QUEENSLAND ALUMINA LIMITED

PROCEDURE

RioTinto RUSAL

Safety Inspection and Testing of Electrical Equipment

Doc #: **P314.607** Issue: **3** Revision: **29**

Risk Rating: **Moderate**

Next Review Due: **11/10/2025**

Department: **Maintenance Services**

Section: **Safety**

Category: **Electrical**

Reviewed by: **R Stewart**

Owner's Role: **Superintendent - Electrical Integrity**

Approver's Role: **Superintendent - Electrical Integrity**

Person Making Latest Change: **R Stewart**

Review Date: **12/10/2022**

CONTENTS

1.0 PURPOSE

To ensure that all electrical equipment other than fixed equipment is maintained in a safe condition as required by the Queensland Electrical Safety Act. Fixed equipment is maintained as per QAL Procedure P314.611 Electrical Installations Testing.

To define applicable site standards for miscellaneous electrical equipment.

2.0 SCOPE

This procedure applies to the in-service safety inspection and testing of specified electrical equipment, which is designed for connection by a flexible power supply cord and plug, to low voltage supply.

It applies to cord extension sets, portable electrical tools, cord connected portable residual current devices, portable isolation transformers and 3 phase plug-in pumping gear and large portable fans etc. This procedure does not apply to welding machines. (Refer Procedure P314.606).

This procedure shall also apply to the in-service safety inspection and testing of fixed RCD's installed in switchboards or in the final sub-circuits of electrical wiring.

3.0 RESPONSIBILITIES

Cost Centre Proprietors or Contractor Principals
Cost Centre Proprietors or Contractor Principals shall be responsible for ensuring that all new electrical equipment under their control, where appropriate is inspected and tested by a competent person before being used.

Cost Centre Proprietors or Contractor Principals shall ensure electrical equipment including fixed and portable RCD's is inspected and tested by a competent person prior to the expiry of the due re-inspection and re-test date.

Building Owners or Building Proprietors
Building Owners or Building Proprietors shall ensure the regular pushbutton testing of RCD's installed in the fixed wiring of electrical circuits within the building, via the in-built test button of the safety switch, is carried out within the required test period as detailed in section 4.3 and 4.5.

Building Owners or Building Proprietors shall ensure records of the pushbutton testing of RCD's over which they have control are maintained. Attachment 7.1 shall be located at the Distribution Board for fixed RCD's***.***

Individual users of portable RCD's shall be responsible for the regular pushbutton testing of the RCD via the in-built test button prior to each use.

Section Maintenance Superintendents
Maintenance superintendents with supervisors of electrical workers may carry out inspection and testing of electrical equipment, including portable and fixed RCD's, on behalf of the applicable Cost Centre Proprietor and/or Building Owner.

The section shall maintain records of the inspection and testing results, and notifications of any missing electrical inspections, on behalf of the applicable Cost Centre Proprietor and/or Building Owner.

The section shall also audit the records of the inspection and testing results monthly to ensure correct details are maintained in the 'Electrical Equipment Register'.

The section areas of responsibility for electrical testing by the Electrical Instrument sections are outlined in Attachment 5.5.

Section Superintendents
Superintendents shall ensure personnel under their control undertake bi-annual electrical safety awareness refresher training TE1- QAL E/I Safety- E/I Workers.

Operators
Individual users of any portable electrical equipment are required to perform a full length visual and physical inspection prior to and after use. Any defective electrical equipment must be removed from service immediately; yellow tagged identifying the equipment as defective and not for use. A work order must then be raised for the appropriate E/I Section to repair and test the equipment.

Individual users of portable RCD's shall be responsible for the testing of the RCD via the in-built test button prior to each use.

Supervisor of Electrical Work in Section
Supervisors responsible for electrical work in the section are to ensure all new electrical equipment is recorded in the 'Electrical Equipment Register' which records the item details, location test and tag requirements as per this procedure.

4.0 ACTIONS

4.1 Using Electrical Equipment for Construction Work

4.1.1 Electrical equipment used in construction work at QAL shall only be used in accordance with the requirements of AS/NZS 3012 – Electrical Installations – Construction and Demolition Sites.

4.1.2 Electrical Equipment used for construction work at QAL shall only be used if it is:

Inspected and tested by a competent person at least every 3 months, and is,
Connected to:
- a portable Type 1 or 2 RCD complying with AS3190; or
- a Type 1 or 2 RCD at a switchboard where a final sub-circuit of electrical wiring at the workplace originates; or
- a Type 1 or 2 RCD which is an integral part of a socket outlet**.**

4.1.3 The equipment is to be connected via an RCD if it's electrical supply is provided by the output from a single or three phase portable auxiliary power supply (such as a portable diesel welder or portable inverter).

4.2 Using Electrical Equipment for Manufacturing Work

4.2.1 Electrical equipment used in operational and workshop areas of QAL shall only be used if it is:

- Inspected and tested by a competent person at least every 6 months if it is not double insulated, or at least every 12 months if it is double insulated; and is

Connected to:

- a portable Type 1 or 2 RCD complying with AS3190; or
- a Type 1 or 2 RCD at a switchboard where a final sub-circuit of electrical wiring at the workplace originates; or
- a Type 1 or 2 RCD which is an integral part of a socket outlet.

4.2.2 The equipment is to be connected via an RCD if its electrical supply is provided by the output from a single or three phase portable auxiliary power supply (such as a portable diesel welder or portable inverter).

