Electricity Specification 400C8

Issue 6          October 2015

LV Service Cables

Contents

1 Scope
2 Definitions
3 General Requirements for Approvals and Assurance
4 Conditions of Installation
5 Conditions of Operation for Power Cables
6 Cable Longevity
7 Manufacturing
8 Technical Support
9 Requirements for Testing and Sampling
10 Technical Particulars
11 Documents Referenced
12 Keywords

Appendices A to C

Approved for issue by the Technical Policy Panel

© 2015 Electricity North West Limited.

All Rights Reserved

The copyright of this document, which contains information of a proprietary nature, is vested in Electricity North West Limited. The contents of this document may not be used for purposes other than that for which it has been supplied and may not be reproduced, either wholly or in part, in any way whatsoever. It may not be used by, or its contents divulged to, any other person whatsoever without the prior written permission of Electricity North West Limited.
### Issue and Amendment Summary

<table>
<thead>
<tr>
<th>Amendment No. Date</th>
<th>Brief Description and Amending Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 01/03/92</td>
<td>Issue 1</td>
</tr>
<tr>
<td></td>
<td>Prepared by:  D.S.McDonald</td>
</tr>
<tr>
<td></td>
<td>Authorised by:</td>
</tr>
<tr>
<td></td>
<td>Approved by the Standards Steering Group and signed on its behalf by:</td>
</tr>
<tr>
<td>0 15/07/97</td>
<td>Issue 2</td>
</tr>
<tr>
<td></td>
<td>Document updated in Word 6.0 with some text changes.</td>
</tr>
<tr>
<td></td>
<td>Prepared by:  DPH</td>
</tr>
<tr>
<td></td>
<td>Authorised by:</td>
</tr>
<tr>
<td></td>
<td>Approved by the Standards Steering Group and signed on its behalf by:</td>
</tr>
<tr>
<td>0 05/01/01</td>
<td>Issue 3</td>
</tr>
<tr>
<td></td>
<td>Document updated to BS 7870.</td>
</tr>
<tr>
<td></td>
<td>Prepared by:  DSD</td>
</tr>
<tr>
<td></td>
<td>Authorised by:</td>
</tr>
<tr>
<td></td>
<td>Approved by the Standards Steering Group and signed on its behalf by:</td>
</tr>
<tr>
<td>1 01/03/01</td>
<td>Minor update for clarification purposes, current rating and impedance requirements added.</td>
</tr>
<tr>
<td></td>
<td>Prepared by:  DSD</td>
</tr>
<tr>
<td></td>
<td>Authorised by:</td>
</tr>
<tr>
<td></td>
<td>Approved by the Standards Steering Group and signed on its behalf by:</td>
</tr>
</tbody>
</table>
## Issue and Amendment Summary (Continued)

<table>
<thead>
<tr>
<th>Amendment No.</th>
<th>Date</th>
<th>Brief Description and Amending Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>09/11/04</td>
<td>Issue 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specification updated for new acceptance requirements.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prepared by: D. P. Horsman.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approved by the Standards Steering Group and signed on its behalf by:</td>
</tr>
<tr>
<td>0</td>
<td>06/03/2012</td>
<td>Issue 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specification updated for new inclusion of LS0H service cable types.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prepared by: John Scott</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approved by the Technical Policy Panel and signed on its behalf by: Paul Whittaker</td>
</tr>
<tr>
<td></td>
<td>15/10/2015</td>
<td>Issue 6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specification updated as marked. The latest template has been applied and the Specification has been updated to the latest editorial standard.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prepared by: John Scott</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approved by the Technical Policy Panel and signed on its behalf by: Steve Cox</td>
</tr>
</tbody>
</table>
LV SERVICE CABLES

1. SCOPe

This Specification covers the technical requirements for Low Voltage (LV) service cables for use on the Electricity North West Limited (hereinafter referred to as Electricity North West) Distribution System.

2. DEFINITIONS

Approval: Sanction by the Electricity North West Underground Circuits Manager that specified criteria have been satisfied.

Contract: The agreement between Electricity North West and the Contractor for the execution of the Works including therein all documents to which reference may properly be made in order to ascertain the rights and obligations of the parties under the said agreement.

