

# Energy Solutions Electrical Steel Coating

Voltatex<sup>®</sup> Product Overview



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## Voltatex® Product Overview

### Wet Varnish Properties

Product	Thermal Class (IEC 60085)	Chemical Base	Dilutant	VOC [%]	Flow Time DIN 53211 4mm cup, 20°C [sec]	Solid Content DIN EN ISO 3251 2h, 110°C, 1g [%]	Density 20°C [g/cm <sup>3</sup> ]	PH Value DIN ISO 976 20°C	Storage Stability 5°C -30°C [month]
<b>C3 - Portfolio</b>									
<b>Voltatex® 1230</b>	180°C (H)	Alkyd-Melamine	Water	10,3	100-130	43-50	1.05 - 1.10	7.5 - 9.5	6
<b>Self - Bonding Portfolio</b>									
<b>Voltatex® 1175W</b>	180°C (H) <sup>(1)</sup>	Epoxy	Water	1175W: 9,4 1075K: 0	60-90	47-53	1.05 - 1.15	n.a.	1175W: 4 1075K: 6
<b>Voltatex® 1175W Fast</b>	180°C (H) <sup>(1)</sup>	Epoxy	Water	1175W: 9,4 1075F: 25	60-90	47-53	1.05 - 1.15	n.a.	1175W: 4 1075F: 4
<b>Voltatex® 1175W HP</b>	180 (H) 1)	Epoxy	Water	1175W: 9,4 1075HP: 0	60 - 90	47 - 53	1.05 - 1.15	n.a.	1175W: 4 1075HP: 4
<b>C5 - Alkaline Portfolio</b>									
<b>Voltatex® 1120</b>	180°C (H)	Alkyd-Melamine	Water	4.8	40-80	38-44	1.10 - 1.20	7.5 - 9.5	6
<b>Voltatex® 1250</b>	180°C (H)	Polyurethane-Melamine	Water	1	105-175	50-60	1.15 - 1.30	7.5 - 9.5	8
<b>Voltatex® 1250V</b>	220°C (R)	Polyurethane-Melamine	Water	7.6	120-175	42-48	1.10 - 1.30	7.5 - 9.5	8
<b>Voltatex® 1250V Fast</b>	220°C (R)	Polyurethane-Melamine	Water	10.9	60-90	40-45	1.10 - 1.30	7.5 - 9.5	4
<b>C5 - Acidic Portfolio</b>									
<b>Voltatex® 1253</b>	>220°C (R)	Acidic, water dilutable polyol/blocked isocyanate resin	Water	3.2	60-90	50-58	1.30 - 1.50	1.5 - 3.5	4
<b>Voltatex® 1254</b>	>220°C (R)	Acidic, water dilutable polyol/blocked isocyanate resin	Water	3.2	15-25	39-44	1.10 - 1.30	1.5 - 3.5	4
<b>Voltatex® 1255</b>	>220°C (R)	Acidic, water dilutable acrylic resins combined with phosphates and specific fillers	Water	2.1	20-60	43-51	1.10 - 1.30	1.5 - 3.5	4
<b>C6 - Portfolio</b>									
<b>Voltatex® 1151A</b>	180°C (H)	Alkyd-Melamine	Water	5	110-150	70-75	1.70 - 1.90	7.5 - 9.5	12
<b>Voltatex® 1151E</b>	180°C (H)	Alkyd-Melamine	Water	5.2	110-150	73-78	1.70 - 1.90	7.5 - 9.5	9
<b>Voltatex® 1151S</b>	180°C (H)	Alkyd-Melamine	Water	5.8	95-125	70-77	1.70 - 1.90	8.0 - 9.5	9
<b>Voltatex® 1262</b>	180°C (H)	Polyurethane	Water	15.3	80-150	55-60	1.45 - 1.65	7.5 - 8.5	6

(1) Temperature resistance is related to the test given in IEC 60404-12 and not related to the bonding behaviour of the coating

## Application Properties

Product	Film Thickness Range	Curing Temperature Range (PMT to reach)	Coating Productiveness (theoretical)	Density of the dry film (theoretical)
	[ $\mu\text{m}$ ]	[ $^{\circ}\text{C}$ ]	[ $\text{m}^2 / \text{kg} / \mu\text{m}$ ]	[ $\text{g} / \text{cm}^3$ ]
<b>C3 - Portfolio</b>				
<b>Voltatex® 1230</b>	0.5 - 6	220 - 260	390	1.15
<b>Self - Bonding Portfolio</b>				
<b>Voltatex® 1175W/ 1075K (9:1)</b>	0.5 - 7	230 - 260	440	1.20
<b>Voltatex® 1175W/ 1075F (9:1)</b>	0.5 - 7	160-200	440	1.20
<b>Voltatex® 1175W/ 1075HP (9:1)</b>	0.5 - 7	230 - 260	440	1.20
<b>C5 - Alkaline Portfolio</b>				
<b>Voltatex® 1120</b>	0.5 - 3	245 - 255	300	1.38
<b>Voltatex® 1250</b>	0.5 - 5	250 - 290	370	1.54
<b>Voltatex® 1250V</b>	0.5 - 5	210 - 290	350	1.44
<b>Voltatex® 1250V Fast</b>	0.5 - 5	150 - 260	330	1.46
<b>C5 - Acidic Portfolio</b>				
<b>Voltatex® 1253</b>	0.5 - 6	240 - 260	300	2.00
<b>Voltatex® 1254</b>	0.5 - 3	250 - 270	300	1.56
<b>Voltatex® 1255</b>	0.5 - 5	250 - 270	295	1.55
<b>C6 - Portfolio</b>				
<b>Voltatex® 1151A</b>	2 - 10	200 - 240	250	3.04
<b>Voltatex® 1151E</b>	2 - 10	200 - 240	300	2.58
<b>Voltatex® 1151S</b>	2 - 10	200 - 240	280	2.62
<b>Voltatex® 1262</b>	3.5 - 10	240 - 300	250	2.35

