



INDUSTRIES, INC.

Division 7-Moisture Protection
Section 7-Under Tile Waterproofing
ICC-ESR 2662 / L.A. RR#: 25431
Exceeds ANSI A118.10
Rev. 06/2011
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8245 Remmet Ave Canoga Park, CA. 91304 (888) 414-1041

Installation Instructions - AVM System 700 Under Tile Waterproofing and Anti-Fracture Membrane

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Installation Instructions - AVM System 700 Under Tile Waterproofing and Anti-Fracture Membrane

General

Description

AVM System 700 is a three layer monolithic waterproofing membrane 1/32nd-1/16th of an inch thick, consisting of a heavy duty reinforced cross stitched polyester fabric sandwiched between two layers of acrylic waterproofing paste. The AVM System 700 is designed to waterproof surfaces which will have Tile, Brick, Slate, Pavers or other similar finished surfaces installed over it. The AVM System 700 may be installed over concrete, plywood, backer boards and other substrates.

Approvals

AVM System 700 meets **ANSI A118.10** Standards. (These standards are used by ICBO, Ceramic Tile Institute of America and the Tile Counsel of America) It also has an ICBO Approval (**ICBO ER 5880**) and L.A. Research Report Number (**L.A. RR 25431**).

Applicator

The applicator shall either be completely experienced in the application of the materials of this system or has carefully read and understood these installation instructions prior to commencing the work.

Product Delivery, Storage and Handling

- A. Delivery of all the AVM System 700 materials to the job site must be in their original sealed containers, with the manufacturer's name and label intact.
- B. Store at temperatures between 50°F and 90°F. Do not store materials in direct sunlight or where they may be damaged by water or rain. Bags (if using AVM Crete for a Protective Coating) must be kept Dry!
- C. Keep all materials out of the reach of children.
- D. If irritation occurs during use, liberally flush affected areas with water. If irritation continues, see a physician immediately.

Limitations

Do not use when temperatures cannot be maintained above 40°F for a minimum of 48 hours or until cured or if precipitation is imminent. Do not install outdoors if temperatures will exceed 100°F before the membrane cures. Install finished flooring within 30 days of membrane installation. Strictly adhere to the Installation Instructions. Failure to do so, may result in the membrane's failure. AVM Industries does not recommend installing this system over substrates consisting only of sheet metals or substrates containing large sheet metal areas. If you wish to install this system over large sheet metal areas, please consult AVM Industries Technical Support department prior to proceeding with such an installation. Failure to do so could void the system's warranty!

Steam Rooms: Maximum temperatures for the AVM System 700 are 167°F or 75°C.

Safety

No special protective gear is required during the application of the system materials, except goggles for eye protection.

Tools Needed for Application

- A. Cutting Knife
- B. Brush
- C. Roller (Helpful for large areas)
- D. Scissors (Helpful if many cuts are needed)

Products

AVM System 700 Materials

- AVM Mat 800, Polyester Stitchbond, 6"x300' and 40"x324', as supplied by AVM Industries.
- AVM Paste 700, Water-Base Acrylic Paste supplied in 5 gallon buckets
- 250 Sq.Ft. Kit. Two 3.5 gallon buckets of AVM Paste 700, Mat 800 6"x80', 40"x80', 4" brush and cutting knife.
- Optional: AVM Primer 100 (Acrylic Primer) or AVM Epoxy Primer for best bonding results

Membrane Installation Over Mortar Beds and other Concrete Substrates



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Inspection of Concrete Substrates

- A. Concrete substrate shall be clean, free of dirt, dust, oil, grease and curing agents.
- B. Concrete finish shall be straight without waviness or noted defects, troweled semi smooth or finished with a light broom surface texture.
- C. Concrete substrate shall be fully cured. On traffic bearing surfaces, concrete substrate shall achieve a min compression strength of 2000 psi.
- D. Damaged concrete surfaces with noted defects shall be repaired prior to commencement of the membrane 700 application.
- E. Verify that mortar bed or concrete slab provides adequate slope for proper drainage. (Minimum slope: 1/4" per foot)
- F. Verify that all sheet metal flashing and related accessories are properly secured and joints solidly imbedded in sealant. Install edging and other related metals where shown or required for a complete installation.
- G. Expansion Joints: **DO NOT COVER EXPANSION JOINTS!** If expansion joints exist, contact the architect or AVM Industries for further instructions on how they should be waterproofed.