4.3 RCD's used for Construction and Manufacturing Work

4.3.1 Portable RCD's

- Testing, using the in-built test button, of portable RCD's shall be carried out:
- immediately after it is connected to a socket outlet; and
- immediately before it is used for the first time on each day

4.3.2 Fixed RCD's

- Testing, using the in-built test button, of fixed RCD's shall be carried out:
- immediately after it is connected; and

- for construction work areas pressed to test monthly, and for manufacturing work areas at least every six (6) months

4.3.3 Testing RCD's

A competent person shall test fixed and portable RCD's for use in manufacturing work in accordance with AS3760 at least once every 12 months. For portable RCD's used in construction work, testing must occur every 3 (three) months as per AS3012 and for fixed RCD's every 12 months.

The testing shall prove in-built test button functionality, and prove residual current trip levels and times are met as defined AS/NZS 3760.

4.4 Using Specified Electrical Equipment in Service or Office Work

Specified electrical equipment used to perform service or office work shall only be used if it is:

- Inspected and tested by a competent person
- for service work at least every one (1) year; or
- for office work at least five (5) years;

Or is

- Connected to:
- a portable Type 1 or 2 RCD complying with AS3190; or
- a Type 1 or 2 RCD at a switchboard where a final sub-circuit of electrical wiring at the workplace originates; or
- a Type 1 or 2 RCD which is an integral part of a socket outlet.

4.5 RCD's used for Service or Office Work

4.5.1 Portable RCD's

- Testing, using the in-built test button, of portable RCD's shall be carried out:
- immediately after it is connected to a socket outlet; and
- at least every six (6) months.

4.5.2 Fixed RCD's

- Testing, using the in-built test button, of fixed RCD's shall be carried:
- immediately after it is connected; and
- at least every six (6) months.

4.5.3 A competent person shall test fixed and portable RCD's in accordance with AS3760 at least once every two (2) years. The testing shall prove in-built test button functionality, and prove residual current trip levels and times are met as defined in the AS / NZS 3760.

4.6 Failure of RCD in Areas

If after inspecting and testing the RCD, the RCD fails either the in-built trip test or the residential current trip levels and times, the competent person will isolate the RCD, lockout the RCD and tag the circuit RCD / circuit breaker with an information tag indicating the RCD is faulty and the SAP workorder number for the repair of the failed RCD.

The competent person will raise a notification under the appropriate cost centre on SAP to have the RCD repaired. It is then the responsibility of the Area EI Planner to raise a work order and the applicable Cost Centre Proprietor and/or Building Owner to approve the work order to have the RCD repaired/replaced.

If the circuit is required during the period until repair, the applicable Cost Centre Proprietor and/or Building Owner may have the circuit turned on if all affected GPO's on the circuit have been provided portable RCD protection at the GPO. An information tag indicating the RCD is faulty and portable RCD's in place and the SAP workorder number for the repair of the failed RCD shall be attached to the circuit RCD / circuit breaker.

4.7 Standard of Inspection and Testing

4.7.1 Prior to the commencement of work, testing or repairs to any electrical equipment in construction work area or specified electrical equipment in all other areas, the existing test tag or tags shall be removed from the lead.

4.7.2 If, after inspecting and testing the equipment, the competent person decides the equipment is safe to use, the competent person shall immediately attach a durable tag to the equipment within 300mm of its plug. This tag shall have legibly and permanently marked upon it the date by which the equipment must be re-inspected and re-tested and include the name of the person or company who performed the test. The asset id tag for the equipment shall be applied as per attachment 5.6 – QAL Test and Tag numbering system.

If after inspecting and testing the equipment, the competent person decides that the equipment is not safe to use, the competent person will tag the appliance as unsafe, disconnect from supply and remove from service.

The competent person will raise a notification under the appropriate cost center on SAP to have the equipment repaired. It is then the responsibility of the applicable Cost Centre Proprietor and/or Building Owner to raise and approve the work order to have the item repaired/replaced. If a listed item of electrical equipment cannot be located for testing, the competent person shall notify the owning Superintendent of the equipment within two working days.

Upon notification that a listed item of electrical equipment is unable to be located for testing, the owning Superintendent shall take steps to locate the missing item, and shall re-arrange for its inspection and testing within one working week of receiving the notification.

If the item cannot be located, and the owning Superintendent is satisfied the item no longer exists on the site, or is obsolete and has been rendered unusable, the owning Superintendent is to provide documented confirmation to the competent person.

4.8 Defined Area for Electrical Equipment to be Repaired / Tested

Sections shall have a defined area for drop off of electrical equipment that is required to be repaired or tested. This area shall be clearly labeled “Electrical Equipment for Test / Repair – Do Not Use”. The purpose of this area is to prevent the accidentally use of equipment that is to be repaired or tested by persons requiring electrical equipment.

The electrical equipment shall also have an Out of Service tag attached.

4.9 Scheduling of Inspections and Tests

QAL EI Department or Contractor Principal shall utilise a cyclic scheduling system so that electrical equipment to be inspected and/or tested is identified prior to the expiry of the due re-inspection and re-test date. Inspections and tests shall be completed prior to the due date.

4.10 New Electrical Equipment

4.10.1 Purchasers of new electrical equipment, (i.e. Cost Centre Proprietors or Contractor Principals) shall ensure new electrical items have been inspected and tested by a competent person prior to initial use.

4.10.2 Newly purchased QAL electrical equipment shall be inspected and tested in the Distribution Centre as per P712.763 – General Receiving.

