WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales
Gwasanaethu Canolbarth a De Orllewin Lloegr a Chymru

Company Directive

ENGINEERING SPECIFICATION

EE SPEC : 80/1

Specification for Multicore Cables

Author: **Peter White**

Implementation Date: **December 2014**

Approved by

Policy Manager

Date: 9 December 2014

IMPLEMENTATION PLAN

Introduction

This EE document contains the specification for Multicore cables purchased in WPD.

Main Changes

The document has been modified to reflect the rebranding of the Company and include 2 core multicore cable.

Impact of Changes

None, this change provides Purchasing the ability to procure relevant Multicore cable that is fit for purpose.

Implementation Actions

The specification is required by Purchasing to enable them to purchase Multicore cable required by Network Services.

No formal training will be required.

Implementation Timetable

This Standard Technique can be implemented with immediate effect.

Document Revision & Review Table		
Date	**Comments**	**Author**
December 2014	The document has been modified to reflect the rebranding of the company and include 2 core multicore cable.	Peter White

1.0 SCOPE

This specification deals with Western Power Distribution's (WPD) requirement for PVC insulated and sheathed multicore armoured cables, which are intended primarily for use within substations for remote operation of electrical equipment and for protection circuits, and are suitable for use on circuits having a working voltage up to and including 600/1000V.

The finished cable shall generally meet the requirements of Electricity Association Technical Specification (EATS) 09-6 (1988) section 2, (or equivalent standard), or except where modified by this Specification.

2.0 CONDUCTORS

The conductors shall comply with BS 6360 (class 2), (or equivalent standard), in so far as applicable for plain annealed copper wires.

The size of conductor shall be 7/0.67mm.

3.0 STANDARD DESIGNS

The standard designs required by WPD are as follows: -

4 core, 7 core, 12 core, 19 core and 27 core.

4.0 INSULATION

PVC insulation shall be Type TI1 compound in accordance with BS 6746 (or equivalent standard).

The thickness of insulation, determined by taking the average of a number of measurements as described in BS EN 60811 Part 3, shall not be less than the value given in EATS 09-6 section 2, Table 2.1.

5.0 IDENTIFICATION OF CORES

Core identification shall be effected by black printed numbers on white cores.
The following scheme of identification shall be used:-

(i) 2 core cable - Numbered 1 and 2.

(ii) 4 core cable - Numbered 1, 2, 3 and 4.

(iii) 7 core cable - Centre numbered 1, 6 around numbered 2 to 7.

(iv) 12 core cable - Centre, 3 cores numbered 1, 2 and 3. 9 around numbered 4 to 12.

(v) 19 core cable - Centre as 7 core cable above, 12 around numbered 8 to 19.

(vi) 27 core cable - Centre as 12 core cable above, 15 around numbered 13 to 27.

6.0 LAYING-UP

The laying-up of the cables shall be as given in EATS 09-6 section 2, clause 2.6.

7.0 FILLERS

Where fillers are used they shall be as given in EATS 09-6 section 2, clause 2.7.

8.0 PLASTIC TAPES

A suitable plastic tape or tapes shall be applied over the laid up cores.

Open spiral interlayer tapes of suitable plastic material shall be applied. In the case of unidirectional laying-up, interlayer tape binders shall be applied over each layer.

9.0 INNER SHEATH (BEDDING)

The inner sheath shall consist of an extruded layer of polymer compound having a tensile strength of not less than $4MN/m^2$ and an elongation at the break of not less than 50 %.

The minimum thickness of the inner polymer sheath, when measured in accordance with BS EN 60811.1.1 clause 8.1 shall not be less than the value given in EATS 09-6 section 2, Table 2.1.

10.0 ARMOURING

The armour shall consist of a single layer of galvanised steel wires of the size indicated in EATS 09-6 section 2, Table 2.1.

The galvanised steel wires shall comply with BS 6346, (or equivalent standard).

11.0 OUTER SHEATH

The outer sheath shall consist of an extruded covering of black PVC, which shall be type TM1 compound in accordance with BS 6746. The minimum thickness of the oversheath, when measured in accordance with BS EN 60811.1.1 shall not be less than the value given in EATS 09-6 section 2, Table 2.1.

12.0 CABLE MARKINGS

The cable markings shall comply with EATS 09-6 section 2 clause 2.12.1 and 2.12.2.

In addition to this the cable shall be metre marked.

13.0 SEALING AND DRUMMING

Shall be as defined in EATS 09-6 section 2, clause 2.13.

14.0 TECHNICAL CHARACTERISTICS

Shall be as defined in EATS 09-6 section 2 clause 2.14.

15.0 TESTS AT WORKS

Shall be as defined in EATS 09-6 section 2 clause 2.15.

Engineering Policy Section
Western Power Distribution
Avonbank
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December 2014

SCHEDULE 1

SPECIFICATION FOR LOW VOLTAGE MULTICORE CABLES

ITEM NO.	SHOPS CODE	DESCRIPTION	ESTIMATED QUANTITY PER ANNUM	PRICE PER UNIT £	PRICE FOR ESTIMATED QUANTITY	MAKERS REF. NO.
1	30749	4 Core multicore armoured cable	1000m			
2	30750	7 Core multicore armoured cable	1000m			
3	30751	12 Core multicore armoured cable	1000m			
4	30752	19 Core multicore armoured cable	1000m			
5	30753	27 Core multicore armoured cable	1000m			
6	50005	2 Core multicore armoured cable	1000m			

APPENDIX A

SUPERSEDED DOCUMENTATION

This document supersedes EE SPEC : 80 dated July 2003 which should now be withdrawn.