



ICC-ES Evaluation Report ESR-3062

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION

Section: 07 11 00—Dampproofing

Section: 07 13 00—Sheet Waterproofing

Section: 07 14 00—Fluid-Applied Waterproofing

REPORT HOLDER:

MAR-FLEX WATERPROOFING AND BUILDING PRODUCTS

EVALUATION SUBJECT:

MAR-FLEX 5000™, MAR-FLEX 5000 WB™, QUICK SEAL™ AND QUICK SEAL WB™ LIQUID-APPLIED WATERPROOFING MEMBRANES; AND GEO-MAT AND GEO-MAT PLUS™ DAMPPROOFING AND WALL WATERPROOFING MEMBRANE SYSTEM

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2018, 2015, 2012, 2009 and 2006 *International Building Code*® (IBC)
- 2018, 2015, 2012, 2009 and 2006 *International Residential Code*® (IRC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Foundation waterproofing
- Foundation dampproofing

1.2 Evaluation to the following green standards:

2015, 2012 and 2008 ICC 700 *National Green Building Standard*™ (ICC 700-2015, ICC 700-2012 and ICC 700-2008)

Attributes verified:

- See Section 2.1

2.0 USES

2.1 Mar-flex 5000™, MAR-FLEX 5000 WB™, QuickSeal™ and QuickSeal WB™:

The liquid-applied dampproofing and waterproofing membranes are applied to the exterior of foundation walls

of parged concrete masonry units or cast-in-place concrete construction. The membranes are alternates to the dampproofing materials specified in 2018, 2015, 2012 and

2009 IBC Section 1805.2.2, 2006 IBC Section 1807.2.2 and IRC Section R406.1. The membranes are also alternates to the waterproofing materials specified in 2018, 2015, 2012 and 2009 IBC Section 1805.3.2, 2006 IBC Section 1807.3.2 and IRC 406.2.

The attributes of the liquid-applied waterproofing membranes have been verified as conforming to the provisions of ICC 700-2015 and ICC 700-2012 Section 602.1.2 and ICC 700-2008 Section 602.11 for foundation waterproofing. Note that decisions on compliance for those areas rest with the user of this report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. These codes or standards often provide supplemental information as guidance.

2.2 Geo-Mat and Geo-Mat Plus™:

The below-grade, exterior wall, sheet membrane systems are used as foundation wall dampproofing materials on cast-in-place concrete, concrete masonry, insulated concrete forms (ICFs) or treated wood foundations. In those jurisdictions adopting the IRC, the membrane systems may be considered as a foundation wall waterproofing material for use in applications of low hydrostatic pressure.

3.0 DESCRIPTION

3.1 Mar-flex 5000™:

Mar-flex 5000™ is a solvent-based, fluid-applied, polymer-modified-asphalt and rubber polymer coating that has a resistance to hydrostatic pressure of 3 psi (20.7 kPa) over a 1/16-inch-wide (1.6 mm) crack, when applied in accordance with Section 4.0 and tested in accordance with ASTM D5385. The coating is supplied in 55-gallon (208L) drums and in bulk form. The product has an unlimited shelf life when stored in unopened containers. The manufacturer's recommended storage temperature range is between 40°F and 100°F (4.4°C and 38°C).

3.2 MAR-FLEX 5000 WB™:

Mar-flex 5000™ is a water-based, fluid-applied, polymer-modified-asphalt and rubber polymer coating that has a resistance to hydrostatic pressure of 3 psi (20.7 kPa)

over a $1/16$ -inch-wide (1.6 mm) crack, when applied in accordance with Section 4.0 and tested in accordance with ASTM D5385. The coating is supplied in 55-gallon (208 L) drums and in bulk form. The product has a six-month shelf life when stored in unopened containers. The manufacturer's recommended storage temperature range is from 40°F to 100°F (4.4°C to 38°C).

3.3 Quick Seal™:

Quick Seal™ is a solvent-based, fluid-applied, one-coat polymer-asphalt coating that has a resistance to hydrostatic pressure of 2 psi (13.8 kPa) over a $1/16$ -inch-wide (1.6 mm) crack when applied in accordance with Section 4.0 and tested in accordance with ASTM D5385. The coating is supplied in 55-gallon (208L) drums and in bulk form. The product has an unlimited shelf life when stored in unopened containers. The manufacturer's recommended storage temperature range is between 40°F and 100°F (4.4°C and 38°C).

3.4 QUICK SEAL WB™:

Quick Seal™ is a water-based, fluid-applied, one-coat polymer-asphalt coating that has a resistance to hydrostatic pressure of 2.5 psi (17.2 kPa) over a $1/16$ -inch-wide (1.6 mm) crack when applied in accordance with Section 4.0 and tested in accordance with ASTM D5385. The coating is supplied in 55-gallon (208 L) drums and in bulk form. The product has a six-month shelf life when stored in unopened containers. The manufacturer's recommended storage temperature range is from 40°F to 100°F (4.4°C to 38°C).

