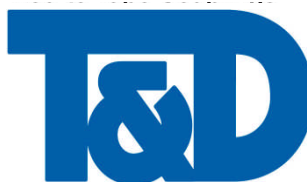




ScottishPower
SP Power Systems



APPROVED EQUIPMENT REGISTER - EARTHING -

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EART- 06 - 001
Issue No.1

1. SCOPE

This document lists the types of new earthing equipment that are currently approved for connection to the SP Transmission Ltd, SP Distribution Ltd and SP Manweb plc networks.

This document does not include earthing equipment that has been previously approved for connection to the SP Transmission Ltd, SP Distribution Ltd and SP Manweb plc networks, which although still suitable for service, are now considered unacceptable for new installations.

2. ISSUE RECORD

This is a controlled maintained document

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Issue Date	Issue No	Author	Amendment Details
December 2001	1	Alastair Graham	Initial Issue

3. ISSUE AUTHORITY

Author	Owner	Issue Authority
Alastair Graham Senior Project Engineer	Angus Campbell Section Head Engineering Development	Eric Leavy Engineering Services Manager



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5. REFERENCES

5.1 ScottishPower Technical Specifications

EART-03-001 (Previously 4389/10.000) Distribution Earth Rods

5.2 Electricity Association Technical Specifications

EART 41-21 Portable Earthing Equipment for Open Type HV Apparatus in Substations

EART 43-81 Portable Earthing Equipment for High Voltage Overhead Lines up to and including 66kV

EATS 43-94 Earth Rods and their Connectors

5.3 National Grid Transmission Plant Specifications

TPS 1/113 Portable Drain Earthing Equipment for use on 132, 275 and 400 kV Overhead Lines and Field Equipment Earths

TPS 3/2 Fixed Copper Earthing Connectors for 132, 275 and 400 kV Substations

TPS 3/3 Fixed Aluminium Earthing Connectors for 132, 275 and 400 kV Substations

TPS 3/4 Fixed Devices for Earthing for Maintenance of 132 and 275 kV Substations



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6. STANDARD REQUIREMENTS

6.1 System Earthing Equipment

Permanently installed Earthing equipment shall comply with the following specifications where appropriate:

ScottishPower Technical Specification	EART - 03 - 001
Electricity Association Technical Specification	EATS 43-94
National Grid Transmission Specifications	TPS 3/2, TPS3/3, TPS 3/4

6.2 Portable Earthing Equipment

Portable earthing equipment shall comply with the following specifications where appropriate:

Electricity Association Technical Specifications	EATS 41-21, EATS 43-81
National Grid Transmission Plant Specifications	TPS 1/113



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7. APPENDICES

7.1 System Earthing Equipment

Manufacturer	Type	Size	Description	ScottishPower Part Number
W J Furse	Earth Rod	1200mm x 9.5mm	Copperbond earth rods, unthreaded.	C43890064
		1200mm x 16mm	Extensible copperbond earth rods, threaded on both ends.	C43890039
	Rod Coupling	16mm	Couplings for copperbond earth rods.	C43890120
	Driving Stud	16mm	Driving stud for earth rods	C43890088
	"G5" Clamp		Light duty clamp for earth rod type G5 or equivalent	C43022327
	'G' Clamp	9.5mm	Earth rod clamp for 9.5mm earth rod.	C43890076
		16mm	Earth rod clamp for 16mm earth rod.	C43890106
	'E' Clamp	16mm	Earth rod clamp for 16mm earth rod.	C43081990
B B Price	Earth Rod	4' x 5/8"	Extensible mild steel earth rod.	C43081976
	Earth Rod & Clamp	16mm	Galvanised steel earth rod.	C43810662
	Earth Rod Driving Tip & Clamp		Earth rod driving head and U-bolt.	C43810663



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7.2 Portable Earthing Equipment

Manufacturer	Type	Colour	Remarks	ScottishPower Part Number
Bowthorpe EMP	Primary	Orange		
	Drain	Blue		
	LV			
CCL Systems Ltd	Primary	Orange		
	LV			
P &B Engineering	Primary	Orange		
	Drain	Blue		
	LV		Earthing kit with S9B conductor clamps	



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