VDL Wientjes Emmen

Material code VDL WIENTJES SMC			0120	0130	0230	240	0330	0342	0442	0531
Discription / Characteristic	Latest Version 15-04-25		Standard 20	Standard 25	Electrical	Automotive High mechanical	Low Profile	LP High mech	Fire Retardant	LP in Colour plates
Applications (Examples)			Water Sink	Roof-gutter	Lamp Housing	Automative fenders	Locker Doors	Rotor Blades	Wastebin	Cover industrial machines
	METHOD	UNIT								
Code SMC	VDA 280		>UP-GF20<	>UP-GF25<	>UP-GF25<	>UP-GF30<	>UP-GF25<	>UP-GF30<	>UP-GF30<	>UP-GF30<
1 . MECHANICAL PROPERTIES										
1.1 Tensile modulus	EN ISO 527-4	GPa	7,5	8,5	9,0	9,0	9,0	10,0	9,5	9,0
1.2 Tensile Strength	EN ISO 527-4	MPa	45	70	70	95	75	100	85	90
1.3 Tensile rupture strain	EN ISO 527-4	%	1,3	1,5	1,5	2,0	1,5	1,8	1,7	1,5
1.4 Flexural modulus	EN ISO 14125	Gpa	8,5	9,0	9,5	10,0	10,0	11,0	9,5	9,5
1.5 Flexural strength	EN ISO 14125	MPa	120	150	150	170	150	180	170	175
1.6 Charpy Impact strength	EN ISO 179-1	kJ/m²	35	50	50	60	50	65	60	60
1.7 Compressive strength	EN ISO 14126	MPa	110	150	145	155	150	170	160	165
2. THERMAL PROPERTIES										
2.1 Temperature of deflection under load	EN ISO 75-2	°C	>190	>190	>190	>190	>190	>190	>190	>190
2.2 Coefficient of linear thermal expansion	ISO 11359-2	10^{-6}/K	20	16	14	17	14	16	20	15
2.3 Glass transition Temperature	ISO 11359-2	°C	170	170	170	170	170	170	170	170
2.4 Temperature aging (50%)	IEC 216	°C	160	160	160	160	160	160	160	160
2.5 Thermal conductivity	ISO 22007-2	W/(Km)	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3
3. ELECTRICAL PROPERTIES										
3.1 Diëlectric constant	IEC 60250		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
3.2 Dissipation factor tanð100	IEC 60250		0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01
3.3 Volume resistivity	IEC 60093	Ωcm	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}
3.4 Surface resistivity	IEC 60093	Ω	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}
3.5 Proof tracking Index CTI	DIN 60112		>600	>600	>600	>600	>600	>600	>600	>600
4, FLAMMABILITY, BURNING BEHAVIOUR										
4.1 Flammability	EN 60695-11-10	class	HB	HB	HB	HB	HB	V0	V0	V0
4.2 Oxygen Index	EN ISO 4589-2	VOL% O2	22	22	22	22	22	34	41	28
4.3 Flammability	ISO 3795	class	NBR	NBR	NBR	NBR	NBR	NBR	NBR	NBR
4.4 Flammability (glow bar)	EN 60707	step	BH2-95	BH2-95	BH2-95	BH2-95	BH2-95	BH2-10	BH1	BH1
4.5 Constructions burning behaviour	DIN 4102	class	B2	B2	B2	B2	B2	B2	B2	B2
4.6 Fire hazard testing, Glow Wire test	IEC 60695-2-1	°C	650	650	650	650	650	850	950	850
5. OTHER PROPERTIES										
5.1 Water absorption	EN ISO 62	mg/4d	25	15	25	25	25	20	25	20
5,2 Poisson's ratio	EN ISO 527-4	°C	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30
5.3 Density	EN ISO 1183	kg/dm³	1,80	1,80	1,80	1,82	1,85	1,80	1,80	1,75
6. RHEOLOGICAL AND PROCESSING PROPERTIES										
6. 1 Shrinkage	ISO 2577	%	0,18	0,15	0,09	0,10	0,03	0,07	0,12	0,00
6.2 Glas fiber Content	EN ISO 1172	%	20	25	25	30	25	30	30	28
6.3 Curing Characteristics	EN ISO 12144	sec	20	14	20	20	18	20	25	25
