

IEC European Wire Types

ELEKTRISOLA - Product-Name	Polysol 155	Polysol 180	Estersol 180	Amidester 200	Amidester202	ML220
ELEKTRISOLA - Product-Code	P155	P180	E180	A200	AI202	
General						
Description	mod. Polyurethane	mod. Polyurethane	Polyesterimide	Theic-mod. Polyesterimide	A200 + Polyamidimide	Polyimide
Standards:						
IEC (including the following norms)	IEC 60317-20,60 317-4	IEC 60317-20	IEC 60317-23, IEC 60317-3/8	IEC 60317-8	IEC 60317-13 MW35	IEC 60317-7
NEMA (including the following norms)	MW 79, MW 2, MW 75	MW 82	MW 77, MW 5, MW 26	MW 74, MW 5, MW 30		MW 16
UL-approval	yes	yes	yes	yes	no	no, JW 1177
Diameters available	0,010 - 0,50 mm	0,010 - 0,50 mm	0,010 - 0,50 mm	0,010 - 0,50 mm	0,015 - 0,50 mm	0,02 - 0,11 mm, ex USA
Properties	Very good solderability and high thermal properties.	Good solderability at 370°C and elevated thermal values	Solderable at high temperatures, very good thermal and good chemical resistance.	High thermal properties and good chemical resistance.	Very high thermal properties and high mechanical resistance	Excellent thermal properties, excellent chemical and high radiation resistance.
Applications	Used in small transformers, linear motors, relays, solenoids, small motors, clock coils, watch coils, fly-back transformers, magnetic heads, instruments	Used for automotive coils as relais and ignition coils, in transformers and in solenoids	Used in small motors, small transformers, automotive coils.	Used in motors, small motors, transformers.	Used in motors	Used in military and space applications.
TECHNICAL VALUES						
1. Thermal Values						
Temperature index 20.000 h acc. to IEC 60172	158°C	>180°C	181°C	210°C	212°C	245°C
Cut through temperature min °C acc. to IEC 60851.6.4	>= 200°C	>= 200°C	>= 265°C	>= 300°C	>= 320°C	>= 400°C
Elektrisola typical values for 0,05 mm/0,25 mm, Grade 1	225/230°C	260/265°C	315/325°C	350/360°C	365/380°C	450°C
Heat Shock min °C acc. to IEC 60851.6.3	<= 175°C	<= 175°C	<= 200°C	<= 200°C	<= 220°C	<= 240°C
Elektrisola typical values for 0,05 mm/0,25 mm, Grade 1	190/180°C	210/200°C	260/250°C	230/220°C	250/240°C	300°C
2. Electrical values						
Low voltage continuity max. acc. to IEC 60851.5.1 for 0,05mm/0,25mm	<= 60/25	<= 60/25	<= 60/25	<= 60/25	<= 60/25	<= 60/25
Elektrisola typical values for 0,05mm/0,25mm, Grade 1	0/0	0/0	0/0	0/0	0/0	0/0
High voltage continuity max. acc. to IEC 60851.5.2 for 0,05mm/0,25mm	<= 60/25	<= 60/25	<= 60/25	<= 60/25	<= 60/25	<= 60/25
Elektrisola typical values for 0,05 mm/0,25 mm, Grade 1	>=2/1	>=2/1	>=2/1	>=2/1	>=2/1	>=2/1
Breakdown voltage (at 20c C, 35% humidity)/Elektrisola typical values to cylindrical test 0,05mm/0.25mm, Grade 1	240/180 V/micron m	240/180 V/micron m	240/180 V/micron m	240/180 V/micron m	230/170 V/micron m	240/n.a. V/micron m
Decrease of breakdown voltage in % at elevated temperature Elektrisola typical value for 0,05 mm, Grade 1, in % at °C Elektrisola typical value for 0,25 mm, Grade 1, in % at °C	25% at 155°C	20% at 180°C	20% at 180°C	20% at 200°C	20% at 205°C	15% at 220°C
3. Mechanical values						
Elongation min. acc. to IEC 60851.3.3 for 0,05 mm/0,25 mm, Grade 1	>= 10% / 22%	>= 10% / 22%	>= 10% / 22%	>= 10% / 22%	>= 10% / 22%	>= 10% / 22%
Elektrisola typical values for 0,05 mm/0,25 mm, Grade 1	23% / 40%	23% / 40%	23% / 40%	23% / 40%	23% / 40%	23% / 40%
Tensile strength min						
Elektrisola typical values for 0,05 mm/0,25 mm, Grade 1	57/1370 cN	57/1370 cN	57/1370 cN	57/1370 cN	57/1370 cN	57/1370 cN
4. Chemical compatibility						
Standard solution						
Pencil Hardness acc. to IEC 60851.4.3/Untreated	4H/4H	4H/4H	4H/4H	4H/4H	4H/4H	6H/6H
Decrease of breakdown voltage in %	5 %	0 %	0 %	5 %	0 %	0 %
General statements about chemical compatibility are not possible due to the high number of influencing factors such as winding, impregnation molding and cleaning materials etc.						
5. Solderability						
acc. to IEC 60851.4.5, max. seconds at °C for 0,05/0,25mm	2s/390°C / 3s/390°C	2s/390°C / 3s/390°C	2s/390°C / 3s/390°C	--	--	--
Elektrisola typical values acc. to IEC 60851.4.5.1.3	0,3s/370°C / 0,2s/390°C	0,9s/370°C / 0,6s/390°C	1,8s/470°C	--	--	--
for 0,05 mm, Grade 1, seconds at °C for 0,25 mm, Grade 1, seconds at °C	0,7s/370°C / 0,5s/390°C	2,5s/370°C / 1,4s/390°C	2,8s/470°C	--	--	--