

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

 <p>UKAS TESTING 4717</p> <p>Accredited to ISO/IEC 17025:2005</p>	<h3>ERA Technology Ltd</h3> <p>Issue No: 002 Issue date: 23 August 2011</p>	
	<p>Circuit Protection and Materials Testing Laboratories Cleeve Road Leatherhead Surrey KT22 7SA</p>	<p>Contact: Dr A Friday Tel: +44 (0)7876 501867 Fax: +44 (0)1372 367070 E-Mail: Alan.Friday@cobham.com Website: www.era.co.uk</p>
<p>Testing performed at the above address only</p>		

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
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SECTION 1: FUSES, CIRCUIT BREAKERS AND THERMAL LINKS	ELECTRICAL PRODUCT TESTS	
Cartridge fuse-links (rated up to 5A) for ac and dc service	Electrical Safety	BS 646:1958, Amd 1 for 50 Hz ratings only
General purpose fuse-links for domestic and similar purposes (primarily for use in plugs)	Electrical safety	BS 1362:1973, Amds 1 and 2
Residual current-operated circuit breakers without integral overcurrent protection (RCCB's)	Electrical safety Maximum prospective current 10,000A	BS EN 61008-1:2004 + A12:2009, Corrig Excluding: Clause 9.13, Resistance to heat Clause 9.14, Resistance to abnormal heat and fire Clause 9.22.1, Climatic tests Clause 9.Z2, EMC tests
Residual current-operated circuit breakers with integral overcurrent protection (RCBO's)	Electrical safety Maximum prospective current 10,000A	BS EN 61009-1:2004, Corrig Excluding: Clause 9.14, Resistance to heat Clause 9.15, Resistance to abnormal heat and fire Clause 9.22.1, Climatic tests Clause 9.Z2, EMC tests
Portable residual current devices	Electrical safety	BS 7071:1992 For the following clauses only: Clauses 8.9 and 8.16
Socket - Outlets incorporating residual current devices	Electrical safety	BS 7288:1990, Amd 1 For the following clauses only: Clauses 8.9 and 8.16
Miniature cartridge fuse links for use on printed wiring boards	Electrical safety	BS 6885:1988



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SECTION 1: FUSES, CIRCUIT BREAKERS AND THERMAL LINKS (cont'd)	ELECTRICAL PRODUCT TESTS (cont'd)	
General requirements for miniature fuses	Electrical safety	BS EN 60127-1:2006 EN 60127-1:2006 IEC 60127-1:2006
Cartridge fuse links	Electrical safety	BS EN 60127-2:2003 + A2:2010 EN 60127-2:2003, Amd 1 IEC 60127-2:2003, Amd 1
Sub-miniature fuses	Electrical safety	BS EN 60127-3:1996 EN 60127-3:1996, Corrig IEC 60127-3:1988, Amd A1
Miniature fuses: Quality assessment	Electrical safety	BS EN 60127-5:1991 EN 60127-5:1991 IEC 60127-5:1988
Circuit-Breakers for overcurrent protection for household and similar installations	Electrical safety Maximum current 10kA a.c.	BS EN 60898-1:2003 + A1:2004 IEC 60898-1:2002 Excluding: Clause 9.7.1 Clause 9.11, Endurance Clauses 9.13, Mechanical shock Clauses 9.14, Resistance to heat Clauses 9.15, Resistance to abnormal heat and fire Clauses 9.16, Resistance to rusting