4.10.3 The asset id tag for the equipment shall be applied as per attachment 5.6 – QAL Test and Tag numbering system

4.11 Standards Applicable to Miscellaneous Electrical Equipment

QAL Engineering Standard QE50-10-02 (SAP Document 10559) defines in detail the type of plugs and sockets used at QAL under the section Standard Plugs, Sockets, and General-Purpose Outlets, however it is also listed for reference in this procedure in the sections below.

Attachment 5.2 (SAP Drwg 229145) details the various pin configurations of plugs and the IP rating of these plugs at QAL**.**

4.11.1 Electrical Plugs & Sockets

240 volt 10 amp portable and stationary connected equipment shall be supplied from a plug or socket using three (3) flat pins. These fittings are in general use throughout the plant.

Outdoor electrical plugs and sockets shall be the screw-on type similar to Clipsal 56P310 and have a minimum level of IP56. (Note: Clipsal 56P310 Plugs have an IP66 rating as per attachment 5.2)

4.11.2 Portable Electrical Equipment

Portable 240-volt equipment rated over 10 amps shall only be connected to circuits appropriately designed for such loads. Large or stationary 240-volt equipment rated over 10 amps and not considered portable, shall be permanently wired.

Outdoor portable electrical equipment plugs shall be the screw-on type similar to Clipsal 56P310 and have a minimum level of IP56. (Note: Clipsal 56P310 Plugs have an IP66 rating as per attachment 5.2). Outdoor portable electrical equipment must be fitted with a heavy-duty flexible cord no longer than 5 meters in length.

4.11.3 Extension Leads (240V and 32V)

240-volt extension leads shall be terminated with plugs and sockets as per requirements of 4.11.1.

The maximum length of a flexible lead shall be based on the table below:

Cord Rating (A)	Conductor Size (mm2)	Max Length (m)
10	1	25
	1.5	35
	2.5	60
	4	100
15	1.5	25
	2.5	40
	4	65

Extension leads shall not be joined together and must be one continuous length.

Flexible extension leads shall not be used while in a coiled or reeled configuration.

32-volt extension leads shall be terminated in plugs and sockets using two (2) flat pins (as per attachment 5.2)

For construction work the following applies:

Flexible cords and cables shall not be subject to mechanical damage, damage by liquids or damage by high temperatures.

Where flexible cords or cables are more than 4m from the electrical equipment that they supply, or are not in view of the person using the electrical equipment, they must be –

(a) provided with suitable protection against, or located where they are not subjected to, mechanical damage, damage by liquids or high temperature; or
(b) supported off the floor or ground on stands or hangers covered with material that is non-conducting and will prevent mechanical damage to the cable.

For all other areas the following requirements apply:

Extension leads in use shall be located where they are not subject to damage or be alternately located to protect against damage.

Extension leads shall be protected from mechanical damage if they pass through a doorway.

4.11.4 32 Volt Appliances

32-volt appliances shall be supplied via a plug with two (2) flat pins, one vertical, the other horizontal, and a compatible socket. Situations where 32 volt plugs and sockets may be found include:

- secondary outlets on 240/32-volt transformers;
- plugs on 32-volt power tools and portable lighting appliances;
- plugs and sockets on 32-volt extension leads.

4.11.5 110 Volt Appliances

110 volt portable and stationary connected equipment shall be supplied from a plug with two (2) round pins and one (1) flat pin, and a compatible socket.

4.11.6 24 Volt Supplies

24-volt Direct Current (DC) equipment shall be supplied from identified terminals, clearly defined as 24V DC + and – terminals.

4.11.7 Power Boards

Multiple outlet power boards may be used in applications where the total current of connected appliances does not exceed 10 amps.

Outdoor power boards must allow for the screw in type plugs (as per section 4.11.1) to be fitted and be of an IP rating no less than IP56. Outdoor power boards must be fitted with a heavy-duty flexible cord no longer than 2 (two) meters in length.

4.11.8 Double Adaptors

Double adaptors or piggy back plugs of any type shall not be used at QAL.

4.11.9 In-line Cord set safety switch devices

In-line cord set safety plug devices may be used in situations where remote isolation of power to the electrical tool in use is required (for example, rope work inside a tank).

Such devices are required to be tested –

- Push button test before and after use
- Every 3 (three) months by a competent person; including RCD trip functionality tests (as per Construction Work requirements).

Devices shall be IP56 rated and be fitted with electrical plugs and sockets as per 4.11.1. They shall have a maximum length of 2 (two) meters and a minimum cable size of 1.5mm^2

Note: In-line Cord set safety switch devices shall not be used as the only means of positive isolation to allow activities that require such positive isolation (for example, changing a grinding disc on a grinder). In such instances the device can be used to remove power and then disconnect the electrical tool from the lead to provide positive isolation.

4.12 Electrical Safety Awareness Training

All QAL personnel shall be given training in electrical safety awareness – Training Module TE1 QAL E/I Safety- E/I Workers. Refresher training shall occur bi-annually.

4.13 Records

4.13.1 Records of inspections and tests of electrical equipment performed by the competent person (including trip testing using the in-built test button, of fixed and portable safety switches) shall be maintained in an appropriate electronic register for the life of the equipment. The competent person conducting the work shall include in the records their electrical license or their full name and company for the electrical equipment register.

Test results such as ohmage for insulation, insulation and earth continuity for appliances or trip points and times for RCD's shall be recorded and maintained in an appropriate electronic register for a period of seven (7) years.

