

INSTALLATION GUIDELINES FOR PAVEMENT OVERLAYS USING MIRAFI® MPM PAVING MATS MPM30 (PGM-30) MPM50 (PGM-50)

Prepared by:

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Surface Preparation

- Power broom, sweep or vacuum the pavement before installing Mirafi® MPM Paving Mat. The pavement surface should be dry, free of dirt, oil and loose stones prior to installation. Additional effort may be necessary on a milled surface to clean the milled surface of dirt and debris.
- Fill all cracks ¼" (6 mm) or greater with an approved material.
- If the existing pavement surface exhibits extensive faulting at joints or cracks, a thin leveling course should be placed prior to placing the fabric. If a leveling course is used, crack sealing may not be necessary
- Repair all failed pavement areas prior to installing MPM Paving Mat.
- Surface must be dry prior to the paving mat placement. (Delamination between the paving mat and existing pavement surface may occur if installed over wet or damp surfaces).
- MPG Paving Mat must be clean and dry prior to the asphalt overlay application, otherwise delamination may result between the paving mat and new overlay due to wet and moist conditions.

Asphalt Tack Installation

- **Always** use neat (paving grade asphalt) or polymerized asphalt tack. Emulsions or cutbacks are not recommended. No additional tack is required over the mat prior to the asphalt overlay installation.
- Tack temperature in the truck should be between 325 - 400°F (163 - 204°C).
- PG64-XX, PG70-XX, polymerized PG70-XX and PG76-XX graded asphalts should be used. For high temperature installations, high viscosity asphalt tack should be used. These include, but are not limited to PG70-XX or higher graded asphalts. (See Asphalt Binder Table 1 for recommended grades to be used when installing MPM Paving Mat)
- Asphalt binder application rates are based on the specific MPM Paving Mat used. Table 2 provides the recommended optimum rate of tack to be used based on material type and surface conditions. Adjusting the tack rate may be made based on existing surface conditions and ambient heat conditions.
- The width of the asphalt tack shall be sprayed sufficiently to include the mat width, plus a minimum of 4" (100 mm) longitudinally and transversely on the overlap side(s).

MPM Paving Mat Installation

- MPM Paving Mat is installed with glass fibers placed up
- Any wrinkle that occurs during installation, 1" (25 mm) and larger, shall be slit and lapped in the direction of paving and pressed down into the asphalt binder. Every effort should be made to pull wrinkles out by hand in lieu of cutting the continuous fiberglass filaments.
- To ease installations around curves, to avoid the possibility of wrinkles, it may be necessary to place shortened lengths by mechanical equipment or by hand.

- To alleviate the pickup of the MPM Paving Mat by vehicle tires, caused by the exposure to high ambient temperatures or overspray of tack causing bleed-through, clean blotting sand or hot mix asphalt may be required to be spread over the affected area.
- Regular traffic should not be allowed to travel on the installed MPM Paving Mat.
- MPM Paving Mat can be installed using a tractor, truck-mounted frame or by hand. Brooms should be used to seat the MPM Paving Mat into the tack and remove air bubbles to ensure complete contact.
- Rolling equipment may be used to "seat" the MPM Paving Mat in cooler weather where asphalt binder tends to harden and stiffen and winds tend to cause a skin to form on the tack surface, reducing the adherence to the MPM Paving Mat, and it is more likely to be displaced by the wind.
- Typical material overlaps may range from a minimum of 1" to no more than 4" (25 to 100 mm). It is recommended that transverse overlaps run in the direction of the paving operation to avoid material from folding over under the paver. All overlaps must be tacked together, so untacked material should either be tacked, or removed, as long as there is still an overlap.
- Turning by paving equipment, asphalt delivery trucks or other construction vehicles on the MPM Paving Mat should be gradual, and shall be kept to a minimum to avoid damage to the material.

