ExMC/534/DV
June 2009

INTERNATIONAL ELECTROTECHNICAL COMMISSION SYSTEM FOR CERTIFICATION TO STANDARDS RELATING TO EQUIPMENT FOR USE IN EXPLOSIVE ATMOSPHERES (IECEx SYSTEM)

Title: **IECEx Assessment Report for an extension of scope for existing ExTL International Testing and Certification Services Pty Ltd, ITACS**

Circulation to: ExMC – IECEx Management Committee

INTRODUCTION

This document contains the IECEx Assessment Report for voting on an extension of scope for existing ExTL, ***International Testing and Certification Services Pty Ltd, ITACS*** to include the Flameproof Tests of - IEC 60079-1 Explosive atmospheres Part 1 - Equipment protection by flameproof enclosure "d"

ITACS has been operating as an Accepted ExTL within the IECEx System since 1998, which included tests and assessment to IEC 60079-1, excluding flameproof tests. In more recent times, June 2005, ITACS has become an Accepted ExCB. While accepted as an ExTL for flameproof Ex'd', since 1998, this has been on the basis that ITACS utilise the flameproof test facilities at SIMTARS and TestSafe, both longstanding members of the IECEx System. All other assessments and tests to IEC 60079-1 have been conducted at ITACS as an ExTL.

Recently ITACS has acquired Flameproof Test facilities and capabilities along with additional staff with Ex "d' Flameproof testing experience. ITACS have now applied for a scope extension to conduct flameproof tests according to IEC 60079-1.

A special site assessment was arranged and carried out by Expert Assessor, Mr. Alain Czyz of FR. Following the successful completion of an on site assessment this report has been prepared by the expert assessor and is now issued for voting by the ExMC.

Please consider the assessment report and return the completed voting form to the IECEx Secretariat by **2009 07 31**

Your speedy response to the voting process will be much appreciated.

Chris Agius

Chris Agius
IECEx Secretariat

Address:	**Contact Details:**
SAI Global Building	**Tel: +61 2 8206 6940**
286 Sussex Street	**Fax: +61 2 8206 6272**
Sydney NSW 2000	**e-mail: chris.agius@iecex.com**
Australia	**http://www.iecex.com**

IECEx ASSESSMENT REPORT FOR ITACS ExTL (IECEx TEST LABORATORY – ExTL)

Type of Assessment:

Scope extension of ExTL x

1. OBJECT AND FIELD OF APPLICATION

1.1 ***Country:***

Australia

1.2 ***Name of Candidate TL***

International Testing and Certification Services Pty Ltd, ITACS

1.3 ***Member/s of the Assessment Team***

Alain CZYZ, Expert Assessor

1.4 ***Place and date of Assessment***

Date: 11 May 2009

4-6 Second Street,
Bowden,
South Australia, 5007

1.5 ***Assessment References***
Documents:
i) IECEx 02 Second Edition 2006-011 IECEx Scheme rules of procedure
ii) IECEx Operational Document OD/003 IECEx Assessment procedures
iii) IECEx Operational Document OD 009 Issuing of CoCs, ExTRs and QARs
iv) ISO/IEC 17025
v) IECEx Technical Guidance Documents
vi) ExTL application documents

1.6 ***Scope of Application***
The following scope extension is sought:

Product Category	**Standard**
Explosive atmospheres	
Part 1 Equipment protection by flameproof enclosure “d”	IEC 60079-1

1.7 *Candidate TL Person/s Interviewed*

Name	Position
Roelof Viljoen	HAE HC manager

1.8 *Legal Entity of the Candidate TL*

Not covered for this scope extension

1.9 *Associated EXCB*

ITACS 4-6 Second Street, BOWDEN, S.A.

1.12 *Financial Support*

Not covered for this scope extension

1.13 *History*

Established in Adelaide in 1980, International Testing and Certification Services Pty. Ltd. (ITACS P/L ABN 60 098 886 563) provides testing, certification, calibration and metrology facilities for the electrical industry within Australia and worldwide. In 1990 ITACS' NATA Laboratory accreditation was extended to include electrical equipment for explosive atmospheres.

ITACS has been operating as an Accepted ExTL within the IECEx System since 1998. In more recent times, June 2005, ITACS has become an Accepted ExCB. While accepted as an ExTL for flameproof Ex 'd', since 1998, this has been on the basis that ITACS utilise the flameproof test facilities at SIMTARS and TestSafe, both longstanding member ExTLs of the IECEx System. All other assessments and tests to IEC 60079-1 are conducted at ITACS as ExTL.

Recently ITACS has acquired Flameproof Test facilities and capabilities along with additional staff with Ex "d' Flameproof testing experience. ITACS have now applied for a scope extension to conduct flameproof tests according to IEC 60079-1.

At the time of the site visit discussions were underway to finalise the incorporation of ITACS into the TUV Rheinland Group. There are no planned changes to location, facilities or staff at ITACS. Any subsequent changes will be notified to the IECEx Secretariat, in accordance with the IECEx Scheme rules and handled at that time.

