

# INSTALLATION GUIDELINES FOR PAVEMENT OVERLAYS USING TENCATE MIRAFI<sup>®</sup> MPV NONWOVENS

Prepared by:

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December 16, 2018

## Surface Preparation

- Power broom, sweep or vacuum the pavement before installing Mirafi® *MPV Paving Fabric*. 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 the clean milled surface of dirt and debris.
- Fill all cracks  $\frac{1}{4}$ " (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 is not necessary.
- Repair failed pavement areas prior to installing *MPV Paving Fabric*.
- Surface must be dry prior to the tack placement. (Delamination between the tack coat and existing surface may occur if installed over wet or damp surface conditions).

## Asphalt Tack Installation

- **Always** use neat (PG asphalt binder) or polymerized asphalt cement tack. Emulsions or cutbacks are not recommended.
- Tack temperature in the truck should be between 325 - 400°F (163 - 204°C).
- PG64-22 (AC-20), PG70-XX (AC-30), or PG76-XX (AC-40), AR8000, 20-40 penetration, or 60-80 penetration grade or polymerized PG70 graded asphalts should be used. For high ambient installation temperatures, higher viscosity asphalt tack should be used. These include, but are not limited to; AC-30, AR8000, 40-60 penetration grade or polymerized PG70-XX graded asphalt. (See Asphalt Cement Table 1 for recommended grades to be used when installing *MPV Paving Fabrics*)
- Tack coat application rates are based on the specific *MPV Paving Fabric* used. Table 2 provides the recommended optimum rate of tack to be used based on material type and surface conditions. Adjusting the tack application rate may be made based on existing surface 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).

## MPV Paving Fabric Installation

- *MPV Paving Fabrics* should be protected from getting wet during storage and transportation. This can be accomplished by elevating the product off the ground and ensuring that it is adequately covered and protected from ultraviolet radiation including sunlight, chemicals that are strong acids or strong bases, fire or flames including welding sparks, and human or animal destruction.
- *MPV Paving Fabrics* must be installed with the untreated (fuzzy) side placed into the asphalt tack coat.
- 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 tack coat.
- To ease installations around curves, it may be necessary to place shortened lengths by mechanical equipment or by hand.
- To alleviate the pickup of fabric by vehicle tires, caused by the exposure to high ambient temperatures or overspray of tack causing bleed-through, clean blotting sand or HMAC may be required to be spread over the affected area. Excess blotting sand shall be removed prior to paving.
- Traffic should NOT be allowed to traffic the installed fabric.
- *MPV Paving Fabric* can be installed using a tractor, truck-mounted frame or by hand. Brooms should be used to seat the *MPV Paving Fabric* into the tack and remove air bubbles.
- Pneumatic Tire Rollers should be used to "seat" the fabric in cooler or windy weather where tack coat tend to prematurely harden and stiffen. Furthermore, it would be recommended that the tack coat be applied in shorter sections to help ensure that the tack coat remains soft enough to promote the proper adhesion with the *MPV Paving Fabric*.
- Typical *Paving Fabric* overlaps may range from a minimum of 1" to 4" (25 to 100 mm). Transverse overlaps should run in the direction of the paving operation, and all overlaps tacked together.
- Care must be taken when handling *MPV Paving Fabrics*. Do not drop or bend rolls as this may damage the core and material.
- Hand cutting of the roll is recommended where necessary. High speed cutting is not recommended.

### **Asphalt Paving on the Installed Paving Fabric**

- The Paving fabric must be clean and dry prior to the asphalt overlay installation, otherwise delamination may occur between the fabric and new overlay.
- The recommended minimum compacted hot mix asphalt overlay thickness for *MPV Paving Fabrics* is 1.5" (40 mm).
- During, or prior to paving, do not allow asphalt delivery vehicles to park on *MPV Paving Fabric* 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.
- Turning of the paving equipment, trucks or other vehicles on *MPV Paving fabric* should be gradual, and shall be kept to a minimum to avoid damage to the fabric.
- Asphalt compaction should proceed as per convention.

### **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 the 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. This also applies to overlaps.
- If the paving fabric 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 paving fabric 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 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 Binder Types for Mirafi® MPV Paving Fabrics**

		Penetration Grade			AC Grades	AR Grades	PG Grades	Polymer Modified	
Asphalts for Mirafi® MPV	40				AC 40	AR 16000			
	50	60						PG 70- 22	SBSPG 76-22
						AC 20	AR 8000	PG 67- 22	SBSPG 70-22
	70	85				AC10	AR 4000	PG 64-22	
								PG 58-10	
								PG 58-28	
			100						
			120		AC 5	AR 2000		HPSPG76-10	
			150				PG 52-28		
				200	AC 2.5	AR 1000			
			300						

Table 1 is prepared for use as a guide for liquid asphalt tack coats to be used when installing Mirafi® MPV Paving Fabrics and is not intended to be an exact comparison of liquid asphalt rate, specific properties of individual grades for use in specific applications. The region of the country and ambient temperatures at the project can influence asphalt binder preference and selection.

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

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

Too light of an application of tack coat could preclude any of the above. Too heavy a tack coat could result in slippage problems at higher temperatures. Therefore, it is of the utmost importance that the proper amount of tack coat be applied. The condition of the existing pavement is one of the determining factors for the proper application rate.

**Table 2: Recommended Asphalt Application Rates**

Mirafi® MPV Paving Fabric	MPV400	MPV500	MPV600	MPV700	
<b>Normal Application - Residual Asphalt Rate</b>					
Gallons/square yard	0.22	0.25	0.27	0.29	
Liters/square meter	1.0	1.1	1.2	1.3	
<b>Heavy Application (Oxidized Asphalt, Milled Surfaces, Coarse Asphalt Surfaces, Cement Treated Bases)</b>					
Gallons/square yard	0.25	0.27	0.28	0.30	
Liters/square meter	1.1	1.2	1.3	1.4	

Application rates should be adjusted based on pavement conditions, (milled, irregular or porous and oxidized surfaces and cracked-distressed) pavement conditions.

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