6.4 Flowability	EN ISO 12155	%	70	55	60	55	55	40	40	80

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Material code VDL WIENTJES SMC			0533	0631	0637	0731	0741	0860	0930	1032
Discription / Characteristic	**Latest Version 15-04-25**		Waterboard Panel	Class A - coloured non painted	Transpor-tation Box	Thermal Heating collector	Waste Water collector	High mechanical	Scratch Resistance	Electrical Antistatic Box
Applications (Examples)			Waterboard Panel	Housing electrical chargers	Transpor-tation Box	Water collector for Heating Units	Water collector for Heating Units	High mechanical	Instrument Panel	Instrumental antistatic
	METHOD	**UNIT**								
Code SMC	**VDA 280**		>UP-GF27<	>UP-GF30<	>UP-GF23<	>VE-GF25<	>VE-GF30<	>VE-GF45<	>VE-GF25<	>UP-GF23<
1 . MECHANICAL PROPERTIES										
1.1 Tensile modulus	**EN ISO 527-4**	**GPa**	9,0	9,5	9,0	9,5	10,0	12,0	11,0	9,0
1.2 Tensile Strength	**EN ISO 527-4**	**MPa**	85	85	60	70	80	140	80	80
1.3 Tensile rupture strain	**EN ISO 527-4**	**%**	1,5	1,5	1,2	1,8	1,8	1,9	1,8	1,3
1.4 Flexural modulus	**EN ISO 14125**	**Gpa**	9,5	9,5	9,0	9,0	10,5	13,0	11,0	10,5
1.5 Flexural strength	**EN ISO 14125**	**MPa**	160	170	140	160	175	240	160	145
1.6 Charpy Impact strength	**EN ISO 179-1**	**kJ/m²**	50	55	45	50	55	85	50	55
1.7 Compressive strength	**EN ISO 14126**	**MPa**	160	160	140	140	140	170	180	130
2. THERMAL PROPERTIES										
2.1 Temperature of deflection under load	**EN ISO 75-2**	**°C**	>190	>190	>190	>210	>210	>200	>200	>190
2.2 Coefficient of linear thermal expansion	**ISO 11359-2**	**10^{-6}/K**	19	19	20	13	13	13	13	18
2.3 Glass transition Temperature	**ISO 11359-2**	**°C**	170	170	170	175	175	175	175	170
2.4 Temperature aging (50%)	**IEC 216**	**°C**	160	160	160	168	168	170	168	155
2.5 Thermal conductivity	**ISO 22007-2**	**W/(Km)**	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,4
3. ELECTRICAL PROPERTIES										
3.1 Diëlectric constant	**IEC 60250**		4,0	4,0	4,0	4,0	4,0	4,0	4,0	N.D.
3.2 Dissipation factor tanð100	**IEC 60250**		0,01	0,01	0,01	0,01	0,01	0,01	0,01	N.D.
3.3 Volume resistivity	**IEC 60093**	**Ωcm**	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}	10^{11}
3.4 Surface resistivity	**IEC 60093**	**Ω**	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}	10^{08}
3.5 Proof tracking Index CTI	**DIN 60112**		>600	>600	>600	>600	>600	>600	>600	>600
4, FLAMMABILITY, BURNING BEHAVIOUR										
4.1 Flammability	**EN 60695-11-10**	**class**	V0	V0	V0	V0	V0	HB	HB	V0
4.2 Oxygen Index	**EN ISO 4589-2**	**VOL% O2**	30	30	100	30	30	22	22	35
4.3 Flammability	**ISO 3795**	**class**	NBR	NBR	NBR	NBR	NBR	NBR	NBR	NBR
4.4 Flammability (glow bar)	**EN 60707**	**step**	BH2-30	BH2-30	BH1	BH2-30	BH2-30	BH2-95	BH2-95	BH2-10
4.5 Constructions burning behaviour	**DIN 4102**	**class**	B2	B2	B1	B2	B2	B2	B2	B2
4.6 Fire hazard testing, Glow Wire test	**IEC 60695-2-1**	**°C**	850	850	950	850	850	650	650	850
5. OTHER PROPERTIES										
5.1 Water absorption	**EN ISO 62**	**mg/4d**	25	20	20	15	15	25	10	25
