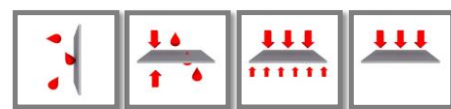


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Colored Needle Punched Nonwoven Geotextiles



Technical Data Sheet 1/2

Date: 3-12-2012 rev 9

Mechanical Properties	Test	Units	200	300	400	450	500	600	700	800
Tensile Strength - MD	EN ISO 10319	kN/m	6,6	10,0	14,0	15,5	17,5	20,0	24,5	28,0
Tensile Strength - XD	EN ISO 10319	kN/m	11,0	18,0	24,0	27,0	30,0	36,0	42,0	48,0
Elongation at break - MD	EN ISO 10319	%	120,0	120,0	120,0	120,0	120,0	120,0	120,0	120,0
Elongation at break - XD	EN ISO 10319	%	115,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
CBR Puncture Resistance	EN ISO 12236	N	1 300	1 900	2 700	3 000	3 400	4 000	5 000	5 500
Dynamic Cone Drop	EN ISO 13433	mm	20	12	6	4	2	1	0	0
Pyramid Puncture	EN 14574	N	130,0	240,0	275,0	300,0	325,0	375,0	400,0	450,0
Protection Efficiency	EN ISO 13719	%	1,68	2,01	2,41	2,55	3,02	3,35	4,02	4,36

Hydraulic Properties										
Permeability	EN ISO 11058	m/s	95x10-3	80x10-3	70x10-3	65x10-3	60x10-3	50x10-3	40x10-3	35x10-3
Waterflow normal to the plane	EN ISO 11058	l/m ² .s	95	80	70	65	60	50	40	35
Waterflow in the plane-20kPa	EN ISO 12958	m ² /s	1x10-6	1x10-6	2x10-6	2x10-6	3x10-6	4x10-6	5x10-6	6x10-6
Characteristic Opening Size	EN ISO 12956	µm	130	125	120	120	115	105	100	90

Physical Properties										
Thickness under 2 kPa	EN ISO 9863-1	mm	2,50	3,00	3,60	3,80	4,50	5,00	6,00	6,50
Weight	EN ISO 9864	g/m ²	200	300	400	450	500	600	700	800
Roll width		cm	525	525	525	525	525	525	525	525
Roll length		m	100	100	50 / 100	50 / 100	50 / 100	50 / 100	50	50
Full truck load volume (+/- 10%)		m ²	26 000	18 000	14 000	12 000	11 000	10 000	6 500	6 500
Roll diameter (+/- 10%)		cm	57	62	50 / 65	54 / 70	59 / 75	58 / 78	61	62

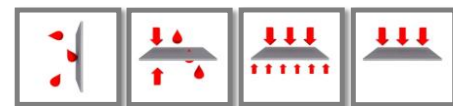
Durability			Product Description	
Natural UV light	ASTM 4533	100%	Polymer	100% Polypropylene
Chemical Resistance	EN 14030	100%	Density	0,91 kg/dm ³
Oxidation Resistance	EN ISO 13438	>90%	Melting Point	165°C
Microbiological Resistance	EN 12225	100%	Fiber bonding	Mechanical/Thermal
Hydrolysis	EN 12447	100%		



Bonar reserves the right to alter product specifications without prior notice. It is the responsibility of all users to satisfy themselves that the above data is current. The above figures are average values obtained from testing to current EN ISO geotextile test standards. All these products need to be covered within 2 weeks.

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Colored Needle Punched Nonwoven Geotextiles



Technical Data Sheet 2/2

Date: 3-12-2012 rev 8

Mechanical Properties	Test	Units	1000	1200	1800	2000
Tensile Strength - MD	EN ISO 10319	kN/m	33,0	39,0	60,0	76,0
Tensile Strength - XD	EN ISO 10319	kN/m	63,0	75,0	117,0	100,0
Elongation at break - MD	EN ISO 10319	%	120,0	120,0	120,0	100,0
Elongation at break - XD	EN ISO 10319	%	100,0	100,0	100,0	100,0
CBR Puncture Resistance	EN ISO 12236	N	7 500	9 500	14 000	15 000
Dynamic Cone Drop	EN ISO 13433	mm	0	0	0	0
Pyramid Puncture	EN 14574	N	480,0	575,0	720,0	800,0
Protection Efficiency	EN ISO 13719	%	4,69	5,36	7,71	8,30

Hydraulic Properties			1000	1200	1800	2000
Permeability	EN ISO 11058	m/s	30x10 ⁻³	25x10 ⁻³	15x10 ⁻³	10x10 ⁻³
Waterflow normal to the plane	EN ISO 11058	l/m ² .s	30	25	15	10
Waterflow in the plane-20kPa	EN ISO 12958	m ² /s	7x10 ⁻⁶	8x10 ⁻⁶	9x10 ⁻⁶	1x10 ⁻⁵
Characteristic Opening Size	EN ISO 12956	µm	85	80	70	65

Physical Properties			1000	1200	1800	2000
Thickness under 2 kPa	EN ISO 9863-1	mm	7,00	8,00	11,50	12,00
Weight	EN ISO 9864	g/m ²	1000	1200	1800	2000
Roll width		cm	525	525	525	390
Roll length		m	50	50	30	25
Full truck load volume (+/- 10%)		m ²	6 000	4 500	3 000	4 680
Roll diameter (+/- 10%)		cm	68	72	62	73

Durability		
Natural UV light	ASTM 4533	100%
Chemical Resistance	EN 14030	100%
Oxidation Resistance	EN ISO 13438	>90%
Microbiological Resistance	EN 12225	100%
Hydrolysis	EN 12447	100%

Product Description	
Polymer	100% Polypropylene
Density	0,91 kg/dm ³
Melting Point	165°C
Fiber bonding	Mechanical/Thermal



Bonar reserves the right to alter product specifications without prior notice. It is the responsibility of all users to satisfy themselves that the above data is current. The above figures are average values obtained from testing to current EN ISO geotextile test standards. All these products need to be covered within 2 weeks.