WESTERN POWER DISTRIBUTION

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

Company Directive

ENGINEERING SPECIFICATION
EE SPEC : 74/2

Specification for Low Voltage Service and Mains Type Cables

Author: **Richard Summers**

Implementation Date: **January 2015**

Approved by

Policy Manager

Date: 24 February 2015

IMPLEMENTATION PLAN

Introduction

This Engineering Specification has been amended to reflect the implementation of the WPD Losses Strategy

Main Changes

4mm and 16mm copper service cables have been removed from this Engineering Specification

Impact of Changes

No major impact, cables removed from the Specification will be upsized to the next conductor size

Implementation Actions

Distribution Managers and Team Managers shall make their teams aware of these changes via the dedicated Toolbox Briefing

Implementation Timetable

Immediate

Document Revision & Review Table		
Date	**Comments**	**Author**
January 2015	• Removal of 4mm and 16mm Cu cables	Richard Summers
October 2013	• Update of BS numbers, consolidation into one specification and update of schedule 1	Richard Summers

1.0 SCOPE

This Specification gives the requirements for the supply and delivery of service and mains cables for use on the Western Power Distribution 230/400 Volt (WPD's) distribution systems. Low Voltage single core Solidal cables are covered in WPD Specification EE75.

2.0 SPECIFICATION FOR SERVICE CABLES

XLPE insulated combined neutral and earth (copper wire) concentric cables with copper and aluminium conductors to BS 7870-3.11:2011. The 35mm^2 copper conductor version of the CNE cable is to be generally manufactured to this British Standard. For variation see section 4

XLPE insulated split concentric cables with copper and aluminium conductors to BS 7870-3.21:2011. For variation see section 4

XLPE insulated split concentric cables with copper and aluminium conductors having low emission of smoke and corrosive gases (LSF) when affected by fire to BS 7870-3.22:2011. For variation see section 4

XLPE insulated split concentric cables with copper and aluminium conductors having low emission of smoke and corrosive gases (LSF) when affected by fire to BS 7870-3.12:2011. For variation see section 4.

3.0 SPECIFICATION FOR WAVEFORM MAINS CABLES

Standard three and four core Waveform cables shall be manufactured in accordance with BS 7870-3.40:2011 XLPE insulated, copper wire waveform concentric cables with solid aluminium conductors. For variation see section 4

LSF variations shall be manufactured in accordance with BS 7870-3.50:2011 XLPE insulated, copper wire Waveform or helical concentric cables with solid aluminium conductors, having low emission of smoke and corrosive gases when affected by fire.
For variation see section 4.

4.0 VARIATIONS

Cable Over-sheaths

Over-sheaths for all non LSF cables will be black and shall be installed by the "float down" method thereby preventing the oversheath from penetrating the separate neutral earth wires. For LSF cable the cable sheath shall be orange.

Security

All cables are to be uniquely traceable to WPD, this can be achieved by embossing of the cable oversheath / conductor or other methods approved by WPD.

Insulation Shrinkage

When a 200 mm sample of core is tested at (130 ±2) °C for 1 h and another 200 mm sample of core is tested at (60 ±2) °C for 4 h in accordance with BS EN 60811-1-3, Clause **10**, the shrinkage of the insulation from all types and sizes of cable shall not exceed 2%.

5.0 SIZES AND DRUM LENGTHS

The sizes of the cables specified in 2 and 3 and the drum lengths in which they will be supplied shall be a maximum of 250m as specified in Appendix 1.

Engineering Policy Section
Western Power Distribution
Avonbank
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BS2 0TB

October 2013

APPENDIX A

SUPERSEDED DOCUMENTATION

This document supersedes :-

EE SPEC : 74/1 dated October 2013 which should now be withdrawn.

APPENDIX 1

SPECIFICATION FOR LOW VOLTAGE THREE PHASE MAINS CABLES.

ITEM NO.	SHOPS CODE	DESCRIPTION
	41347	1 Core 25mm^2 Cu CNE – 250m
	41361	1 Core 25mm^2 Cu CNE – **100m**
	41349	1 Core 35mm^2 Cu CNE – 250m
	41355	1 Core 25mm^2 SAC CNE Service Cable – 250m
	41362	1 Core 25mm^2 SAC CNE Service Cable – **100m**
	41348	1 Core 35mm^2 SAC CNE Service Cable – 250m
	41363	1 Core 35mm^2 SAC CNE Service Cable – **100m**
	41353	1 Core 25mm^2 Cu SNE – 250m
	50000	1 Core 35mm^2 SAC SNE – 250mm
	41966	1 Core 25mm^2 SNE **LSF**– 250m
	50004	1 Core 35mm^2 SAC CNE Service Cable **LSF** – 250m
	41351	3 Core 25mm^2 Cu CNE Service Cable – 250m
	41356	3 Core 25mm^2 SAC CNE Service Cable – 250m
	41357	3 Core 35mm^2 SAC CNE Service Cable – 250m
	41354	3 Core 25mm^2 Cu SNE – 250m
	50003	3 Core 35mm^2 SAC SNE – 250m
	42144	3 Core 25mm^2 Cu SNE **LSF** – 250m
	52949	3 Core 35mm^2 Hybrid CNE **LSF** – 250m
	41345	3 core 95mm^2 Waveform mains cable – 250m
	41344	3 core 185mm^2 Waveform mains cable – 250m
	41343	3 core 300mm^2 Waveform mains cable – 250m

	41342	4 core 95mm^2 Waveform mains cable – 250m
	41341	4 core 185mm^2 Waveform mains cable – 250m
	41340	4 core 300mm^2 waveform mains cable – 250m
	41336	4 core 300mm2 Cu waveform mains cable – 250m
	41883	3 core 95mm^2 LSF Waveform mains cable – 250m
	41884	3 core 185mm^2 LSF Waveform mains cable – 250m
	41885	3 core 300mm^2 LSF Waveform mains cable – 250m
	41886	4 core 95mm^2 LSF Waveform mains cable – 250m
	41887	4 core 185mm^2 LSF Waveform mains cable – 250m
	41888	4 core 300mm^2 LSF waveform mains cable – 250m