Contractor: The person or person's firm or company, including personal representatives, successors and permitted assigns, whose Tender has been accepted by Electricity North West.

Specification: The Specifications and schedules (if any) agreed by the parties for the purpose of the Contract.

Sub-Contractor: Any person (other than the Contractor) named in the Contract for any part of the Works or any person to whom any part of the Contract has been sub-let with the consent in writing of the Electricity North West Underground Circuits Manager, and the legal representatives, successors and assigns of such person.

Supplier: Any person or person's firm or company who supplies goods to Electricity North West or to its Contractor.

Tender: An offer in writing to execute work or supply goods at a fixed price.

Tenderer: The person or person's firm or company, including personal representatives, successors and permitted assigns, invited by Electricity North West to submit a Tender.

3. GENERAL REQUIREMENTS FOR APPROVALS AND ASSURANCE

3.1 Product not to be Changed

No change in the product, packaging or labelling shall be made after Approval has been granted without prior notice to the Electricity North West Underground Circuits Manager and receipt of a written agreement from the Electricity North West Underground Circuits Manager.
3.2 Electricity North West Technical Approval

The Tenderer shall submit, with this Tender, proposals for testing which will demonstrate, to the satisfaction of the Electricity North West Underground Circuits Manager, compliance with this Specification. Such tests shall be carried out without expense to Electricity North West.

Alternatively, the Tenderer may submit technical reports and other data that he considers will demonstrate, to the satisfaction of the Electricity North West Underground Circuits Manager, compliance with this Specification. Acceptance of this evidence shall be at the discretion of the Electricity North West Underground Circuits Manager but will not be unreasonably withheld.

Approval shall be ‘factory specific’ and is not transferable to another factory without the written Approval of the Electricity North West Underground Circuits Manager.

The Supplier and product shall comply with all the relevant requirements of Electricity North West documents EPD311 and CP311.

3.3 Quality Assurance

The Tenderer shall confirm whether or not Approval is held in accordance with a quality assurance scheme accredited under BS EN ISO 9000. If not, he shall submit a statement of the quality assurance procedures employed to control the quality of the product, including the performance of Suppliers and Sub-Contractors.

The right is reserved for the Electricity North West Underground Circuits Manager to require, from time to time, the repeat of such tests as he may deem to be reasonably necessary to demonstrate continued compliance with the Specification.

The Tenderer shall submit, with his Tender, a list of tests and inspections which are carried out on the product prior to despatch which shall demonstrate, to the satisfaction of the Electricity North West Underground Circuits Manager, fitness for installation and service.

The Tenderer shall provide free of charge to Electricity North West such samples as may, in the opinion of the Electricity North West Underground Circuits Manager, be reasonably required for inspection and/or retention as quality control samples. The Electricity North West Underground Circuits Manager will confirm the requirements for samples at the time of tendering.

The right is reserved for the Electricity North West Underground Circuits Manager to make, from time to time, such inspections of the Tenderer’s facilities as he may deem to be reasonably necessary to ensure compliance with this Specification and any Contract of which it forms a part.

The Tenderer shall submit, with his Tender, such details of product packaging disposal, as will enable Electricity North West to comply with the requirements of BS EN ISO 14001: 2004 – Environmental Management Systems.
3.4 **Formulation**

The Tenderer shall submit, with his Tender, such details of the formulation and use of the product and associated substances as will enable Electricity North West to comply with the obligations of the Health and Safety at Work Act 1974 and the Control of Substances Hazardous to Health Regulations 2002, in the use, storage and disposal of the product. The Tenderer may stipulate, prior to submission of such information, that he requires it to remain confidential and the Electricity North West Underground Circuits Manager will, if requested, confirm his agreement to this prior to receipt of the information.

3.5 **Identification Markings**

The Tenderer shall submit, with his Tender, details of markings which it is proposed to apply to the product or packaging to identify manufacturing batches or items. The forms and content of such markings shall be subject to the Approval of the Electricity North West Cable Circuit Policy Manager, and shall in all cases include the Electricity North West Approved Description and Commodity Code Number.