Asphalt Paving on the Installed Paving Fabric

- MPM Paving Mat should be protected from getting wet after installation. This can be accomplished by following the weather reports closely, and if rain is imminent, then the amount of exposed installed MPM Paving Mat should be significantly reduced. It is also recommended that the installed fabric be rolled by a pneumatic tire roller to maximize saturation of the MPM Paving Mat prior to the rainfall.
- The recommended minimum hot mix asphalt overlay thickness for MPM Paving Mat is 1.5" (40 mm).
 - Care must be taken when handling MPM Paving Mat. Do not drop or bend rolls as this may damage the core and material.
- During construction, do not allow asphalt delivery vehicles to park on MPM Paving Mat for extended periods of time. This could cause damage to the fabric and cause bleed through of the tack caused by tire and motor temperatures of asphalt trucks and support equipment.
- Damaged MPM Paving Mat, should be removed and replaced, using a craft knife or similar.
- To cut the rolls of material, an articulating blade should be used. A circular saw is not recommended.

Key Factors to Ensure a Successful Installation

- The asphalt binder should be continuous across the width and length of the pavement. The nozzles are likely to clog during the tack coat application, and clogged filters on the asphalt distributor could reduce the actual tack coat application rate.
- Ensure the tack coat application width is at least 4" (100 mm) wider than the product width, on the edge where overlapping will occur.
- If the MPM Paving Mat is still moving under foot prior to paving, then the incorrect tack coat type has been selected for the installation. Consider a stiffer binder type.
- If the MPM Paving Mat does not adhere to the tack coat and want to blow away in the wind, or moves excessively under construction vehicle traffic. Firstly, make sure the fabric lay down machine follows more closely behind the tack coat distributor. Secondly, consider reducing the length of sections that are

being sprayed and check to see if that resolves the issue. Thirdly, if the problem is still not resolved, then check to see if the tack coat is pulling up off the existing asphalt surface, as it might not be clean enough.

Table 1: Recommended Asphalt Binders for Mirafi® MPM Paving Mat

	PG Grades	Polymer Modified	Typical Use
Asphalts for Mirafi® MPM	PG 70	SBSPG 76-22	T _{ambient} > 90°F (32° C)
	PG 67	SBSPG 70-22	T _{ambient} > 80°F(27° C)
	PG 64		Most Common
	PG 58		
	PG 52	HPSPG76	

Table 1 is prepared for use as a guide for all liquid asphalt binders to be used as asphalt binder when installing Mirafi® MPM Paving Mat. It is not intended to be an exact comparison of liquid asphalt rates or specific properties of individual grades for use in specific applications. The region of the country and ambient temperatures at the time of the project installation will influence asphalt binder preference and selection.

The amount (gallons/square yard or liters/square meter) of tack asphalt placed should be sufficient to:

- 1) Bond the interlayer to the old pavement (or leveling course).
- 2) Saturate the interlayer.
- 3) Provide enough residual to bond the new overlay to the interlayer.

Too light of an application of asphalt binder could preclude any of the above. Applying asphalt binder too heavy could result in slippage problems of the MPM under construction traffic at higher temperatures. Therefore, it is most important that the proper amount of asphalt binder be evenly applied. The condition of the existing pavement is one of the determining factors for the proper application rate.

Table 2: Recommended Asphalt Tack (Binder) Application Rates

Mirafi® MPM Paving Mats	MPM30	MPM50
Normal Application Rates (<90°F, new asphalt, uncracked surface)		
Gallons/Square Yard	0.13	0.14
Liters/Square Meter	0.59	0.63
Normal Application Rates (>90°F, new asphalt, uncracked surface)		
Gallons/Square Yard	0.11	0.12
Liters/Square Meter	0.50	0.54
Heavy Application Rates (<90°F ambient, milled, heavily oxidized, badly cracked)		
Gallons/Square Yard	0.14	0.15
Liters/Square Meter	0.63	0.68
Heavy Application Rates (>90°F ambient, milled, heavily oxidized, badly cracked)		
Gallons/Square Yard	0.13	0.14
Liters/Square Meter	0.59	0.63

Application rates should be adjusted based on pavement conditions, (milled, irregular or porous, oxidized and cracked-distressed are characterized as heavy applications).

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