Preparation of Concrete Substrates

- A. Remove latence, oil, grease, curing agents, debris and other deleterious materials from surfaces scheduled to receive application. High pressure washing is highly recommended. Sandblasting or acid washing might be needed, especially on older or very dirty slabs.
- B. Clean hairline cracks and rout out cracks larger than 1/8 inch. Seal cracks flush with the AVM Acripatch 5020 patching compound or other exterior grade, traffic bearing patching compound.
- C. Just prior to beginning the installation of the membrane 700, thoroughly clean the areas to receive this work with a broom or blower to remove all debris and dust from the work area.

System Application

Important Note: The following material coverages may vary based on job conditions, Substrate conditions and other factors. Please read the coverage charts carefully prior to the application of the AVM System 700.

Primer Application: (optional) AVM recommends applying AVM Primer 100 (acrylic primer) to all surfaces prior to installing the membrane. In demanding applications and for best bonding results, use AVM's epoxy primer.

Membrane Installation Instructions

Reinforcement: Reinforce all cracks, joints and corners by covering them with the 6" fabric embedded in some of the Paste 700. Apply a second layer of the 6" fabric and Paste 700 at critical corners and areas subjected to stress or movement. Tuck the fabric tightly into corners using a brush and Paste 700. Allow to dry until dry to the touch.

Surface Areas: Precut the fabric allowing a minimum of 2" overlap at seems and make sure to leave enough fabric to roll up at base coves and flashings. Apply a liberal coat of the Paste 700 to an area 4" larger than the fabric width using a roller or brush. Lay the fabric onto the wet paste and push it down gently with the brush, allowing the paste to bleed through it. Remove all wrinkles. Once the mat is properly embedded, apply another coat of the Paste 700 over the wet fabric. Continue this procedure until all the areas scheduled to receive the Membrane 700 are covered. Allow to cure until dry. Then, apply another coat of the AVM Paste 700 to the entire area. Allow to thoroughly cure.

Membrane Inspection

- 1. After the membrane has cured, carefully inspect the surface for bubbles blotches, clumps or other imperfections at the fabric joints or within the field areas.
- 2. If bubbles, blotches, clumps or other imperfections are found, remove them and the surrounding area by cutting them out and reinstalling the membrane per the membrane installation instructions.
- 3. Carefully inspect the membrane for imperfections. (The membrane should be completely and evenly sealed) If imperfections are found, apply another coat of the AVM paste 700 at the rate of one (1) gallon per 100 square feet, or until the imperfections are sealed.
- 4. **Flood testing is highly recommended whenever possible. Do not flood test until membrane has fully cured!**

you are now ready to install the tile or other finish surfaces. (Or the optional protective coating)
To install the protective coating, please refer to the "Protective Coating" installation instructions.

Membrane Installation Over Plywood Substrates

Inspection of Plywood Substrates



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- A. Plywood must be at least 5/8" thick, Exterior Grade, Structural plywood with maximum span of 16" between supports. All plywood edges must be properly supported and fastened to the support structure below. Joints must be properly blocked. All nails or screws shall be flush to the plywood surface or slightly sunk in. Plywood to have 1/8" spacing between sheets, installed perpendicular to the supports below and installed per code.
- B. AVM recommends using ACX grade plywood, installed with the smooth side facing up. CDX is acceptable as well. OSB plywood is not recommended and if used, will void all warranties!
- C. Plywood substrate shall be clean, free of dirt, dust, oil, grease and other materials that can prevent or reduce the bonding of the system to the plywood.
- D. Plywood shall be securely attached with glue to wood beams and joices. In lieu of glued connections, screw or nail plywood with non-rising, ring shank nails spaced at 6 inches on centers maximum or as required by code.
- E. Damaged plywood substrate areas with noted defects or deflections shall be repaired or replaced prior to commencement of deck system application.
- F. Verify that substrate provides adequate slope for proper drainage. (Recommended slope: 1/4" per foot)
- G. Verify that all sheet metal flashing and related accessories are properly secured and joints solidly imbedded in sealant. Install Galvanized or preferably Bonderized edging metal where shown or required for a complete installation.

Preparation of Plywood Substrates

- A. Clean (scrape if necessary) all sheet metal areas to receive the deck coating. Sheet metals made out of Galvanized or Bonderized Steel need to be wiped clean using a rag and water mixed with a strong detergent. (Make sure all oil residues are removed)
- B. Caulk all exposed sheet metal joints, and other hard to reach areas. Especially areas prone to leaking . Special attention should be given to the following areas: Corners, around drains and scuppers, voids, holes, and around posts.
- C. Seal plywood joints and cracks flush with the AVM Acripatch 5020 patching compound or other exterior grade, traffic bearing patching compound.
- D. Just prior to beginning the installation of the membrane 700, thoroughly clean the areas to receive this work with a broom or blower to remove all debris and dust from the work area.