5,2 Poisson's ratio	**EN ISO 527-4**	**°C**	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30
5.3 Density	**EN ISO 1183**	**kg/dm³**	1,80	1,83	1,95	1,68	1,71	1,75	2,10	1,71
6. RHEOLOGICAL AND PROCESSING PROPERTIES										
6. 1 Shrinkage	**ISO 2577**	**%**	0,09	0,00	0,02	0,04	0,08	-0,02	0,01	0,10
6.2 Glas fiber Content	**EN ISO 1172**	**%**	27,5	28	23	25	30	45	25	25
6.3 Curing Characteristics	**EN ISO 12144**	**sec**	20	25	25	20	18	20	18	18
6.4 Flowability	**EN ISO 12155**	**%**	50	50	30	40	30	50	45	40

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Material code VDL WIENTJES SMC			1230	1231	1330	1340	1430	1640	2023	2140
Discription / Characteristic	Latest Version 15-04-25		Low-density	Low-density FR	Standaard HD	Chemical Resistant Density	Automotive	Low Pressure	UV SMC	Food Contact
Applications (Examples)			Noise Reduction	Noise Reduction	High Density	High panel	Painted Automotive Parts	Transportation	UV-reactive	FDA Boxes
	METHOD	UNIT								
Code SMC	VDA 280		>UP-GF32<	>UP-GF33<	>UP-GF20<	>UP-GF25<	>UP-GF28<	>UP-GF30<	>UP-GF20<	>UP-GF30<
1 . MECHANICAL PROPERTIES										
1.1 Tensile modulus	EN ISO 527-4	GPa	9,0	8,5	10,0	10,0	9,5	9,0	8,0	9,0
1.2 Tensile Strength	EN ISO 527-4	MPa	80	75	60	90	80	75	50	80
1.3 Tensile rupture strain	EN ISO 527-4	%	1,9	1,9	2,0	2,0	1,5	1,4	1,3	1,5
1.4 Flexural modulus	EN ISO 14125	Gpa	7,0	7,0	10,5	11,0	9,0	10,0	8,0	10,0
1.5 Flexural strength	EN ISO 14125	MPa	160	165	165	180	180	160	110	180
1.6 Charpy Impact strength	EN ISO 179-1	kJ/m²	55	60	55	60	65	65	40	60
1.7 Compressive strength	EN ISO 14126	MPa	100	100	170	180	190	125	150	150
2. THERMAL PROPERTIES										
2.1 Temperature of deflection under load	EN ISO 75-2	°C	>190	>190	>190	>190	>190	>190	>190	>190
2.2 Coefficient of linear thermal expansion	ISO 11359-2	10^{-6}/K	15	18	17	25	10	25	25	20
2.3 Glass transition Temperature	ISO 11359-2	°C	170	170	175	175	170	170	170	170
2.4 Temperature aging (50%)	IEC 216	°C	155	155	160	160	160	160	160	160
2.5 Thermal conductivity	ISO 22007-2	W/(Km)	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3
3. ELECTRICAL PROPERTIES										
3.1 Diëlectric constant	IEC 60250		4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
3.2 Dissipation factor tanð100	IEC 60250		0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01
3.3 Volume resistivity	IEC 60093	Ωcm	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}
3.4 Surface resistivity	IEC 60093	Ω	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}
3.5 Proof tracking Index CTI	DIN 60112		>600	>600	>600	>600	>600	>600	>600	>600
4, FLAMMABILITY, BURNING BEHAVIOUR										
4.1 Flammability	EN 60695-11-10	class	HB	V0	HB	HB	HB	HB	V0	HB
4.2 Oxygen Index	EN ISO 4589-2	VOL% O2	22	26	22	22	22	22	45	22
4.3 Flammability	ISO 3795	class	NBR	NBR	NBR	NBR	NBR	NBR	NBR	NBR
4.4 Flammability (glow bar)	EN 60707	step	BH2-95	BH2-30	BH2-95	BH2-95	BH2-95	BH2-95	BH1	BH2-95
4.5 Constructions burning behaviour	DIN 4102	class	B2	B2	B2	B2	B2	B2	B1	B2
4.6 Fire hazard testing, Glow Wire test	IEC 60695-2-1	°C	650	850	650	650	650	650	950	650
5. OTHER PROPERTIES										
