INSTALLATION GUIDELINES FOR TENCATE MIRAFI® MPG COMPOSITE PAVING GRIDS

Prepared by:
TenCate Geosynthetics Americas
365 South Holland Drive
Pendergrass, GA 30567
Tel. (706) 693 – 2226
www.tencategeo.us

April 22, 2019

Surface Preparation

- Power broom, sweep or vacuum the pavement before installing *Mirafi® MPG Composite Paving Grid(s) (**interlayer**)*. 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. Typically, a power broom and vacuum are effective at removing the larger particles, and a blower (leaf or industrial), is more effective at removing the finer particles.
- Fill all cracks ¼" (6 mm) or greater with an approved crack fill or mastic 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 structurally failed pavement areas prior to installing the **interlayer**.
- After milling, it is likely that the remaining lift of asphalt will be milled up leaving localized areas that are lower than the milled surface. If these localized areas are deeper than ½" (12 mm), it is recommended that these areas be filled with asphalt mix prior to placing the **interlayer**.
- In some cases, after milling, the aggregate base or cement treated base is exposed. If the area is smaller than 10' x 10' (3m x 3m), then the area should be tacked with an emulsion till it breaks, and then the **interlayer**, should be installed per normal. If the area is larger than 10' x 10' (3m x 3m), then the surface should be scarified using a rake, or other equipment, and then tacked with an emulsion (0.15 gal/sy or 0.70 l/sm solids), and then recompacted once the emulsion breaks on the surface. Then the conventional **interlayer** installation can proceed. This is not recommended as a standard alternative to paving on asphalt, but should only be performed, where the asphalt has been milled up by accident.
- The installed **interlayer** must be clean and dry prior to the asphalt overlay application, otherwise delamination may result between the **interlayer** and new overlay.

Asphalt Tack Installation

- **Always** use neat asphalt or polymerized asphalt tack to install the **interlayer**. Emulsions or cutbacks are not recommended.
- PG64-XX, PG70-XX, PG76-XX asphalts should be used for the neat asphalt. For high temperature installations (ambient air temperatures exceed 90°F or 32^0C), higher viscosity asphalt tack should be used. These include but are not limited to; PG70-XX asphalts. (See Asphalt Binder Table 1 for recommended grades to be used when installing **interlayers**)
- Tack coat application rates are based on the specific **interlayer** used. Table 2 provides the recommended optimum rate of tack to be used based on **interlayer** material type and surface conditions. Adjustments to the tack rate may be made based on existing surface conditions.
- The tack coat should be sprayed full width, and should provide a continuous wet surface, with no gaps. If a gap is observed, the operator should be informed immediately, and the affected nozzle cleaned before proceeding. If clogging is ongoing, then the filters should be checked.
- The length of tack coat application should never exceed the length of the roll. In cool or windy conditions, the tack coat will develop a film on the surface, potentially limiting the ability for the **interlayer** to bond. Therefore, when the temperatures are lower than 50°F (10°C), and/or there are windy conditions, the length of the tack coat application should be reduced.
- The width of the asphalt tack shall be sprayed sufficiently to include the **interlayer** width, plus a minimum of 4" (100 mm) longitudinally and transversely on the overlap side(s).
- At the end of one roll and the start of the next roll, the tack coat needs to be applied on the previously installed roll (approx. 4-6" or 100-150 mm). The tack coat rate at the start of a pull, is typically much higher, and could

be excessive. It is therefore recommended that sand should be liberally applied over the overlap, swept to provide a uniform thin blinding layer of sand. This will also limit any pickup from exposed tack coat and limit the potential for bleeding.

