

Summary of Polyfelt PEC Testing & Evaluation

Item	Description	Test Standard	Test Specimen	Test Institute	Brief Result	Report Reference
1	Connection test with Compac II	NCMA method, ASTM D6638	PEC 75	BCGT, Canada	Ult and serviceability connection capacity	BCGT Reports #1404 (2005)
2	Direct shear for interface friction coefficient with sand	500 x 500mm shear box	PEC	Various test institutes	Interaction coeff. = 0.7	Tech Note 500 460
3	Interaction coefficient PEC with Bangkok clay by pullout test		PEC200	AIT, Bangkok	Interaction coeff. $\tan 15.9 / \tan 22.8 = 0.68$	12 SEA Geotech Conf 1996
4	UV resistance of Polyfelt PEC to ASTM D4355 @ 500 hours	ASTM D4355	PEC35	SAGEOS, Canada	Strength retained (MD) > 70%	S804-009-21751A Oct 2007
5	UV test after 60 days outdoor exposure in tropical conditions	ISO 10319	PEC200	CPG, Singapore	Tensile strength retained 92%	G/02/000469 11 Jan 2003
6	Seam tests	ISO 10319 ISO 10321	Polyfelt TS50 (base material)		Prayer seam on nonwoven component 100% efficiency	Geotextiles & Geomembranes 1994
7	Creep on high tenacity polyester yarn (uncoated)	ISO 13431 SIM test	Yarn code VNC	ERA, UK	Creep reduction factor = 1.5 for 114 years	ERA Report No. 2001-0635
8	Density & Specific gravity test	ASTM D792	Polyester yarns (uncoated)	GTS, Australia	Density 1326 kg/m ³	Ref: 24000/1761 19 Feb 2004
9	Installation damage tests with sand	TRL, UK ASTM D5818	PEC35, 75, 100	TRI, USA	Reduction factors PEC35 = 1.05 PEC75 = 1.00 PEC100 = 1.00	TRI Report Nov 2007
10	Molecular weight & Carboxyl End Group (CEG)	SAGEOS, Canada	PEC yarns	SAGEOS, Canada	Mn > 34000 g/mol CEG < 4 meq/kg	S804-008-20337B S804-008-20339B 2 Aug 2007

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Item	Description	Test Standard	Test Specimen	Test Institute	Brief Result	Report Reference
11	Durability tests	ENV 12447	Uncoated polyester yarn Mn > 25000 g/mol CEG < 30 meq/kg	SKZ, Germany	For 2<pH<9, Reduction factors: 50 years = 1.01 100 years = 1.03	Report # 75050/06
12	Water permeability normal to the plane (100mm head)	ISO 11058	PEC 200	CPG, Singapore	Vertical water flow above published data	G/03/000068 12 Feb 2003
13	Water permeability (in-plane)	ISO 12958	PEC 200	National Univ. Singapore	Test result above published data	Ref 02/110 22 July 2002