current written instructions.
 1. The boards should be placed side by side, extending from the top of the footers to finished grade with the metallic side of the board facing you. Boards must be installed with drainage channels in a vertical position in order to maintain drainage flow. Note: Boards with the shiplap edges should be fitted together to ensure a tight fit.

2. If needed, secure QuickSilver to the wall using powder actuated mechanical fasteners. Install top fasteners within 4" (102 mm) of the tops of each panel.
 3. If board overlaps the membrane once you have reached the grade line, a utility knife or similar tool can be used to cut the boards to the correct height.
- E. Protect installed insulation/drainage panels during subsequent construction.

Specifier Note: Coordinate article below with Division 1 Execution Requirements (Cleaning) Section.

3.06 CLEANING

- A. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.