



中国认可
国际互认
检测
TESTING
CNAS L0207

报告编号
Reference No

CT23-04559

检测报告

Test Report

样品名称
Name of sample 0.6/1kV同心绞合入户服务电缆
0.6/1kV Concentric Service Entrance Cable

样品型号
Type of sample AA-8000/XLPE/AA-8000/PVC

委托方
Consigner 河南庆州电缆有限公司
Henan Qingzhou Cable Co., Ltd.

试验类型
Kind of test 委托试验
Commission Test

上海国缆检测股份有限公司
SHANGHAI NATIONAL CENTER OF TESTING AND INSPECTION
FOR ELECTRIC CABLE AND WIRE CO., LTD

国家电线电缆质量检验检测中心
CHINA NATIONAL CENTRE OF TESTING AND INSPECTION
FOR ELECTRIC CABLE AND WIRE



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Shanghai National Center of Testing and Inspection for Electric Cable and Wire Co.,Ltd
China National Centre of Testing and Inspection for Electric Cable and Wire
Test Report

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试验类型 Kind of test		委托检验		报告编号 Reference No.		CT23-04559	
样品名称 Name of sample		0.6/1kV 同心绞合入户服务电缆 0.6/1kV Concentric Service Entrance Cable					
型号规格 Type and Size		AA-8000/XLPE/AA-8000/PVC 3×6AWG		检测日期 Date of test		2023-11-06 ~ 2023-12-19	
委托方 Consigner	名称 Name	河南庆州电缆有限公司 Henan Qingzhou Cable Co., Ltd.					
	地址 Address	河南省巩义市竹林镇西工业区 Zhulin Town, Gongyi City, Henan Province, China					
	电话号码 Tel.	0371-6117683 0	邮政编码 P.C.	451200	单位编号 Unit No.	037129	
生产单位 Manufacturer	名称 Name	河南庆州电缆有限公司 Henan Qingzhou Cable Co., Ltd.					
	地址 Address	河南省巩义市竹林镇西工业区 Zhulin Town, Gongyi City, Henan Province, China					
	电话号码 Tel.	0371-6117683 0	邮政编码 P.C.	451200	单位编号 Unit No.	037129	
来样方式 Delivering mode		送样 Supplied by	接收状态 Sample state at receiving	正常 Normal	收样日期 Receiving date	2023-09-27	
检测依据 Test standard		见第2页/See Page 2					
判定依据 Verdict standard		见第2页/See Page 2					
检测结论 Conclusion		该样品导体结构和性能符合ASTM B801-18标准的要求, 耐磨试验符合UL62: 2018标准的要求, 绝缘和护套的加速吸水试验仅提供检测结果, 绝缘电阻、热延伸试验和热变形试验以及护套的性能符合UL44: 2018标准的要求, 其余所测项目符合UL854: 2020的标准要求。 The conductor's construction and properties complied with the requirements of ASTM B801-18, abrasion test complied with the requirement of UL62:2018, accelerated water absorption test of insulation and sheath just provided the test results, insulation resistance, heat deformation and hot creep test of the insulation and the properties of sheath complied with the requirements of UL44:2018, other items tested complied with the requirements of UL854:2020.					
备注 Note		/					
主检 Tested by	李娜 Li Na	审核 Checked by	杨立志 Yang Lizhi	批准 Approved by	肖继东 Xiao Jidong		
日期 Date	2023.12.19	日期 Date	2023.12.20	日期 Date	2023.12.20		