3.5 Geo-Mat and Geo-Mat Plus™:

Geo-Mat and Geo-Mat Plus™ membranes are high-density polyethylene (HDPE), semirigid, thermally formed sheets that are smooth on one side and "dimpled" on the other side to provide an air gap between the membrane and the wall surface. Geo-Mat Plus™ has an attached polypropylene geotextile mat on the dimpled side. The Geo-Mat membrane is available in 48-inch-wide (1219 mm), 81-inch-wide (2057 mm), and 96-inch-wide (2438 mm) rolls, 50 feet (15.24 m) in length. The Geo-Mat Plus™ membrane is available in 48-inch-wide (1219 mm), 72-inch-wide (1829 mm), and 96-inch-wide (2438 mm) rolls, 50 feet (15.24 m) in length. The membranes must be stored in areas protected from ultraviolet light.

The membrane system includes the Geo-Mat or Geo-Mat Plus™ membrane; Geo-Clips to help distribute the weight of the membrane and speed up installation; Mar-flex Profiles to prevent soil and water penetration between the wall and the membrane along any below grade cut such as at windows, walkouts, or vertical terminations; and the Mar-flex Adhesive Band for seams between sheets.

4.0 INSTALLATION

4.1 Installation of Mar-flex 5000™, MAR-FLEX 5000 WB™ QuickSeal™ and QuickSeal WB™ Liquid-Applied Waterproofing Membranes:

Installation of the liquid-applied waterproofing membranes must comply with this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at the jobsite at all times during installation.

The surface to which the coatings are applied must be structurally sound, clean, dry, and free of dust, mud, loose mortar, sand, soil, frost or loose materials. Additionally, there must be no fins, metal projections or any substances that will prevent bonding of the membrane to the surface.

Voids in concrete or concrete masonry, tie holes and honeycombed areas in the foundation wall must be filled with nonshrinking grout or an asphalt-based mastic. Where nonshrinking grout is used to fill voids, the grout must be allowed to cure before the membrane is applied. Concrete and parged masonry surfaces must be cured and dry prior to application of the membranes.

The ambient air temperature during application must be in the range of 0° to 150° F (-17.8° to 65.6° C) for Mar-flex 5000 SB™ and QuickSeal SB™ and 20° to 130° F (-6.7° to 54.5° C) for the Mar-flex 5000 WB™ and QuickSeal WB™. The membranes may be brush-, roller- or spray-applied in one coat, to a nominal wet film thickness of 55 mils [0.055 inch (1.40 mm)], to the exterior vertical surfaces of below-grade foundation walls of parged concrete masonry units or cast-in-place concrete construction. Once applied, the membranes will cure to a nominal film thickness of 40 mils [0.040 inch (1.0 mm)].

The membranes are required to cure for a period of 24 hours before any backfill is placed against the wall. Protection boards must be placed against the wall to protect the membrane when backfill contains angular stone or other sharp objects.

4.2 Installation of Geo-Mat and Geo-Mat Plus™ Membranes:

Installation of the sheet membranes must comply with this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at the jobsite at all times during installation.

Surfaces to receive the membrane must be structurally sound and free of loose mortar, fins, and metal projections. Wall ties must be removed and the tops of the footers swept. A chalk line must be made on the foundation wall at final grade in order to establish placement of the top of the membrane and the profile. Except for concrete block that must be parged, there are no primers required prior to the application of the Geo-Mat or Geo-Mat Plus™.

The Geo-Mat and the Geo-Mat Plus™ membrane is unrolled right to left. The top of the roll has a termination edge. The dimples on the Geo-Mat will be facing inward towards the foundation wall. The Geo-Mat Plus™ is installed with the filter fabric facing outward. The membrane may be unrolled and cut into 10-foot (3048 mm) sections to create an easier piece to work with.

The membrane must be mechanically fastened with fasteners approved by the report holder. Geo Clips are installed first along the side edge to hold the sheet in place. The clips may be placed every 12 to 15 inches sporadically along the wall and over the seams, sufficient to hold the membrane in place. The prongs are placed over the dimples of the sheet and a fastener is inserted into the preformed center nail hold to attach the membrane to the wall. On walls greater than 8 feet (2438 mm) in height, the bottom course must be installed first and the top course overlap onto the bottom course by at least 6 inches (152 mm). A utility knife or similar tool can be used to cut the roll to the correct height.

Mar-flex Profiles must be installed across the top edge of the membrane to prevent soil and water from entering between wall and membrane. The profile is placed along the top edge of the wall to overlap the top roll of dimples, and is attached with fasteners in the pre-drilled holes. Excess material may be cut with a utility knife or similar tool if needed.

When installing membrane around corners, the membrane must be pressed in as tightly as possible, then the Geo Clips are installed along the seam at 12-inch (305 mm) intervals.

At seams, the dimples must be overlapped 6 inches (152 mm) and connected either with Geo Clips every 12 to 15 inches (305 to 381 mm) or with the Mar-flex Adhesive Band applied between the two layers on the flat side (not dimpled) or other critical points to create continuous coverage of the wall.

The Geo-Mat membrane must be installed tightly around any foundation penetrations and sealed at the entire intersection between the membrane and the penetration. The membrane must be placed flush to the penetration and the membrane cut vertically, fastening with Geo Clips.