MPG Composite Paving Grid (Interlayer) Installation

- The **interlayer** must be installed with glass fibers placed facing down into the asphalt tack coat.
- Any wrinkles that occur during installation, 1" (25 mm) and larger, shall be slit and lapped in the direction of paving and pressed down into the tack coat by applying some pressure.
- To ease installations around curves, and thereby avoid the increased possibility of wrinkles, it is recommended that shortened lengths of **interlayer** are installed, to fit the curve.
- To alleviate the pickup of **interlayer** 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. Excess loose blotting sand shall be removed before the installation of the final hot mix asphalt placement over the installed **interlayer**.
- Regular traffic should not be allowed to travel on the installed **interlayer**. If temporary access is required for one or two vehicles, then at this location, any exposed tack coat must be covered with sand or loose hot mix asphalt, before the traffic runs over the **interlayer**.
- The **interlayer** can be installed using a tractor, front mounted frame or by hand. Brooms should be used to seat the **interlayer** into the tack and remove air bubbles to ensure complete contact. The length of applied tack coat ahead of the laydown crew will depend on the speed of the installation device, so the length of tack coat pulls will be much longer for a tractor, then for a hand installation.
- Pneumatic tire rolling equipment (steel wheel rollers are not recommended) may be used to "seat" the **interlayer** in cooler weather where tack coat tends to harden and stiffen rapidly, and winds tend cause a skin to form on the tack coat surface, reducing the adherence to the **interlayer**. In many cases, the pneumatic tire rollers are also used, when the **interlayer** is being installed on a milled surface to improve the bond.
- Typical longitudinal overlaps may range from a minimum of 1" (25 mm) to no more than 4" (100 mm). All overlaps must be tacked together, so untacked material should either be tacked by hand, or removed, as long as there is still an overlap.
- Transverse overlaps in the direction of paving are typically 4" (100mm) to 6" (150mm). These overlaps must also be tacked in all cases.
- Turning while at a standstill by paving equipment, asphalt delivery trucks or other construction vehicles on the **interlayer** should be kept to a minimum to avoid damage to the material.

Asphalt Paving on the Installed MPG Composite Paving Grid (Interlayer)

- Care must be taken when handling the **interlayer**. Do not drop or bend rolls as this may damage the core and material.
- The recommended minimum compacted hot mix asphalt overlay thickness for **interlayer** is 1.5" (40 mm).
- The **interlayer** 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 **interlayer** should be significantly reduced. It is also recommended that the installed **interlayer** be rolled by a pneumatic tire roller to maximize saturation of the **interlayer** prior to the rainfall. If the installed **interlayer** is rained on, then the level of saturation should be checked prior to paving. If water is displaced around one's shoe while walking on the installed **interlayer**, then paving should be halted. Blowers and brooms can be used to attempt to displace the water from the installed **interlayer**.
- During construction, do not allow asphalt delivery vehicles to park on the installed **interlayer** for extended periods of time. This could cause damage to the **interlayer** and cause bleed through of the tack caused by the high contact pressure of the tires and the elevated temperatures of asphalt trucks and support equipment.

- To cut rolls of **interlayer** material, an articulating blade should be used. A circular saw is not recommended.

Table 1: Recommended Asphalt Binders for Mirafi® *MPG Composite Paving Grids*

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

Table 1 is prepared for use as a guide for liquid asphalt binders to be used as tack coats when installing the **interlayer**. It is not intended to be an exact comparison of liquid asphalt rate or 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 **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 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® MPG Composite Paving Grids	MPG-G100	MPG-G4
Normal Application Rates (<90°F, new asphalt, uncracked surface)		
Gallons/Square Yard	0.300	0.19
Liters/Square Meter	1.36	0.86
Normal Application Rates (>90°F, new asphalt, uncracked surface)		
Gallons/Square Yard	0.28	0.17
Liters/Square Meter	1.27	0.77
Heavy Application Rates (<90°F ambient, milled, heavily oxidized, badly cracked)		
Gallons/Square Yard	0.33	0.21
Liters/Square Meter	1.49	0.95
Heavy Application Rates (>90°F ambient, milled, heavily oxidized, badly cracked)		
Gallons/Square Yard	0.31	0.19
Liters/Square Meter	1.4	0.86

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