**AFM Anti-Fracture Membrane & AFM-WM Anti-Fracture Waterproofing Membrane 3-Part Specifications**

[PROJECT NUMBER] [PROJECT NAME]

[DATE] [PROJECT LOCATION]

Protecto Wrap AFM Anti-Fracture Membrane and AFM - WM Anti-Fracture Waterproofing Membrane is a 40 mil thick reinforced peel and-stick sheet membrane specifically designed for use under ceramic tile, porcelain and stone tile as a stress relieving material in conjunction with thin-set methods. The membrane has the flexibility and strength to withstand structural movement and natural concrete shrinkage cracks up to 3/8" (6.4 mm) without transferring the stress load to the finished tile topping.

SECTION 09 30 00 TILING

Protecto Wrap AFM Anti-Fracture Membrane and AFM-WM Waterproofing Membrane PART 1 GENERAL

* 1. SECTION INCLUDES
		1. This Section specifies a 40 mil (1 mm) thick reinforced peel and-stick sheet membrane specifically designed for use under ceramic tile, porcelain and natural stone as a stress relieving material in conjunction with thin set methods.
			1. Protecto Wrap AFM Anti-Fracture Membrane.
			2. Protecto Wrap AFM - WM Anti-Fracture Waterpoofing Membrane.
			3. No. 6000 Water Based Primer.
			4. Protecto Wrap Universal Water Based Primer.
			5. No. 80 Exterior Primer
			6. AFM500 Detail Tape
			7. JS 160H Mastic
			8. JS 160WB Water Based Mastic
		2. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + - 1. 09 30 00 Tiling
			2. 09 34 00 Waterproofing Membrane Tiling
		1. REFERENCES
			1. International Code Council Evaluation Service (ICC / ES):
				1. AC115 Waterproof Membranes for Flooring and Shower Lining
			2. ASTM International (ASTM):
				1. ASTM C627 Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester.
				2. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
				3. ASTM E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
				4. ASTM E492 Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine.
			3. Tile Council of North America (TCNA)
				1. Handbook for Ceramic Tile Installation.
			4. ANSI American National Standards Institute
				1. A108.17 Installation of Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone

.

* 1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Manufacturer's data sheets on each product to be used, including:
			1. Preparation instructions and recommendations.
			2. Storage and handling requirements and recommendations.
			3. Installation methods.
		3. Samples: Submit manufacturer's samples of specified anti-fracture and waterproofing membrane.
		4. Verification Samples: For each product specified, two samples, minimum size 6” x 6” (152 mm x 152 mm) square, representing actual product, color, and patterns.
	2. QUALITY ASSURANCE
		1. Regulatory Requirements: Comply with requirements of local authorities having jurisdiction and applicable codes at the location of the project.
		2. Manufacturer: Minimum 10 years experience producing anti-fracture and waterproofing membranes.
	3. DELIVERY, STORAGE, AND HANDLING
		1. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
		2. Storage:
			1. Store products in a dry space at temperatures between 50-90 degrees F (10 and 32 degrees C).
			2. Do not store in direct sunlight.
			3. Optimum adhesion to substrates when used within one year from the date of manufacture.
		3. Handling: Do not remove from box until ready to use.
	4. Warranty
		1. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
		2. Manufacturer’s Warranty: Submit, for Owner’s acceptance, manufacturer’s standard warranty document.
			1. Warranty Period: 10-Year Product Warranty commencing on date of substantial completion.

PART 2 PRODUCTS

* 1. MANUFACTURER
		1. Acceptable Manufacturer: Protecto Wrap Company, which is located at: 1955 South Cherokee Street, Denver, Colorado 80223. Tel: (800) 759-9727, Fax: (303) 777-3001, Email: info@protectowrap.com, Website: [www.protectowrap.com.](http://www.protectowrap.com/)