Records of notification (and confirmation) of missing electrical equipment shall be retained for at least 12 months.

4.13.2 The electronic or hardcopy register for electrical equipment and RCD testing is to be audited to ensure items are correctly identified and tested.

A SAP work order for the Electrical Maintenance Provider is to be generated once a month for inspection of the 'Electrical Equipment Register' as per QAL Work Instruction W798.200.02 – Audit of Electrical Database Test Results.

The audit is to ensure that duplicate items are corrected, correct appliance identification exists, and that the list of out of date items and other items in the database that need correction (such as duplicate items, incorrectly identified equipment) is sent to the Supervisor of Electrical work in the section and the Section Planner. The Electrical Planner in the section will create a work order to correct the issues highlighted by the audit

5.0 ATTACHMENTS

5.1 Record Sheet - In-Built Test Button Trip Testing of Safety Switches

5.2 Electric Plugs and Sockets – QAL SAP DRWG 10559

5.3 Test Frequency Chart

5.4 Areas of Responsibility for EI Sections Electrical Testing

5.5 QAL Work Areas – QAL SAP DRWG 244654

5.6 QAL Test and Tag Numbering System

6.0 REFERENCES

Workplace Health & Safety Act
Electrical Safety Act (QLD)
Electrical Safety Regulation (QLD)
Code of Practice – Managing Electrical Risks in the Workplace
AS/NZS 3000 – Wiring Rules
AS 3760 – In-Service Safety Inspection and Testing of Electrical Equipment
AS/NZS 3012 – Electrical Installations – Construction and Demolition Sites
P314.606 – Inspection and Testing of Electric Welding Equipment
P314.611 – Electrical Installations Testing
P712.763 – General Receiving
W798.200.01 – Recording, Reporting and Storage of RCD Test Results
W798.200.02 – Audit of Electrical Database Test Results
PM798.600.42 – Electrical Welder Inspection
PM798.600.43 – RCD Testing 240V
Training Module TE1 –QAL E/I Safety- E/I Workers
QE50-010-02 (SAP Doc 10559) – Electrical Design
SAP DRWG 229145 – Electric Plugs and Sockets

7.0 DEFINITIONS

Electrical Equipment (AS 3000)
Wiring systems, switchgear, control gear, accessories, appliances, luminaries and fittings used for such purposes as generation, conversion, storage, transmission, distribution or utilisation of electrical energy.

Appliance (AS3000)
A consuming device, other than a lamp, in which electricity is converted into heat, motion, or any other form of energy, or is substantially changed in its electrical character.

Fixed Appliance (AS3000)
An appliance that is fastened to a support or otherwise secured in a specific location.

Portable Appliance (AS3000)
Either an appliance that is moved while in operation or an appliance that can be easily moved from one place to another while connected to the supply.

Specified Electrical Equipment
Means for the purpose of manufacturing work:
A cord extension set; or
A portable outlet device; or
Electrical equipment (other than a portable residual current device) that:

(a) is designed to be connected by a flexible cord and plug to low voltage supply; and
(b) has a current rating of not more than 20 amps.

and for the purpose of service and office work:
(a) A cord extension set; or
(b) A portable outlet device; or
(c) Electrical equipment (other than a portable residual current device) that:

(a) is designed to be connected by a flexible cord and plug to low voltage supply; and
(b) has a current rating of not more than 20 amps; and
(c) is moved during its normal use for the purpose of its use.

Low Voltage Supply
Means a supply of electricity at a voltage of:
For alternating current – more than 50V AC RMS but not more than 1000V; and
For direct current – more than 120V ripple-free DC but not more than 1500V.

RCD
Residual Current Device.

Type 1 RCD
Means a residual current device with a rated residual current of not more than 10mA.

Type 2 RCD
Means a residual current device with a rated residual current of more than 10mA but not more than 30mA.

Work vs Work Area
Queensland Alumina has different work areas. However, the requirement for electrical testing is applied based upon the type of work the electrical appliance is used for. So, for example, a drill used to mount a shelf in an office area is classified as manufacturing work and shall be tested as per manufacturing work. A grinder located in a manufacturing area that is used for construction work would need to be tested as for construction work. A guide to the different work areas is in Attachment 7.4 and is intended as a guide to testing the electrical equipment that is only used in these areas. Portable equipment must be tested to the work that the electrical equipment performs.

Construction Work
a) Construction work within the meaning of the WHS Regulation, section 289, other than amusement work or rural industry work; or

b) work done in conjunction with construction type work mentioned in paragraph (a).
Example of paragraph (b) – Installation of plumbing in a house under construction.

Manufacturing Work
Means assembly, disassembly***,*** fabrication, installation, maintenance, manufacturing, refurbishment or repair work but does not include work that is Construction Work.

Service Work
Means work that is not construction, manufacturing or office work, typically – laboratories, crib rooms, training rooms, office kitchens and health care areas

Office Work
Means office work.

Competent Person
A competent person – for electrical work under the Queensland Electrical Safety Regulation – is a person who has required, through training, qualifications, experience or a combination of these, the knowledge and skill enabling the person to inspect and test electrical equipment. At QAL, a competent person must be a licensed electrical worker or an apprentice who has been deemed competent after appropriate training.