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SECTION 2: LOW VOLTAGE SWITCHGEAR AND CONTROLGEAR	ELECTRICAL PRODUCT TESTS	
Low voltage switchgear and controlgear	Electrical safety Maximum current 10 kA a.c.	BS EN 60947-1:2007 Excluding: Clause 7.3, EMC tests Clause 8.4, EMC tests Annex C, Degree of protection
General rules		
General requirements	Electrical safety	BS EN 61439-1:2009 IEC 61439-1:2009 Excluding: Clause 10.2 Strength of material and parts Clause 10.3, Degree of protection Clause 10.12, EMC tests BS EN IEC 60439-1:1999 Excluding: Clause 8.2.7, Degree of protection Clause 8.2.8, EMC tests
Low voltage switchgear and controlgear assemblies	Electrical safety Maximum current 10 kA a.c.	BS EN 61439-2:2009 IEC 61439-2:2009 Clause 10.2 Strength of material and parts Clause 10.3, Degree of protection Clause 10.12, EMC tests BS EN 60947-5-1:2004 + A1:2009 EN 60947-5-1:2003 IEC 60947-5-1:2003, Amd 1 Excluding: Annex C, Degree of protection
Busbar trunking systems	Electrical safety Maximum rating 63 A at 250 V ac	BS EN 60439-2:2000 IEC 60439-2:2000 Excluding: Clause 8.2.7, Degree of protection Clause 8.2.8, EMC tests Clause 8.2.10, Structural strength Clause 8.2.14, Flame-propagation Clause 8.2.15, Fire-proofing in building penetrations



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<p>SECTION 4: IMPULSE VOLTAGE TESTING</p> <p>Low-voltage surge protective devices. Surge protective devices connected to low-voltage power systems.</p> <p>Requirements and tests</p> <p>Information technology equipment Safety</p> <p>General requirements</p> <p>Audio, video and similar electronic apparatus</p> <p>Household and Similar Electrical Appliances</p> <p>General requirements</p> <p>Incandescent lamps</p> <p>Tungsten filament lamps for domestic and similar general purpose lighting</p>	<p>ELECTRICAL PRODUCT TESTS</p> <p><u>Impulse Voltage Tests</u></p> <ul style="list-style-type: none"> - Peak voltage 8.0 kV - Impulse 1.2/50 μs - Short-circuit 8/20 μs - Peak current 4kA - 50 Hz - 3-Phase 	<p>BS EN 61643-11:2002 EN 61643-11:2002 IEC 61643-1:2005</p> <p>IEC 61643-11:2011 For the following tests only: Clauses 7.2.3 and 7.2.4 BS EN 61643-21:2001 + A1:2009 EN 61643-21:2001 IEC 61643-21:2000, Amd 1 For the following tests only: Clause 6.2.1</p> <p>BS EN 60950-1:2006 + A12:2011 IEC 60950-1:2005 including A1 For the following tests only: Clause 2.10.3.4 a) and Appendix G5 a)</p> <p>IEC 60065:2005, Amds 1 and 2 BS EN 60065:2002 + A2:2010 EN 60065:2002 For the following tests only: Clause 13.3.4 a) and Appendix J5 a)</p> <p>BS EN 60335-1:2002 + A14:2010 EN 60335-1:2002 IEC 60335-1:2010 For the following tests only: Clause 14</p> <p>BS EN 60432-1:2000 For the following tests only: Annex D Deviation: 50 μs pulse width used</p>



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SECTION 4: IMPULSE VOLTAGE TESTING (cont'd) Electrical equipment for measurement, control and laboratory use	ELECTRICAL PRODUCT TESTS (cont'd)	BS EN 61010-1:2010, EN 61010-1:2010 IEC 61010-1:2010 For the following tests only: Clause 14.8
13A rewireable and non-rewireable plugs	<u>Impulse Voltage Tests</u> - Peak voltage 8.0 kV - Impulse 1.2/50 μ s - Short-circuit 8/20 μ s (cont'd)	BS 1363-1:1995, Amd 1 to 3 For the following tests only: Annexes D and F
13A switched and unswitched socket-outlets		BS 1363-2:1995, Amd 1 to 3 For the following tests only: Annexes D and F
13A adaptors		BS 1363-3:1995, Amd 1 to 3 For the following tests only: Annexes D and F
13A fused connection units switched and unswitched		BS 1363-4:1995, Amd 1 to 3 For the following tests only: Annexes D and F
SECTION 5: POLYMER and ALLOYS; REINFORCED POLYMERS	<u>Mechanical Tests</u> Tensile strength (Loads up to 10 kN in temperature range 20°C to 250°C)	BS 2782:Part 3:Methods 320A to F: 1976 (obsolescent) BS EN ISO 527-1:1996 BS EN ISO 527-2:1996 BS EN ISO 527-3:1996
	Creep and Stress (Loads up to 50 kN at 20°C, Loads up to 5 kN in temperature range 20°C to 250°C)	BS EN ISO 899-1:2003
	Flexural	BS EN ISO 178:2010 excluding Method B