2. ORGANISATION

2.1 Names, Titles and Experience of the Senior Executives

Name	Title	Experience
David Gray,	Director	25 Years

2.2 Name, Title and Experience of the Quality Management Representative

Name	Title	Experience
Alysa Fox	Quality Manager	7 Years

2.3 Name and title of Nominated Principal Contact

Roelof Viljoen, HAE HC manager

2.4 Employees

There are 4 verification staff with 72 years total experience with an average of 18 years. The total number of years of Ex experience of all engineers at ITACS is 105 years and the average is 15 years.

2.5 Organisational Structure

See organisation chart in annex 1

3. RESOURCES

The ExTL has the necessary competent staff and facilities to test according to the standard. The staff involved in the Ex d assessment and testing were interviewed as part of the assessment and found to be very competent in this field.

4. TEST METHODS

4.1 Test Methods/Procedures

A procedure has been produced to cover the reference pressure, overpressure and non transmission testing, TMP 15-150. This was reviewed during the assessment and found to meet IEC 60079-1 requirements.

4.2 Staff Work Instructions

The competency documentation has been updated to reflect staff with competency in this work.

5. TEST REPORTS AND RECORDS

5.1 Test Reports Issued in 2008 for d enclosures

7 test reports for the ANZ Ex Scheme
3 ExTRs

Explosion tests on flameproof enclosures have been carried on by accepted Australian ExTLs SIMTARS and TestSafe**.** For the time being, some test reports with explosion tests are in progress

5.2 Test Records

There is an effective system in place for recording the results whereby test record sheets are available for recording the results of tests carried out. The equipment used for a particular test is noted on a printed copy and this document is kept with the rest of the information in the project data report.

6. CALIBRATION

Items of equipment used for explosion tests are calibrated with links to national standards following the rules defined in the quality manual.

7. DOCUMENTATION

7.1 *Quality Manual*

Not covered for this scope extension, apart from the areas associated with this scope extension.

7.2 *Document Change Control*

Not covered for this scope extension

8. CONFIDENTIALLY

Not covered for this scope extension

9. NATIONAL ACCREDITATION

Extension of the scope of National Accreditation was issued by NATA after a 2 day assessment on site in December 2008. Assessment was on the tests defined in 15.1, 15.2 and15.4 of IEC 60079-1.Notification of the new scope was given on 1st of April 2009. See Annex 2 Extract of accreditation certificate, of this document.

10. RECOGNITION AND AGREEMENTS

Not covered for this scope extension

11. INTERNAL AUDIT AND PERIODIC REVIEW

Not covered for this scope extension

12. COMPLAINTS MECHANISM

Not covered for this scope extension

13. SPECIAL FACTS TO BE NOTED

Copies of additional supporting information for this assessment have been provided to both the applicant and to the IECEx Secretariat.
These include:

- The site assessment report
- Completed technical guidance document for IEC 60079-1 (TGD).
- Photos of the facilities
- Assessor's notes

Test equipment for the explosion tests (reference pressure determination and non-transmission test) has been designed and built by ITACS; A comprehensive and well documented procedure, based upon IEC 60079-1, and the test equipment has been issued.

14. COMMENTS

As noted earlier, ITACS has provided evidence that they have both the competency and capability to operate as an ExTL for this scope extension. No issues requiring rectification were found during the assessment.

At the time of the assessment ITACS had only one staff member with the knowledge + experience of the test equipment and of the relevant procedure. Only this person could carry on the explosion tests, however other ExTL staff are capable of other IEC 60079-1 assessment and tests. Such a situation could be critical if the jobs will grow, with ITACS management aware of this.