8.0 REVISION HISTORY

Iss	Rev	Date	Author / Reviewer	Change Reason	Approver
3	29	13/10/2022	R Stewart	Update procedure for test/tag and its application on the control system equipment (new CCR) in attachment 5.3	B Crause
3	28	02/09/2021	J Kington	Update training module from SM56 to TE1	B Crause
3	27	19/04/2016		Added attachment 7.6 – QAL Test and Tag Numbering System, format changes, new template, role descriptions as per current QAL structure	

RECORD SHEET

IN-BUILT TEST BUTTON TRIP TESTING OF SAFETY SWITCH

Location/Description: _____ Date:_____

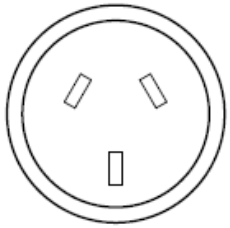
Trip Test By (Print Name)	Date	Tested OK	Test Failed	Comments	Signature

Notes:

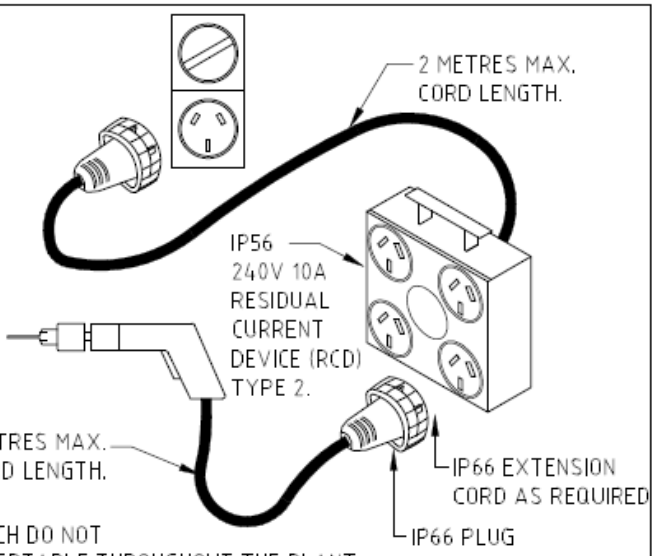
1. Check appropriate box after Test, e.g., either Tested OK or Test Failed. If Failed, note the RCD number and details in comments.

SAFETY ENGINEERING STANDARD:

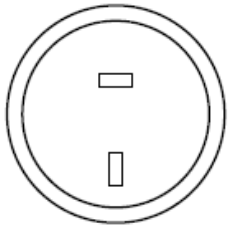
ELECTRIC PLUGS AND SOCKETS.



