SP Electricity North West

Electricity Specification 400D4

Plastic Ducts, Conduit & Accessories

Issue 9 February 2026

Amendment summary

Issue No/Date	Description
Issue 4 **October 2021**	New template applied throughout. Ducting and accessories reviewed and updated. Prepared by: D M Talbot Approved by: Policy Approval Panel and signed on its behalf by Steve Cox, Engineering and Technical Director
Issue 5 **March 2024**	New template for ES Documents applied Reference to CP410, Chapter 6 for Shallow cables added. Commodity Codes updated for High Strength PVC (1500N) ducts and 200/188mm High Strength (1500N) PVC duct commodity code added Commodity Codes for flexible conduit updated Prepared by: P. Howell Approved by: Policy Approval Panel and signed on its behalf by Paul Turner, PAP Chairperson
Issue 6 **August 2024**	High strength PVC Accessories added SDR 11 Ducts for HDD installations added Fibre Optic sub ducts added Prepared by: P. Howell Approved by: Policy Approval Panel and signed on its behalf by Paul Turner, PAP Chairperson
Issue 7 **January 2025**	Minor corrections as marked Prepared by: P. Howell Approved by: Policy Approval Panel and signed on its behalf by Paul Turner, PAP Chairperson
Issue 8	Updated Section 6.1 on duct labelling requirements, including requirement for black ink, and associated image to include our new company name. Prepared by: E. Pattison Approved by: Policy Approval Panel and signed on its behalf by Paul Turner, PAP Chairperson

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Minor update to amend degree symbols.

Prepared by: E. Pattison

Approved by: Policy Approval Panel
and signed on its behalf by Paul Turner, PAP Chairperson

Contents

1. Scope

This Specification comprises general requirements for the Approval and testing of plastic ducts used for buried cable installations, plastic conduit for above ground electrical installations and associated accessories employed on the electricity distribution network owned by Electricity North West Limited (SP Electricity North West).

2. Definitions

Approval	Sanction by the SP Electricity North West Circuits Policy Manager that specified criteria have been satisfied.
Contract	The agreement between SP Electricity North West and the Contractor for the execution of the Works including therein all documents to which reference may properly be made 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, who's Tender has been accepted by SP Electricity North West.
SP ENW	SP Electricity North West
HDD	Horizontal Directional Drilling
HDPE	High Density Polyethylene
ID/OD	Inside diameter/Outside diameter in mm. ID is nominal value based on wall thickness to achieve the required strength.
Specification	The Specifications and schedules (if any) agreed by the parties for the purpose of the Contract.
SDR	Standard Dimensional Ratio
Supplier	Any person or person's firm or company who supplies goods to SP 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 SP Electricity North West to submit a Tender.
uPVC	Unplasticized polyvinyl chloride – a rigid, chemically resistant form of PVC.

3. General Requirements for Approvals and Testing

3.1. Product not to be Changed

Compliance with this clause shall be in accordance with ES001.

3.2. SP Electricity North West Technical Approval

Compliance with this clause shall be in accordance with ES001.

3.3. Quality Assurance

Compliance with this clause shall be in accordance with ES001.

3.4. Formulation

Compliance with this clause shall be in accordance with ES001.

3.5. Identification Markings

Compliance with this clause shall be in accordance with ES001.

3.6. Minimum Life Expectancy

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

3.7. Product Conformity

Compliance with this clause shall be in accordance with ES001.

3.8. Confirmation of Conformance

The Tenderer shall complete the conformance declaration sheets in Appendix A.

Failure to complete these declaration sheets may result in an unacceptable bid.

4. Requirements for Type and Routine Testing

Compliance with this clause shall be in accordance with ES001.

4.1. Requirement for Type Tests at Suppliers Premises

Compliance with this clause shall be in accordance with ES001.

4.2. Requirement for Routine Tests at the Supplier's Premises

Compliance with this clause shall be in accordance with ES001.

5. Technical Particulars

Cable ducts and accessories shall comply with the requirements of the Energy Networks Association Technical Specification (ENA TS) 12-24 and any additional specifications detailed in the following schedules.

Cable ducts and accessories shall be red unless specified otherwise in the schedules. Ducts shall be Red in colour, typically to BS 5252: 04D43 to 45 or near equivalent.