15. RECOMMENDATION

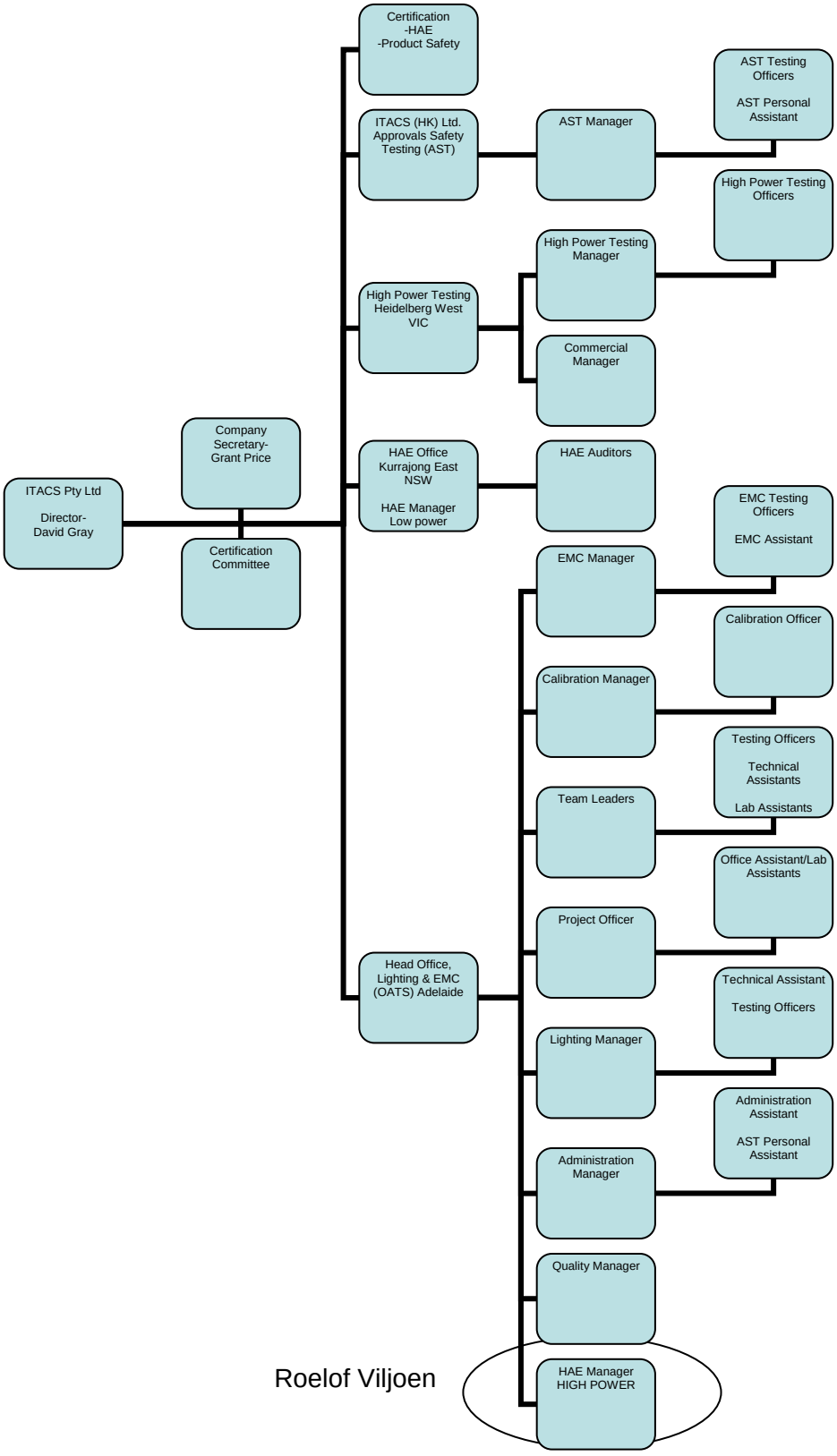
Based on the assessment performed on 11 May 2008, ITACS is recommended for an extension of scope as IECEx Testing Laboratory for the standard listed in this document.

LIST OF ANNEXES

Annex 1 Organisation chart

Annex 2 Extract of accreditation certificate

Annex 1


ITACS Pty Ltd
Director-
David Gray
Company
Secretary-
Grant Price
Certification
Committee
Certification
-HAE
-Product Safety
ITACS (HK) Ltd.
Approvals Safety
Testing (AST)
AST Manager
AST Testing
Officers
AST Personal
Assistant
High Power Testing
Officers
High Power Testing
Manager
High Power Testing
Heidelberg West
VIC
Commercial
Manager
HAE Office
Kurrajong East
NSW
HAE Manager
Low power
HAE Auditors
EMC Testing
Officers
EMC Assistant
EMC Manager
Calibration Officer
Calibration Manager
Testing Officers
Technical
Assistants
Lab Assistants
Team Leaders
Office Assistant/Lab
Assistants
Project Officer
Technical Assistant
Testing Officers
Head Office,
Lighting & EMC
(OATS) Adelaide
Lighting Manager
Administration
Assistant
AST Personal
Assistant
Administration
Manager
Quality Manager
HAE Manager
HIGH POWER
Roelof Viljoen

Scope of Accreditation

ACCREDITATION NO: 1700

International Testing and Certification Services Pty Ltd

4-6 Second Street
BOWDEN SA 5007

CONTACT: Mr D A Gray
PHONE: (08) 8346 8680 FAX: (08) 8346 7072 MOBILE:
EMAIL: itacs@itacslab.com
WEB SITE:

FACILITIES: Public testing service

This facility complies with the requirements of ISO/IEC 17025:2005

1.38 Instrument calibrators

with least uncertainties of measurement of -
based on 1.39 where appropriate
.01 D.C. voltage
.02 A.C. voltage
.11 D.C. current
.12 A.C. current
.51 Resistance

1.39 Indicating and recording instruments

.01 D.C. voltmeters
with least uncertainties of measurement of -
0.005% of reading from 5μV up to 100 V
0.012% of reading from 100 V up to 1000 V
0.4% of reading from 1000 V to 10 kV

.02 A.C. voltmeters
with least uncertainties of measurement of -
0.08% of reading from 5μV up to 100 V
0.21% of reading from 100 V to 1000 V
2.2% of reading from 1000 V to 30kV