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of

Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
	1. MATERIALS
		1. Protecto Wrap AFM Anti-Fracture Membrane and AFM-WM Anti-Fracture Waterproofing Membrane.
			1. Material: 40mil (1.0 mm) tough fabric reinforcement laminated to an aggressive adhesive membrane.
			2. Robinson Floor Test: Rated for extra heavy traffic when used in accordance to ASTM C627).
			3. Roll size: AFM
				1. For localized crack isolation: 12”x 25’ and 12”x 75’ (305 mm x 7.6 m and 305 mm x 23 m) rolls.
				2. For full floor coverage: 36” x 75’ (914 mm x 23 m) rolls.
				3. Crack protection kit: 12” x 25’ (305 mm x 7.6 m) roll plus primer.
			4. Roll size AFM-WM
				1. For full floor coverage: 36” x 75’ (914 mm x 23 m) rolls.
			5. Color: White top, black adhesive bottom.
			6. Elongation: 500%, minimum (rubberized adhesive only) when tested in accordance with ASTM D412.
			7. Application Temperature: 45 F to 120 F (7 C - 49 C).
			8. Service Temperature: -20 - 180 F (-29 C - 82 C).
			9. Application(s): AFM Anti-Fracture Membrane
				1. Use under ceramic tile, porcelain, and stone tile as a stress relieving material in conjunction with thin set methods.
				2. Use over concrete slabs, plywood, precast floor panels, gypcrete, radiant heated floors, ceramic tile, terrazzo, marble slate, stone, leveling and patching compounds, cement backer board.
			10. Application(s): AFM-WM Waterproofing Membrane
				1. Suitable for all applications where AFM is recommended, in addition to showers by using 2” (51 mm) overlap strip, which provides an adhesive-to-adhesive cohesive bond between subsequent sheets of membrane.
				2. For use over all substrates recommended for AFM.
				3. Rated for use as a shower pan liner.
				4. For use with Primer, AFM500 Detail Tape and Mastic to complete water proofing system.
				5. For exterior applications use over concrete or exterior grade T&G plywood with exposure rating 1.
	2. ACCESSORlES
		1. General: Ensure accessories are from Protecto Wrap.
		2. Adhesive No. 6000 Water-Based Primer
			1. Description: High tack water based primer for use with AFM and AFM -WM for indoor applications.
			2. Packaging: 1 gal (3.8L) can.
			3. Protect from freezing.
		3. Universal Water Based Primer
			1. Universal Water Based Primer is a high tack water based primer for interior and exterior use on horizontal and vertical surfaces.
			2. Used as an adhesive coating to any interior or exterior surface to promote optimum adhesion of self-adhered membranes to most surfaces.
			3. Packaged in 1 and 5 gallon containers.
			4. Protect from freezing.
		4. No.80 Primer
			1. Description: High tack exterior grade solvent based primer for use with exterior applications of AFM-WM. A VOC compliant formula is available upon request.
			2. Packaging: 1 gal (3.8L) can, 5 gal (19 L) pail.
			3. Exterior use only.
		5. AFM500 Detail Tape
			1. Description: A 20 mil (0.51 mm) unreinforced conformable tape used, prior to installing AFM-WM, for detailing inside corners, drains, posts, protrusions or any area where membrane adherence may be difficult.
			2. Packaging: 6” x 50’ and 12” x 50’ rolls.
		6. JS160 Mastic
			1. Description: Rubberized blend of bituminous and synthetic resins used for sealing detail cuts and membrane terminations.
			2. Packaging: 10.5 fl.oz. tube, 1 gallon (3.8L) can.
			3. Application(s): Applied to all AFM-WM termination edges, bent seams, end laps, overlaps, and detail cuts the same day of application.
		7. JS160 WB
			1. JS160 WB is a rubberized blend of premium grade bituminous and synthetic resins used for sealing detail cuts and membrane terminations on Protecto Wrap Company’s waterproofing and flashing membranes.

PART 3 EXECUTION

* 1. EXAMINATION
		1. Examine surfaces and areas to receive anti-fracture and/or waterproofing membrane. Notify Architect in writing of defects of work and other unsatisfactory site conditions that would cause defective installation of anti-fracture membranes and/or waterproofing membranes. Do not begin installation until unacceptable conditions have been corrected.
		2. Verify site dimensions.
		3. Commencement of work will imply acceptance of substrate.
	2. INSTALLATION
		1. Comply with manufacturer’s product data including product technical bulletins, product catalog installation instructions and product carton instructions for installation.
		2. Limitations
			1. AFM is not intended for use as a waterproofing membrane when installed with butt joint seams. For waterproofing applications, requiring multiple sheets of membrane, use AFM-WM with the factory overlap edge.
			2. Do not install over wet primer.
			3. Not recommended for use on concrete floors where hydrostatic head pressure exists or moisture vapor transmission in excess of 3-4 lbs. is present.
			4. Not recommended for use where horizontal floor movement is greater than 3/8” (9.52 mm).
			5. Existing cracks larger than 3/16” (4.8 mm) should be prepared with proper backing material prior to installation of membrane.
			6. Not recommended for use where vertical floor movement is present.
			7. For installations over plywood subfloors, please refer to TCA Method F147. For expansion joints, reference TCA Method EJ171.
			8. Do not apply over marine-grade plywood or other substrates containing solvent based waterproofing preservatives that could chemically react with the membrane.
			9. Do not use solvent-based sealants or sealers where contact with membrane may occur.
			10. When installing stone tile over AFM or AFM-WM (or any other impervious membrane), it is important to maintain a thin set thickness of 3/8” (9.5 mm) or less after the tile is embedded, even if the mortar manufacturer allows for thicker installations. Thicker mortar beds can potentially provide sufficient moisture to cause some stone tiles to warp or crown.
			11. Not recommended for vertical applications exceeding 8’ (2.4 m) in height.
		3. AFM and AFM-WM.
			1. Priming Interior:
				1. Begin by priming the surface to receive AFM or AFM-WM by brushing or rolling the No. 6000 water based primer onto the surface at a rate of approximately 500 sq.ft. / gal. (12.5 sq.m. / L) or Universal Primer at Rate of approximately 250-350 sq.ft. / gal., depending on porosity of substrate.
				2. Allow drying fully before the AFM or AFM-WM is installed.
				3. When fully cured, the primer will feel tacky to the touch but will not come off the surface.
			2. Priming Exterior:
				1. Begin by priming the surface to receive AFM-WM by brushing or rolling the No. 80 Primer onto the surface at a rate of 150-200 sq.ft (3.6 - 5 sq.m. / L).
				2. Allow drying fully before the AFM-WM is installed.
			3. For Crack Isolation using AFM:
				1. After priming, cut desired length(s) of AFM to cover the crack or area of distress as follows:

