CABLE TEST REPORT
电缆测试报告

Test Standard 测试标准: AS/NZS 1802

1. MANUFACTURER INFORMATION 制造商信息

Manufacturer Name **制造商名称**	**Anhui Feichun Special Cable Co., Ltd.** 安徽飞纯特种电缆有限公司
Brand Name **品牌名称**	Feichun Cable / 飞纯电缆
Manufacturing Location **生产地址**	Anhui Province, People's Republic of China 中华人民共和国安徽省
Contact Information **联系方式**	Tel 电话: +86-0551-65363735 | Email 邮箱: Tech@feichuncables.com

2. SAMPLE INFORMATION 样品信息

2.1 General Information 通用信息

Product Name **产品名称**	Type 241.1 Mining Trailing Power Cable 241.1型矿用拖曳电力电缆
Application **用途**	Trailing power supply for mobile mining equipment (without LED light strip) 矿用移动设备拖曳供电（不带LED灯带）
Rated Voltage (Uo/U) **额定电压**	**0.6/1.1 kV**
Cable Structure Description **电缆结构说明**	3 Power cores + 3 Pilot/Earth cores + 1 Pilot core 3根主电力芯 + 3根辅/地线芯 + 1根监控芯

2.2 Sample Details 样品详情（多规格）

Sample ID 样品编号	Model / Type 型号规格	Cross-sectional Area 标称截面积	Sample Length 样品长度
Sample A	Type 241.1 Mining Trailing Power Cable 3+3+1 35 SQMM Type 241.1 3(35mm²)+3+1(2.5mm²)	3 × 35 mm² + 3 × 2.5 mm² + 1 × 2.5 mm²	2 pieces × 25 m
Sample B	Type 241.1 Mining Trailing Power Cable 3+3+1 6 SQMM Type 241.1 3(6mm²)+3+1(2.5mm²)	3 × 6 mm² + 3 × 2.5 mm² + 1 × 2.5 mm²	2 pieces × 25 m

3. TEST INFORMATION 测试信息

Test Standard **测试标准**	**AS/NZS 1802** Electric cables – Reeling and trailing	**Sample Quantity** **样品数量**	Sample A: 2 pcs

	– For mining and general use (other than underground coal mining) 电缆—卷筒和拖曳—用于采矿及一般用途（不包括井下煤矿）		× 25 m Sample B: 2 pcs × 25 m
Test Date **测试日期**	2025-12-02 to 2025-12-08	**Report Date** **报告日期**	2025-12-08
Test Environment **测试环境**	Temperature 温度: 23°C ± 2°C | Humidity 湿度: 50% ± 10% RH | Atmospheric Pressure 气压: 86~106 kPa		

4. TEST RESULTS 测试结果 (According to AS/NZS 1802 依据AS/NZS 1802标准)

4.1 Electrical Tests 电气性能测试

No. 序号	Test Item 测试项目	Cable Type 电缆规格	Standard Requirement 标准要求	Test Result 测试结果	Tolerance 偏差	Verdict 判定
4.1.1	Conductor DC Resistance @ 20°C (Power cores) 主电力芯导体直流电阻 @ 20°C	Sample A (35 mm²)	≤ 0.554 Ω/km	0.532 Ω/km	-4.0%	PASS
4.1.2	Conductor DC Resistance @ 20°C (Power cores) 主电力芯导体直流电阻 @ 20°C	Sample B (6 mm²)	≤ 3.30 Ω/km	3.14 Ω/km	-4.8%	PASS
4.1.3	Conductor DC Resistance @ 20°C (2.5 mm² cores) 2.5mm²芯导体直流电阻 @ 20°C	Both samples 两规格	≤ 7.41 Ω/km	7.02 Ω/km	-5.3%	PASS
4.1.4	Insulation Resistance @ 20°C 绝缘电阻 @ 20°C	Both samples 两规格	≥ 100 MΩ·km	> 1,000 MΩ·km	—	PASS
4.1.5	Voltage Withstand (AC 3.5 kV, 5 min) 交流耐压 (3.5kV, 5分钟)	Both samples 两规格	No breakdown 不击穿	No breakdown 不击穿	—	PASS
4.1.6	Spark Test (10 kV) 火花试验 (10kV)	Both samples 两规格	No faults 无击穿	No faults 无击穿	—	PASS
4.1.7	Capacitance between conductors 导体间电容	Sample A	≤ 250 pF/m	195 pF/m	-22.0%	PASS
4.1.8	Capacitance between conductors 导体间电容	Sample B	≤ 250 pF/m	188 pF/m	-24.8%	PASS

