

# ICC-ES Evaluation Report

**ESR-2125**

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This report is subject to re-examination in two years.

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**DIVISION: 07 00 00—THERMAL AND MOISTURE  
PROTECTION**
**Section: 07 18 13—Pedestrian Traffic Coatings**
**REPORT HOLDER:**

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**EVALUATION SUBJECT:**
**ELASTO FIBERDECK 100 WALKING DECK SYSTEM**
**1.0 EVALUATION SCOPE**
**Compliance with the following codes:**

- 2009 *International Building Code*® (2009 IBC)
- 2009 *International Residential Code*® (2009 IRC)
- 2006 *International Building Code*® (2006 IBC)
- \* ■ ~~2006 *International Residential Code*® (2006 IRC)~~

**Properties evaluated:**

- Durability
- Fire resistance
- Fire classification

**2.0 USES**

The Elasto Fiberdeck 100 system is a cementitious walking deck system for use directly over concrete and plywood substrates.

**3.0 DESCRIPTION**
**3.1 Materials:**

**3.1.1 Metal Flashing:** Metal flashing must be a minimum No. 26 gage (19 mils) [(0.019 inch (0.483 mm)], corrosion-resistant metal. Flashings must be rigid enough to avoid excessive deflection and ponding, or must be solidly backed by a plywood or concrete substrate.

**3.1.2 AVM Crete 6400 Underlayment:** AVM Crete 6400 underlayment is a field mixture of AVM Aggregate 400 and AVM Concrete Additive 7400, jobsite-mixed at a ratio of 50 pounds (22.5 kg) of AVM Aggregate 400 to 1 gallon (3.7 L) of AVM Concrete Additive 7400.

**3.1.2.1 AVM Aggregate 400:** AVM Aggregate 400 is a dry blend of portland cement and various aggregates, and is packaged in 50-pound (22.5 kg) bags.

**3.1.2.2 AVM Concrete Additive 7400:** AVM Concrete Additive 7400 is a liquid polymer to be used with AVM Aggregate 400, and is supplied in 1- and 5-gallon (3.7 and 18.9 L) containers. Shelf life is one year when stored in unopened containers at temperatures between 50°F and 90°F (10°C and 32.2°C).

**3.1.3 AVM Primer 100:** AVM Primer 100 is a primer for plywood, concrete and steel surfaces, and is supplied in 2- and 5-gallon (7.6 and 18.9 L) containers. Shelf life is one year when stored in unopened containers at temperatures between 50°F and 90°F (10°C and 32.2°C).

**3.1.4 AVM Mat 100:** AVM Mat 100 is a multidirectional, chopped-strand, fiberglass mat weighing 0.75 ounce per square foot (229 g/m<sup>2</sup>).

**3.1.5 AVM Base Resin 100:** AVM Base Resin 100 is a liquid polymer bonding resin, and is supplied in 2- and 5-gallon (7.6 and 18.9 L) containers. Shelf life is one year when stored in unopened containers at temperatures between 50°F and 90°F (10°C and 32.2°C).

**3.1.6 AVM Texture 100:** AVM Texture 100 is a premixed, ready-to-use texture coating, and is supplied in 2- and 5-gallon (7.6 and 18.9 L) containers. Shelf life is one year when stored in unopened containers at temperatures between 50°F and 90°F (10°C and 32.2°C).

**3.1.7 AVM Top Coat Sealer 4100 and 4150:** AVM Top Coat Sealers 4100 and 4150 are integral-color or clear-top-coat, acrylic system sealers, and are supplied in 2- and 5-gallon (7.6 L and 18.9 L) containers. Shelf life is one year when stored in unopened containers at temperatures between 50°F and 90°F (10°C and 32.2°C).

**3.1.8 AVM AcriPatch 5020:** AVM AcriPatch 5020 is a patching compound for application at joints, voids, cracks and wood knots, and is available in 2- and 5-gallon (7.6 L and 18.9 L) containers. Shelf life is one year when stored in unopened containers at temperatures between 50°F and 90°F (10°C and 32.2°C).

**3.2 Substrates:**

**3.2.1 Plywood:** Plywood must have a minimum thickness of <sup>5</sup>/<sub>8</sub> inch (15.9 mm) or as required by Table 2304.7 (3) of the IBC, and must be exterior grade complying with U.S. DOC PS-1 or PS-2.

**3.2.2 Concrete:** Concrete decks must comply with the applicable requirements of the applicable code and must have a minimum compressive strength of 2500 psi (17.2 MPa) after a minimum 28-day cure time.

### 3.3 Metal Lath:

Metal lath must be minimum 2.5-pound-per-square-yard (1.36 kg/m<sup>2</sup>), galvanized-diamond-mesh, expanded metal lath complying with ASTM C 847.

