

STRUCTURE & MATERIAL

WIRE

TA : Tinned annealed copper

SA : Silver plated annealed copper

NA : Nickel plated annealed copper

TEFLON

item	nominal V.	temperature range	conductor		insulation material	jacket material	shield structure	testing V.
			size	material				
UL 1180	300	-100°C~+200°C	32~10AWG	NA / SA	PTFE			
UL 1199	600	-100°C~+200°C	30~4/0AWG	NA / SA	PTFE			
UL 1213	300	-100°C~+105°C	36~16AWG	NA / SA	PTFE			
UL 1330	600	-100°C~+200°C	30~4/0AWG	TA	FEP			
UL 1331	600	-100°C~+150°C	30~4/0AWG	TA	FEP			
UL 1332	300	-100°C~+200°C	30~10AWG	TA	FEP			
UL 1333	300	-100°C~+150°C	30~10AWG	TA	FEP			
UL 1371	300	-100°C~+105°C	30~10AWG	TA / AC	TFE or FEP			1500
UL 1577	300	-100°C~+200°C	32~16AWG	NA / SA / TA	FEP or PTFE			
UL 1659	600	-100°C~+250°C	30~10AWG	TA	PTFE			2000
UL 1726	300	-100°C~+250°C	32~4/0AWG	TA	PFA			
UL 1727	600	-100°C~+250°C	32~4/0AWG	TA	PFA			
UL 1815	300	-100°C~+250°C	30~10AWG	TA	PFA			2500
UL 1901	600	-100°C~+200°C	30~4/0AWG	TA	FEP			
UL 1911	1k~50k	-100°C DC~+250°C	24~10AWG	NSA	PTFE			
UL 10086	600	-100°C~+200&250°C	30~10AWG	TA	ETFE			2500
UL 10109	300	-100°C~+150&200°C	30~10AWG	TA	ETFE			1500
UL 10362	600	-100°C~+250°C	30~4/0AWG	TA	PFA			
UL 10393	600	-100°C~+250°C	30~10AWG	TA	PTFE			2000
UL 20242	300	-40°C~+105°C	20/18AWG, 2-7C	TA / AC	FEP / PTFE / PFA	PVC	al-mylar + braid	
UL 20262	300	-40°C~+200°C	20/18AWG, 2-7C	TA / AC	FEP / PTFE / PFA	PVC	al-mylar + braid	
UL 2661	300	-40°C~+80/90/105°C	20/18AWG, 2-10C	TA / AC	FEP / PTFE / PFA	PVC	al-mylar + braid	
UL 2662	600	-40°C~+80/90/105°C	20/18AWG, 2-10C	TA / AC	FEP / PTFE / PFA	PVC	al-mylar + braid	
UL 20308	300	-100°C~+150°C	20/18AWG, 2-7C	NA / TA	FEP / PTFE / PFA	FEP	al-mylar + braid	
UL 20369	300	-100°C~+200°C	20/18AWG, 2-7C	NA / TA	FEP / PTFE / PFA	FEP	al-mylar + braid	
UL 20604	300	-100°C~+200°C	20/18AWG, 2-6C	NA / TA	FEP / PTFE / PFA	FEP	al-mylar + braid	
UL 20710	600	-100°C~+200°C	20/18AWG, 2-6C	NA / TA	FEP / PTFE / PFA	FEP	al-mylar + braid	
UL 20711	300	-100°C~+200°C	20/18AWG, 2-10C	NA / SA / TA	FEP / PTFE / PFA	FEP	al-mylar + braid	
VDE 3188	300/500	-100°C~+250°C	30~10AWG	NA / TA	PTFE			
VDE 3218	450/750	-100°C~+180°C	0.14~6.0mm2	TA	FEP			
VDE 3288	450/750	-100°C~+250°C	26~16AWG	SA / TA	PFA			
VDE 3289	300/500	-100°C~+180°C	26~16AWG	TA	FEP			
VDE 3238	300/500	-100°C~+250°C	26~16AWG	NA / TA	PFA			
VDE 7022	300/500	-100°C~+180°C	0.25~1.5mm2	NA / TA	FEP	FEP		
VDE 7023	300/500	-100°C~+250°C	0.25~2.5mm2	NA / SA	PFA	PFA		
VDE 7023F	300/500	-100°C~+180°C	0.25~2.5mm2	NA / SA	PTFE	PTFE		4000
VDE F03F-P	300/500	-40°C~+180°C	0.25~2.5mm2	TA	FEP	PVC		
VDE F05F-P	300/500	-100°C~+180°C	0.25~2.5mm2	TA	FEP	FEP		

FLUORINE properties

Heat resistance	ETFE		FEP	PTFE, PFA	
Cold resistance	PFA		ETFE	FEP, PTFE	
Flame retardant	ETFE		FEP, PFA, PTFE		
Oil immersion	ETFE, FEP, PFA, PTFE				
Chemical resistance	ETFE		FEP, PFA, PTFE		
Insulation resistance	ETFE		FEP, PFA, PTFE		
Permittivity	ETFE		FEP, PFA, PTFE		
Dielectric strength	ETFE	PTFE	PFA		FEP
Abrasion resistance	FEP, PFA, PTFE			ETFE	
Edge resistance	FEP, PFA, PTFE			ETFE	
Strength	FEP	PTFE	PFA	ETFE	
Flexibility	ETFE		PFA	FEP	PTFE
Heat deformation	ETFE	FEP		PFA	PTFE
Adhesive	FEP, PFA, PTFE			ETFE	
Cost	ETFE		FEP	PFA	PTFE

low ←—————→ high

ETFE : Ethylene tetrafluoroethylene
FEP : Fluorinated ethylene propylene
PFA : Perfluoroalkoxy
PTFE : Polytetrafluoroethylene