型号和规格 Type and size	AA-8000/XLPE/AA-8000/PVC 3×6AWG	报告编号 Reference No.	CT23-04559
检测依据： Test standard: 1. ASTM B 557-15 锻造和铸造的铝和铝镁合金产品拉伸试验方法Standard Test Methods for Tension Testing Wrought and Cast Aluminum and Magnesium-Alloy Products 2. ASTM B263/B263M-14(R2020) 绞合导体横截面积测定试验方法 Standard Test Method for Determination of Cross-sectional Area of Stranded Conductors 3. UL 2556:2015 电线电缆试验方法 Wire and Cable Test Methods 4. UL 1581: 2017 电线电缆和软线参考标准Reference standard for electrical wires, cables, and flexible cords 5. ICEA T-27-581-2016 挤包绝缘电力电缆、控制电缆、仪表电缆和移动用电线测试方法 Standard Test Methods for Extruded Dielectric Power, Control, Instrumentation, and Portable Cables for Test			
判定依据： Verdict standard: 1. ASTM B801-18 用于后续包覆或绝缘的同心绞合 8000 系列铝合金导体标准规范 Standard Specification for Concentric-lay-Stranded Conductors of 8000 Series Aluminum Alloy for Subsequent Covering or insulation 2. UL 854: 2020 引入电缆 Service-Entrance Cables 3. UL 44: 2018 热固性绝缘电线和电缆 Thermoset-Insulated Wires and Cables 4. UL 62: 2018 软线和软缆 Flexible cords and cables			

型号和规格 Type and size		AA-8000/XLPE/AA-8000/PVC 3×6AWG		报告编号 Reference.No.	CT23-04559	
序号 No.	检测项目 Test Items	单位 Unit	技术要求 Requirements	检测结果 Test Results		判定 Verdict
	受检绝缘线芯标志 inspected cores identification		/	蓝blue	黑black	N
1	结构尺寸 CONSTRUCTION					
1.1	导体 conductor					
	— 材料 material		铝或铝合金 Aluminum or aluminum alloy	绞合圆铝合金导体 Stranded circular aluminum alloy conductor		P
	— 单线根数 number of wires		7	7	7	P
	— 最外层绞合方向 Hand of lay of the outer layer		左向或右向 left hand or right hand	右向 right hand	右向 right hand	P
	— 最外层绞合节径比 Pitch of outer layer/conductor diameter	倍 times	8-16	15	15	P
	— 导体外径 diameter of the conductor	mm	4.57-4.71	4.61	4.63	P
	— 导体截面积 cross- sectional area	mm ²	≥13.03	13.05	13.04	P
1.2	绝缘 Covering					
	— 平均厚度 average thickness		≥1.52	1.84	1.80	P
	— 最薄处厚度 minimum thickness at any point	mm	≥1.37	1.70	1.70	P
1.3	同心导体 concentric conductor					
	— 材料 material		铝或铝合金 Aluminum or aluminum alloy	铝合金 aluminum alloy		P
	— 单线根数 number of wires		/	15		N
	— 单丝直径 diameter of wires		/	1.07		N
	— 绞合方向 hand of lay		左向 left hand	左向left hand		P
	— 绞合节径比 pitch/length of the minor axis	倍 times	≤35	12		P
1.4	护套 Oversheath					

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序号 No.	检测项目 Test Items	单位 Unit	技术要求 Requirements	检测结果 Test Results		判定 Verdict
	— 平均厚度 average thickness		≥1.52	1.75		P
	— 最薄处厚度 minimum thickness at any point	mm	≥1.27	1.56		P
1.5	电缆外形尺寸(宽度×高度) cable dimension (width×height)	mm	/	21.34×14.22		N
2	电性能 Electrical requirements					
2.1	导体直流电阻 conductor D.C resistance (20℃)	MΩ/m	≤2.21	2.18	2.15	P
2.2	同心导体的导体直流电阻 concentric conductor D.C resistance (20℃)	MΩ/m	≤2.21	2.21		P
2.3	交流耐压试验 A.C voltage test (3.5kV,60s)		不击穿 no breakdown	未击穿 no breakdown	未击穿 no breakdown	P
2.4	绝缘电阻 insulation resistance test(15℃)	GΩ·m	≥680	89000	170000	P
2.5	绝缘加速吸水试验 Accelerated water absorption Test of insulation (75℃)					
2.5.1	介电常数 (浸水 24h 后) Dielectric constant (after immersed 24h)		/	3.3	3.3	N
2.5.2	电容增率 Increase in capacitance					
	— 1-14 天 day((C ₁₄ -C ₁)/C ₁)	%	/	3.4	3.4	N
	— 7-14 天 day((C ₁₄ -C ₇)/C ₇)	%	/	0.9	1.6	N
2.5.3	浸水 1 天与浸水 14 天后稳定因数变化 Stability factor difference		/	0.03	0.45	N
2.6	护套 PVC 加速吸水试验 (同心导体与水间, 75℃) Accelerated water absorption					