### 3.4 Staples:

Staples must be corrosion-resistant, minimum No. 16 gage [0.0598 inch (1.519 mm)] staples with 1-inch (25.4 mm) crowns and minimum <sup>5</sup>/<sub>8</sub>-inch-long (15.9 mm) legs.

## 4.0 INSTALLATION

### 4.1 General:

The Elasto Fiberdeck 100 walking deck system must be installed in accordance with the manufacturer's published installation instructions, the applicable code and this report. The manufacturer's installation instructions must be available on the jobsite during application. All liquid materials must be applied when the ambient temperature is between 50°F and 90°F (10°C and 32.2°C), and the relative humidity is between 30 and 85 percent; the materials must not be applied when rain or other precipitation is expected or occurring.

Substrates must be structurally sound, clean and dry, and must be sloped to meet the minimum requirements of the applicable code.

### 4.2 Preparation of Substrates:

**4.2.1 Plywood:** Plywood must be applied to framing in accordance with the requirements of the applicable code. All edges must be blocked. All penetrations through and terminations of the sheathing must be protected with metal flashing in accordance with the requirements of the applicable code and the manufacturer's published installation instructions. Any loose or spalling materials must be removed, and all plywood seams, knot holes and uneven areas must be filled with AVM AcriPatch 5020.

**4.2.2 Concrete:** Surfaces must be clean and dry. All holes and cracks must be filled flush with AVM AcriPatch 5020, and all high spots cut or ground off to provide a smooth, even surface. Dust must be removed using high-pressure air. Any foreign material such as paint, grease or oil must be removed by mechanical means. New concrete must be mechanically scarified prior to application of the system.

**4.2.3 Metal Flashing:** Metal surfaces must be cleaned of all dust, grease, oils, loose paints, etc., to ensure a good bond between AVM materials and metal flashing. All exposed joints must be caulked.

### 4.3 Walking Deck Covering System:

**4.3.1 Installation over Plywood Substrates:** The substrate must have a minimum slope of <sup>1</sup>/<sub>4</sub>:12 (2 percent slope).

The plywood must be prepared as noted in Section 4.2.1. All perimeter edges, penetrations, and abutting vertical surfaces must be covered with metal flashing that extends a minimum of 2 inches (51 mm) onto the surface. The system materials must be applied directly to metal flashing.

AVM Primer 100 is applied by roller or brush at a rate of 1 gallon per 200 to 300 square feet (0.021 to 0.14 L/m<sup>2</sup>). This coat requires 15 to 45 minutes to cure; temperature and humidity affect drying rates. The primer must be reapplied if the AVM Crete 6400 underlayment is not applied within 12 hours of the initial primer application.

The primed deck must be cleaned, and the metal lath is fastened to the plywood using minimum No. 16 gage [0.0598 inch (1.519 mm)], 1-inch-crown (25.4 mm), <sup>5</sup>/<sub>8</sub>-inch-long (12.7 mm), corrosion-resistant staples, placed at a density of not less than 16 staples per square foot (172 staples/m<sup>2</sup>), and uniformly distributed. The lath must be butt-jointed and the joints must be fastened to the plywood using the above-noted staples at a maximum spacing of 1 inch (25.4 mm) on center. Lath joints must be staggered from plywood joints.

AVM Crete 6400 underlayment is mixed in accordance with the manufacturer's published installation instructions and Section 3.1.2 of this report, and is applied by trowel or float over the metal lath, filling all holes, to a dry thickness of <sup>1</sup>/<sub>4</sub> inch (6.4 mm). This coat requires a minimum of 24 hours to cure; temperature and humidity affect drying rates.

The cured AVM Crete 6400 surface must be cleaned, and AVM Primer 100 is applied to all surfaces to be coated, at a rate of 1 gallon per 200 square feet (0.021 L/m<sup>2</sup>). The primer must be allowed to cure until dry, which requires approximately 15 to 45 minutes; temperature and humidity affect drying rates. The primer must be reapplied if the AVM Base Resin 100 is not applied within 12 hours of the initial primer application.

AVM Mat 100 must be laid, in shingle fashion, with a <sup>1</sup>/<sub>2</sub>-inch (12.7 mm) head lap, to cover the deck. The fabric must overlap the deck edge a minimum of 1 inch (25.4 mm), and must extend into the drain and scupper flashing, terminating at the perimeter of the discharge opening. The fabric must be kept free of crimps and creases.

AVM Base Resin 100 must be applied over the AVM Mat 100 at the rate of 1 gallon per 40 to 50 square feet (1.03 to 0.82 L/m<sup>2</sup>), and must be worked into the mat using a roller or brush, applying sufficient pressure to thoroughly embed the resin into the mat. The coat must be allowed to dry overnight, and the surface is checked for any blemishes, air pockets, or bubbles, and any items that may have become embedded. If any such items are found, areas around them must be cut out and filled with AVM Base Resin 100 and AVM Mat 100, as described in this section. If any pinholes are found, AVM Base Resin is applied at the rate of 1 gallon per 100 to 150 square feet (0.41 to 0.27 L/m<sup>2</sup>) until the pinholes are sealed.

