

QA/QC Templates

For

**General Electrical
Construction Standard**

No. EC

Ver. 1.0

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Table of contents

E3 SWITCHBOARDS, DISTRIBUTION CENTRES AND CONTROL CENTRES.....3
 E3.6 QA/QC template..... 3
E4 UNINTERRUPTABLE POWER SUPPLIES (UPS).....4
 E4.6 QA/QC template..... 4
E5 MOTORS.....5
 E5.8 QA/ QC template..... 5
E6. ELECTRICAL CABLES.....6
 E6.20 QA/QC template..... 6
E7 FIBRE OPTIC.....8
 E7.9 QA/QC template..... 8
E8 CATHODIC PROTECTION9
 E8.11 QA/QC template..... 9
CATHODIC PROTECTION COMMISSIONING REPORTING SHEET10

E3 Switchboards, Distribution centres and Control centres

E3.6 QA/QC template

Quality / Control		Measurement	Certification		
			Document supplied	Site supervisor witness	Engineer witness
1	Earthing	Welds inspected before covering the welds			
2	Wiring	Minimum cross sectional area checked against current requirement			
		Trunking capacity 50% remain			
		Ducting capacity 30% remain			
		Un-ducted wiring loomed			
3	Indication	Correctly labelled and coloured			
		Indicator lamps high intensity LED			
		Layout confirmed			
4	Glands and connections	Suitable for cable type			
		IP66 rated			
			Sign-off		

E4 Uninterruptable power supplies (UPS)

E4.6 QA/QC template

Quality / Control		Measurement	Certification		
			Document supplied	Site supervisor witness	Engineer witness
1	Installation process	Clear access, not located below water or chemical lines			
		Secured and restrained			
2	Cabling	Sufficient length provided for removal and maintenance			
		Confirmed size and rating as appropriate			
		Neutral to earth connection confirmed as one location			
3	Maintenance	Documentation provided			
			Sign-off		

E5 Motors

E5.8 QA/ QC template

Quality / Control		Measurement	Certification		
			Document supplied	Site supervisor witness	Engineer witness
1	Fault indications	All connected; Common fault lamp provided			
2	Circuit breakers	Load rating confirmed as appropriate			
		Rotary pivot arm connected to front panel			
		Breaker provided per motor			
3	Heaters	Connected on load side of motor circuit breaker			
		VSD (if installed) anti-condensation not installed in lieu of heater			
4	Vibration and noise	Limitation confirmed per limits set out in AS 1359.114			
5	Insulation resistance	Measured at > 1.5 megohm. When lower insulation measured the motor may not be energized			
6	Winding resistance	Document winding resistance measurements			
			Sign-off		

E6. Electrical cables

E6.20 QA/QC template

Quality / Control		Measurement	Certification		
			Document supplied	Site supervisor witness	Engineer witness
1	Cable length	No joints – single length			
2	Conductors	Multi-core copper for cabling < 70mm ²			
		Unused cores grouped and heat shrink sleeved			
3	Un-armoured cable	Trunked in conduit or cable support.			
4	Instrumentation cable	Lay lines to cross power cables at right angles			
		ELV and LV using separate cables			
		Minimum 300mm spare length at cable ends			
		Cable depth maximum 2 on cable supports			
5	Communication cables	Min 300mm separation from power cables			
		Installation individual in 20mm conduit			
		Dual redundancy installed in separate cable paths			
6	Glands	Installed to manufacturer requirements and appropriate to the operating environment			
		Minimum 50mm straight cable allowance before entering gland			

Quality / Control		Measurement	Certification		
			Document supplied	Site supervisor witness	Engineer witness
		Cables are not under tension			
7	Bending and twist	Within maximum allowed for cable type			
8	Cable ends sealed	Heat shrink			
9	Identification	Cables tagged and identified			
10	Cable support	Support brackets space at minimum 300mm			
		Deflection limited to 25mm per 6m			
		Cable support bonding to correct size			
11	Cable conduit	Support saddles space at minimum 1000mm			
		Expansion joints provided at minimum 25m intervals and conduit boxing provided at minimum 40m intervals			
		Appropriate anchor size used. – Wood or fibre plugs are not allowed			
12	Buried cable	Min 75mm bedding and 300mm width			
		Cable marker tape installed			
			Sign-off		

E7 Fibre optic

E7.9 QA/QC template

Quality / Control		Measurement	Certification		
			Document supplied	Site supervisor witness	Engineer witness
1	Qualification	Certified to complete fibre installation			
2	Duct installation	Bending radius not exceeded			
		Connection details through pits adhered to; no sharp edges or sharp turns			
		Bedding surround 100mm of the fibre duct.			
		Warning tape installed over top of bedding			
		Duct integrity tested in accordance with Section 10			
3	Cable installation	15m additional length left at each draw end for cable termination			
		Un-used fibre placed in dark storage area, not in duct.			
		Cable labels installed			
		Only Velcro ties used			
4	Record keeping	Records provided			
			Sign-off		

E8 Cathodic protection

E8.11 QA/QC template

Quality / Control		Measurement	Certification		
			Document supplied	Site supervisor witness	Engineer witness
1	Surge protection	Lightening arrestor installed. Not connected to valve or isolated fitting bodies.			
2	Cabling	QA completed as per section E6			
		Correct cable size and colour used			
3	Anodes	Position confirmed exactly as per the specific drawings – captured co-ordinates			
4	Reference cell	Installed in bentonite fill, ground wetted when placing			
5	Isolation and bonding	Joints and fitting/component isolation inspected for bonding. Flange isolation confirmed as per the mechanical construction standard			
6	Coupons and resistance probes	Drop tube provided. Backfill same material as pipe bedding			
7	Electrical hazard analysis	Analysis completed. Any issues rectified			
8	Labelling	Equipment and cables labelled			
			Sign-off		

Cathodic protection commissioning reporting sheet

CP Site ID	TP #	TP Name/Location	Mounting	Type	Structure	Facility Code	Terminal	Cable	Commissioning surveys										
									IF and influence checks from other systems*		Natives*	Post Energisation		After 3 months					
									Dates:			On	Off	On	Off	On	Off		
									On	Off	On							Off	
												Panel Meter	Portable	Panel Meter	Portable				