6. Duct Schedules

6.1. Class 1 Ducts and Accessories

These ducts and accessories shall meet the requirements of ENA TS 12-24, Class 1 and shall be capable of meeting the 5% deflection requirements with an applied force of 450N compression strength at 75^{0}C.

High Strength versions are also required for shallow-laid trenches which do not meet the minimum laying depths as specified in ES400E4/ ES400E5 and Chapter 6 of CP410. These shall meet all requirements for standard Class 1 ducts except be capable of meeting the 5% deflection requirements with an applied force of 1500N compression strength at 23^{0}C (ambient temperature). These High Strength versions shall be distinguishable from standard ducts by suitable marking along the length of the duct.

The ducts shall be non-coilable, manufactured in 100% virgin material uPVC or HDPE.

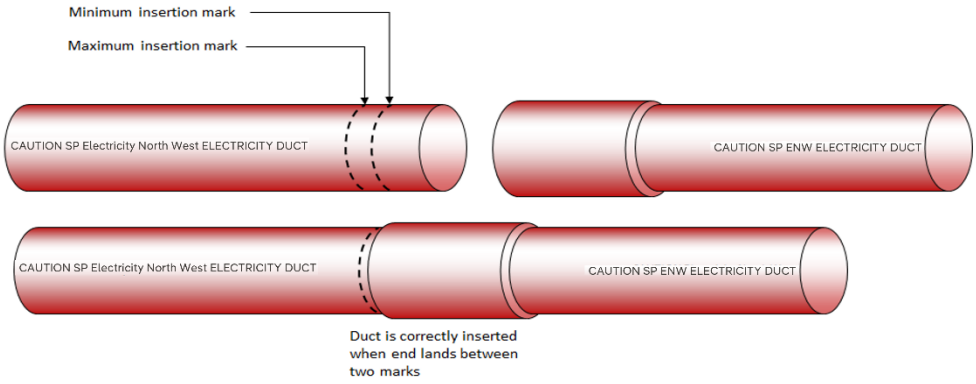
Each duct type shall have a smooth, low-friction surface completely free of ripples, sharp edges and protrusions.

The cross section of all ducts shall be circular and ends cleanly cut and square with the longitudinal axis. They shall have no sharp edges, burrs or surface projections which are likely to damage the cables and shall not present any impedance to the installation or withdrawal of cable throughout its length.

Each duct length shall be supplied with a straight coupler incorporated on one end and be so designed to be a close push fit onto a plain end of a duct with the similar nominal diameter.

All ducts shall be indelibly and clearly marked with “CAUTION SP Electricity North West ELECTRICITY DUCT” or “CAUTION SP ENW ELECTRICITY DUCT” and shall include the Class of duct, the manufacturers name, date of manufacturer and manufacturer's reference number for traceability. The marking shall be laser printed or equivalent agreed with the SP Electricity North West Circuits Policy Manager. Jan 2026

The markings shall be in black print, on three print lines, 120 degrees apart.



Two circumferential marks are required to indicate the correct push-in distance for duct jointing for spigot and socket joints as shown.

6.1.1. Table 1: ENA TS 12-24 Class 1 Ducts

APPROVED DESCRIPTION (FOR PURCHASING AND PRODUCT LABELLING)	SP ENW COMMODITY CODE
Cable duct, non-coilable, uPVC, single socket, red, 110/103mm OD/ID, 6.6m or 6m length	229619
Cable duct, non-coilable, uPVC, single socket, red, 110/103mm OD/ID, 3m length	229620
Cable duct, non-coilable, uPVC, single socket, red, 160/150mm OD/ID, 3m length	229590
Cable duct, non-coilable, uPVC, single socket, red, 160/150mm OD/ID, 6.6m or 6m length	229597
Cable duct, non-coilable, uPVC, single socket, red, 200/188mm OD/ID, 6.6m or 6m length	229621

Cable duct, non-coilable, uPVC, single socket, red, 200/188mm OD/ID, 3m length	229622

6.1.2. Table 2: High strength PVC Ducts (1500N rated to ENA TS 12-24)

APPROVED DESCRIPTION (FOR PURCHASING AND PRODUCT LABELLING)	SP ENW COMMODITY CODE
Cable duct, non-coilable, uPVC, HIGH STRENGTH (1500N), red, 110/100mm OD/ID, 3m length	300321
Cable duct, non-coilable, uPVC, HIGH STRENGTH (1500N), red, 160/146mm OD/ID, 3m length	300322
Cable duct, non-coilable, uPVC, HIGH STRENGTH (1500N), red, 200/182mm OD/ID, 3m length	300323