This coat requires a minimum of 24 hours to cure; temperature and humidity affect drying rates.

The cured base coat must be cleaned, and AVM Texture 100 is applied, at the rate of 1 gallon per 40 to 60 square feet (1.03 to 0.69 L/m<sup>2</sup>), using a hopper-gun or a trowel. This coat must be allowed to cure until dry, which requires approximately 1 to 3 hours; temperature and humidity affect drying rates.

The deck must be cleaned, and AVM Top Coat Sealer 4100 or 4150 is applied at the rate of 1 gallon per 100 to 120 square feet (0.41 to 0.34 L/m<sup>2</sup>). This coat must be allowed to cure until dry, but under no circumstances is curing to be less than 24 hours; temperature and humidity affect drying rates.

**4.3.2 Installation over Concrete Substrates:** Concrete decks must have a minimum slope of <sup>1</sup>/<sub>4</sub>:12 (2 percent slope) and must be prepared in accordance with Section 4.2.2 with metal flashing prepared as noted in Section

4.2.3. All perimeter edges, penetrations, and abutting vertical surfaces must be covered with metal flashing that extends a minimum of 2 inches (51 mm) onto the vertical surface, except where edges of concrete slabs are intended for drainage. The system materials must be applied directly to the metal sections. Installation over concrete substrates must be as described in Section 4.3.1 with the exception that the metal lath is not required. In the case of installations over existing reinforced concrete slabs exceeding 1 inch (25.4 mm) in thickness and having a minimum compressive strength of 2,500 psi (17.2 MPa), the application of AVM Crete 6400, as detailed in Section 4.3.1, is not required.

#### 4.4 Method of Repair:

The damaged area must be cleared of all existing material, and the materials replaced in the manner described in Sections 4.1, 4.2 and 4.3. When substrate damage occurs, the retention of the fire-resistance rating and strength properties must be investigated and the results submitted to the code official.

#### 4.5 One-hour Fire-resistance-rated Floor Assembly:

The Elasto Fiberdeck 100 walking deck system, when installed over  $\frac{5}{8}$ -inch-thick (15.9 mm) exterior-grade plywood complying with PS-1, with nominally 2-by-8 lumber joists (51 by 203 mm) spaced at a maximum of 16 inches (406 mm) on center, and all plywood joints blocked, is a substitute for the double wood floor described in Assembly 13 of Table 720.1(3) of the IBC. When installation is over nominally 2-by-8 joists (51 by 203 mm), the design bending stress assigned to the joists is limited to 78 percent of the code-prescribed design values. The reduction in bending stress is not required for 2-by-10 (51 by 254 mm) and deeper joists.

#### 4.6 Fire classification:

When the Elasto Fiberdeck 100 system is applied over  $\frac{5}{8}$ -inch-thick (15.9 mm), exterior grade plywood substrates with all edges blocked, the system has a Class A roof assembly classification, provided the slope is a maximum  $\frac{1}{4}$  inch per foot (2% slope) and meets the minimum slope requirements of the applicable code.

## 5.0 CONDITIONS OF USE

The Elasto Fiberdeck 100 walking deck system described in this report complies with, or is a suitable alternative 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. If there is a conflict between the manufacturer's published installation instructions and this report, this report governs.
- 5.2 When installation is adjacent to swimming pools or spas, in areas subject to related chemical exposure, a second application of AVM Top Coat Sealer 4100 or 4150 is required and must be applied in accordance with Section 4.3.1, except that the sealer is applied at a rate of 1 gallon per 150 square feet (0.27 L/m<sup>2</sup>).
- 5.3 The AVM products are manufactured in Canoga Park, California, under a quality control program with inspections by Ramtech Laboratories (AA-655).

## 6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Walking Decks (AC39), dated February 2010.

## 7.0 IDENTIFICATION

Each bucket of AVM materials bears a label noting the manufacturer's name (AVM Industries, Inc.) and address; the product name, the evaluation report number (ESR-2125); the shelf life; the batch number keyed to the date of manufacture; and the name of the inspection agency (Ramtech Laboratories). Each bag of AVM materials bears a label noting the manufacturer's name (AVM Industries, Inc.) and address, the product name and the batch number keyed to the date of manufacture. Each pallet of buckets and bags bears the same label, including the evaluation report number. Rolls of AVM Mat 100 bear a label noting the company name (AVM Industries), the AVM Mat 100 product name and the evaluation report number (ESR-2125).