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序号 No.	检测项目 Test Items	单位 Unit	技术要求 Requirements	检测结果 Test Results		判定 Verdict	
2.6.1	介电常数（浸水 24h 后） Dielectric constant (after immersed 24h)		/	10		N	
2.6.2	电容增率 Increase in capacitance						
	— 1-14 天 $\text{day}((C_{14}-C_1)/C_1)$	%	/	9.6		N	
	— 7-14 天 $\text{day}((C_{14}-C_7)/C_7)$	%	/	3.4		N	
2.6.3	浸水 1 天与浸水 14 天后稳定因 数变化 Stability factor difference between immersed 1day and 14days		/	-0.43		N	
3	绝缘性能 INSULATION TEST REQUIREMENTS						
3.1	原始机械性能 Initial mechanical properties						
	— 抗张强度 tensile strength	MPa	≥10.3	13.7	13.4	P	
	— 断裂伸长率 Ultimate elongation	%	≥150	428	435	P	
3.2	空气箱老化试验 Mechanical properties after ageing in an air oven (121℃,168h)						
	— 抗张强度保留率 Percent of unaged value of tensile strength	%	≥70	99	95	P	
	— 断裂伸长率保留率 Percent of unaged value of elongation at rupture	%	≥70	90	86	P	
3.3	热变形 Heat deformation (131℃,30min,750g)	%	≤30	5.3	4.6	P	
3.4	热延伸试验 Hot creep (150℃, 15min,0.2MPa)						
	— 载荷下伸长率 maximum elongation	%	≤175	44	44	P	
	— 冷却后永久变形 hot set	%	≤10	0	0	P	

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4	外护套性能 OVERSHEATH TEST REQUIREMENTS					
4.1	原始机械性能 Initial mechanical properties					
	— 抗张强度 tensile strength	MPa	≥10.3	18.2		P
	— 断裂伸长率 Ultimate elongation	%	≥100	331		P
	Percent of unaged value of elongation at rupture					
4.2	热变形 Heat deformation (121°C, 1h, 2000g)	%	≤50	13		P
4.3	热冲击试验 heat shock test (121°C, 1h)		无裂纹 no cracks			P
4.4	低温卷绕试验 cold bend test (-40°C, 6D)		无裂纹 no cracks	无裂纹 no cracks		P
4.5	低温冲击试验 Cold impact test (-40°C)		10 个成品电缆 试件中至少 8 个试件无裂纹 at least 8 out of 10 completed cable specimens shall not crack or rupture	10个试件均无裂纹 No cracks or rupture on 10 specimens		P
5	导体拉断力 strength of the conductor					
	— 导体抗张强度 tensile strength of conductors	N	747-1470	1196	1187	P
6	耐日光试验 (氙灯法, 720h) sunlight resistance test(Xenon-Arc weather-O- meter, 720h)					
	— 抗张强度保留率 Percent of unaged value of tensile strength	%	≥85	95		P

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7	— 断裂伸长率保留率 Percent of unaged value of elongation at rupture	%	≥85	100	P
	电缆燃烧试验 (500W, 3 次 60s 供火, 每次供火时间的间隔 30s) Cable flame test(500W, three 60s applications of flame with 30s between applications)				
	— 标志旗损坏百分比 Percent of the indicator flag burned away or charred	%	≤25	0	P
	— 滴落物检查 Glowing particles or flaming drops		不引燃棉花 Shall not ignite the cotton	不引燃棉花 Not ignite the cotton	P
	— 自熄时间 Self-extinguishing time		三次供火后火焰持续时间不超过60s Continues to flame not longer than 60s after three applications of the gas flame	0	P
8	耐磨试验 (340 克负载, 28 次/分钟, 5000 次往复) Abrasion Test (340g weight on load, 28times/min, 5000cycles)		不露出导体或屏蔽层 No exposure of conductor or shield on any of the 5 specimens	未露出同心铝合金导体 no exposure of the inner concentric aluminum alloy conductor	P
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