



RPP

PRODUCT DATA SHEET

Table 1(a) – Flexible Polypropylene Nonreinforced (fPP) and Reinforced (fPP-R) Geomembranes

Property	Test Method ASTM or GRI	fPP 30 mils	fPP 40 mils	fPP-R 36 mils	fPP-R 45 mils	Testing Frequency minimum
Mass per Unit Area – lb/ft ² (min. ave.)	D5261	0.12	0.16	0.15	0.18	15,000 lb
Thickness – mils (min. ave.)	D5199	30	40	36	45	roll
• lowest individual specimen – mils, nominal – 10%		27	36	32	40	
Tensile Strength						
• dumbbell ⁽¹⁾ – lb/in. (min. ave.)	D6693-IV	60	72	-	-	15,000 lb
• grab ⁽¹⁾ – lb (min. ave.)	D751-A	-	-	200	250	15,000 lb
Tensile Elongation						
• dumbbell ^(1,2) - % (min. ave.)	D6693-IV	700	700	-	-	15,000 lb
• grab ⁽¹⁾ - % (min. ave.)	D751-A	-	-	22	22	15,000 lb
Multiaxial Elongation - %	D5617	120	120	-	-	formulation
Tear Resistance						
• nonreinforced ⁽¹⁾ – lb (min. ave.)	D1004	10	12	-	-	15,000 lb
• reinforced ⁽¹⁾ – lb (min. ave.)	D5884	-	-	55	55	15,000 lb
Puncture Resistance – lb (min. ave.)	D4833	25	30	75	85	15,000 lb
Ply Adhesion – lb (min. ave.)	D6636	-	-	15	15	15,000 lb
Low Temperature Flexibility - °F	D2136 ⁽³⁾	-40	-40	-40	-40	formulation
Carbon Black Content ⁽⁴⁾ - %	D4218	2-3	2-3	2-3	2-3	45,000 lb
Oven Aging at 85°C ⁽⁶⁾		Black (fPP & fPP-R)		Other Colors (fPP & fPP-R)		formulation
(a) Standard OIT (min. ave.) - % ret. after 90 days - or -	D5721 D3895	Note (5)		Note (5)		
(b) High Pressure OIT (min. ave.) - % ret. after 90 days - and -	D5885	60		50		
(c) Surface Cracking Observation	GM16	none		none		
Ultraviolet Light Resistance ^(6,7)		Black (fPP & fPP-R)		Other Colors (fPP & fPP-R)		formulation
(a) Standard OIT (min. ave.) - % ret. after 1600 hrs. - or -	GM11 D3895	Note (5)		Note (5)		
(b) High Pressure OIT (min. ave.) - % ret. after 1600 hrs. - and -	D5885	80		60		
(c) Surface Cracking Observation	GM16	none		none		

(1) Test methods modified to 20 in./min. for unreinforced and 12 in./min. for reinforced
(2) Calculation based on a 2.0 in. gage length
(3) Using 1/8 in. mandrel for 4-hours.
(4) Applicable only to black geomembranes. Also D1603 is an acceptable method to determine carbon black content.
(5) Not recommended since the high temperature of the Std-OIT test produces an unrealistic result for some antioxidants used in fPP formulations
(6) It is also recommended to evaluate samples at 15 days to compare with the 30 day response.
(7) The condition of the test should be 20 hr. UV cycle at 75°C followed by 4 hr. condensation at 60°C.