Crack must be covered a minimum of 6” (152mm) in any direction.

Membrane must be a minimum of 1 ½ times the width of the tile.

Where any portion of a tile spans a crack, the tile must rest completely on membrane.

Note: If membrane width does not meet the above criteria, turn the membrane 90 degrees and apply in proper lengths perpendicular to the crack. Use multiple strips in a butt joint fashion to cover the length of the crack.

* + - * 1. Carefully remove the first few inches of the paper release backing. Align 6” (152 mm) above the beginning of the crack and press into place. Continue removing the release paper, exposing the adhesive bottom, while smoothing the membrane onto the primed surface. Continue to smooth the membrane as it comes into contact with the primer, which is essential to gain maximum adhesion, as well as to minimize trapping air beneath the membrane. Repeat process as necessary.
			1. For Full Floor Coverage using AFM:
				1. After priming, roll out the AFM membrane (do not remove the release paper at this point) and cut to the appropriate length.
				2. Pull on half of the membrane on top of the other half. Lightly core the paper at the halfway point. Do not cut through the adhesive.
				3. Begin pulling the release paper off the upper section and apply the exposed

adhesive bottom to the primed surface, smoothing the membrane as the adhesive comes into contact with the surface.

* + - * 1. Once completed, pull the other half of the AFM membrane on top of the applied AFM membrane. Pull the remaining release paper off the membrane while smoothing the AFM into place.
				2. Pre-cut a new sheet of AFM and align the new membrane sheet next to the installed AFM membrane sheet as described above. Install adjacent sheets in a butt joint fashion - do not overlap.
				3. Should air become trapped beneath the membrane, puncture it with a sharp instrument and press the sheet flat.
				4. For maximum performance, ensure that 100% of the surface is in contact with the primed substrate.
			1. For Vertical Application:
				1. Prime with No. 6000 Primer or Universal Primer in its concentrated form as described above (do not dilute).
				2. Apply the membrane as previously described, starting the membrane application at the top of the vertical surface, removing release paper downward as membrane is hand smoothed into place.
				3. For vertical exterior applications, see Limitations section.
		1. FOR AFM-WM Waterproofing
			1. Protrusions:
				1. Tape all protrusions (pipes and conduits) with AFM500 Detail Tape by first priming the area to be taped with a 6” (152 mm) piece of AFM500 Detail Tape.
				2. Force and form the Detail Tape to fit tightly to the protrusion and the subfloor. At drain openings, apply a light coat of primer and allow it to fully cure. Cover drain at least 6” (152 mm) past all perimeters with AFM500 Detail Tape.
				3. Remove the release paper, apply the membrane over the drain hole and form the Detail Tape into the drain. Be sure the membrane has 100% contact with the primed drain surface.
				4. Remove the top release film. Double-ply with a full sheet of AFM-WM over the Detail Tape, then cut and form it around or into the protrusion or drain.
				5. Apply a troweled bead of JS160H mastic at the membrane terminations. Secure the drain, clamping ring tightly over the AFM-WM.
			2. Floor to Wall Transitions and Inside Corners:
				1. After priming the floor and wall, apply a 6” (152 mm) strip of AFM500 Detail Tape tightly at all floor-to-wall transitions and into the corners.
				2. Remove the release paper and install the detail Tape 3” (76 mm) on the floor and 3” (76 mm) up the wall. Press the Detail Tape tightly into the corner and be sure to keep any voids from occurring behind the Detail Tape.
				3. Remove the release film from the face of the Detail Tape and install AFM-WM (see instructions below) up the wall extending 3” (76 mm) past the Detail Tape. Place a 1” (25.4 mm) troweled bead of JS160H Mastic to the overlap. Trowel the mastic 3” (76 mm) up and 3” (76 mm) out from the transition on the seam. It must cure for a minimum of 24 hours prior to flood testing.