If repairs are needed, a patch piece large enough to overlap the surrounding areas by 6 inches (152 mm) is used. Sealant must be applied around the damaged area and the patch piece installed to interlock with adjacent dimples.

5.0 CONDITIONS OF USE

The Mar-flex 5000™, MAR-FLEX 5000 WB™, QuickSeal™, QuickSeal WB™ exterior foundation waterproofing membranes, and the Geo-Mat and Geo-Mat Plus™ membrane system, described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Installation must comply with this report, the manufacturer's published installation instructions and the applicable code. In the event of a conflict between the manufacturer's published installation instructions and this report, this report governs.

5.2 Mar-flex 5000™ MAR-FLEX 5000 WB™, Quickseal™ and QuickSeal WB™:

5.2.1 The coatings are limited to applications on the exterior vertical surfaces of below-grade foundation walls.

5.2.2 Joints and penetrations of the walls to which the coatings are to be applied must be made watertight in accordance with the requirements of the applicable code.

5.2.3 This report is limited to an evaluation of the coatings applied to the thicknesses stated in Section 4.0.

5.2.4 Application of the coatings on uncured ("green") concrete is outside the scope of this report.

5.2.5 When use is in dampproofing applications, a subsurface soil investigation of the level of ground water at the construction site must be performed to verify the nonexistence of hydrostatic pressure.

5.3 Geo-Mat and Geo-Mat Plus™:

5.3.1 The backfill of the foundation must be clean soil free of rocks or any other deleterious materials and placed (for jurisdictions adopting the IBC, the

backfill must be placed in lifts and compacted) so as not to damage the foundation of the membrane system. The design and construction of the foundation is outside the scope of this report. For jurisdictions adopting the IRC, local backfilling requirements must be followed. Caution must be taken so as not to damage the foundation of the membrane system.

5.3.2 Geo-Mat and Geo-Mat Plus™ membranes must be backfilled within 15 days of installation to protect the membrane from prolonged exposure to UV rays from sunlight.

5.3.3 Geo-Mat and Geo-Mat Plus™ may be used as dampproofing under the IBC. Use of the membrane under the IBC as waterproofing is outside the scope of this report.

5.3.4 Geo-Mat and Geo-Mat Plus™ may be used as dampproofing and wall waterproofing under the IRC.

5.3.5 The design and installation of the foundation drainage system is outside the scope of this report. The foundation drainage system must be installed in accordance with 2018, 2015, 2012 and 2009 IBC Section 1805.4 (2006 IBC Section 1807.4) or IRC Section R405, as applicable.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Cold, Liquid-applied, Below-grade, Exterior Dampproofing and Waterproofing Materials (AC29), dated June 2011 (editorially revised March 2019).

6.2 Data in accordance with the ICC-ES Acceptance Criteria for Rigid, Polyethylene, Below-grade, Dampproofing and Wall Waterproofing Material (AC114), dated March 2012 (editorially revised April 2019).

7.0 IDENTIFICATION

7.1 Containers of the liquid-applied membranes as described in this report must be identified by a label bearing the manufacturer's name (Mar-Flex Waterproofing & Building Products) and address, the product name (Mar-flex 5000™, MAR-FLEX 5000 WB™, QuickSeal™, QuickSeal WB™, Geo-Mat or Geo-Mat Plus™) and the evaluation report number (ESR-3062).

7.2 The report holder's contact information is the following:

MAR-FLEX WATERPROOFING AND BUILDING PRODUCTS

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1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Mar-flex 5000™, Mar-flex 5000 WB™, Quick Seal™, Quick Seal WB™ Liquid-applied Waterproofing Membranes; and Geo-Mat and Geo-Mat plus™ Dampproofing and Wall Waterproofing Membrane System, described in ICC-ES evaluation report ESR-3062, have also been evaluated for compliance with the codes noted below.

Applicable code edition(s):

- 2019 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2019 *California Residential Code* (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The Mar-flex 5000™, Mar-flex 5000 WB™, Quick Seal™, Quick Seal WB™ Liquid-applied Waterproofing Membranes; and Geo-Mat and Geo-Mat plus™ Dampproofing and Wall Waterproofing Membrane System, described in Sections 2.0 through 7.0 of the evaluation report ESR-3062, comply with CBC Chapter 18, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC), as applicable provisions noted in the evaluation report and the additional requirements of the CBC Chapter 18, as applicable.

2.1.1 OSHPD:

The applicable OSHPD Sections of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections of the CBC are beyond the scope of this supplement.

2.2 CRC:

The Mar-flex 5000™, Mar-flex 5000 WB™, Quick Seal™, Quick Seal WB™ Liquid-applied Waterproofing Membranes; and Geo-Mat and Geo-Mat plus™ Dampproofing and Wall Waterproofing Membrane System, described in Sections 2.0 through 7.0 of the evaluation report ESR-3062, comply with CRC Chapter 4, provided the design and installation are in accordance with the 2018 *International Residential Code*® (IRC) provisions noted in the evaluation report.

This supplement expires concurrently with the evaluation report, reissued October 2022.