**Dry Film Properties**

Product	Humidity Test (100%@40 °C) DIN EN ISO 6270-2 Degree of Rusting DIN EN ISO 4628-3	Salt-Spray Test DIN EN ISO 9227 Degree of Rusting DIN EN ISO 4628-3	Overcoat-ability with all Voltatex® ESC	Adhesion Cross Cut Test DIN EN ISO 2409
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40 °C,  
100 %  
Humidity

C3 - Portfolio				
<b>Voltatex® 1230</b>	[W.cm <sup>2</sup> / Lamella]	5h / Ri0	390	Gt0B
Self - Bonding Portfolio				
<b>Voltatex® 1175W/ 1075K (9:1)</b>	24h / Ri0	5h / Ri0	440	Gt0B
<b>Voltatex® 1175W/ 1075F (9:1)</b>	24h / Ri0	5h / Ri0	440	Gt0B
<b>Voltatex® 1175W/ 1075HP (9:1)</b>	24h / Ri0	5h / Ri0	n.a.	Gt0B
C5 - Alkaline Portfolio				
<b>Voltatex® 1120</b>	24h / Ri0	5h / Ri0	300	Gt0B
<b>Voltatex® 1250</b>	24h / Ri0	5h / Ri0	370	Gt0B
<b>Voltatex® 1250V</b>	24h / Ri0	5h / Ri0	350	Gt0B
<b>Voltatex® 1250V Fast</b>	24h / Ri0	5h / Ri0	330	Gt0B
C5 - Acidic Portfolio				
<b>Voltatex® 1253</b>	24h / Ri0	5h / Ri0	300	Gt0B
<b>Voltatex® 1254</b>	24h / Ri0	5h / Ri0	300	Gt0B
<b>Voltatex® 1255</b>	24h / Ri0	5h / Ri0	295	Gt0B
C6 - Portfolio				
<b>Voltatex® 1151A</b>	24h / Ri0	5h / Ri0	250	Gt0B
<b>Voltatex® 1151E</b>	24h / Ri0	5h / Ri0	300	Gt0B
<b>Voltatex® 1151S</b>	24h / Ri0	5h / Ri0	280	Gt0B
<b>Voltatex® 1262</b>	24h / Ri0	5h / Ri0	250	Gt0B

Dry Film Properties

Product	Pencil Hardness DIN EN 13523-4	Flexibility Cylindrical Mandrel DIN EN ISO 1519, Type 2	Surface Insulation Resistance ASTM A 717-06	TIG-Welding SEP 1210	Short Term Temperature Resistance DIN IEC 60404-12
		[mm]	typical film thickness [ $\mu\text{m}$ ] / [ $\text{W}\cdot\text{cm}^2$ / Lamella]		T [ $^{\circ}\text{C}$ ] / t [h] / atmosphere
<b>C3 - Portfolio</b>					
<b>Voltatex® 1230</b>	9H	5	3 / >50	n.a.	n.a.
<b>Self - Bonding Portfolio</b>					
<b>Voltatex® 1175W/ 1075K (9:1)</b>	9H	5	5 / >500	n.a.	n.a.
<b>Voltatex® 1175W/ 1075 F (9:1)</b>	9H	5	5 / >500	n.a.	n.a.
<b>Voltatex® 1175W : 1075HP (9:1)</b>	9H	5	4 / >50	n.a.	n.a.
<b>C5 - Alkaline Portfolio</b>					
<b>Voltatex® 1120</b>	9H	5	2 / >60	up to 2 $\mu\text{m}$	850 / 2 / inert
<b>Voltatex® 1250</b>	9H	5	2 / >50	up to 5 $\mu\text{m}$	850 / 2 / inert
<b>Voltatex® 1250V</b>	9H	3	2 / >50	up to 3 $\mu\text{m}$	850 / 2 / inert 400 / 8 / air
<b>Voltatex® 1250V Fast</b>	9H	3	2 / >50	up to 3 $\mu\text{m}$	850 / 2 / inert 400 / 8 / air
<b>C5 - Acidic Portfolio</b>					
<b>Voltatex® 1253</b>	9H	3	2 / >100	up to 3 $\mu\text{m}$	850 / 2 / inert 600 / 8 / air
<b>Voltatex® 1254</b>	9H	3	1 / >50	up to 3 $\mu\text{m}$	850 / 2 / inert 600 / 8 / air
<b>Voltatex® 1255</b>	9H	5	3 / >100	up to 3 $\mu\text{m}$	850 / 2 / inert 600 / 8 / air
<b>C6 - Portfolio</b>					
<b>Voltatex® 1151A</b>	9H	5	5 / >1500	n.a.	n.a.
<b>Voltatex® 1151E</b>	9H	3	5 / >1500	n.a.	n.a.
<b>Voltatex® 1151S</b>	9H	5	5 / >1500	n.a.	n.a.
<b>Voltatex® 1262</b>	9H	3	5 / >1500	n.a.	n.a.

Axalta Coating Systems Germany GmbH & Co. KG  
Energy Solutions  
Technical Service  
Christbusch 25  
D-42285 Wuppertal

[www.electricalinsulation.com](http://www.electricalinsulation.com)  
[electricalinsulation@axalta.com](mailto:electricalinsulation@axalta.com)



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