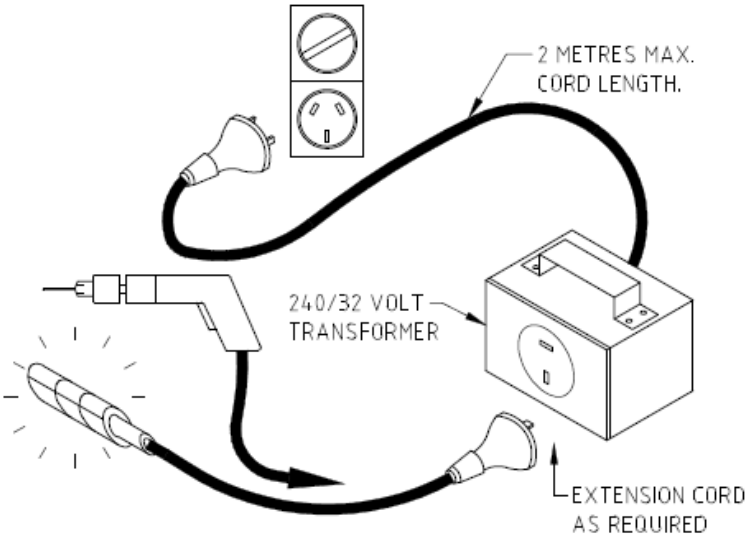
240 VOLT STANDARD PLUG
3 FLAT PINS

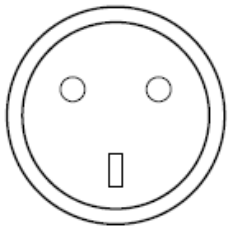


NOTE:
SOME DOUBLE INSULATED APPLIANCES WHICH DO NOT HAVE AN EARTH PIN FITTED ARE ALSO ACCEPTABLE THROUGHOUT THE PLANT

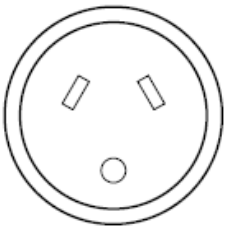


32 VOLT PLUG
2 FLAT PINS
1 VERTICAL
1 HORIZONTAL





110 VOLT PLUG
2 ROUND PINS
1 FLAT PIN



240 VOLT PLUG
T-BAR LIGHTING CONNECTION
2 FLAT PINS
1 ROUND PIN

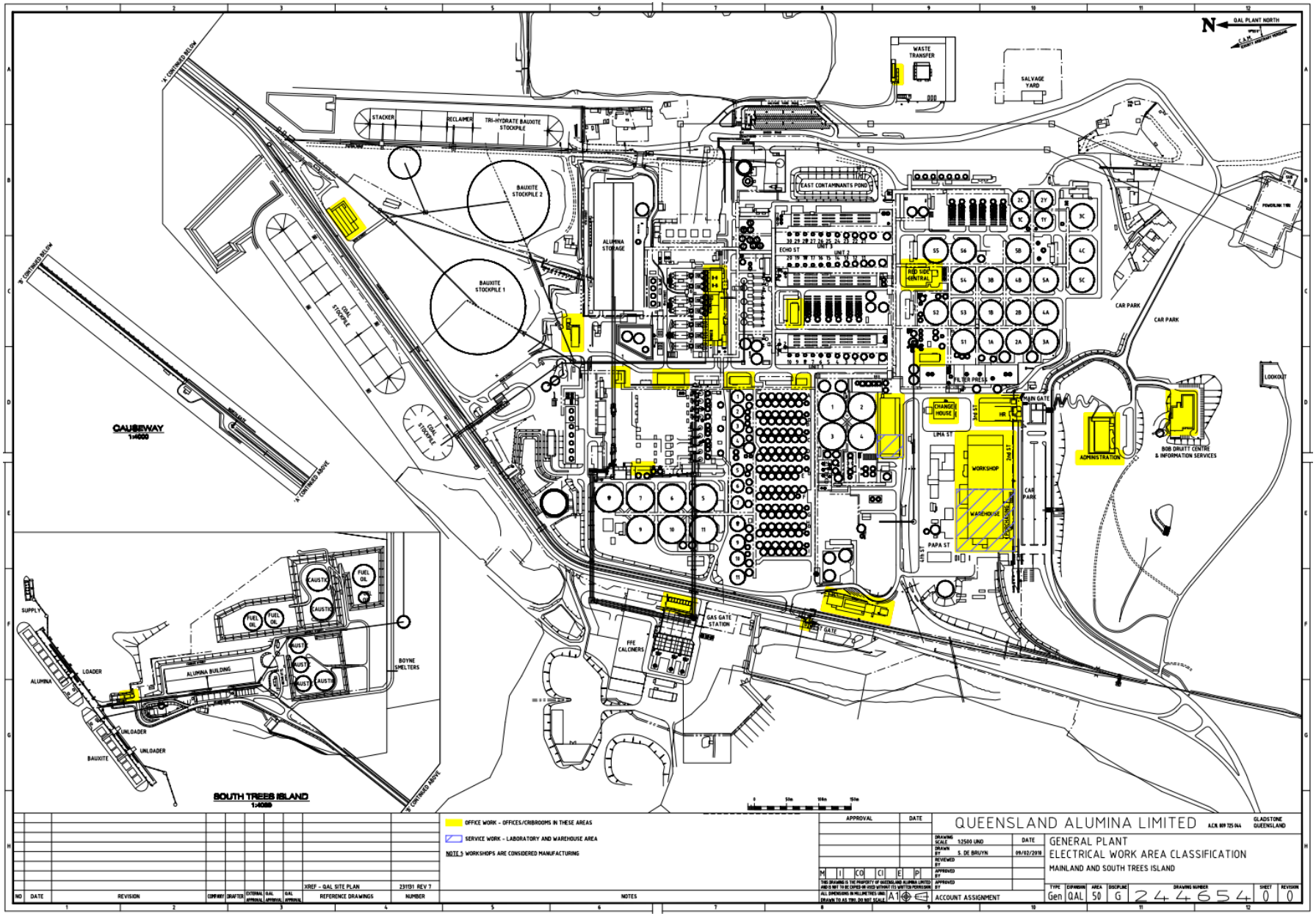
DRAWING No. 229145

TEST FREQUENCY CHART FOR SPECIFIED ELECTRICAL EQUIPMENT AND RCD'S

	Construction Work	Manufacturing Work	Service Work	Office Work
Testing and use of Specified Electrical Equipment	Tested three (3) monthly **AND** Connected to a fixed RCD	Tested six (6) monthly **AND** Connected to a fixed or portable RCD	Where the equipment or supply cord is subject to flexing in normal use and is open to abuse and is in a hostile environment Tested Yearly **OR** No test and tag required if connected to a fixed or portable RCD	Where the equipment or supply cord is NOT subject to flexing in normal use and is NOT open to abuse and is NOT in a hostile environment Tested Five (5) Yearly **OR** No test and tag required if connected to a fixed or portable RCD **OR** ***No test and tag required if being used to operate control equipment AND is not moved during its normal use for the purposes of its use***
Testing of Portable RCD's	Pushbutton Test 1. Immediately after it is connected (by the installer) and, 2. Immediately before the first use each day Trip test (by competent person) Three (3) Monthly	Pushbutton Test (by user) 1. Immediately connected to a socket outlet 2. Immediately before the first use each day Trip test (by competent person) 1. One (1) yearly	Pushbutton Test 1. Immediately connected to a socket outlet (by user) 2. Six (6) monthly if portable (by owner or owner's delegate) Trip test (by competent person) 1. Two (2) yearly	Pushbutton Test 1. Immediately connected to a socket outlet (by user) 2. Six (6) monthly (by owner or owner's delegate) Trip test (by competent person) 1. Two (2) yearly
Testing of Fixed RCD's	Pushbutton Test 1. Immediately after it is connected (by the installer) and, 2. Every (1) month (by owner or owner's delegate) Trip test (by competent person) 1. One (1) yearly	Pushbutton Test 1. Immediately after it is connected (by the installer) and, 2. Every six (6) months (by owner or owner's delegate) Trip test (by competent person) 1. One (1) yearly	Pushbutton Test 1. Immediately after it is connected (by the installer) and, 2. Every six (6) months (by owner or owner's delegate) Trip test (by competent person) 1. Two (2) yearly	Pushbutton Test 1. Immediately after it is connected (by the installer) and, 2. Every six (6) months (by owner or owner's delegate) Trip test (by competent person) 1. Two (2) yearly

