

# **INSTALLATION GUIDELINES FOR PAVEMENT OVERLAYS USING TENCATE MIRAFI MPV NONWOVENS**

Prepared by:

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## Surface Preparation

- Power broom, sweep or vacuum the pavement before installing *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  $\frac{1}{4}$ " (0.63 cm) 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 fabric placement. (Delamination between the fabric and existing surface may occur if installed over wet or damp surface conditions).
- Paving fabric must be clean and dry prior to the asphalt overlay application, otherwise delamination may result between the fabric and new overlay due to wet and moist conditions.

## Asphalt Tack

- **Always** use neat (paving grade asphalt) 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).

*NOTE:* Heating the tack coat above 400°F (204°C) in the truck will cause premature aging of the asphalt.

- AC-20, PG64-22, PG70, AR8000, 60-80 penetration grade or polymerized PG70 graded asphalts should be used. For high temperature installations, high viscosity asphalt tack should be used. These include, but are not limited to; AC-30, PG67-22, AR8000, 40-60 penetration grade or polymerized PG70 graded asphalt. (See Asphalt Cement Table 1 for recommended grades to be used when installing *MPV Paving Fabrics*)

*NOTE:* Residue grades such as AR grades do not specify initial viscosity. Since the asphalt used in this application does not go through a hot-mix plant, use of these grades does not insure proper viscosity of the asphalt. Bituminous materials specified for *MPV Paving Fabrics* installation

should have initial or un-aged viscosity corresponding to the above grades.

- 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 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" (10.16cm) longitudinally and transversely on the overlap side(s).

## Installation Best Practices

- *MPV Paving Fabrics* must be installed with the untreated (fuzzy) side placed into the asphalt tack coat.
- Any wrinkle that occurs during installation, 1" (2.54cm) and larger, shall be slit and lapped in the direction of paving and pressed down into the tack coat.

*NOTE:* Burning or torching of *MPV Paving Fabrics* to remove wrinkles or folds shall never be done.

- 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 HMA may be required to be spread over the affected area. Excess blotting sand shall be removed before the installation of the hot mix asphalt placement over the *MPV Paving Fabric*.
- After the installing *MPV Paving Fabric*, the pavement may be opened to traffic at the contractors/engineers discretion.
- *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.
- Rolling equipment may be used to "seat" the fabric in cooler weather where tack coat tend to harden and stiffen and winds tend to displace the fabric.



- Typical material overlaps may range from a minimum of 1" to 4". Transverse overlaps should run in the direction of the paving operation, and all overlaps tacked together.
- 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.

### General Construction Notes

- The recommended minimum hot mix asphalt overlay thickness for *MPV Paving Fabrics* is 1.5".
- Care must be taken when handling *MPV Paving Fabrics*. Do not drop or bend rolls as this may damage the core and material
- *MPV Paving Fabric* 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.
- During construction, do not allow 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.
- There are five grades of *MPV Paving Fabrics*. Refer to the TenCate Mirafi Technical Data Sheets for specific physical properties of each material.
- High speed mechanical cutting *MPV Paving Fabric* may result in the ends of the material to melt and bind together making unrolling of the material difficult. Hand cutting is recommended if necessary.

**Table 1: Recommended Asphalt Binders For Mirafi® MPV Paving Fabrics**

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

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) 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	MiraGreen® HD
<b>Normal Application - Residual Asphalt Rate</b>					
Gallons/Square Yard	0.22	0.25	0.27	0.29	0.29
Liters/Square Meters	1.0	1.1	1.2	1.3	1.3
<b>Heavy Application</b>					
Gallons/Square Yard	0.25	0.27	0.28	0.30	0.30
Liters/Square Meters	1.1	1.2	1.3	1.4	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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