.03 D.C. ammeters
with least uncertainties of measurement of -
0.2% + 1 digit from 2μA up to 10 A
0.1% from >10 A to 20 A
0.7% from 20 to 1000 A

.04 A.C. ammeters
with least uncertainties of measurement of -
0.4% from 2μA to 10 A from 10 Hz to 30 kHz
0.2% from >10 A to 20 A from 10 Hz to 30 kHz
0.7% from 20 A to 1000 A from 10 Hz to 400 Hz

.09 Ohmmeters
Tests on ohmmeters and megohommeters with applied direct voltages up to 1000 V
with least uncertainties of measurement of -
0.006% of reading + 0.5mΩ from 1 mΩ to 100 kΩ
0.11% of reading from 100 kΩ to 1 MΩ
0.15% of reading at 1000 V from 200 kΩ to 500 MΩ

Scope of Accreditation

.10 LCR meters
4.5% + 2 digits from 1 pF to <1 nF
1.5% from 1 nF to 1 mF

1.41 Frequency and time measuring instruments and standards
.01 Frequency meters
with least uncertainties of measurement of -
1 in 10^5 up to 1MHz

1.51 Electronic equipment
.10 Transducer indicators and calibrators
with least uncertainties of measurement of -
based on 1.39
.30 Miscellaneous equipment and tests
Residual current circuit breaker testers

3.15 Electromagnetic compatibility - emission testing
Conducted EMC Emissions only
AS/NZS CISPR 14.1, CISPR 14-1, EN 55014-1
AS/NNZS CISPR 15, CISPR 15, EN 55015
AS/NZS CISPR 11, CISPR 11, EN 55011
AS/NZS CISPR 22, CISPR 22, EN 55022 MAINS ONLY
AS/NZS 4251.1, IEC 61000-6-3
AS/NZS 4251.2
IEC 60669.2.1, EN 60669-2-1, IEC 61000-6-4
IEC 61326, EN 61326
EN 50270
AS/NZS 2144
IEC 61204-3, EN 1703-1
IEC 60730-1, EN 60730-1
IEC 61543, EN 61543

3.16 Electromagnetic compatibility - immunity testing
AS/NZS 61000-4-2, IEC 61000-4.2. EN 61000-4-2
AS/NZS 61000-4-4, IEC 61000-4.4, EN 61000-4-4
AS/NZS 61000-4-5, IEC 61000-4.5, EN 61000-4-5
AS/NZS 61000-4-6. IEC 61000-4.6, EN 61000-4-6
AS/NZS 61000-4-11, IEC 61000-4.11, EN 61000-4-11
AS/NZS CISPR 14.2, IEC CISPR 14-2, EN 55014-2
AS/NZS CISPR 24, IEC CISPR 24, EN 61000-6-1
AS/NZS 4251.1, IEC 61000-6-1, EN 61000-6-1
IEC 61000-6-2, EN 61000-6-2
AS/NZS 2144
IEC 61326, EN 61326
EN 50270
AS/NZS 60335.1, IEC 60335.1
IEC 60669.2.1, EN 60669.2.1

3.22 Approval tests on telecommunications equipment
Tests and examinations for compliance with AS/ACIF S008 (excluding clauses 5.6- optical fibre enclosurers, 5.8.2.5 - additional electrical requirements of coaxial cables and 5.9 - requirements of optical fibre customer cables and cords);

3.24 Approval tests on electrical appliances and accessories
AS/NZS 3100 series
Tests and examinations for compliance with:
AS/NZS 3100 General requirements
AS/NZS 3102 Duct heaters
AS/NZS 3105 Epods

Scope of Accreditation

AS 3106 Electric jugs
AS/NZS 3111 Miniature CBR's
AS/NZS 3112 Plug & Sockets
AS/NZS 3113 Ceiling roses
AS/NZS 3117 Bayonet lampholders
AS/NZS 3119 Bayonet lampholders adaptors
AS/NZS 3120 Cord extension sockets
AS/NZS 3121 Insulating mouldings
AS/NZS 3122 Socket outlet adaptors
AS/NZS 3123 Industrial plugs and sockets
AS/NZS 3124 Overhead line connection boxes
AS/NZS 3127 Cord line switches
AS/NZS 3128 Portable lamp standard
AS/NZS 3130 Beauty therapy equipment
AS/NZS 3131 Plugs and socket-outlets for stationary appliances
AS/NZS 3133 Air break switches
AS/NZS 3135 Semi enclosed fuses
AS/NZS 3136 Spa & swimming pool equipment
AS/NZS 3140 ES lampholders
AS/NZS 3160 Hand held tools
AS/NZS 3161 Thermostats
AS/NZS 3166 Cables for HV luminous discharge tubes
AS/NZS 3190 RCD's
AS/NZS 3191 Flexible cords
AS/NZS 3194 Electric shaver supply unit
AS/NZS 3195 Welders
AS/NZS 3197 Portable control or condition devices
AS/NZS 3199 cord sets

