VDL Wientjes Emmen

Material code VDL WIENTJES SMC			0120	0130	0230	0240	0330	0342
Discription / Characteristic	Latest Version 27-07-18		Standard 20	Standard 25	Electrical	Automotive High mechanical	Low Profile	LP High mech
Applications (Examples)			Water Sink	Roof-gutter	Lamp Housing	Automative fenders	Locker Doors	Rotor Blades
	METHOD	UNIT						
Code SMC	VDA 280		>UP-GF20<	>UP-GF25<	>UP-GF25<	>UP-GF30<	>UP-GF25<	>UP-GF30<
1 . MECHANICAL PROPERTIES								
1.1 Tensile modulus	EN ISO 527-4	MPa	7500	8500	9000	9000	9000	10000
1.2 Tensile Strength	EN ISO 527-4	MPa	45	70	70	95	75	100
1.3 Tensile rupture strain	EN ISO 527-4	%	1,3	1,5	1,5	2,0	1,5	1,8
1.4 Flexural modulus	EN ISO 14125	MPa	8500	9000	9500	10000	10000	11000
1.5 Flexural strength	EN ISO 14125	MPa	120	150	150	170	150	180
1.6 Charpy Impact strength	EN ISO 179-1	kJ/m²	35	50	50	60	50	65
1.7 Compressive strength	EN ISO 14126	MPa	110	150	145	155	150	170
2. THERMAL PROPERTIES								
2.1 Temperature of deflection under load	EN ISO 75-2	°C	>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
2.3 Glass transition Temperature	ISO 11359-2	°C	170	170	170	170	170	170
2.4 Temperature aging (50%)	IEC 216	°C	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
3. ELECTRICAL PROPERTIES								
3.1 Diëlectric constant	IEC 60250		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
3.3 Volume resistivity	IEC 60093	Ωcm	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}
3.5 Proof tracking Index CTI	DIN 60112		>600	>600	>600	>600	>600	>600
4, FLAMMABILITY, BURNING BEHAVIOUR								
4.1 Flammability	EN 60695-11-10	class	HB	HB	HB	HB	HB	V0
4.2 Oxygen Index	EN ISO 4589-2	VOL% O2	22	22	22	22	22	34
4.3 Flammability	ISO 3795	class	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
4.5 Constructions burning behaviour	DIN 4102	class	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
5. OTHER PROPERTIES								
5.1 Water absorption	EN ISO 62	mg/4d	25	15	25	25	25	20
5,2 Poisson's ratio	EN ISO 527-4	°C	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
6. RHEOLOGICAL AND PROCESSING PROPERTIES								
6. 1 Shrinkage	ISO 2577	%	0,18	0,15	0,09	0,10	0,03	0,07
6.2 Glas fiber Content	EN ISO 1172	%	20	25	25	30	25	30
6.3 Curing Characteristics	EN ISO 12144	sec	20	14	20	20	18	20
6.4 Flowability	EN ISO 12155	%	70	55	60	55	55	40

All values are mean values determined on standard compression moulded specimens at roomtemperature (ISO 1268- part 8).