			3. Applying AFM-WM:
				1. Always apply AFM-WM with the Zip Strip overlap guide as the leading edge for the proper seam.
				2. Roll out the AFM-WM membrane (do not remove the release paper at this point), and cut to the appropriate length. Pull one half of the membrane on top of the other half. Lightly score the paper at the halfway point. Do not cut through the adhesive.
				3. Pull the release paper off the upper section and apply the exposed adhesive bottom to the primed surface. Smooth out the membrane as the adhesive comes into contact with the surface. This is essential to minimize air beneath the membrane. Once completed, pull the other half of the AFM-WM membrane.
				4. Pull the remaining release paper off the membrane while smoothing the AFM- WM in place.
				5. Precut a new sheet of AFM-WM and align the new membrane 2” (51 mm) over the overlap guide on the installed AFM-WM membrane.
				6. Remove the overlap release film from the installed AFM-WM membrane 2” (51 mm) past the overlap guide. Continue to install the new membrane sheet as described above.
				7. Firmly roll the 2 membrane sheets together, forming a cohesive bond at the overlap. For maximum performance, 100% surface contact to the primed substrate must be achieved.
				8. Note - Should air get trapped beneath the membrane, puncture it with a sharp instrument and press the sheet flat. Repair any punctures per guidelines cited in Repairs section.
			4. Applying JS160H Mastic or JS160 WB Mastic:
				1. Use a troweled bead of JS160H Mastic on all termination edges, bent seams, end laps, overlaps and detail cuts the same day of application.
			5. End Laps and Corners:
				1. Must be a minimum of 6” (152 mm). Place two 1” (25.4 mm) troweled beads of JS160H Mastic 1” (25.4 mm) apart beneath all overlaps and firmly roll the seam.
				2. Trowel a 1’ (25.4 mm) bead of JS160H Mastic onto the edge of the overlap, extending ½” (12.7 mm) on both layers of AFM-WM.
				3. Apply a 1” (25.4 mm) troweled bead of JS 160H Mastic 6” (152 mm) in both directions to all overlaps and “T” joints. Mastic must be allowed to cure for a minimum of 24 hours prior to flood testing.
			6. Repairs:
				1. Carefully inspect the applied membrane before covering to ensure that it is free of large blisters, fishmouths or any damage. If the membrane is damaged and requires repair, clean the affected area and lightly prime at least 6” (152 mm) beyond the area damaged and allow to dry.
				2. Cut an AFM-WM membrane patch. Cover the re-primed area, press on the patch and roll firmly.
				3. Apply a troweled bead of JS160H Mastic on all edges of the patch. The patch must overlap the damage area at least 6” (152 mm) on all sides.
			7. Flood Testing:
				1. Protecto Wraps’s warranty cannot be enforced without documentation of a successful leak-free flood test, which must be submitted to the Protecto Wrap Co. within 30 days after testing.
				2. The applicator and general contractor must sign the successful flood-testing document.
				3. The mastic must cure at least 24 hours prior to flood testing (48 hours prior to flood testing on all planter boxes). Perform a flood test with a minimum of 2” (51 mm) and a maximum of 4” (102 mm) of water for 24 hours. Plug all drains and position barriers to contain the water. Repair any leaks prior to covering the membrane. Upon completion of repairs, re-flood the affected area to ensure that repaired leaks are sound.
			8. Curing:
				1. There is no cure time for the membrane. After membrane is adhered, ceramic, porcelain, or stone tiles can be installed with a latex-modified thin set mortar meeting ANSI 118.6 standard.
				2. Follow mortar manufacturer’s recommendations for trowel size and open time. For natural stone installations, see Limitations section.
				3. Note - For AFM-WM applications, JS60H Mastic must be allowed to cure 24 hours prior to tile installation.
	1. PROTECTION
		1. Protect AFM Anti-Fracture Membrane and AFM-WM Waterproofing Membrane from damage until covered by finished material.
		2. Do not expose to direct sunlight for more than 30 days.

END OF SECTION