Appliances
Tests and examinations for compliance with the general requirement of
AS/NZS 3350.1 and IEC 60335-1 3rd Edition and EN 60335.1 3rd edition
AS/NZS 60335.1, IEC 60335-1 4th edition and EN 60335.1 4th edition
and the associated part 2 series of the standards for the following equipment types:
part .1 General requirements of part series
part .2.2 Vacuum cleaners
part .2.3 Electric irons.
part .2.4 Spin extractors
part .2.5 Dishwashers
part .2.6 Rangers, ovens & hobs
part .2.7 washing machines
part .2.8 Shavers & hair clippers
part .2.9 portables cooking appliances
part .2.10 Floor treatment machines & scrubbing machines
part .2.11 Tumble dryers
part .2.12 Warming plates
part .2.13 Deep fryers and fry pans
part .2.14 Kitchen machine
part .2.15 Heating liquids
part .2.16 Waste disposal units
part .2.17 Blankets, pad, flexible heating appliance
part .2.21 Storage water heaters
part .2.23 Skin and hair care
part .2.24 Refrigerators and ice makers
part .2.25 Microwave ovens
part .2.26 Clocks
part .2.27 Skin exposure to ultraviolet and infrared red radiation
part .2.28 Sewing machines
part .2.29 Battery chargers
part .2.30 Room heaters

Scope of Accreditation

part .2.31 Range hoods
part .2.32 massage appliance
part .2.34 Motor compressor
part .2.35 Instantaneous water heaters
part .2.40 Heat pumps, Air conditioners and dehumidifiers
part .2.41 Pumps
part .2.43 Clothes dryers
part .2.44 Ironers
part .2.45 heating tools
part .2.51 Circulation pumps
part .2.52 Oral hygiene appliances
part .2.53 Saunas
part .2.54 Surface cleaning appliance
part .2.55 Aquarium & garden ponds
part .2.56 Projectors
part .2.59 Insect killers
part .2.60 Whirlpool pool baths
part .2.61 Thermal storage room heaters
part .2.65 Air cleaning appliances
part .2.66 Water bed heaters
part .2.73 Fixed immersion heaters
part .2.74 Portable immersion heaters
part .2.75 Dispensing appliances & vending machine
part .2.76 Fence energiser
part .2.77 Lawnmowers - up to 3 kW rating
part .2.78 Outdoor barbecues
part .2.79 High pressure cleaners
part .2.80 Fans
part .2.81 Foot warmers & heating mat
part .2.82 Service machine & amusement machine
part .2.83 Heated gullies - subcont. salt mistspray
part .2.84 Toilets - selected clause
part .2.85 Fabric Steamers
part .2.86 Fishing machines - subcont. salt mistspray
part .2.87 Animal stunning equipment
part .2.88 Humidifiers for heating, ventilation or air conditioners
part .2.89 Commercial refrigerators
part .2.90 Commercial microwave ovens
part .2.91 Lawn trimmers and edgers
part .2.92 Lawn scarifiers and aerators
part .2.94 Scissors type grass shears
part .2.95 Vertical garage doors
part .2.96 Flexible sheet heating elements
part .2.97 Roller shutters
part .2.98 Humidifiers
part .2.100 Garden blowers and blower vacuums
part .2.101 Vaporizers
part .2.102 Gas, oil and solid fuel burnings
part .2.105 Multi function shower cabinets

Cables wires, conduits & accessories
Tests and examinations for compliance with the following Australian/New Zealand Standards
and the IEC parent documents where applicable:
AS/NZS 5000.1 Cables-polymeric insulated -0.6/1(1.2) kV
AS/NZS 5000.2 Cables-polymeric insulated - 450/750 V
AS/NZS 1660.1 Test methods for electric cables - conductors
AS/NZS 1660.2.1 Insulation, screens and sheathing - general
AS/NZS 1660.2.2 Insulation, screens and sheathing - elastomeric
AS/NZS 1660.2.3 Insulation, screens and sheathing - PVC & Halogen free

Scope of Accreditation

AS/NZS 1660.2.4 Insulation, screens and sheathing - polyethylene and polypropylene
AS/NZS 1660.2.5 Insulation, screens and sheathing - above 1 kV
AS/NZS 1660.3 Electrical tests
AS/NZS 1660.4 Test methods - Complete cable and flexible cord
AS/NZS 1660.5.1 Fire tests -Test for vertical flame spread
AS/NZS 1660.5.2 Fire tests - Measurement of smoke density of cables burning under defined conditions
AS/NZS 1660.5.3 Fire Tests - Determination of the amount of halogen acid gas evolved during the combustion of polymeric materials taken from cables
AS/NZS 1660.5.5 Fire tests - Circuit integrity
AS/NZS 1660.5.6 Fire tests - Test for vertical flame propagation for a single insulated wire or cable

AS/NZS 3808 Insulating and sheathing materials for electric cables

AS/NZS 1802 Electrical Cables - Reeling & Trailing - For underground coal mining purposes

