

SYNTEC PRODUCT SPECIFICATION

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SYNTEC
GEOSYNTHETICS EVOLVED

TENSEAL GM 70-1

The TENSEAL GM geocomposite is a combination of cusped/textured HPDE membrane (TENSEAL) and a non-woven geotextile. The product is capable of providing filtration - drainage - protection - water proofing, and will have properties conforming to the values and test methods listed below. The cusped/ textured HPDE membrane meets GRI-GM13 values for 40 mil thick textured membrane. TENSEAL GM has smooth edges on both sides to enable wedge welds to be made between adjacent sheets.

PROPERTY	TEST METHODS	UNITS	VALUE	QUALIFIER	FREQUENCY
CUSPATED/TEXTURED MEMBRANE¹					
Membrane Thickness	ASTM D 5994	mil	40	MAV	100,000 sf
Lowest individual for 8 of 10 values		%	-10		
Lowest individual for any of 10 values		%	-15		
Asperity Height	GM 12	mil	10	MAV	100,000 sf
Density	ASTM D 792	g/cm ³	0.94-0.96	Range	100,000 sf
Tensile Properties	ASTM D 6693				
Yield Strength	Type IV	lb/in	84	MAV	100,000 sf
Break Strength		lb/in	60	MAV	100,000 sf
Yield Elongation		%	12	MAV	100,000 sf
Break Elongation		%	100	MAV	100,000 sf
Tear Resistance	ATSM D 1004	lb	28	MAV	100,000 sf
Puncture Resistance	ASTM D 4833	lb	60	MAV	100,000 sf
Stress Crack Resistance	ASTM D 5397	hrs	300	MAV	Per Formula
Carbon Black	ASTM 4218	%	2-3	Range	100,000 sf
Carbon Black Dispersion	ASTM 5596	for 10 views	9 in cat 1 & 2, 1 in cat 3		Per Formula
Oxidative Induction Time (OIT)	ASTM D 3895	min	100	MAV	Per Formula
Oven Aging at 85°C HP OIT (%retained after 90 days)	ASTM D 5721 ASTM D 5885	%	80	MAV	Per Formula
UV Resistance (20hr UV cycle @ 75°C followed by 4hr condensation @ 60°C) HP OIT (% retained after 1600 hrs)	GM 11 ASTM 5885	%	50	MAV	Per Formula
TOP FILTER GEOTEXTILE^{1,2}					
U.V. Resistance (500 hrs)	ASTM D 4355	%	70		Per formula
Grab Tensile	ASTM D 4632	lbs (N)	160 (711)	MARV	100,000 sf
Grab Elongation	ASTM D 4632	%	50	MARV	100,000 sf
Tear Strength	ASTM D 4533	lbs (N)	60 (266)	MARV	100,000 sf
CBR Puncture	ASTM D 6241	lbs (N)	400 (1,776)	MARV	100,000 sf
AOS	ASTM D 4751	US Std Sieve(mm)	70 (0.212)	MaxARV	500,000 sf
Permittivity	ASTM D 4491	sec ⁻¹	1.4	MARV	500,000 sf
GEOCOMPOSITE					
Bond Strength (Ply Adhesion) – MD					
Peak	ASTM D 7005	lbs/in	1.0	MAV	100,000 sf
Average			0.5		
Transmissivity - MD					
Plate/Ottawa Sand/Geocomposite/ Geomembrane/Plate Gradient = 0.1 @ 1,000 psf 100 hour seating period	ASTM D 4716	m ² /sec	6.0*10 ⁻³	MAV	500,000 sf
Plate/Ottawa Sand/Geocomposite/ Geomembrane/Plate Gradient = 0.33 @ 1,000 psf 100 hour seating period			3.5*10 ⁻³		
DIMENSIONS AND DELIVERY					
The geocomposite shall be delivered to the jobsite in roll form with each roll identified and nominally measuring 6.7 feet (2.04 meters) in width and 100 feet (30.5 meters) in length.					

Qualifiers: MARV=Minimum Average Roll Value (MARV), MAV=Minimum Average Value, MAX=Maximum Value, MaxARV=Maximum average roll value, MD=Machine Direction.

NOTES: 1. Geotextile and geonet properties listed are prior to lamination. 2. Top filter geotextile meets AASHTO Standard Specification M 288-00 strength requirements of class.