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VDL Wientjes Emmen

Material code VDL WIENTJES SMC			0442	0531	0532	0632	0637	0731
Discription / Characteristic	**Latest Version 27-07-18**		Fire Retardant	LP-Colour in plates	Waterboard Panel	Class A - coloured non painted	Transpor-tation Box	Thermal Heating collector Water for Heating Units
Applications (Examples)			Wastebin	Cover industrial machines	Waterboard Panel	Chousing electrical chargers	Transpor-tation Box	
	METHOD	**UNIT**						
Code SMC	**VDA 280**		>UP-GF30<	>UP-GF30<	>UP-GF27<	>UP-GF30<	>UP-GF23<	>VE-GF25<
1 . MECHANICAL PROPERTIES								
1.1 Tensile modulus	**EN ISO 527-4**	**MPa**	9500	9000	9000	9500	9000	9500
1.2 Tensile Strength	**EN ISO 527-4**	**MPa**	85	90	85	85	60	70
1.3 Tensile rupture strain	**EN ISO 527-4**	**%**	1,7	1,5	1,5	1,5	1,2	1,8
1.4 Flexural modulus	**EN ISO 14125**	**MPa**	9500	9500	9500	9500	9000	9000
1.5 Flexural strength	**EN ISO 14125**	**MPa**	170	175	160	170	140	160
1.6 Charpy Impact strength	**EN ISO 179-1**	**kJ/m²**	60	60	50	55	45	50
1.7 Compressive strength	**EN ISO 14126**	**MPa**	160	165	160	160	140	140
2. THERMAL PROPERTIES								
2.1 Temperature of deflection under load	**EN ISO 75-2**	**°C**	>190	>190	>190	>190	>190	>210
2.2 Coefficient of linear thermal expansion	**ISO 11359-2**	**10^{-6}/K**	20	15	19	19	20	13
2.3 Glass transition Temperature	**ISO 11359-2**	**°C**	170	170	170	170	170	175
2.4 Temperature aging (50%)	**IEC 216**	**°C**	160	160	160	160	160	168
2.5 Thermal conductivity	**ISO 22007-2**	**W/(Km)**	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
3.2 Dissipation factor tanð100	**IEC 60250**		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}
3.4 Surface resistivity	**IEC 60093**	**Ω**	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
4, FLAMMABILITY, BURNING BEHAVIOUR								
4.1 Flammability	**EN 60695-11-10**	**class**	V0	V0	V0	V0	V0	V0
4.2 Oxygen Index	**EN ISO 4589-2**	**VOL% O2**	41	28	30	30	100	30
4.3 Flammability	**ISO 3795**	**class**	NBR	NBR	NBR	NBR	NBR	NBR
4.4 Flammability (glow bar)	**EN 60707**	**step**	BH1	BH1	BH2-30	BH2-30	BH1	BH2-30
4.5 Constructions burning behaviour	**DIN 4102**	**class**	B2	B2	B2	B2	B1	B2
4.6 Fire hazard testing, Glow Wire test	**IEC 60695-2-1**	**°C**	950	850	850	850	950	850
5. OTHER PROPERTIES								
5.1 Water absorption	**EN ISO 62**	**mg/4d**	25	20	25	20	20	15
5,2 Poisson's ratio	**EN ISO 527-4**	**°C**	0,30	0,30	0,30	0,30	0,30	0,30
5.3 Density	**EN ISO 1183**	**kg / dm³**	1,80	1,75	1,80	1,83	1,95	1,68
6. RHEOLOGICAL AND PROCESSING PROPERTIES								
6. 1 Shrinkage	**ISO 2577**	**%**	0,12	0,00	0,09	-0,02	0,02	0,04
6.2 Glas fiber Content	**EN ISO 1172**	**%**	30	28	27,5	28	23	25
6.3 Curing Characteristics	**EN ISO 12144**	**sec**	25	25	20	25	25	20
6.4 Flowability	**EN ISO 12155**	**%**	40	80	50	50	30	40

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VDL Wientjes Emmen

Material code VDL WIENTJES SMC			0741	0860	1032	1230	1330	1340
Discription / Characteristic	Latest Version 27-07-18		Water collector Waste Water for Heating Units	High mechanical High mechanical	Electrical Antistatic Box Instrumental antistatic	Low-density Noise Reduction	Standaard HD High Density	Chemical Resistant Density High panel
Applications (Examples)								
	METHOD	UNIT						
Code SMC	VDA 280		>VE-GF30<	>VE-GF45<	>UP-GF23<	>UP-GF32<	>UP-GF20<	>UP-GF25<
1 . MECHANICAL PROPERTIES								
1.1 Tensile modulus	EN ISO 527-4	MPa	10000	12000	9000	9000	10000	10000
1.2 Tensile Strength	EN ISO 527-4	MPa	80	140	80	80	60	90
1.3 Tensile rupture strain	EN ISO 527-4	%	1,8	1,9	1,3	1,9	2,0	2,0
1.4 Flexural modulus	EN ISO 14125	MPa	10500	13000	10500	7000	10500	11000
1.5 Flexural strength	EN ISO 14125	MPa	175	240	145	160	165	180
1.6 Charpy Impact strength	EN ISO 179-1	kJ/m²	55	85	55	55	55	60
1.7 Compressive strength	EN ISO 14126	MPa	140	170	130	100	170	180
2. THERMAL PROPERTIES								
2.1 Temperature of deflection under load	EN ISO 75-2	°C	>210	>200	>190	>190	>190	>190
2.2 Coefficient of linear thermal expansion	ISO 11359-2	10^{-6}/K	13	13	18	15	17	25
2.3 Glass transition Temperature	ISO 11359-2	°C	175	175	170	170	175	175
2.4 Temperature aging (50%)	IEC 216	°C	168	170	155	155	160	160
2.5 Thermal conductivity	ISO 22007-2	W/(Km)	0,3	0,3	0,4	0,3	0,3	0,3
3. ELECTRICAL PROPERTIES								
3.1 Diëlectric constant	IEC 60250		4,0	4,0	N.D.	4,0	4,0	4,0
3.2 Dissipation factor tanð100	IEC 60250		0,01	0,01	N.D.	0,01	0,01	0,01
3.3 Volume resistivity	IEC 60093	Ωcm	10^{14}	10^{14}	10^{11}	10^{14}	10^{14}	10^{14}
3.4 Surface resistivity	IEC 60093	Ω	10^{11}	10^{11}	10^{08}	10^{11}	10^{11}	10^{11}
3.5 Proof tracking Index CTI	DIN 60112		>600	>600	>600	>600	>600	>600
4, FLAMMABILITY, BURNING BEHAVIOUR								
4.1 Flammability	EN 60695-11-10	class	V0	HB	V0	HB	HB	HB
4.2 Oxygen Index	EN ISO 4589-2	VOL% O2	30	22	35	22	22	22
4.3 Flammability	ISO 3795	class	NBR	NBR	NBR	NBR	NBR	NBR
4.4 Flammability (glow bar)	EN 60707	step	BH2-30	BH2-95	BH2-10	BH2-95	BH2-95	BH2-95
4.5 Constructions burning behaviour	DIN 4102	class	B2	B2	B2	B2	B2	B2
4.6 Fire hazard testing, Glow Wire test	IEC 60695-2-1	°C	850	650	850	650	650	650
5. OTHER PROPERTIES								
5.1 Water absorption	EN ISO 62	mg/4d	15	25	25	35	20	10
5,2 Poisson's ratio	EN ISO 527-4	°C	0,30	0,30	0,30	0,30	0,30	0,30
5.3 Density	EN ISO 1183	kg / dm³	1,71	1,75	1,71	1,36	2,20	2,00
6. RHEOLOGICAL AND PROCESSING PROPERTIES								
6. 1 Shrinkage	ISO 2577	%	0,08	-0,02	0,10	0,07	0,07	0,10
6.2 Glas fiber Content	EN ISO 1172	%	30	45	25	32,5	20	25
6.3 Curing Characteristics	EN ISO 12144	sec	18	20	18	20	15	20
6.4 Flowability	EN ISO 12155	%	30	50	40	70	40	55