Primer Application: (optional) AVM recommends applying AVM Primer 100 (acrylic primer) to all surfaces prior to installing the membrane. In demanding applications and for best bonding results, use AVM's epoxy primer.

Membrane Installation Instructions

Reinforcement: Reinforce all cracks, plywood joints and corners by covering them with the 6" fabric embedded in some of the Paste 700. Apply a second layer of the 6" fabric and Paste 700 at all corners and areas subjected to stress or movement. Tuck the fabric tightly into corners using a brush and Paste 700. Allow to dry until dry to the touch.

Surface Areas: Precut the fabric allowing a minimum of 2" overlap at seems and make sure to leave enough fabric to roll up at base coves and flashings. Apply a liberal coat of the Paste 700 to an area 4" larger than the fabric width using a roller or brush. Lay the fabric onto the wet paste and push it down gently with the brush, allowing the paste to bleed through it. Remove all wrinkles. Once the mat is properly embedded, apply another coat of the Paste 700 over the wet fabric. Continue this procedure until all the areas scheduled to receive the Membrane 700 are covered. Allow to cure until dry. Then, apply another coat of the AVM Paste 700 to the entire area. Allow to thoroughly cure.

Membrane Inspection

- 1. After the membrane has cured, carefully inspect the surface for bubbles blotches, clumps or other imperfections at the fabric joints or within the field areas.
- 2. If bubbles, blotches, clumps or other imperfections are found, remove them and the surrounding area by cutting them out and reinstalling the membrane per the membrane installation instructions.
- 3. Carefully inspect the membrane for imperfections. (The membrane should be completely and evenly sealed) If imperfections are found, apply another coat of the AVM paste 700 at the rate of one (1) gallon per 100 square feet, or until the imperfections are sealed.
- 4. **Flood testing is highly recommended whenever possible. Do not flood test until membrane has fully cured!**

Protective Coating

Please refer to the "Protective Coating Installation Instructions".



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Protective Coating Installation Instructions

Optional when the membrane is bonded directly to cement. Required when the membrane is bonded directly to plywood

Description

The protective layer is a special cement mix made at the consistency of slurry which is applied 1/16" thick, and when cured, achieves over 6000 PSI.

Advantages

- A. The protective coating protects the membrane from physical damage and the elements from the time the protective coating is applied to the time the finish surfaces (such as tile) are installed. This is particularly helpful in preventing accidental damage to the waterproofing membrane by the tile installers and other trades while the tile is being installed and other work is being done.
- B. It increases the amount of time you can wait for the tile to be installed. Without the protective layer, we recommend the membrane be covered (the tile be installed) within 30 days after it has cured. Once the protective coating is installed however, the time could easily be increased to 90 days! This extra time provides extra flexibility in scheduling.
- C. The protective layer bonds to the membrane much stronger than some of the best thin sets.
- D. Thin set bonds extremely well to the protective layer. (Including the low-end thin set ANSI 118.1)

Protective Layer Components

AVM Crete 6200/6700 Consists of:

- | | | |
|----|---------------------------------|---|
| A. | AVM Aggregate 200 | A 50 pound bag of AVM Aggregate 200. (Cementitious) |
| B. | AVM Concrete Additive 7400/7700 | 1.00/5.00 Gal containers of the AVM Concrete Additive 7400/7700 Liquid. |

Recommended Tools

- Electric Drill and paddle
- Cutting knife
- Brush
- Trowel

Installation Instructions

Preparation

Just prior to beginning the installation of the protective coating, thoroughly clean the areas to receive this work with a broom or blower to remove all debris and dust from the work area.

Mixing

Wear eye protection while mixing!

- A. Put 1.00 gallon of the AVM Concrete Additive 7400/7700 in an empty 5 gallon bucket.
- B. While mixing with the drill and paddle, Slowly add the entire contents of the AVM Aggregate 200 bag into the bucket.
- C. Mix thoroughly using an electrical drill and paddle.
- D. Continue to add additive as necessary until a soft paste consistency is reached. Expect to use approximately 1¼ gallons of additive for each 50 pound bag of the AVM Aggregate 200.

