

MIRAFI and AASHTO M288-24

The use of geotextiles in transportation applications has dramatically increased over the past several decades. As a result, a variety of specifications and subsequent products were developed to meet the ever-increasing needs of Federal, State, and Local governmental organizations. This has resulted in greater acceptance of geotextiles, but has also created vast confusion concerning the important and relevant properties associated with specifying geotextiles in general transportation applications.

As a result, a joint committee was formed from the American Association of State Highway and Transportation Officials (AASHTO) and the Advanced Textiles Association (ATA), formerly the Industrial Fabrics Association, to revise and improve the current standards and develop a platform that could be used to standardize geotextiles for general transportation applications. The original result of this effort was the “Standard Specifications for Geotextiles,” AASHTO M288-24. The current revision for this standard is AASHTO M288-24.

Selection criteria

AASHTO M288-24 addresses the following applications: subsurface drainage, stabilization, separation, permanent erosion control, sediment control, and paving fabrics. The user of the specification must be cautioned that AASHTO M288-24 is not a design guideline. Instead, the selection criteria are based on an engineer’s knowledge of the site specific installation stresses and soil hydraulic properties for the project application. If installation stresses are not known, AASHTO M288-24 has recommended “Survivability Default Classes” to assist an engineer in selection of the appropriate product properties.

AASHTO M288-24 categorizes the survivability of the geotextile into one of three different classes based on the harshness of the installation conditions: Class 1 being the most severe and Class 3 being the least severe.

The potential survivability of the geotextile within each class is determined by a standard set of properties generated from ASTM test methods. These properties are grab tensile strength, trapezoidal tear strength, CBR Puncture strength, and ultraviolet stability. Paving fabrics incorporate the addition of mass per unit area, asphalt retention, and melting point as survivability criteria.

In addition, for selected applications, a group of hydraulic properties is included based on the site soil conditions (i.e., % fines). These properties are permittivity and apparent opening size.

Conclusion

The result of this type of specification is several selection criteria that are based on site-specific conditions. This should result in more care when specifying appropriate geotextiles for common transportation applications. In addition, a standard specification should allow geotextile manufacturer’s to produce products more efficiently and in a timelier manner.

The following table summarizes the different AASHTO M288-24 categories and the appropriate Solmax product. For further information on Solmax and AASHTO M288-24 contact your local Solmax Representative or call (800) 685-9990. To order a copy of the complete AASHTO M288-24 specification, contact AASHTO at (202) 624-5800.

AASHTO M288-24 Selection Guide

		AASHTO M288-24 Survivability Class						
		Class 1A	Class 1 ¹		Class 2		Class 3	
Application	Woven	Woven	Nonwoven	Woven	Nonwoven	Woven	Nonwoven	
	(elongation < 50%)	(elongation < 50%)	(elongation > 50%)	(elongation < 50%)	(elongation > 50%)	(elongation < 50%)	(elongation > 50%)	
Subsurface drainage								
% fines								
< 15%	MIRAFI® FW404 NTPEP Listed	MIRAFI FW404 NTPEP Listed	MIRAFI 180N NTPEP Listed	MIRAFI FW404 NTPEP Listed	MIRAFI 160N NTPEP Listed	MIRAFI FW402 NTPEP Listed	MIRAFI 140N NTPEP Listed	
15% to 50%	N/A	N/A		MIRAFI FW700 NTPEP Listed		MIRAFI FW700 NTPEP Listed		
> 50%								
Separation		MIRAFI 600X MIRAFI FW404 NTPEP Listed	MIRAFI 180N NTPEP Listed	MIRAFI 550X MIRAFI 600X MIRAFI FW404 NTPEP Listed	MIRAFI 160N NTPEP Listed	MIRAFI 500X MIRAFI FW402 NTPEP Listed	MIRAFI 140N NTPEP Listed	
Stabilization		MIRAFI 600X MIRAFI FW404 NTPEP Listed	MIRAFI 180N NTPEP Listed	MIRAFI 550X MIRAFI 600X MIRAFI FW404 NTPEP Listed	MIRAFI 160N NTPEP Listed	MIRAFI 500X MIRAFI FW402 NTPEP Listed	MIRAFI 140N NTPEP Listed	
Permanent erosion control								
% fines								
< 15%		MIRAFI FW404 NTPEP Listed	MIRAFI 180N NTPEP Listed	MIRAFI FW404 NTPEP Listed	MIRAFI 160N NTPEP Listed	MIRAFI FW404 NTPEP Listed	MIRAFI 140N NTPEP Listed	
15% to 50%		N/A		MIRAFI FW700 NTPEP Listed		MIRAFI FW700 NTPEP Listed		
> 50%								
Sediment control fabrics	Supported silt fence		Self supported					
		Woven	Nonwoven	Woven	Nonwoven			
				(elongation < 50%)	(elongation > 50%)			
		N/A	MIRAFI 140NL NTPEP Listed	N/A	MIRAFI 160NL NTPEP Listed			
Subgrade stabilization		4A	4B	4C	4D			
		Woven	Geogrid	Geogrid	Geogrid			
		MIRAFI HP570 MIRAFI RS580i MIRAFI H2Ri NTPEP Listed	MIRAGRID® BXG300	MIRAGRID BXG120	MIRAGRID BXG110			

Default geotextile selection for subsurface drainage. The engineer may specify a Class 3 geotextile from Table 1 in M288 (see note b in specification).

Default geotextile selection for Stabilization. The engineer may specify a Class 2 or 3 geotextile from Table 1 in M288 (see note 1 and 2 in specification). Solmax recommends considering Class 4A Geotextile for soft ground stabilization.

Default Class 2 with armor layer less than 100 kg and drop height < 1 m (from Table 6 in M288).

Required geotextile class is 4A (Class 4B is default for geogrid).

Solmax is not a design or engineering professional and has not performed any such design services to determine if Solmax's goods comply with any project plans or specifications, or with the application or use of Solmax's goods to any particular system, project, purpose, installation, or specification.