The Tenderer shall submit, with his Tender, such details of marking gross weight on components, assemblies and packages, as will enable Electricity North West to comply with the Manual Handling Operations Regulation 1992, for components, assemblies and packages supplied with a gross weight over 1kg. The forms and content of such markings shall be subject to the Approval of the Electricity North West Underground Circuits Manager.

3.6 **Minimum Life Expectancy**

The minimum life expectancy of all products covered by this Specification is 60 years.

3.7 **Product Conformity**

Preference will be given to those Suppliers who can provide suitable product conformity certification to a recognised or specified standard, or an equivalent certification.

3.8 **Confirmation of Conformance**

The Tenderer shall complete the conformance declaration sheets in Appendix C. Failure to complete these declaration sheets may result in an unacceptable bid.
4. **CONDITIONS OF INSTALLATION**

Cables specified in this Specification will be pulled or laid into open trenches, pulled into ducts or installed in air. Cables may also be installed directly by trenchless installation techniques.

During storage and after installation cables can be expected to be subjected to the full range of climatic conditions encountered in the UK.

Cables may be surrounded by ground water for most of their operating life. Where cables are installed in ducts, flooding of ducts can occur resulting in permanently wet sections along the cable route.

Cables installed above ground will be supported by means of cleats either vertically or horizontally and these cables may be exposed to direct sunlight for significant periods.

Cables may be installed on wood poles in contact with the pole and, therefore, in contact with a pole preservation medium such as creosote.

Accessories may be cold applied or require application of heat.

5. **CONDITIONS OF OPERATION FOR POWER CABLES**

The following are the general conditions under which power cables purchased in accordance with this Specification are required to operate:

- Nominal system voltage 400/230.
- The working voltage of any part of the system does not normally exceed the normal system voltage by more than 10%.
- Nominal system frequency: 50Hz.
- The system operates with the neutral point earthed either directly or through a resistance or reactance at one or more points.

6. **CABLE LONGEVITY**

Cables offered shall be designed and manufactured to operate satisfactorily under the installation and operating conditions detailed in Sections 4 and 5.
7. **MANUFACTURING**

The Tenderer shall provide at the time of Tender details of manufacturing location(s) for each cable offered.

Any Approval granted will be site specific and will not be transferable to any other site without the prior written agreement of the Electricity North West Underground Circuits Manager (as per General Requirement 3.2).

8. **TECHNICAL SUPPORT**

During the contact period questions will arise regarding unusual or non-standard applications where advice will be required on matters such as cable ratings etc. The successful Tenderer(s) will be expected to support Electricity North West with technical advice on these matters.

9. **REQUIREMENTS FOR TESTING AND SAMPLING**

The Electricity North West Underground Circuits Manager shall set out the requirement of the following tests to be carried out by the Supplier at the Supplier’s cost.

9.1 **Requirement for Type Tests at the Supplier's Premises**

These are a series of one-off type tests, which are carried out to ensure the satisfactory performance of the product design, under extremes of operating stresses, and of endurance, as may be appropriate, to be determined by the Electricity North West Underground Circuits Manager.

These may or may not be destructive tests.

9.2 **Type Test Approval**

All cables offered shall be fully Type Tested and Qualified according to the requirements of the Technical Specification and Standards detailed for each cable type. The Tenderer shall provide Type Test certificates and Type Test reports, including details of independent witnesses, at the time of Tender.

Where a Tenderer wishes to offer a cable which has been Type Tested to an alternative Standard(s), full details of the alternative Standard(s) and how it differs from the Specified Standard(s) shall be provide at the time of Tender along with Type Test certificates.

If, during the period of the Contract, the Contractor wishes to make any changes to the Approved product, packaging or labelling, proposals for such changes shall be notified in writing to the Electricity North West Underground Circuits Manager. No such changes shall be implemented without the prior written Approval of the Electricity North West Underground Circuits Manager. If the Electricity North West Underground Circuits Manager deems that the changes require Type Approval testing to be repeated, in full or in part, the cost of such testing shall be borne by the Contractor.
9.3 Requirement for Routine Tests at the Supplier's Premises and Sampling

These tests may be required to be carried out on every individual unit or component, as specified, or at some regular frequency to be determined by the Electricity North West Underground Circuits Manager.