6.1.3. Table 3: ENA TS 12-24 Class 1 Duct Accessories

APPROVED DESCRIPTION (FOR PURCHASING AND PRODUCT LABELLING)	SP ENW COMMODITY CODE
Cable duct accessory, uPVC, coupling (slip), red, 103mm internal diameter duct (bag of 50)	229628
Cable duct accessory, uPVC, coupling (slip), red, 150mm internal diameter duct (bag of 15)	229095
Cable duct accessory, uPVC, coupling (slip), red, 188mm internal diameter duct (bag of 5)	229629
Cable duct accessory, uPVC, preformed bend (single socket end), 11.25°, red, 1200mm bending radius, 150mm internal diameter duct	229490
Cable duct accessory, uPVC, preformed bend (single socket end), 11.25°, red, 1200mm bending radius, 103mm internal diameter duct	229623
Cable duct accessory, uPVC, preformed bend (single socket end), 11.25°, red, 3900mm bending radius, 188mm internal diameter duct	229626
Cable duct accessory, uPVC, preformed bend (single socket end), 11.25°, red, 3900mm bending radius, 150mm internal diameter duct	229515
Cable duct accessory, uPVC, preformed bend (single socket end), 22.5°, red, 1200mm bending radius, 150mm internal diameter duct	229550
Cable duct accessory, uPVC, preformed bend (single socket end), 22.5°, red, 1200mm bending radius, 103mm internal diameter duct	229618

Cable duct accessory, uPVC, preformed bend (single socket end), 22.5°, red, 3900mm bending radius, 188mm internal diameter duct	229627
Cable duct accessory, uPVC, preformed bend (single socket end), 22.5°, red, 3900mm bending radius, 150mm internal diameter duct	229516
Cable duct accessory, uPVC, preformed bend (single socket end), 45°, red, 1200mm bending radius, 150mm internal diameter duct	229560
Cable duct accessory, uPVC, preformed bend (single socket end), 45°, red, 1200mm bending radius, 103mm internal diameter duct	229624
Cable duct accessory, uPVC, preformed bend (single socket end), 90°, red, 1200mm bending radius, 150mm internal diameter duct	229570
Cable duct accessory, uPVC, preformed bend (single socket end), 90°, red, 1200mm bending radius, 103mm internal diameter duct	229625

6.1.4. Table 4: Duct Accessories for High strength PVC Ducts (1500N rated to ENA TS 12-24)

APPROVED DESCRIPTION (FOR PURCHASING AND PRODUCT LABELLING)	SP ENW COMMODITY CODE
Cable duct accessory, **HIGH STRENGTH** (1500N), uPVC, preformed bend (single socket end), 11.25°, red, 1200mm bending radius, 100mm internal diameter duct	300324
Cable duct accessory, **HIGH STRENGTH** (1500N), uPVC, preformed bend (single socket end), 22.5°, red, 1200mm bending radius, 100mm internal diameter duct	300325
Cable duct accessory, **HIGH STRENGTH** (1500N), uPVC, preformed bend (single socket end), 45°, red, 1200mm bending radius, 100mm internal diameter duct	300326
Cable duct accessory, **HIGH STRENGTH** (1500N), uPVC, preformed bend (single socket end), 90°, red, 1200mm bending radius, 100mm internal diameter duct	300327
Cable duct accessory, **HIGH STRENGTH** (1500N), uPVC, preformed bend (single socket end), 11.25°, red, 1200mm bending radius, 146mm internal diameter duct	300328
Cable duct accessory, **HIGH STRENGTH** (1500N), uPVC, preformed bend (single socket end), 22.5°, red, 1200mm bending radius, 146mm internal diameter duct	300329
Cable duct accessory, **HIGH STRENGTH** (1500N), uPVC, preformed bend (single socket end), 45°, red, 1200mm bending radius, 146mm internal diameter duct	300330

Cable duct accessory, **HIGH STRENGTH** (1500N), uPVC, preformed bend (single socket end), 90°, red, 1200mm bending radius, 146mm internal diameter duct	300331
Cable duct accessory, **HIGH STRENGTH** (1500N), uPVC, preformed bend (single socket end), 11.25°, red, 3900mm bending radius, 182mm internal diameter duct	300332
Cable duct accessory, **HIGH STRENGTH** (1500N), uPVC, preformed bend (single socket end), 22.5°, red, 3900mm bending radius, 182mm internal diameter duct	300333

6.2. CLASS 1+ Standard Dimensional Ratio Ducts

SDR11 ducting is only to be used for trenchless Horizontal Directional Drilled (HDD) sections only.

