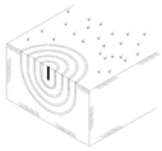
DISTRIBUTION COMMISSIONING TEST SHEET – EARTH TESTING OF DISTRIBUTION POLES
HPC-4DL-07-0038-2017

This commissioning test sheet covers the checking and testing of the earth resistance of stakes for distribution pole earths.



NOTE: These tests must be carried out after the installation of new earth stakes for poles. Where poles have been replaced, altered or repaired do not use this sheet, instead use HPC-4DL-07-0037-2017 *Earth Testing of Altered Systems*.

SAFETY: At all times maintain suitable clearance to all other electrical equipment, and verify planned escape routes.

DATE:		**Project No.**		**Name of Officer**	
Location description:					

1. LINE DETAILS

Rated System Voltage	kV	No of stakes		Typical stake depth	m	Size of earth cables:	mm²

2. EARTH STAKE RESISTANCE TEST

Test each earth stake using an Earth Resistance Tester (three-pole fall of potential method). The earth stake under test (electrode 1) must be disconnected from the earthing system. This test involves two test instrument electrodes (electrode 2 and electrode 3), installed at distances as per the reference table shown in section 4.

This test is repeated by moving electrode 3 a distance of 3 metres forwards and backwards from its initial position, in a straight line.
The final test result for each stake, is the average of the three test results. For each stake, the results should be within 10% of each other.

Pole number:											
Disconnect earth stake	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Required resistance as per design package documents	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω
Measured resistance	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω
Measured resistance after moving electrode P metres **plus 3 m**	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω
Measured resistance after moving electrode P metres **minus 3 m**	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω
Average value of the above three measurements	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω
Average value is less than the required design value	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Reconnect earth stake	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Continuity check: measured resistance between pole earth bond and earth stake	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω

3. OPERATIONAL HANDOVER

The commissioning officer must ensure that all checks are completed and the test results comply with the minimum standards.

I hereby certify that all sections have been completed with satisfactory results and transfer responsibility to the network operating authority. This equipment is ready to be **SAFELY** energised.

Commissioning Officer: _____ Pay Number: _____

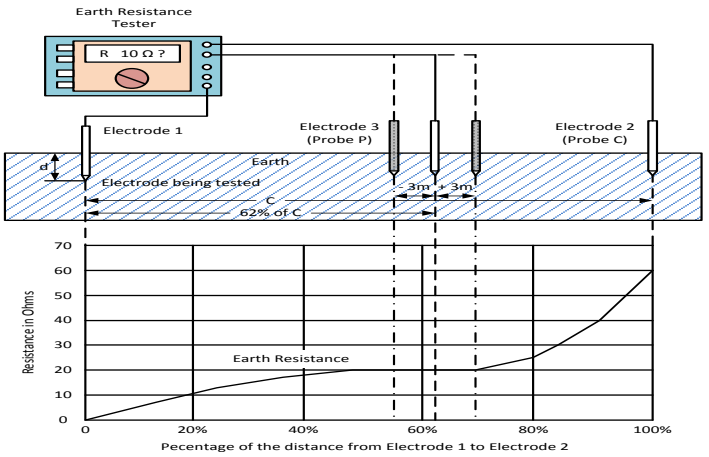
Signature: Date: DD/MM/YY Time: HH:MM

1. Ensure the work area is left tidy with no hazards to the public.
2. Hand over responsibility to the operating authority
3. Return this sheet to the project/working file as a record of commissioning and as a document required for the Handover Certificate.

IMPORTANT: PLEASE SEND THIS SHEET TO THE RELEVANT ASSET MANAGER

East & West Kimberley	East Pilbara	West Pilbara	Carnarvon	Esperance

4. REFERENCE TABLE



Electrode Depth	Test Lead lengths from Earth Electrode	
	Potential Probe (P)	Current Probe (C)
< 15 m	30 m	50 m
15 to 30 m	60 m	100 m
30 to 45 m	90 m	150 m
45 to 60 m	120 m	190 m
60 to 75 m	150 m	240 m
75 to 100 m	200 m	320 m
Unknown	30 m	50 m