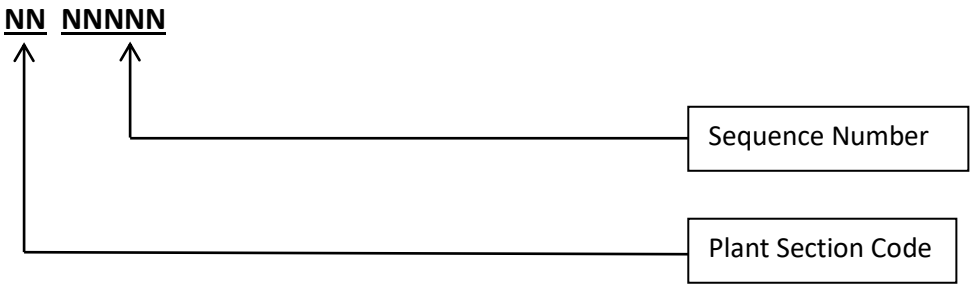
Areas of Responsibility for EI Sections Electrical Testing

EI Responsibility	Area
EI Main Workshop	AC Crew
	Lab
	Maint Top
	NDT
	Machine Shop
	Machine Shop - Apprent Training
	Machine Shop - Weld Bay
	Plant Services Bldg
	Warehouse
	Heavy Drives
	Scaffold Yard
	Purchasing
	IS/IMS
	Bob Druitt Training Centre
	Fire Station
	HR
	Medical Centre
	Tech Training / Change House
	Admin Top / Ground
	Environmental
	HR Community House
	Waste Transfer Station
	Salvage Yard
	Contract Support Centre
	Aestec/Coates Building
	Plant Ops Building (Top & Ground)
	Security
EI Redside	Redside Pump Crew
	Safety Dept
	Sect 1 Ops & Maint Bldgs
	Sect 2 Ops & Maint Bldgs
	Red Mud Dam
EI Boilerhouse	Boilerhouse Ops & Maint
EI Primary Distribution	Field E/I W/shop/Pri Dist
EI Raw Materials	Raw Materials M/land Ops Bldg
	Raw Materials Island Ops Bldg
	Raw Materials Mech Mtce Bldg
EI Whiteside	Whiteside Mtce Building
	CCR/Precip Ops Buildings
	FFE/Lurgi Calciner Bldgs
	Calcination Ops Building
	Whiteside Pump Crew


QUEENSLAND ALUMINA LIMITED
GENERAL PLANT
ELECTRICAL WORK AREA CLASSIFICATION
MAINLAND AND SOUTH TREES ISLAND
OFFICE WORK - OFFICES/CRIBROOMS IN THESE AREAS
SERVICE WORK - LABORATORY AND WAREHOUSE AREA
NOTE 5 WORKSHOPS ARE CONSIDERED MANUFACTURING
CAUSEWAY
SOUTH TREES ISLAND
WORKSHOP
WAREHOUSE
ADMINISTRATION
MAIN GATE
CAR PARK
WASTE TRANSFER
SALVAGE YARD
BAUXITE STOCKPILE 1
BAUXITE STOCKPILE 2
ALUMINA STORAGE
EAST CONTAMINANTS POND
ALUMINA BUILDING
BOYNE SMELTERS
LOADER
UNLOADER
BOB DRUITT CENTRE & INFORMATION SERVICES
LOOKOUT

QAL Test and Tag Numbering System

QAL Equipment numbering for test and tag database locations and electrical equipment asset identification numbering is in the standard format that follows –



N – Numeric Character

Plant Section Code

Two (2) numeric characters are assigned to the Plant Section Code. The assignment of the code is based upon the location of the tested equipment. Allocation of these codes is as per the table below. This number is included in the asset equipment identification number. **Tester & Database Site Code** is the entered code in the Supernova XE testing Unit and the Pats Software database as a Site List code

Plant Section Code	Tester & Database Site List Code
10 – Raw Materials	10-RawM
22 – Digestion	22-Digest
24 – Clarification	24-Clarif
27 – Precipitation	27-Precip
29 – Calcination	29-Calc
41 – Utilities	41-Util
42 – Primary Distribution	42-PD
57 – Maintenance Services	57-MaintServ
58 – Admin and other Buildings (including Bob Druitt, Engineering, HR, Safety and Medical)	58-OBuild

Location Code

Two (2) numeric characters are assigned to the Sub-section Code. The assignment of the code is based upon the location of the tested equipment within the plant section area.

It is not used in the equipment Asset ID number and is only referenced on the Supernova XE test unit and on the database as a location to provide further information on whereabouts of the equipment.

Supernova XE testers in sections shall only have the location sub-section codes for that area.

Allocation of these codes is as per Table 1 below.