Application

Apply a thin layer of the protective coating using a trowel or wide brush. Make sure the entire membrane is properly covered. For better thin set bonding, give the protective coating a slight broom finish.

you are now ready to install the tile or other finish surfaces.



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Notes / Testing / Options

Special Notes for Waterproofing Shower Pans

- Make sure all plywood joints and corners do not have cracks or gaps exceeding 1/8" wide.
- Slope the shower pan floor with AVM Crete 6400 or other reinforced concrete mud bed. (Min 2500 PSI after 28 days)

Flood Testing

Under tile waterproofing membranes are berried underneath the finished surfaces (such as tile) and are not readily accessible for repairs. If a leak is found, the only way to repair them would be to remove the tile, repair the damaged membrane, and then reinstall the tile. This would be time consuming, inconvenient and costly.

Flood testing provides an efficient and economical method to test the waterproofness of the membrane prior to proceeding with the installation of the protective coating or the finished surfaces. Following are some guidelines for flood testing.

- **Make sure the membrane is fully cured!**
- Visually inspect corners and other hard to reach areas for openings where water might penetrate.
- Fix all openings prior to proceeding with the flood test

- Close the drains using drain plugs or other methods
- Be careful not to damage the membrane while walking on it or plugging the drains.
- Slowly fill the deck area with water. Do not overfill! Be extra careful when flood testing on decks built over wood substrates! The extra weight of the water could cause damage or cause the deck to collapse. If you are not sure the deck can support the extra weight of the water, consult with an architect or structural engineer before flood testing!

Other Optional Materials

- I. **Caulking:**
Construction Grade quality sealant, compatible with system materials, as manufactured by Sika (Sika Flex 1a) or equal for sealing of perimeter joints and other waterproofing system discontinuities.

- J. **Patching Compound:**
AVM Acripatch 5020 for application at joints, voids, cracks, and wood knots not exceeding 1/4 inch maximum thickness.

- K. **AVM Crete 6400/6460** (for mud beds) consisting of AVM Aggregate 400 bags and concrete additive 7400 or 7160.

Thin Set Requirements:

- A. When the membrane is bonded directly to concrete, the minimum thin-set required must comply with ANSI A118.4 (AVM Thin-Set 780, 770 or 760 + AVM Additive 7400/7160)
- B. When the membrane is bonded directly to plywood, the minimum thin-set required must comply with ANSI A118.4 (AVM Thin-Set 780, 770 or 760)

- AVM Thin-Set 780 - (ANSI A118.4) Polymer Modified High Performance Thin-Set (The best)
- AVM Thin-Set 770 - (ANSI A118.4) Polymer Modified High Performance Thin-Set (Multi-Purpose)
- AVM Thin-Set 760 - (ANSI A118.1) Basic Thin-Set. Best if mixed with AVM Additive 7400/7160
- AVM Stone-Set 790 Polymer Modified High Performance Stone Setting Material



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Repairing Damage to the AVM System 700, Under Tile Waterproofing System (When the substrate is not damaged)

Damage Description (1)

A leak or a bad section of the AVM Membrane 700 is detected. (No protective coating or finished surfaces are installed)

Method of Repair

1. Cut out an area of the membrane 6" larger in diameter than the defective area.
2. Clean the substrate of any loose materials using a scraper or and a stiff brush.
3. Remove anything else that might prohibit bonding of the new materials.
4. Reapply the membrane 700 to the damaged area following the appropriate installation instructions. (min 2" overlap)
5. Allow to properly cure. Once cured, visually inspect the repaired area for imperfections.
6. (Optional) Do another flood test.

Damage Description (2)

A leak or a bad section of the AVM Membrane 700 is detected. Protective coating is installed. (No finished surfaces are installed)

Method of Repair

1. Remove or scrape off the protective coating as much as possible from an area 9" larger in diameter than the defective area.
2. Cut out and area of the membrane 6" larger in diameter than the defective area.
3. Clean the substrate of any loose materials using a scraper or and a stiff brush.
4. Remove anything else that might prohibit bonding of the new materials.
5. Reapply the membrane 700 to the damaged area following the appropriate installation instructions. (min 2" overlap)
6. Allow to properly cure. Once cured, visually inspect the repaired area for imperfections.
7. (Optional) Do another flood test.
8. Reapply the protective coating.

Damage Description (3)

A leak or a bad section of the AVM Membrane 700 is detected. Protective coating and finished surfaces are installed.