4.2 Dimensional Tests 尺寸测试

No. 序号	Test Item 测试项目	Cable Type 电缆规格	Standard Requirement 标准要求	Test Result 测试结果	Verdict 判定
4.2.1	Conductor Diameter (Power cores) 主电力芯导体直径	Sample A (35 mm²)	Nominal 6.7 mm	6.72 mm	PASS

4.2.2	Conductor Diameter (Power cores) 主电力芯导体直径	Sample B (6 mm²)	Nominal 2.8 mm	2.79 mm	PASS
4.2.3	Insulation Thickness (Power cores, Nominal) 主芯绝缘标称厚度	Both samples 两规格	1.1 mm (Min 0.88 mm)	1.15 mm / Min 0.96 mm	PASS
4.2.4	Sheath Thickness (Outer sheath, Nominal) 外护套标称厚度	Both samples 两规格	3.0 mm (Min 2.4 mm)	3.14 mm / Min 2.69 mm	PASS
4.2.5	Overall Outer Diameter 整体外径	Sample A	48.0 ± 2.0 mm	48.6 mm	PASS
4.2.6	Overall Outer Diameter 整体外径	Sample B	32.0 ± 2.0 mm	31.4 mm	PASS

4.3 Mechanical Tests 机械性能测试

No. 序号	Test Item 测试项目	Standard Requirement 标准要求	Test Result 测试结果	Cable Type 电缆规格	Verdict 判定
4.3.1	Insulation Tensile Strength (Before Aging) 绝缘抗拉强度（老化前）	≥ 12.5 N/mm²	16.0 N/mm²	Both samples	PASS
4.3.2	Insulation Elongation at Break (Before Aging) 绝缘断裂伸长率（老化前）	≥ 150%	290%	Both samples	PASS
4.3.3	Sheath Tensile Strength (Before Aging) 护套抗拉强度（老化前）	≥ 10.0 N/mm²	13.0 N/mm²	Both samples	PASS
4.3.4	Sheath Elongation at Break (Before Aging) 护套断裂伸长率（老化前）		315%	Both samples	PASS



4.4 Aging Tests 老化试验

No. 序号	Test Item 测试项目	Standard Requirement 标准要求	Test Result 测试结果	Cable Type 电缆规格	Verdict 判定
4.4.1	Heat Aging (168 h @ 100°C) – Insulation 热老化试验 (168小时 @ 100°C) – 绝缘	Tensile change ≥ -25% 抗拉变化率 ≥ -25%	-12%	Both samples	PASS
		Elongation change ≥ -25% 伸长变化率 ≥ -25%	-18%	Both samples	PASS
4.4.2	Heat Aging (168 h @ 100°C) – Sheath 热老化试验 (168小时 @ 100°C) – 护套	Tensile change ≥ -25% 抗拉变化率 ≥ -25%	-15%	Both samples	PASS
		Elongation change ≥ -25% 伸长变化率 ≥ -25%	-20%	Both samples	PASS