The results of these tests may be required to be supplied to Electricity North West with each unit purchased or retained for inspection, at a period to be determined by the Electricity North West Underground Circuits Manager.

9.4 Routine and Sample Testing

The Contractor shall carry out all routine and sample tests specified for each cable. Tenderers shall state at the time of Tender their proposals for sample test frequencies where such frequencies are not detailed specifically by this Specification or the relevant referenced Standards or Specifications. The Electricity North West Underground Circuits Manager reserves the right to be present and witness routine and sample tests. Where the Electricity North West Underground Circuits Manager wishes to witness any such tests, the date and time of testing shall be mutually agreed.

9.5 Samples

During the Tender period the Tenderer shall submit samples for Approval as required by the Electricity North West Underground Circuits Manager. Such samples shall remain the property of Electricity North West.

10. TECHNICAL PARTICULARS

10.1 Scope

This Specification covers the supply of the following types of service cables:

(a) Single phase: 4, 25 and 35mm², polymeric insulated Split Concentric Neutral Earth (SCNE) Cables.

(b) Single phase: 4, 25 and 35mm², polymeric insulated Combined Neutral/Earth (CNE) Cables.

(c) Single phase: 4, 25 and 35mm², polymeric insulated Split Concentric Neutral Earth (SCNE) Cables, with LS0H oversheath.

(d) Three phase: 25mm² and 35mm² polymeric insulated Split Concentric Neutral Earth (SCNE) Cables.

(e) Three phase: 25mm² and 35mm² polymeric insulated Combined Neutral/Earth (CNE) Cables.

10.2 Technical Requirements

Where a requirement of this Specification differs from that of another quoted Specification or Standard, the requirements of this Specification shall apply.

If a Tenderer is unsure regarding any requirement of this Specification, clarification shall be sought in writing from Electricity North West.
Service cables referenced in 10.1(a) and 10.1(d) shall comply with BS 7870 Part 3 Section 3.21.

Service cables referenced in 10.1(c) shall comply with BS 7870 Part 3 Section 3.21 and the requirements of Section 3.12 for low emission of smoke and corrosive gasses when affected by fire.

Service cables referenced in 10.1(b) and 10.1(e) shall comply with BS 7870 Part 3 Section 3.11.

10.3 Cable Data

The following additional cable data shall be provided with all cables supplied:

10.3.1 Impedance Data

- Maximum dc resistance of phase conductor at 20°C in ohms/km.
- Maximum dc resistance of CNE or SCNE conductor(s) at 20°C in ohms/km.
- Maximum ac resistance of phase conductor at maximum conductor temperature in ohms/km.
- Equivalent star reactance at 50Hz in ohms/km.
- Equivalent star capacitance in pF/km.
- Charge current per phase at normal voltage and frequency in mA/m.
- Zero sequence impedance $R_0 + jK_0$ in ohms/km.

10.3.2 Current Rating Data

The maximum continuous current carrying capacity per phase conductor for the following conditions:

- Laid direct with $g = 1.2 \, ^\circ C/W$ and $T_g = 15^\circ C$
- Laid direct with $g = 0.9 \, ^\circ C/W$ and $T_g = 15^\circ C$
- Drawn into a 32mm diameter smooth bore plastic duct (one cable per duct) where $g = 1.2 \, ^\circ C/W$ and $T_g = 15^\circ C$
- Drawn into a 32mm diameter smooth bore plastic duct (one cable per duct) where $g = 0.9 \, ^\circ C/W$ and $T_g = 15^\circ C$
- In Air where $T_g = 25^\circ C$

The following assumptions shall be made when quoting ratings:

- Cover to top of LV cables is 450mm.

Tenderers shall also provide data to show the variation in rating with Ground TR and depth of cover.
10.3.3 **Installation Parameters**

For each power cable offered the Tenderer shall provide the following parameters:

- Minimum dynamic bending radius in mm.
- Minimum static bending radius in mm.
- Recommended pulling method and maximum pulling tension in kgf.