IEC/EN 60227.1 Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - General requirements
IEC/EN 60227.2 Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Test methods
IEC/EN 60227.3 Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Non-sheathed cables for fixed wiring
IEC/EN 60227.4 Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part Sheathed cables for fixed wiring
IEC/EN 60227.5 PVC Flexible cords
IEC/EN 60245.1 Rubber insulated cables - Rated voltages up to and including 450/750 V - General requirements
IEC/EN 60245.2 Rubber insulated cables - Rated voltages up to and including 450/750 V - Test methods
AS/NZS 60245.4 Rubber Flexible cables and cords

AS/NZS 2053-1 Conduit and fittings - general requirements
AS/NZS 2053-2 Conduit and fittings - rigid non metallic
AS/NZS 2053-3 Conduit and fittings - rigid fibre reinforced concrete
AS/NZS 2053-4 Conduit and fittings - flexible plain
AS/NZS 2053-5 Conduit and fittings - corrugated
AS/NZS 2053-6 Conduit and fittings - profile wall smooth bore
AS/NZS 2053-7 Conduit and fittings - rigid metal
AS/NZS 2053-8 Conduit and fittings - Flexible conduits and fittings of metal or composite

IEC/EN 61386-1 Conduit systems - general requirements
IEC/EN 61386-21 Rigid conduit systems
IEC/EN 61386-22 Pliable conduit systems
IEC/EN 61386-23 Flexible conduit systems
IEC/EN 61386-24 Conduit systems buried underground

AS/NZS 4702 Polymeric cable protection covers.

AS/NZS 4325 clause 7 IEC61238-1 tensile test on cable lugs

Lighting and controls
Tests and examinations for compliance with the general requirements of AS/NZS 60598.1, IEC 60598-1 and EN 60598-1
and the associated part 2 series of the standards for the following equipment types:
part 2.1 General purpose luminaires
part 2.2 Recessed luminaires
part 2.3 Road and street lighting
part 2.4 Portable general purpose luminaires

Scope of Accreditation

part 2.5 Floodlights
part 2.6 Luminaires with built-in transformers for tungsten filament lamps
part 2.7 Portable luminaires of garden use
part 2.8 Handlamps
part 2.10 Portable child-appealing luminaires
part 2.17 Stage lighting, television and film studios
part 2.18 Luminaires for swimming-pools and similar applications
part 2.19 Air handling luminaires (safety requirements
part 2.20 Lighting chains
part 2.22 Emergency lighting
part 2.23 ELV lighting systems for filament lamps
part 2.25 Luminaires for Clinical areas

AS/NZS 61184, IEC 61184, EN 61184 BC Lamp holders
AS/NZS 60238, IEC 60238, EN 60238 ES Lamp holders
AS/NZS 60968 Integral (self ballasted lamp) magnetic & electronic
AS/NZS 60155 Fluorescent lamp starters

Tests and examinations for compliance with the general requirements of
AS/NZS 61347.1,.IEC 61347-1 and EN 61347-1
and the associated part 2 series of the standards for the following equipment types:
part .2.1 Starting devices other than glow starters
part .2.2 Electronic step-down convectors
part .2.3 ac supplied electronic ballast for tubular fluorescent
part .2.4 dc supplied electronic ballast for general lighting
part .2.5 ac supplied electronic ballast for public transport
part .2.6 d.c. supplied electronic ballasts for aircraft lighting
part .2.7 d.c. supplied electronic ballasts for emergency lighting
part .2.8 Ballast for fluorescent lamps
part .2.9 Ballasts for discharge lamps
part .2.10 electronic invertors and convertors for high-frequency operation of cold start tubular discharge lamps (neon tubes)
part .2.11 miscellaneous electronic circuits used with luminaires

Material Tests
Fire hazard testing in accordance with the following Australian/New Zealand Standards
and the IEC parent documents where applicable
AS/NZS 4695.112 Comparative & proof tracking index
AS/NZS 4695.2.2 Needle flame test
AS/NZS 60695.2.10 Glow wire based test method
AS/NZS 60695.2.11 Glow wire based test method-end products
AS/NZS 60695.2.12 Glow wire test method for materials
AS/NZS 60695.2.13 Glow wire test method for materials
AS/NZS 60695.10.2 Ball pressure test
AS/NZS 60695.11.2 1 kW nominal pre-mixed flame
AS/NZS 60695.11.3 500 W flames
AS/NZS 60695.11.4 50 W flames
AS/NZS 60695.11.5 Needle flame test
AS/NZS 60695.11.10 50 W horizontal and vertical flame
AS/NZS 60695.11.20 500 W flame test
AS/NZS 60112 Comparative & proof tracking index

Power Tools
Tests and examinations for compliance with the general requirements of
AS/NZS 60745.1 and IEC 60745-1
and the associated part 2 series of the standards for the following equipment types:
part .2.1 Drills
part .2.2 Screwdrivers and impact wrenches
part .2.3 Grinders polishers and disk type sanders

part .2.4 Sanders
part .2.5 Circular saws and circular knives
part .2.6 Hammers
part .2.7 Spray guns for non flammable liquids
part .2.8 Sheet metal shears
part .2.9 Tappers
part .2.11 Reciprocating saws
part .2.12 Concrete vibrators
part .2.14 Planers
part .2.17 Routers
part .2.18 Strapping tools
part .2.19 Jointers
part .2.20 Band saws
part .2.21 Drain cleaners