4.5 Environmental & Special Tests 环境及特殊试验

No. 序号	Test Item 测试项目	Standard Requirement 标准要求	Test Result 测试结果	Cable Type 电缆规格	Verdict 判定
4.5.1	Cold Bend Test @ -25°C 低温弯曲试验 @ -25°C	No cracks 无裂纹	No cracks 无裂纹	Both	PASS
4.5.2	Cold Impact Test @ -25°C 低温冲击试验 @ -25°C	No cracks 无裂纹	No cracks 无裂纹	Both	PASS
4.5.3	Hot Deformation Test @ 80°C 热变形试验 @ 80°C	≤ 50%	28%	Both	PASS
4.5.4	Ozone Resistance Test 耐臭氧试验	No cracks 无裂纹	No cracks 无裂纹	Both	PASS
4.5.5	Flame Retardant Test (IEC 60332-1) 阻燃试验 (IEC 60332-1)	Self-extinguishing 自熄	Self-extinguishing 自熄	Both	PASS
4.5.6	Oil Resistance Test (24 h @ 100°C) 耐油试验 (24小时 @ 100°C)	Mass change ≤ ±30% 质量变化 ≤ ±30%	+8%	Both	PASS
4.5.7	Trailing Flex Test (Loaded cycles) 拖曳反复弯曲试验（带载循环）	No electrical or mechanical failure 无电气及机械失效	Sample A: 20,000 cycles – No failure Sample B: 20,000 cycles – No failure	Both	PASS

5. TEST EQUIPMENT 测试设备

Equipment Name 设备名称	Model / 型号	Calibration Date 校准日期	Valid Until 有效期至
DC Resistance Tester 直流电阻测试仪	QJ57P	2025-06-15	2026-06-14
Insulation Resistance Tester 绝缘电阻测试仪	ZC36	2025-05-20	2026-05-19
Withstand Voltage Tester 耐压测试仪	YD2013	2025-07-10	2026-07-09
Tensile Testing Machine 拉力试验机	WDW-100	2025-04-25	2026-04-24

Aging Oven 老化烘箱	401A	2025-08-01	2026-07-31
Low Temperature Chamber 低温箱	DW-40	2025-03-18	2026-03-17
Reeling/Trailing Flex Test Rig 拖曳耐久试验台	FCT-RT-01	2025-09-05	2026-09-04

6. CONCLUSION 结论

★ ALL TESTS PASSED ★

★ 所有测试项目合格 ★

The above cable samples (**Sample A:** Type 241.1 Mining Trailing Power Cable 3+3+1 35 SQMM, **Sample B:** Type 241.1 Mining Trailing Power Cable 3+3+1 6 SQMM, rated voltage 0.6/1.1 kV, without LED light strip) have been tested in accordance with the **AS/NZS 1802** standard and relevant referenced standards. All electrical, mechanical and environmental test results comply with the specified requirements.

上述电缆样品（**样品A：**Type 241.1 矿用拖曳电力电缆 3+3+1 35mm²，**样品B：**Type 241.1 矿用拖曳电力电缆 3+3+1 6mm²，额定电压0.6/1.1kV，均为不带LED灯带结构）已按照 **AS/NZS 1802** 标准及相关引用标准进行测试，电气性能、机械性能及环境适应性等各项测试结果均符合规定要求。

7. AUTHORIZATION 授权签署

Tested By 检测员	Reviewed By 审核员	Approved By 批准人	Company Stamp 公司印章
刘坚	张国强	王大伟	Anhui Feichun 2025/12/8 Global Marketing Dpt
Date 日期: 2025-12-08	Date 日期: 2025-12-08	Date 日期: 2025-12-08	

Notes 备注:

1. This test report is only valid for the tested sample(s). 本报告仅对受检样品有效。
2. Without written approval from the issuing laboratory, this report may not be reproduced in part. 未经检测实验室书面批准，本报告不得部分复制。
3. The test results relate only to the items tested. 测试结果仅与测试项目相关。
4. Test Standard: AS/NZS 1802 – Electric cables – Reeling and trailing – For mining and general use (other than underground coal mining). 测试标准：AS/NZS 1802 – 电缆—卷筒和拖曳—用于采矿及一般用途（不包括井下煤矿）。