10.4 **Phase Core Insulation**

Phase core insulation shall be XLPE type GP8 complying with BS7655 section 1.3 for all service cables.

Three phase service cables shall have the cores laid up with a right hand direction of lay in the sequence Brown, Black and Grey.

The oversheath shall be black PVC type TM1.

In the case of LS0H cable the oversheath shall be orange compound, type LTS1.

10.5 **Cable Identification**

Each delivery length of cable shall be allocated a unique reference number. This unique reference number shall be embossed on the cable near to the metre mark. This unique reference number will be used to identify all materials used within the manufacturing process. This number shall appear on the factory test sheet covering the cable length and shall be clearly marked on the drum on which the length is delivered and shall be referred to on all invoices and advice notes.

Additional costs should be included if applicable for the option of providing a unique identifier / batch number or having Electricity North West printed on to the conductor to enable positive identification of ownership in event of theft.

10.5.1 **Oversheath Marking**

In addition to the requirements detailed in the relevant specification for each cable supplied, the unique reference number shall be embossed in the cable oversheath.

10.6 **Logistical Requirements**

Each cable supplied shall meet the requirements of Appendix B.
11. DOCUMENTS REFERENCED


Control of Substances Hazardous to Health Regulations 2002.


BS EN ISO 9000: Quality management systems.


BS EN 60228: 2005: Conductors of insulated cables.

BS 3988: Specification for wrought aluminium for electrical purposes. Solid conductors for insulated cables.

BS 7655: Insulation and sheathing materials for cables.

BS 7870 Part 3: XLPE Insulated CNE Copper Wire Concentric Cables with Copper or Aluminium Conductors.

BS 7870 Part 3: XLPE Insulated Split Concentric Cables with Copper or Aluminium Conductors.

EPD311: Approval of Equipment.

CP311: Equipment Approval Process.

ES400C7 Returnable Cable Drums for Mains Cables Conforming to ECP 410 Chapter 1.

12. KEYWORDS

Cable; Service; XLPE; PVC
### APPENDIX A

#### SCHEDULE OF CABLES

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Ordering Specification</th>
<th>Size (mm²)</th>
<th>CC No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SCNE single phase split concentric: polymeric insulated</td>
<td>4 25 35</td>
<td>000213 000345 000299</td>
</tr>
<tr>
<td>2</td>
<td>CNE Single phase: polymeric insulated</td>
<td>4 25 35</td>
<td>000108 000353 000175</td>
</tr>
<tr>
<td>3</td>
<td>SCNE single phase split concentric: polymeric insulated with LS0H oversheath</td>
<td>4 25 35</td>
<td>TBA TBA TBA</td>
</tr>
<tr>
<td>4</td>
<td>SCNE three phase split concentric: polymeric insulated</td>
<td>25 35</td>
<td>002127  TBA</td>
</tr>
<tr>
<td>5</td>
<td>CNE three phase split concentric: polymeric insulated</td>
<td>25 35</td>
<td>002119  TBA</td>
</tr>
</tbody>
</table>

15/10/15
A1. SCHEDULE ONE – SCNE SINGLE PHASE SPLIT CONCENTRIC: 4, 25 AND 35 mm² POLYMERIC INSULATED

A1.1 Specification

Single core plus split neutral and earth 600/1000 volt cable; phase conductor as described below; XLPE insulation; concentric layer of insulated copper wires (neutral) and bare copper wires (earth); and PVC oversheath.

Note:
A Linear Low Density Polyethylene oversheath (LLDPE) will be considered.

Shrink back of insulation shall be a routine test and shall be carried out at both 65°C and 130°C for 1 hour. Shrink back shall not exceed 2%.

A1.1.1 Conductor Type

- 4mm² stranded plain annealed copper – Class 2 in accordance with BS EN 60228 and shall also conform to the dimensional requirement specified in BS 3988.
- 25mm² stranded plain annealed copper – Class 2 in accordance with BS EN 60228 and shall also conform to the dimensional requirement specified in BS 3988.
- 35mm² circular solid aluminium phase conductor – Class 1 in accordance with BS EN 60228 and shall also conform to the dimensional requirement specified in BS 3988.