5.1 Water absorption	EN ISO 62	mg/4d	35	35	20	10	15	25	15	20
5,2 Poisson's ratio	EN ISO 527-4	°C	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,30
5.3 Density	EN ISO 1183	kg/dm³	1,36	1,35	2,20	2,00	1,85	1,90	1,70	1,80
6. RHEOLOGICAL AND PROCESSING PROPERTIES										
6. 1 Shrinkage	ISO 2577	%	0,07	0,10	0,07	0,10	-0,04	-0,01	0,20	0,11
6.2 Glas fiber Content	EN ISO 1172	%	32,5	33	20	25	28	30	20	30
6.3 Curing Characteristics	EN ISO 12144	sec	20	20	15	20	20	25	UV	15
6.4 Flowability	EN ISO 12155	%	70	70	40	55	65	90	0	50

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VDL Wientjes Emmen

Material code VDL WIENTJES SMC			0110	0130	0140	0980	2442
Discription / Characteristic	Latest Version 15-04-25		Standard	Building	Electrical	High Temperature	BIO-Resin
Applications (Examples)			Hybrid material	Lighting Shaft	Lamp Housing	Heatshield	Traafic signs
	METHOD	UNIT					
Code SMC	VDA 280		UP	UP	UP	VE	>UP-GF30<
1 . MECHANICAL PROPERTIES							
1.1 Tensile modulus	EN ISO 527-4	GPa	7,0	10,5	12,0	9,0	9,5
1.2 Tensile Strength	EN ISO 527-4	MPa	35	65	75	190	90
1.3 Tensile rupture strain	EN ISO 527-4	%	1,0	1,4	1,5	1,5	1,6
1.4 Flexural modulus	EN ISO 14125	Gpa	7,5	11,0	11,0	14,5	11,0
1.5 Flexural strength	EN ISO 14125	MPa	90	150	155	350	180
1.6 Charpy Impact strength	EN ISO 179-1	kJ/m²	30	50	45	120	60
1.7 Compressive strength	EN ISO 14126	MPa	80	150	160	170	150
2. THERMAL PROPERTIES							
2.1 Temperature of deflection under load	EN ISO 75-2	°C	>190	>190	>190	>250	>190
2.2 Coefficient of linear thermal expansion	ISO 11359-2	10^{-6}/K	<30	<25	<25	<15	20
2.3 Glass transition Temperature	ISO 11359-2	°C					165
2.4 Temperature aging (50%)	IEC 216	°C			160		155
2.5 Thermal conductivity	ISO 22007-2	W/(Km)	0,3	0,3	0,3	0,3	0,3
3. ELECTRICAL PROPERTIES							
3.1 Diëlectric constant	IEC 60250		4,0	4,0	4,0	4,0	4,0
3.2 Dissipation factor tanð100	IEC 60250		0,01	0,01	0,01	0,01	0,01
3.3 Volume resistivity	IEC 60093	Ωcm	10^{14}	10^{14}	10^{14}	10^{14}	10^{14}
3.4 Surface resistivity	IEC 60093	Ω	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}
3.5 Proof tracking Index CTI	DIN 60112		>600	>600	>600	>600	>600
4, FLAMMABILITY, BURNING BEHAVIOUR							
4.1 Flammability	EN 60695-11-10	class	HB	HB	HB	HB	V0
4.2 Oxygen Index	EN ISO 4589-2	VOL% O2	22	22	22	30	32
4.3 Flammability	ISO 3795	class	NBR	NBR	NBR	NBR	NBR
4.4 Flammability (glow bar)	EN 60707	step		B2	B2		BH2-30
4.5 Constructions burning behaviour	DIN 4102	class		B2	B2		B2
4.6 Fire hazard testing, Glow Wire test	IEC 60695-2-1	°C					850
5. OTHER PROPERTIES							
5.1 Water absorption	EN ISO 62	mg/4d	20	25	25	25	20
5,2 Poisson's ratio	EN ISO 527-4	°C	0,30	0,30	0,30	0,30	0,30
5.3 Density	EN ISO 1183	kg/dm³	1,75	1,85	1,78	1,83	1,85
6. RHEOLOGICAL AND PROCESSING PROPERTIES							
6. 1 Shrinkage	ISO 2577	%	0,18	0,17	0,09	0,10	0,03
6.2 Glas fiber Content	EN ISO 1172	%	17	25	28	60	28
6.3 Curing Characteristics	EN ISO 12144	sec	20	25	25	25	20
6.4 Flowability	EN ISO 12155	%					50

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