Transformers and Power supplies
Tests and examinations for compliance with the general requirements of
AS/NZS 61558.1,.IEC 61558-1 and EN 61558-1
and the associated part 2 series of the standards for the following equipment types:
part .2.1 separating transformers
part .2.2 control transformers
part .2.3 ignition transformers for gas and oil burners
part .2.4 Isolating transformers general use
part .2.5 Shaver transformers
part .2.6 Safety isolating transformers
part .2.7 Transformers for toys
part .2.8 Bell & chime transformers
part .2.9 Transformers for Class III handlamps for tungsten lamps
part .2.12 stabilising transformers
part .2.13 auto transformers
part .2.15 isolating transformers for the supply of medical rooms
part .2.17 Transformers for switch mode power supplies
part .2.23 transformers for construction sites

Other standards
AS/NZS 60065 Audio, video and electronic equipment excluding clauses 6 & 12.1.2
AS/NZS 60320.1 Appliances couples for household & similar general purpose
AS/NZS 60320.2.1 Sewing machine couplers
AS/NZS 60320.2.2 Interconnection couplers
AS 60529 Degree of protection IP
AS/NZS 60950.1 Information technology equipment
IEC/EN 60204-1 Electrical Assemblies (machinery)

BS plugs & sockets
BS 5733 Specification for general requirements for electrical accessories
BS 546 Specification. Two-pole and earthing-pin plugs, socket-outlets and socket-outlet adaptors
BS 1363.1 13 A plugs, socket-outlets and adaptors. Specification for rewirable and non-rewirable 13 A fused plugs
BS 1363.2 13 A plugs, socket-outlets and adaptors. Specification for 13 A switched and unswitched socket-outlets
BS 1363.3 13 A plugs, socket-outlets and adaptors. Specification for adaptors
BS 1363.4 13 A plugs, socket-outlets and adaptors. Specification for 13A fused connection units switched and unswitched

Low Voltage Switchgear and controls
(Excluding high current tests)
AS/IEC/EN 60947-1 General rules
AS/NZS/IEC/EN 60947-2 Circuit-breakers
AS 3947-3 IEC/EN 60947-3 Switches, disconnectors, switch-disconnectors and fuse-

combination units
AS 3947-4.1 IEC/EN 60947-4.1 Contactors and motor-starters - Electromechanical contactors and motor-starters
AS 3947-4.2 IEC/EN 60947-4.2 Contactors and motor-starters - A.C. semiconductor motor controllers and starters
AS 3947-4.3 IEC/EN 60947-4.3 Contactors and motor-starters - A.C. semiconductor controllers and contactors for non-motor loads
AS 3947-5.1 IEC/EN 60947-5.1Control circuit devices and switching elements - Electromechanical control circuit devices

AS 3947-5.2 IEC/EN 60947-5.2 Control circuit devices and switching elements - Proximity switches
AS 3947-5.31 IEC/EN 60947-5.3 Control circuit devices and switching elements - Requirements for proximity devices with define behaviour under fault conditions
AS 3947-5.4 IEC/EN 60947-5.4 Control circuit devices and switching elements - Methods of assessing the performance of low-energy contacts - Special tests
AS 3947-5.5 IEC/EN 60947-5.5 Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function

AS/NZS/IEC/EN 61008 Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) - General rules
AS/NZS/IEC/EN 61009 Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) - General rules

AS/NZS/IEC/EN 60898-1 Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations - Circuit-breakers for a.c. operation

AS/IEC/EN 60669-1 Switches for household and similar fixed-electrical installations - General requirements
AS/IEC/EN 60669-2-1 Switches for household and similar fixed-electrical installations - Particular requirements - Electronic switches
AS/IEC/EN 60669-2-2 Switches for household and similar fixed-electrical installations - Particular requirements - Electromagnetic remote-control switches (R.C.S.)
AS/IEC/EN 60669-2-3 Switches for household and similar fixed electrical installations - Particular requirements - Time-delay switches (TDS)

AS 3439-1 Type-tested and partially type-tested assemblies
AS 3439-3 Particular requirements for low-voltage switchgear and control gear assemblies intended to be installed in places where unskilled persons have access for their use - Distribution boards

3.25 Performance tests on electrical appliances and accessories

Temperature tests on emergency lighting in buildings to:
AS 2293 Part 1 Appendix D-1: type testing of self-contained luminaires and exit signs

Performance tests of external power supplies to AS/NZS 4665.1 & .2 with measurement uncertainties of -
+/- 1.25% for power values > 1.5 W to < 250 W
+/- 0.02 W for power values < 1.5 W

3.35 Electrical equipment for explosive atmospheres

Tests and examinations for compliance with the following specifications.
General Requirements
AS 2380.1
AS/NZS 60079.0 (excluding Clause 26.14)
IEC 60079-0
Flame Proof - Ex d
AS 2380.2 - Flame Proof Enclosures - Ex d (Standard withdrawn on 28th February 2005)
AS/NZS 60079.1 - Flame Proof - Ex d

