

# Polyfelt® TS Nonwoven Geotextiles

## Properties of Polyfelt® TS Nonwoven Geotextiles

Property	Test Standard	Unit	TS 20	TS 30	TS 40	TS 50	TS 60	TS 65	TS 70	TS 80
Physical characteristics	Continuous filament, nonwoven needle punched									
Polymer	100% polypropylene, UV stabilised									
UV resistance										
tensile strength retention	ISO 10319		>70% after 3 months of outdoor weathering							
puncture strength retention	ISO 12236		>70% after 3 months of outdoor weathering							
Chemical resistance	No influence at pH range 2-13									
Tensile strength (avg.)	ISO 10319	kN/m	9.5	11.5	13.5	15	19	21.5	24	28
Tensile elongation (MD/CD)	ISO 10319	%	75/35	75/35	75/35	75/35	80/35	80/40	80/40	80/40
Performance energy*	Calculated	kN/m	2.5	3.2	3.7	4.1	5.5	6.5	7.2	8.4
CBR puncture strength	ISO 12236	N	1500	1750	2100	2350	2900	3300	3850	4250
Effective opening size O <sub>90</sub>	ISO 12956	mm	0.12	0.10	0.10	0.10	0.09	0.09	0.09	0.08
Vertical water flow (50mm head)	ISO 11058	l/m <sup>2</sup> /s (mm/s)	115	100	90	85	72	65	55	50
Horizontal water flow (20 kPa)	ISO 12958	l/m.h	4	7	9	11	13	14	16	20
Horizontal water flow (200 kPa)	ISO 12958	l/m.h	1.4	2.2	2.5	2.9	3.0	3.2	3.6	4.0
Nominal mass	ISO 9864	g/m <sup>2</sup>	125	155	180	200	250	285	325	400
Thickness (2 kPa)	ISO 9863	mm	1.2	1.5	1.7	1.9	2.2	2.5	2.9	3.2
Grab strength (MD/CD)	ASTM D4632	N	560/510	690/600	825/720	920/810	1150/1025	1300/1200	1500/1400	1770/1650
Grab elongation (MD/CD)	ASTM D4632	%	75/40	75/40	75/40	75/40	75/40	75/40	75/40	75/40
Apparent opening size O <sub>90</sub>	ASTM D4751	mm	0.26	0.25	0.24	0.21	0.19	0.18	0.18	0.15
Permittivity	ASTM D4491	s <sup>-1</sup>	3.0	2.7	2.5	2.0	2.0	1.7	1.7	1.7
<b>Form of supply</b>										
Width		m	4	4	4	4	4	4	4	4
Length		m	250/100	225	200	175	135	125	100	90
Area		m <sup>2</sup>	1000/400	900	800	700	540	500	400	360
Weight of roll		kg	135/60	150	154	150	145	153	140	154

\* Indicates the ability of the geotextile to absorb construction stress. Performance energy = 1/2 (energy MD + energy CD) where, Energy MD = 1/2 (tensile strength MD x elongation MD)  
Energy CD = 1/2 (tensile strength CD x elongation CD)  
Other forms of supply as well as grades, adjusted to the requirements of specific projects, are available on request.

TenCate Polyfelt® is a registered trademark of Royal Ten Cate.

The values given are indicative and correspond to average values obtained in accredited testing laboratories and institutes.

Tolerance: Mechanical properties ±10%

Hydraulic properties ±30%

Further details of this application and products can be obtained by contacting your nearest TenCate Technical Support Office. Unauthorized reproduction and distribution is prohibited. This document is provided as supporting service only. The information contained in this document is to the best of our knowledge true and correct. No warranty whatsoever is expressed or implied or given. Engineers wishing to apply this information shall satisfy themselves on the validity of the input data relative to the applicable soil and engineering conditions and in doing so assume design liability.