SILICON

item	nominal V.	temperature range	conductor		insulation material	jacket material	shield structure	testing V.
			size	material				
UL 2516	600	-40°C~+105°C	40AWG~	TA / AC	Silicon	PVC	al-mylar + braid	
UL 3071	600	-60°C~+200°C	18/16/14AWG	TA	Silicon		Fiberglass+ Silicon	
UL 3074	600	-60°C~+200°C	12AWG	TA	Silicon		Fiberglass+ Silicon	
UL 3122	300	-60°C~+200°C	26~16AWG	TA	Silicon		Fiberglass	
UL 3123	600	-60°C~+150°C	30~16AWG	TA	Silicon			
UL 3132	300	-60°C~+150°C	28~16AWG	NA / SA / TA	Silicon			
UL 3133	600	-60°C~+150°C	28~16AWG	NA / SA / TA	Silicon			
UL 3135	600	-60°C~+200°C	26~12AWG	TA	Silicon			
UL 3239	3/6/10/20/30k	-60°C~+150/200°C	28~14AWG	TA	Silicon			
UL 3367	300	-60°C~+200°C	26~16AWG	TA	Silicon			
UL 3512	600	-60°C~+200°C	0.3~250mm ²	TA	Silicon			
UL 4389	600	-60°C~+150/200°C	30~10AWG, 2~8C	TA	FEP	Silicon		
VDE N2GFAF	300	-60°C~+180°C	0.75mm ²	TA	Silicon			
VDE H05S-K	500	-60°C~+180°C	0.5~2.5mm ²	TA	Silicon			2000
VDE FG4G4	300/500	-60°C~+180°C	0.5~2.5mm ²	TA	Silicon	Silicon		2000
VDE 1185	300/500	-60°C~+180°C	0.25~1.0mm ²	TA	Silicon	Silicon	spiral/braid shield	
VDE SVT-S	1/3/6/10/20k	-60°C~+180°C	0.5~2.5mm ²	TA	Silicon			
VDE H05SJ-K	300/500	-60°C~+180°C	0.5~6.0mm ²	TA	Silicon		Fiberglass+ Silicon	
VDE H05SS-F	300/500	-60°C~+180°C	0.5~6.0mm ² , 2~7C	TA	Silicon	Silicon		

XLPE

item	nominal V.	temperature range	conductor		insulation material	jacket material	shield structure	testing V.
			size	material				
UL 3173	600	-40°C~+125°C	26~10AWG	TA / AC	XLPE			
UL 3196	600	-40°C~+125°C	7~2AWG	TA / AC	XLPE			
UL 3266	300	-40°C~+125°C	32~10AWG	TA	XLPE			
UL 3271	AC:600/DC:750	-40°C~+125°C	30AWG~2000kcmil	SA / TA	XLPE			
UL 3321	AC:600/DC:751	-40°C~+150°C	30~4/0AWG	TA	XLPE			
UL 3398	300	-40°C~+150°C	32~10AWG	SA / TA	XLPE			

PVC

item	nominal V.	temperature range	conductor		insulation material	jacket material	shield structure	testing V.
			size	material				
UL 1007	300	-40°C~+80°C	32~16AWG	AC	PVC			
UL 1015	600	-40°C~+105°C	30AWG~2000kcmil	TA	PVC			
UL 1061	300	-40°C~+80°C	30~16AWG	TA / AC	SRPVC			
UL 1185	300	-40°C~+80°C	30~4/0AWG	TA	PVC			
UL 1430	300	-40°C~+105°C	30~16AWG	TA / AC	XL PVC			
UL 1569	300	-40°C~+80/90/105°C	30~2AWG	TA	PVC			
UL 1571	30	-40°C~+80°C	50AWG min	TA	PVC			
UL 1617	600	-40°C~+105°C	30~16AWG	TA	PVC	PVC		
UL 1672	300	-40°C~+105°C	30~16AWG	TA	PVC	PVC		
UL 2464	300	-40°C~+80°C	28/26AWG	TA / AC	PVC	PVC	al-mylar + braid	
UL 2468	300	-40°C~+80°C	32~16AWG, 2-80pin	TA / AC	PVC			
UL 2725 (USB)	30	-40°C~+60/80°C	28AWG + 28~20AWG	TA / AC	PVC/SRPVC/XLPE FEP/ETFE/PFA	PVC	al-mylar + braid	
UL 2919	30	-40°C~+80°C	1coax. + 4/8C 3coax. + 4~8C	TA / AC	SRPVC/PE/FOPE FEP/ETFE/PFA	PVC	al-mylar + braid	
UL 20276 (HDMI)	30	-40°C~+60/80°C	24/26/28AWG 4P1C5C	TA / AC	PVC/SRPVC/HDPE FOPE/FEP/ETFE	PVC	al-mylar + braid	
VDE H05V-K	300/500	-30°C~+70°C	0.5/0.75/1.0mm ²	TA / AC	PVC			
VDE H07V-K	450/750	-30°C~+70°C	1.5~16mm ²	TA	PVC			

SR PVC
FO PE

semirigid PVC
Formed PE