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SECTION 6: THERMOPLASTIC AND FLEXIBLE METAL PIPEWORK FOR UNDERGROUND INSTALLATION AT PETROL FILLING STATIONS	<u>Mechanical Tests</u>	
	Leakage, hydrostatic strength, burst pressure	Institute of Petroleum Specification for underground pipework systems for petrol filling stations, second edition 2001 Clause 6.2.1 only BS EN 14125:2004 Clause 5.1.2 only
	Vacuum	Institute of Petroleum Specification for underground pipework systems for petrol filling stations, second edition 2001 Clause 6.2.2 only BS EN 14125:2004 Clause 5.1.3 only
	Cyclic pressure	Institute of Petroleum Specification for underground pipework systems for petrol filling stations, second edition 2001 Clause 6.2.3 only BS EN 14125:2004 Clause 5.1.4 only
	Estimated working life	BS EN 14125:2004 Clause 5.2 a only
	Crush resistance	Institute of Petroleum Specification for underground pipework systems for petrol filling stations, second edition 2001 Clause 6.3.1 only BS EN 14125:2004 Clause 5.4.1 only
	Bend radius and low temperature flexibility Forces up to 10 kN	Institute of Petroleum Specification for underground pipework systems for petrol filling stations, second edition 2001 Clause 6.3.2 only BS EN 14125:2004 Clause 5.4.2 only



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SECTION 6: THERMOPLASTIC AND FLEXIBLE METAL PIPEWORK FOR UNDERGROUND INSTALLATION AT PETROL FILLING STATIONS (cont'd)	Impact	Institute of Petroleum Specification for underground pipework systems for petrol filling stations, second Clause 6.3.3 only BS EN 14125:2004 Clause 5.4.3 only
	Puncture resistance	Institute of Petroleum Specification for underground pipework systems for petrol filling stations, second Clause 6.3.4 only BS EN 14125:2004 Clause 5.4.4 only
	Pull test on connectors	Institute of Petroleum Specification for underground pipework systems for petrol filling stations, second Clause 7.3.1 only BS EN 14125:2004 Clause 5.4.4 only
	Fuel compatibility	Institute of Petroleum Specification for underground pipework systems for petrol filling stations, second Clause 6.4 only BS EN 14125:2004 Clause 5.5.1 only
	Fuel permeation and swelling	Institute of Petroleum Specification for underground pipework systems for petrol filling stations, second Clause 6.5 only BS EN 14125:2004 Clauses 5.5.2 and 5.5.3 only



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SECTION 7: GEOSYNTHETIC MATERIALS	Creep testing (Loads up to 50 kN at 20 °C, Loads up to 5 kN in temperature range 20 °C to 100 °C)	BS EN ISO 13431:1999, Amd 1 ISO 13431:1999
	Tensile (wide strip) (Loads up to 200 kN)	BS EN ISO 10319:2008 ISO 10319:2008
	Breaking Strength and Elongation (strip method)	BS EN ISO 13934-1:1999
	Accelerated tensile Creep by stepped isothermal method (Loads up to 10 kN)	ASTM D6992-03
	Accelerated compressive creep by stepped isothermal method (Pressures up to 1000 kPa)	ASTM D 7361-07
	END	