# Polyfelt PS Nonwoven Geotextiles

Properties of Polyfelt PS Geotextiles													
Property	Test Standard	Unit	PS 130	PS 140	PS 150	PS 160	PS 170	PS 180	PS 190	PS 1100	PS 1120	PS 1140	PS 1160
<b>Wide width tensile strength</b> ISO 10319													
Mean peak strength		kN/m	7.0	9.0	10.0	12.0	14.5	16.0	18.0	20.0	22.5	25.0	28.0
Extension at peak strength		%	45	45	45	50	50	50	50	60	60	60	60
<b>CBR puncture resistance</b> ISO 12236													
Mean peak strength		N	1100	1500	1850	2000	2250	2500	2800	3300	3600	4000	4500
<b>Grab tensile resistance</b> ASTM D4632													
Mean peak strength		N	450	550	650	700	850	1000	1100	1250	1450	1650	1850
<b>Trapezoidal tear resistance</b> ASTM D4533													
Mean peak strength		N	150	180	200	250	300	350	380	420	480	500	550
<b>Drop cone</b> EN 918													
		mm	35	30	28	25	23	22	20	16	13	10	8
<b>Pore size</b>													
Dry sieving	ASTM D4751	mm	0.15	0.12	0.11	0.10	0.09	0.08	0.07	<0.06	<0.06	<0.06	<0.06
Wet sieving	ISO 12858	mm	0.10	0.10	0.10	0.10	0.09	0.09	0.08	0.07	0.07	0.08	0.06
<b>Water permeability</b>													
Velocity index	ISO 11058	m/s	0.09	0.09	0.08	0.06	0.05	0.04	0.04	0.04	0.03	0.03	0.03
Permittivity	ASTM D4491	s <sup>-1</sup>	2.0	1.8	1.5	1.4	1.3	1.2	1.1	1.0	0.8	0.7	0.8
Flow rate $Q_{100}$	BS 8908:3	l/m <sup>2</sup> /s	170	150	150	140	130	120	110	100	90	80	70
<b>Mass per unit area</b> EN 965													
		g/m <sup>2</sup>	130	150	175	200	250	280	300	350	400	450	500
<b>Roll width</b>													
		m	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
<b>Roll length</b>													
		m	200	200	200	200	200	100	100	100	100	100	50
<b>Roll weight</b>													
		kg	105	120	140	160	200	115	120	140	160	180	100

200 601-84-0806 (TC\_A46)

*The information given in this brochure is to the best of our knowledge true and correct. However new research results and practical experience can make revisions necessary. No guarantee or liability can be drawn from the information mentioned herein. Furthermore, it is not our intention to violate any patents or licenses.*

# Polyfelt® PEC Reinforcing Geotextiles

Properties of Polyfelt® PEC Reinforcing Geotextiles											
Property	Unit	PEC									
		35	50	75	100	150	200	35/35	50/50	75/75	100/100
Characteristic short term tensile strength (ISO 10319)	MD kN/m	35	50	75	100	150	200	35	50	75	100
Characteristic short term tensile strength (ISO 10319)	CD kN/m	14	14	14	14	14	14	35	50	75	100
Strain at short term strength	MD %	10	10	10	10	10	10	10	10	10	10
Partial factor -creep rupture at 120 years design life		1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55
Creep limited strength at 120 years design life	kN/m	22.6	32.3	48.4	64.5	96.8	129.0	22.6	32.3	48.4	64.5
Partial factor -construction damage in clay, silt or sand		1.05	1.02	1.00	1.00	1.00	1.00	1.05	1.02	1.00	1.00
Partial factor -environmental effects soil environment, pH <11 at 120 years design life		1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Long term design strengths at 120 years design life in clay, silt or sand	kN/m	19.6	28.8	44.0	58.7	88.0	117.3	19.6	28.8	44.0	58.7
Water flow rate normal to the plane (ISO 11058)	mm/s (l/m <sup>2</sup> /s)	65	65	65	65	65	65	50	50	50	50
Water flow rate in the plane: 20kPa (ISO 12958)	10 <sup>-3</sup> m <sup>2</sup> /s	30	30	30	30	30	30	30	30	30	30
	l/mh	11	11	11	11	11	11	11	11	11	11
Nominal mass (ISO 9864)	g/m <sup>2</sup>	265	280	300	330	400	480	330	360	400	500
Nominal roll width	m	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
Nominal roll length	m	100	100	100	100	100	100	100	100	100	100
Estimated roll weight (+/- 10%)	kg	147	155	165	181	217	259	181	196	217	269

Other forms of supply as well as grades, adjusted to the requirements of specific projects, are available on request.

TenCate Polyfelt® is a registered trademark of TenCate.

The values given are indicative and correspond to average values obtained in accredited testing laboratories and institutes.

Further details of this application and products can be obtained by contacting your nearest TenCate Technical Support office. Unauthorized reproduction and distribution is prohibited. This document is provided as supporting service only. The information contained in this document is to the best of our knowledge true and correct. No warranty whatsoever is expressed or implied or given. Engineers wishing to apply this information shall satisfy themselves on the validity of the input data relative to the applicable soil and engineering conditions and in doing so assume design liability.