Method of Repair

1. Gently as possible, remove the finished surface from an area 12" larger in diameter than the defective area. Be careful not to damage the membrane underneath!
2. Remove or scrape off the protective coating as much as possible from an area 9" larger in diameter than the defective area.
3. Cut out and area of the membrane 6" larger in diameter than the defective area.
4. Clean the substrate of any loose materials using a scraper or and a stiff brush.
5. Remove anything else that might prohibit bonding of the new materials.
6. Reapply the membrane 700 to the damaged area following the appropriate installation instructions. (min 2" overlap)
7. Allow to properly cure. Once cured, visually inspect the repaired area for imperfections.
8. (Optional) Do another flood test.
9. Reapply the protective coating.

Repairing Damage to the AVM System 700, Under Tile Waterproofing System (When the substrate is damaged)

Damage Description (4)

A leak or a bad section of the AVM Membrane 700 is detected and the substrate is damaged as well.

Method of Repair

You MUST contact AVM Industries, an authorized AVM Industries installer or a professional contractor to review the damage. Since the substrate is damaged, the repairs must be done very carefully to ensure the Fire Resistance and or the Structural Strength of the deck is not compromised during and after the repairs!



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Coverage Charts & Technical Information

The following coverages are based on controlled tests. Actual coverages may vary.

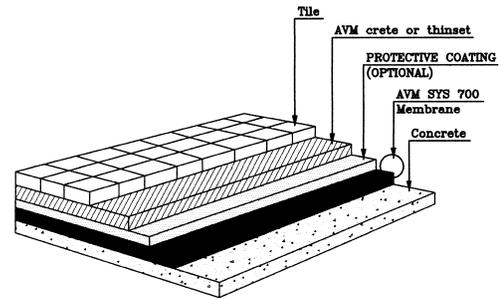
Materials	One Kit Makes	One Kit Covers at 1/16" Thick
AVM Crete 6200 - Protective Coating	4 Gallons of Mixed Product	80 Square Feet
Weight of 1 Sqft of AVM Crete 6200 installed and Cured		1 Sqft at 1/16" thick = ~0.625 Lbs

Materials	Over Plywood	Over Concrete	Over Sheet Metal
AVM Primer 100 (Optional)	200-300 Sqft/gal	200-300 Sqft/gal	200-300 Sqft/gal
AVM Paste 700	40 Sqft/gal	40 Sqft/gal	40 Sqft/gal
AVM Matt 800 (6" and 40")	Min 2" Overlaps Allow 5%-10% waste		

Technical Data - AVM System 700			General Data - AVM System 700	
Over Substrate Type	Cement	Plywood	Shelf Life: (Liquids)	One year in original unopened packaging.
Fungus and Micro Organism Resistance	Pass	Pass	Storage Conditions:	Store dry at 50-90F. If frozen, discard
Breaking Strength - ASTM D-752 (1989)	Pass	Pass	Cement Mixing Ratio:	One 50 Lbs bag Aggregate 200 to 1.0-1.25 gal additive 7700
Seam Strength - ASTM D-751 (1989)	Pass	Pass	Paste Color:	Paste is Black
Dimensional Stability - ASTM D1204	Pass	Pass	Additive Color:	AVM Additive 7700 is Black
Waterproofness - ASTM D-4068	Pass	Pass	Protective Coating:	AVM Crete 6200 is Gray.
Shear Strength to Ceramic Tile and Cement Mortar after 100 Days Immersion - ASTM C-482	Pass	Pass	Protective Coating Strength:	AVM Crete 6200 achieves over 6000 PSI when cured, providing excellent protection and bonding

Packaging:	AVM Aggregate 200 50 LB Bag AVM Additive 7400/7700 1.00/5.0 Gal pails AVM Paste 700. 3.5/5.0 Gal pails Mat 800 40" wide x 324 Ft. Long ... 1080 Sq. Ft Mat 800 6" wide x 300 Ft. Long 150 Sq. Ft 250 Sq. Ft. Kit. 1 box + 2 (3.5 Gal) buckets
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Approximate Shipping Weights:	AVM Aggregate 200 50 Lbs/Bag AVM Additive 7400/7700 1.00/5.0 Gal. . 9/46 Lbs AVM Paste 700 3.5/5.0 Gal 33.5/46 Lbs Mat 800 40" wide x 324 Ft. Long 27 Lbs Mat 800 6" wide x 300 Ft. Long 3 Lbs 250 Sq. Ft. Kit. 78 Lbs
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AVM System 700 Under Tile Waterproofing Membrane / Anti-Fracture Membrane