A1.1.2 Cable

- Cables to be in accordance with BS 7870 Part 3 Section 3.21.
A2. SCHEDULE TWO – CNE SINGLE PHASE: 4, 25 AND 35 mm$^2$ POLYMERIC INSULATED

A2.1 Specification

Single core plus concentric CNE (combined neutral and earth) 600/1000-volt cable; phase conductor as described below; XLPE insulation; CNE concentric copper wires and PVC oversheath.

Note:
A Linear Low Density Polyethylene oversheath (LLDPE) will be considered.

Shrink back of insulation shall be a routine test and shall be carried out at both 65°C and 130°C for 1 hour. Shrink back shall not exceed 2%.

A2.1.1 Conductor Type

- 4mm$^2$ circular stranded plain annealed copper – Class 2 in accordance with BS EN 60228 and shall also conform to the dimensional requirement specified in BS 3988.

- 25mm$^2$ circular stranded plain annealed copper – Class 2 in accordance with BS EN 60228 and shall also conform to the dimensional requirement specified in BS 3988.

- 35mm$^2$ circular solid aluminium phase conductor – Class 1 in accordance with BS EN 60228 and shall also conform to the dimensional requirement specified in BS 3988.

A2.1.2 Cable

Cables to be in accordance with BS 7870 Part 3 Section 3.11.
A3. SCHEDULE THREE – SCNE SINGLE PHASE SPLIT CONCENTRIC: 4, 25 AND 35mm$^2$ POLYMERIC INSULATED WITH LS0H OVERSHEATH

A3.1 Specification

Single core plus split neutral and earth 600/1000 volt cable; phase conductor as described below; XLPE insulation; concentric layer of insulated copper wires (neutral) and bare copper wires (earth); and a Low Smoke Zero Halogen (LS0H) oversheath.

Shrink back of insulation shall be a routine test and shall be carried out at both 65°C and 130°C for 1 hour. Shrink back shall not exceed 2%.

A3.1.1 Conductor Type

- 4mm$^2$ stranded plain annealed copper – Class 2 in accordance with BS EN 60228 and shall also conform to the dimensional requirement specified in BS 3988.

- 25mm$^2$ stranded plain annealed copper – Class 2 in accordance with BS EN 60228 and shall also conform to the dimensional requirement specified in BS 3988.

- 35mm$^2$ circular solid aluminium phase conductor – Class 1 in accordance with BS EN 60228 and shall also conform to the dimensional requirement specified in BS 3988.

A3.1.2 Cable

Cables to be in accordance with BS 7870 Part 3 Section 12.
A4. SCHEDULE FOUR – SCNE THREE PHASE SPLIT CONCENTRIC: 25mm² AND 35mm² POLYMERIC INSULATED

A4.1 Specification

Three phase plus split neutral and earth 600/1000 volt cable; circular solid aluminium phase conductors (Class 1 in accordance with BS EN 60228 and shall also conform to the dimensional requirement specified in BS 3988); XLPE insulation; concentric layer of insulated copper wires (neutral) and bare copper wires (earth) and PVC oversheath.

Note:
A Linear Low Density Polyethylene oversheath (LLDPE) will be considered.

Shrink back of insulation shall be a routine test and shall be carried out at both 65°C and 130°C for 1 hour. Shrink back shall not exceed 2%.

Cables to be in accordance with BS 7870 Part 3 Section 3.21.
A5. SCHEDULE FIVE – CNE THREE PHASE: 25 mm² AND 35mm² POLYMERIC INSULATED

A5.1 Specification

Three phase plus concentric CNE (combined neutral and earth) 600/1000 volt cable; circular solid aluminium phase conductors (Class 1 in accordance with BS EN 60228 and shall also conform to the dimensional requirement specified in BS 3988); XLPE insulation; CNE concentric copper wires and PVC oversheath.

Note:
A Linear Low Density Polyethylene oversheath (LLDPE) will be considered.

Shrink back of insulation shall be a routine test and shall be carried out at both 65°C and 130°C for 1 hour. Shrink back shall not exceed 2%.