Plant Section Code	Tester & Database Location Sub-section Code	Description
10	1001–RMOpsBld 1002–RMMaintBld 1003–RMEI 1004-RMMech 1005–STIsBld 1006–Wharf 1007–IsAlumStor 1008-BauxStock 1009-CoalStkUnl 1010-MnAlumStor 1011-DayBin	1001 – Raw Materials Ops Building 1002 – Raw Materials Maint Building 1003 – Raw Materials EI 1004 – Raw Materials Mech 1005 – South Trees Island Building 1006 – Island Wharf area 1007 – Island Alumina Storage area 1008 – Bauxite Stockpiles area 1009-Coal Stockpiles & Unload Facilities area 1010 – Mainlaind Alumina Storage area 1011 – Day Bin area
22	2201-DgOpsBld 2202-DgMaintBld 2203-DgEI 2204-DgMech 2205-MillMtr 2206-DgOilStr 2207-DgTileStr	2201 – Digestion Ops Building 2202 – Digestion Maint Building 2203 – Digestion EI 2204 – Digestion Mech 2205 – Mill Motor Rooms Area 2206 – Digestion Oil Store 2207 – Digestion Tile Store
24	2401-ClrfOpsBld 2402-ClrfMaintB 2403-ClrfEI 2404-ClrfMech 2405-ClrfPrssFl 2406-ClrfOilStr 2407–NFRDWshop 2408–NFRDBuild 2409–RDAMainOff	2401 – Clarification Ops Building 2402 – Clarification Maint Building 2403 – Clarification EI 2404 – Clarification Mech 2405 – Clarification Press Floor 2406 – Clarification Oil Store 2407 – NFRD Workshop 2408 – NFRD Building 2409 – RDA Main Office
27	2701-PrecipOpsB 2702-PrecipMntB	2701 – Precipitation Ops Building 2702 – Precipitation Maint Building

Plant Section Code	Tester & Database Location Sub-section Code	Description
	2703-PrecipEI 2704-PrecipMech 2705-TopDeck 2706-PrimSec 2707-Subs 2708-Oxalate 2709-CCR	2703 – Precipitation EI 2704 – Precipitation Mechanical 2705 – Precipitation Top Deck 2706 – Precipitation Primary / Secondary Area 2707 – Precipitation Substations 2708 –Oxalate 2709 – Central Control Room
29	2901-CalcOpsBld 2902-CalcEI 2903- CalcMech 2904-FFE 2905- Lurgi 2906-FilterTabl 2907-Subs	2901 – Calcination Ops Building 2902 – Calcination EI 2903 – Calcination Mechanical 2904 – Calcination FFE 2905 – Calcination Lurgi 2906 – Calcination Filter Tables 2907 – Calcination Subs
41	4101-BlrHseBld 4102-BlrHseEI 4103-BlrHseMech	4101 – Boilerhouse Building 4102 – Boilerhouse EI 4103 – Boilerhouse Mechanical
42	4201–PD 4202–T21 4203–Sub42 4204–Sub42W 4205–ESS 4206-Sub17 4207-EDG	4201 – PD Workshop 4202 – T21 4203 – Sub 42 4204 – Sub 42W 4205 – ESS 4206 – Sub 17 4207 – EDG
57	5701 – Valvebay 5702 – Aircon 5703 – ElecWshop 5704 –PressFitt 5705 – AppTrain 5706 – HvyDrives 5707- CraneBase 5708 – SiteServ 5709 - NDT 5710 - FittTeam 5711 - MaintTop 5712-Descale 5713-DeconBay 5714- CondMon	5701 – Valve bay 5702 – Aircon section 5703 – Electrical Workshop 5704 – Pressure Fittings 5705 – Apprentice Training 5706 – Heavy Drives 5707- Crane Base 5708 – Site Services 5709- NDT 5710-Fitting Team 5711- Maintenance Top 5712-Descale 5713-Decon Bay 5714- Condition Monitoring

Plant Section Code	Tester & Database Location Sub-section Code	Description
58	5801–InfServ 5802–BDTrain 5803–AdminBuild 5804–HRBuild 5805–MDSafety 5806-Purchasing 5807–Environ 5808–Whouse 5809–CraneBase 5810–DeconBay 5811–ContWshop 5812–Lab 5813–PlOpsGnd 5814–PlOpsTop 5815–ChngHous	5801 – Information Services 5802 – Bob Druitt Training 5803 – Admin Building 5804 – HR Building 5805 – Medical and Safety 5806 - Purchasing 5807 – Environmental 5808 – Warehouse 5809 – Crane Base 5810 – Decon Bay 5811 – Contractor Workshops 5812 – Lab 5813 – Plant Ops Ground 5814 – Plant Ops Top 5815 – Change House

Sequence Number

Five (5) numeric characters are assigned to the sequence number. The assignment of the number is based upon the next available sequence number for the equipment code type.

So, for example, equipment tested in Raw Materials would have the following identification numbers –

Extension Lead 1 -	10 00001
Extension Lead 2 -	10 00002
Drill -	10 00003

Asset ID Tag Colours

The following colours are allocated to the areas for the asset ID tag –

Plant Section Code	Asset Tag Colour	SAP Warehouse Number (Non-stock)
10 – Raw Materials	Pink	500035795
22 – Digestion	Red	500035796
24 – Clarification	Yellow	500035797
27 – Precipitation	Purple	500035798
29 – Calcination	Grey	500035799
41 – Boilerhouse	Brown	500035800
42 – Primary Distribution	Green	500035801
57 – Maint Services	Natural	500035802

Plant Section Code	Asset Tag Colour	SAP Warehouse Number (Non-stock)
58 – Admin and other Buildings (including Bob Druitt, Engineering, HR, Safety and Medical)	Orange	500035803

The Asset ID tags are purchased from –

Jtagz
Ph: 07 49302806
sales@jtagz.com

Jtagz type is 175mm RigTag and Order quantity is 600 minimum per order.

Sequential numbering of the required tags is the responsibility of each section to track before placing orders.