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Material code VDL WIENTJES SMC			1430	1640	2023	2140
Discription / Characteristic	Latest Version 27-07-18		Automotive	Low Pressure	UV SMC	Food Contact
Applications (Examples)			Painted Automotive Parts	Transportation	UV-reactive	FDA Boxes
	METHOD	UNIT				
Code SMC	VDA 280		>UP-GF28<	>UP-GF30<	>UP-GF20<	>UP-GF30<
1 . MECHANICAL PROPERTIES						
1.1 Tensile modulus	EN ISO 527-4	MPa	9500	9000	8000	9000
1.2 Tensile Strength	EN ISO 527-4	MPa	80	75	50	80
1.3 Tensile rupture strain	EN ISO 527-4	%	1,5	1,4	1,3	1,5
1.4 Flexural modulus	EN ISO 14125	MPa	9000	10000	8000	10000
1.5 Flexural strength	EN ISO 14125	MPa	180	160	110	180
1.6 Charpy Impact strength	EN ISO 179-1	kJ/m²	65	65	40	60
1.7 Compressive strength	EN ISO 14126	MPa	190	125	150	150
2. THERMAL PROPERTIES						
2.1 Temperature of deflection under load	EN ISO 75-2	°C	>190	>190	>190	>190
2.2 Coefficient of linear thermal expansion	ISO 11359-2	10^{-6}/K	10	25	25	20
2.3 Glass transition Temperature	ISO 11359-2	°C	170	170	170	170
2.4 Temperature aging (50%)	IEC 216	°C	160	160	160	160
2.5 Thermal conductivity	ISO 22007-2	W/(Km)	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
3.2 Dissipation factor tanð100	IEC 60250		0,01	0,01	0,01	0,01
3.3 Volume resistivity	IEC 60093	Ωcm	10^{14}	10^{14}	10^{14}	10^{14}
3.4 Surface resistivity	IEC 60093	Ω	10^{11}	10^{11}	10^{11}	10^{11}
3.5 Proof tracking Index CTI	DIN 60112		>600	>600	>600	>600
4, FLAMMABILITY, BURNING BEHAVIOUR						
4.1 Flammability	EN 60695-11-10	class	HB	HB	V0	HB
4.2 Oxygen Index	EN ISO 4589-2	VOL% O2	22	22	45	22
4.3 Flammability	ISO 3795	class	NBR	NBR	NBR	NBR
4.4 Flammability (glow bar)	EN 60707	step	BH2-95	BH2-95	BH1	BH2-95
4.5 Constructions burning behaviour	DIN 4102	class	B2	B2	B1	B2
4.6 Fire hazard testing, Glow Wire test	IEC 60695-2-1	°C	650	650	950	650
5. OTHER PROPERTIES						
5.1 Water absorption	EN ISO 62	mg/4d	15	25	15	20
5,2 Poisson's ratio	EN ISO 527-4	°C	0,30	0,30	0,30	0,30
5.3 Density	EN ISO 1183	kg / dm³	1,85	1,90	1,70	1,80
6. RHEOLOGICAL AND PROCESSING PROPERTIES						
6. 1 Shrinkage	ISO 2577	%	-0,04	-0,01	0,20	0,11
6.2 Glas fiber Content	EN ISO 1172	%	28	30	20	30
6.3 Curing Characteristics	EN ISO 12144	sec	20	25	UV	15
6.4 Flowability	EN ISO 12155	%	65	90	0	50

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