Cables to be in accordance with BS 7870 Part 3 Section 3.11.
APPENDIX B
LOGISTICAL REQUIREMENTS

B1. CABLE DRUMS AND LABELLING

Cable drums shall meet the requirements of ES400C7.

All cable drums shall be marked in accordance with the relevant cable specification or standard. The drum label shall also contain:

- Electricity North West commodity code
- Name of manufacturer
- Supplied length
- Rated voltage
- Number of cores
- Size of conductor
- Type of conductor material ("Cu" or "Al")
- Abbreviated description of cable construction
- Gross and nett weights
- Direction of rolling drum
- The metre marking start and end values
- The unique reference number

B2. GENERAL LOGISTICAL REQUIREMENTS

In order to avoid snagging, cables shall be neatly wound in layers on the drum with the inner “start” end either protruding through, protected and securely fixed to the outer flange of the drum, or securely fixed to the inner surface of the drum. The end of the wound cable shall be securely fixed into position on the drum.

Cable drums may be stored for long periods outdoors. All drum labels shall remain legible and durable under these conditions.

All service cable drums shall be non-returnable. The Tenderers shall state at the time of Tender their proposed cable drum sizes and weights for each cable type offered.

The ends of all cables shall be effectively sealed against the ingress of moisture by a method appropriate to the cable type. Tenderers shall detail at the time of Tender their proposed sealing arrangement for each cable type offered.
Where applicable the cable end projecting from the drum shall be protected from damage during transit, storage and handling on site.

The cable on the drum shall not be susceptible to damage during transit, storage and handling on site.

Tenderers shall state at the time of Tender their proposed method of protection for each cable.
APPENDIX C

CONFORMANCE DECLARATION

SECTION-BY-SECTION CONFORMANCE WITH SPECIFICATION

The Tenderer shall declare conformance or otherwise for each product/service or range of products/services, section-by-section, using the following Conformance Declaration Codes.

Conformance Declaration Codes:

N/A = Section is not applicable/appropriate to the product/service.

C1 = The product/service conforms fully with the requirements of this section.

C2 = The product/service conforms partially with the requirements of this section.

C3 = The product/service does not conform to the requirements of this section.

C4 = The product/service does not currently conform to the requirements of this section, but the manufacturer proposes to modify and test the product in order to conform.

Manufacturer:

Product/Service description:

Product/Service reference:

Assessor details

Name:

Company:

Signature:

Date:
## SECTION-BY-SECTION CONFORMANCE

<table>
<thead>
<tr>
<th>Section</th>
<th>Section Topic</th>
<th>Conformance Declaration Code</th>
<th>Remarks * (must be completed if code is not C1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Product not to be Changed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>Electricity North West Technical Approval</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.3</td>
<td>Quality Assurance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.4</td>
<td>Formulation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.5</td>
<td>Identification Markings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.6</td>
<td>Minimum Life Expectancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.7</td>
<td>Product Conformity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.8</td>
<td>Confirmation of Conformance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Conditions of Installation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Conditions of Operation for Power Cables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Cable Longevity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Manufacturing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Technical Support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.1</td>
<td>Requirement for Type Test at the Supplier’s Premises</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.2</td>
<td>Type Test Approval</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.3</td>
<td>Requirement for Routine Tests at the Supplier’s Premises and Sampling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.4</td>
<td>Routine and Sample Testing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.5</td>
<td>Samples</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.1</td>
<td>Scope</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.2</td>
<td>Technical Requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.3.1</td>
<td>Impedance Data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.3.2</td>
<td>Current Rating Data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.3.3</td>
<td>Installation Parameters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.4</td>
<td>Phase Core Insulation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.5</td>
<td>Cable Identification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.5.1</td>
<td>Oversheath Marking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.6</td>
<td>Logistical Requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>App A</td>
<td>Schedule 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>App A</td>
<td>Schedule 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## SECTION-BY-SECTION CONFORMANCE

<table>
<thead>
<tr>
<th>Section</th>
<th>Section Topic</th>
<th>Conformance Declaration Code</th>
<th>Remarks * (must be completed if code is not C1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>App A</td>
<td>Schedule 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>App A</td>
<td>Schedule 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>App A</td>
<td>Schedule 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes:

---