

## AASHTO M288-21 Selection Guide

AASHTO M288-21 Survivability Class						
Application	CLASS 1 <sup>1</sup>		CLASS 2		CLASS 3	
	Woven <small>(elongation &lt; 50%)</small>	Nonwoven <small>(elongation ≥ 50%)</small>	Woven <small>(elongation &lt; 50%)</small>	Nonwoven <small>(elongation ≥ 50%)</small>	Woven <small>(elongation &lt; 50%)</small>	Nonwoven <small>(elongation ≥ 50%)</small>
Subsurface Drainage						
% Fines						
< 15%	FW404 <small>NTPEP Listed</small>	180N <small>NTPEP Listed</small>	FW404 <small>NTPEP Listed</small>	160N <small>NTPEP Listed</small>	FW402 <small>NTPEP Listed</small>	140N <small>NTPEP Listed</small>
15% to 50%	N/A		FW700 <small>NTPEP Listed</small>		FW700 <small>NTPEP Listed</small>	
> 50%	N/A		FW700 <small>NTPEP Listed</small>		FW700 <small>NTPEP Listed</small>	
<sup>1</sup> Default geotextile selection for Subsurface Drainage. The engineer may specify a Class 3 geotextile from Table 1 in M288 (see note b in specification).						
Separation	600X <small>NTPEP Listed</small>	180N <small>NTPEP Listed</small>	550X 600X <small>NTPEP Listed</small>	160N <small>NTPEP Listed</small>	500X <small>NTPEP Listed</small>	140N <small>NTPEP Listed</small>
TenCate recommends ≥ 50% for ALL separation applications						
Stabilization	600X <small>NTPEP Listed</small>	180N <small>NTPEP Listed</small>	550X 600X <small>NTPEP Listed</small>	160N <small>NTPEP Listed</small>	500X <small>NTPEP Listed</small>	140N <small>NTPEP Listed</small>
<sup>2</sup> 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) TenCate recommends considering Class 4A Geotextile for soft ground stabilization.						
Permanent Erosion Control						
% Fines						
< 15%	FW404 <small>NTPEP Listed</small>	180N <small>NTPEP Listed</small>	FW404 <small>NTPEP Listed</small>	160N <small>NTPEP Listed</small>	FW404 <small>NTPEP Listed</small>	140N <small>NTPEP Listed</small>
15% to 50%	N/A		FW700 <small>NTPEP Listed</small>		FW700 <small>NTPEP Listed</small>	
> 50%	N/A		FW700 <small>NTPEP Listed</small>		FW700 <small>NTPEP Listed</small>	
Default Class 2 with armor layer less than 100kg and drop height <1m (see notes b, c, d, e)						
Paving Fabrics	Type 1 MPM30	Subgrade Stabilization CLASS 4	4A Woven	4B Geogrid	4C Geogrid	4D Geogrid
	Type 2 MPV500 <small>NTPEP listed</small>		HP570 RS580i H2Ri <small>NTPEP Listed</small>	BXG300	BXG120	BXG110
Required geotextile class is 4A (Class 4B is default for geogrid)						

Miragrid 2XT and 3XT is below weight noted in footnote d, we have supporting data in accordance with R69 to support use of these products

**Table 9**—Geosynthetic Reinforcement Property Requirements

	Geosynthetic Type	Test Methods	Units	Requirements
Minimum Strength to Resist Installation Damage <sup>a</sup>	Geogrid	ASTM D6637/D6637M	kN/m	10 <sup>d</sup>
Ultimate Tensile Strength based on Structure Specific Design	Geotextile			Class 1 from Table 1 <sup>d</sup>
	Geogrid	ASTM D6637/D6637M	kN/m	Site and Structure Specific Value of $T_{max} \times FS \times RF^b$
	Geotextile	ASTM D4595	kN/m	Site and Structure Specific Value of $T_{max} \times FS \times RF^b$
$RF_{ID}$	All	R 69		Value from R 69 for Site Specific Backfill Gradation and Specific Product, but Not Less Than 1.1
$RF_{CR}$	All	R 69		Value from R 69 for Specific Product
$RF_D$	All	R 69		1.3 <sup>c</sup>
Secant Stiffness at 1,000 hrs and 2% Strain <sup>e</sup>	All	R 69	kN/m	Site and Structure Specific Value

<sup>a</sup> The minimum strengths required here are to limit damage to the geosynthetic during installation to a tolerable and predictable level. All values are minimum values unless otherwise specified.

<sup>b</sup>  $T_{max}$  is determined from internal stability analysis of the wall or reinforced slope under consideration in accordance with the AASHTO LRFD Bridge Design Specifications, Article 11.10.6.4.3b. FS is the safety factor, or for Load and Resistance Factor Design (LRFD), the combination of load factor divided by the resistance factor.  $RF = RF_{ID} \times RF_{CR} \times RF_D$ .

<sup>c</sup> The default value of 1.3 shall be used only if the geosynthetic meets the minimum requirements in Table 10 and the backfill soil chemical properties meet the requirements in Table 11. If the effective design temperature is greater than 20°C but less than 30°C, a default value for  $RF_D$  of 1.5 should be used. If  $RF_{ID}$  is greater than 1.7, consideration should be given to either using a finer backfill material with a smaller top size to reduce installation damage, or conducting long-term chemical durability tests on damaged material to justify the use of a default reduction factor of  $RF_D$ .

<sup>d</sup> Minimum strength requirements are based on the results of numerous exhumations of geosynthetics, in which it was determined that installation damage was minimal for products with a minimum weight of 270 g/m<sup>2</sup> (8 oz/yd<sup>2</sup>) (Koerner and Koerner, 1990; Allen, 1991). This roughly corresponds to a Class 1 geotextile as specified in Table 1. A lighter weight geotextile class may be used if site specific installation damage testing is conducted in accordance with R 69, and  $RF_{ID}$  is determined to be 1.7 or less.

<sup>e</sup> Property requirement is optional as specified by the purchasing agency.