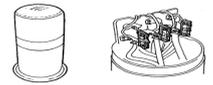


DISTRIBUTION COMMISSIONING FORM (DCF) 2.6 – Low voltage cable with/without pillars/pits



Purpose: This instruction covers the testing and commissioning of all replacements or new installations of low voltage cross-linked polyethylene (XLPE) cable with or without pillars/pits.

For more information refer to the *Distribution Commissioning Forms Guideline* ([EDM 34137510](#))

Note: The following tests must be carried out after installation, alteration, repair or jointing and before the cable is put into service. If the circuit contains more than nine pillars/pits, another set of test sheets must be used.

Work Package No:		Test Site:	
Description of equipment	Actual quantity		Quantity as per drawings
Working ends			
Uni-pillars			
Mini-pillars/pits			

1. Location of Pillars/pits (Lot No. and Road Name)

A		F	
B		G	
C		H	
D		I	
E		J	

2. Cable without Pillars/pits (Single Run) and Live End Seals (LES) – Column X

Size of Conductor:	mm ²	Length of cable (approx.):	m
Location of LES			

3. Replacing a cable

1	Before de-energising the cable to be replaced, record the phase sequence	∅	∅	∅
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4. Visual Inspection and Safety Check

Description		A	B	C	D	E	F	G	H	I	J	X
1	Confirm that the cable is de-energised (with an approved testing device) before proceeding.											
2	Check that the pillars/pits finished ground level is satisfactory.											N/A
3	Check that all the cables and pillars/pits are correctly installed and that there is no sign of damage.											
4	Check that there are no loose connections or unconnected cables in any of the pillars/pits. Ensure customer connections are disconnected.											N/A
5	Check that the neutral and phase conductor arrangement inside the pillars/pits is correct at the source end.											
6	Check that the neutral screens are all solidly and separately bolted to the neutral bar/block.											

7	Check that all the cables are correctly connected in accordance with the design drawings and protected against mechanical damage.											
Description		A	B	C	D	E	F	G	H	I	J	X
8	Check that the cable labelling is correct according to the DELS.											
9	Normally open point (NOP). Cables are identified by labels that show their first points of isolation from that source. Check the labelling to identify the correct circuit in all pillars. Ensure that red reflective labels are placed on the outside of the uni-pillars.	NOP 1										
		NOP 2										N/A
		NOP 3										N/A
10	Check that no cables are exposed and backfill if required.											
11	Check that the final positions of the top and bottom busbars of the universal pillars are correctly aligned to accept fuses or links.											
12	Disconnect the neutral of the cable under test from N-E connections.											

5. Continuity and Phasing Test

This test verifies the continuity of the circuit. If using Western Power equipment, connect the four-lead resistor box at the beginning of the cable.

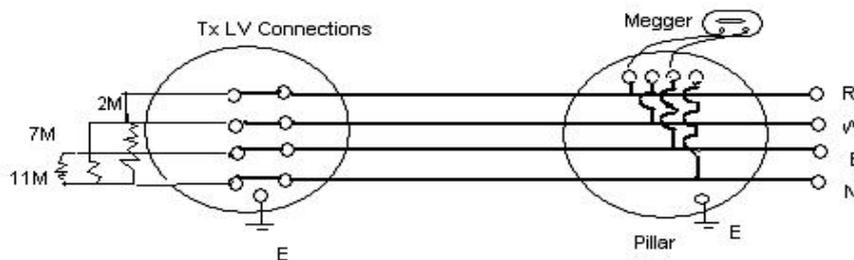
Example: At the transformer end, connect the four-lead resistor box and test using a 500 V insulation resistance tester at the pillar(s).

Correct resistance values should be measured between R-N, W-N, and B-N, respectively.

A value of more than 10 MΩ should be measured between N-E.

Ensure all the N-E connections at the uni-pillars, mini-pillars/pits and low voltage connection points are disconnected for this test.

Resistor box values (MΩ):	Red phase	White phase	Blue phase
	MΩ	MΩ	MΩ



Description	A	B	C	D	E	F	G	H	I	J
R – N MΩ										
W – N MΩ										
B – N MΩ										

6. Insulation Resistance Test (Disconnect the Resistor Box in Preparation for Insulation Resistance Test

Note: If an NOP is in the circuit, relocate the resistor box.

This test is to be carried out using a 1 kV (never use 5 kV insulation testers for this test) between phase to phase, phase to neutral, and neutral to earth for 1 minute.

Values greater than 10 MΩ for new cables and 1 MΩ for existing cables are acceptable.

Circle:

New	Existing
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Ensure that all persons are clear of the circuit before testing. Record actual values in MΩ.

Description	A	B	C	D	E	F	G	H	I	J	X
R – W MΩ											
W – B MΩ											
B – R MΩ											
R – N MΩ											
W – N MΩ											
B – N MΩ											

7. Sheath Integrity Test (new cable only): Neutral to Earth Test at 1kV

Test at 1 kV for 1 minute with all the neutral connections disconnected within the circuit of the cable being tested. (>10 MΩ). Circle N/A for in-service cable. Record actual values in MΩ. Record N/A for in-service cable

Description	A	B	C	D	E	F	G	H	I	J	X
Neutral – earth MΩ											

8. Reinstatement of all N-E Connections and Insulation Resistance Test between Phases and Neutral

Reinstate all connections which were disconnected as per item 4.12 above.	
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Note: A final insulation resistance test must be performed between all phases and neutral/earth on all low voltage circuits before energising for the first time.

9. Handover of Responsibility for the Completion of Items 1-8

I hereby certify that items 1 to 8 have been completed with satisfactory results and transfer control to the person responsible for commissioning.			
Testing officer/cable jointer/CPM		BNA	
Signature		Date & Time	

10. Commissioning

If energisation occurs more than two weeks after the above handover, conduct all insulation resistance tests again to ensure the cable is safe to energise.

Energisation	Ensure that all persons and equipment are clear of the circuit and all pillars, pits and units are secured.			
	Ensure that all short-circuiting equipment has been removed.			
	Check that the LV fuses are correct (if applicable).			
	Energise the circuit in accordance with the low voltage switching program and record the switching program number: Click here to enter text.			
	Test and record voltages at the pillar terminals.	Expected Value 226–254V	Red - Neutral	V
			White - Neutral	V
			Blue - Neutral	V
		Expected Value 390–440V	Red to White	V
White to Blue			V	
Blue to Red			V	

	Confirm correct phase sequence. (See step 3)	∅	∅	∅
	Conduct a service connection test on all installations where the service connections have been disturbed.			
	Phase out across open points at the feeder pillars, mini-pillars/pits and LV connection points.			
	Red – red		V	Acceptable results (0–10 V)
	White – white		V	
	Blue – blue		V	

The person responsible for commissioning must ensure that all checks are completed, and the test results comply with the minimum standards.

I hereby certify that all items have been completed with satisfactory results and transfer control to the network operating authority.			
Commissioned by		BNA	
Signature		Date & Time	

1. Ensure the work area is left tidy with no hazards to the public.
2. Hand over responsibility to the operating authority.
3. The completed form must be returned to the project file/work pack.