IEC 60079-1 - Flame Proof - Ex d
Increased Safety
AS 2380.6 - Increased Safety - Ex e (Standard withdrawn on 28th February 2005)
AS/NZS 60079.7 - Increased Safety - Ex e
IEC 60079-7 - Increased Safety - Ex e
Intrinsic Safety - Ex i
AS 2380.7 - Intrinsic Safety - Ex i (Standard withdrawn on 28th February 2005)
AS/NZS 60079.11 - Intrinsic Safety - Ex i (Excluding clause 10.1 - 10.4)
IEC 60079-11 - Intrinsic Safety - Ex i (Excluding clause 10.1 - 10.4)
AS/NZS 60079.25 - Intrinsically Safe Systems
IEC 60079-25 - Intrinsically Safe Systems
AS/NZS 60079.27 - Intrinsic Safety Field Bus
IEC 60079-27 - Intrinsic Safety Field Bus
Encapsulation - Ex m
AS 2431 - Encapsulated Apparatus - Ex m
AS/NZS 60079.18 - Encapsulation Ex m
IEC 60079-18 - Encapsulation Ex m
Non Sparking - Ex n
AS 2380.9 - Non Sparking - Ex n (Excluding clauses 4.5, 5.3, 5.4, 5.5, 5.6.2 and 5.7- rubber and like rubber products)
AS/NZS 60079.15 - Type of protection Ex n (Excluding clause 33.4.3 & 33.6)
IEC 60079-15 - Type of protection Ex n. (Excluding clause 33.4.3 & 33.6)
Special Protection
AS 1826 - Special protection - Ex s
Combustible Dusts
AS/NZS 61241.1.1 - DIP Enclosures (Standard withdrawn 5th May 2005)
IEC 61241-1.1 - DIP Enclosures (Standard withdrawn 5th May 2005)
AS/NZS 61241.0 - General Requirements
IEC 61241-0 - General Requirements
AS/NZS 61241.1 - Protection by Enclosures "tD"
IEC 61241-1 - Protection by Enclosures "tD"
AS/NZS 61241.18- Protection by Encapsulation "mD"
IEC 61241-18 - Protection by Encapsulation "mD"
AS/NZS 61241.11- Intrinsic Safety "iD" (Excluding clause 10.1 - 10.4)
IEC 61241-11- Intrinsic Safety "iD" (Excluding clause 10.1 - 10.4)
Electrical protective devices
AS/NZS 2081.1 - Electrical protection devices
AS/NZS 2081.2 - Earth continuity monitoring devices
AS/NZS 2081.3 - Earth-leakage protection systems for use on earth fault current limited systems (IT systems)
AS/NZS 2081.4 - Lockout earth-fault protection devices
Caplamps
AS/NZS 62013.1, IEC 62013-1 - Caplamps for use in mines (Excluding Clauses 10.5, 10.6 and 10.10.1)
Fuel Dispensing Equipment
AS/NZS 2229 - Fuel Dispensing Equipment for explosive atmospheres

3.44 Distribution of luminous intensity

.01 Road lighting luminaires

Luminaires for road lighting by goniophotometry using the Relative Method with a test distance not less than 15 times the maximum light emitting dimensions of 1500 mm
with least uncertainties of measurement of -
1.0° in angle;
5.0% in luminous intensity;
5.0% in light output ratio;
by the methods and guidelines of -
AS/NZS 1158.1.1:2005, AS/NZS 1158.3.1:2005, AS 1158.2:2005,
CIE Publication No 121-1996

.02 Interior lighting luminaires

Luminaires for interior lighting by goniophotometry using the Relative Method with luminaire dimensions not

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exceeding 1400 mm
with least uncertainties of measurement of -
1.0° in angle;
5.0% in luminous intensity;
5.0% in light output ratio;
by the methods and guidelines of -
AS 1680.3-1991, CIE Publication No 121-1996

.03 Flood lighting luminaires
Luminaires for flood lighting by goniophotometry using the Relative Method with luminaire dimensions not exceeding 1400 mm
with least uncertainties of measurement of -
1.0° in angle;
5.0% in luminous intensity;
5.0% in light output ratio;
by the methods and guidelines of -
AS 1680.3-1991, CIE Publication No 43-1979, CIE Publication No 121-1996

.04 Emergency evacuation lighting luminaires
Dimensions, illumination and classification of emergency luminaires by goniophotometry using the Relative Method with luminaire dimensions not exceeding 1400 mm
with least uncertainties of measurement of -
1.0° in angle;
5.0% in luminous intensity;
5.0% in light output ratio;
2 mm in dimensions;
by the methods and guidelines of -
AS 1680.3-1991 and AS/NZS 2293.3-2005 Appendix C Clauses C1 to C3

Accreditation No: 1700
Corporate Site No: 1693
(Scope Last Changed 01/04/09)