All ducts intended for directional drilled installations shall be manufactured in virgin polymers and have a smooth outer wall and manufactured from polyethylene.

SDR11 ducts shall have a smooth inner surface as detailed in relevant sections of BS EN 61386-24 and ENA TS 12-24 class 1+.

6.2.1. Table 5: SDR 11 Duct

APPROVED DESCRIPTION (FOR PURCHASING AND PRODUCT LABELLING)	SP ENW COMMODITY CODE
Red SDR11 Duct (12m sticks), 110/89mm OD/ID	229639
Red SDR11 Duct (100m coil), 110/89mm OD/ID	229640
Red SDR11 Duct (6m sticks), 125/101mm OD/ID	229641
Red SDR11 Duct (100m coil), 125/101mm OD/ID	229642
Red SDR11 Duct (12m sticks),140/114mm OD/ID	229643
Red SDR11 Duct (100m coil),140/114mm OD/ID	229644
Red SDR11 Duct (12m sticks),160/130mm OD/ID	229686
Red SDR11 Duct (100m coil), 160/130mm OD/ID	229687
RED SDR11 Duct (6m sticks), 180/146mm OD/ID	229645
RED SDR11 Duct (12m sticks), 180/146mm OD/ID	229646
RED SDR11 Duct (100m coil),180/146mm OD/ID	229611
RED SDR11 Duct (12m sticks), 225/183mm OD/ID	229647

6.2.2. Table 6: SDR 11 Duct Accessories

APPROVED DESCRIPTION (FOR PURCHASING AND PRODUCT LABELLING)	SP ENW COMMODITY CODE
HDPE Straight Coupler 160mm SDR11–160mm SDR11	229704
HDPE Straight Coupler 125mm SDR11–125mm SDR11	229705
HDPE Straight Coupler 110mm SDR11–110mm SDR11	229690
HDPE Transition Coupler 180mm SDR11 to 160mm PVC	229683
HDPE Transition Coupler 160mm SDR11 – 160mm PVC	229678
HDPE Transition Coupler 160mm SDR11 to 125mm PVC	229679
HDPE Transition Coupler 140mm SDR11 to 125mm PVC	229684
HDPE Transition Coupler 125mm SDR11 to 125mm PVC	229680
HDPE Transition Coupler 125mm SDR11 to 110mm PVC	229682
HDPE Transition Coupler 110mm SDR11 to 110mm PVC	229681
HDPE Transition Coupler 225mm SDR11 to 200mm PVC	229653

6.3. Other Duct Accessories

6.3.1. Table 7: Other Accessories

APPROVED DESCRIPTION (FOR PURCHASING AND PRODUCT LABELLING)	SP ENW COMMODITY CODE
Cable duct accessory, uPVC, Spigot end cap, red, 103mm internal diameter	229616
Cable duct accessory, uPVC, Spigot end cap, red, 150mm internal diameter	229615
Cable duct accessory, uPVC, Spigot end cap, red, 188mm internal diameter	229650
Cable duct accessory, Cable Lube	229699

6.4. Class 2 Ducts and Accessories

Ducts shall meet the requirements of ENA TS 12-24 Class 2 and be non-coilable, manufactured in 100% virgin material uPVC. Each duct type shall have a smooth, low-friction surface completely free of ripples, sharp edges and protrusions.

The 'Hockey Stick' accessory shall be manufactured from uPVC and have a nominal diameter of 38mm (OD)/32mm (ID) for single phase services as shown in Drawing I-400D4-GA-

001.The short end of the hockey stick shall be so designed to be a close push fit into the end of a duct or bend with the same nominal diameter. The 'long' end of the hockey stick can be expected to be subjected to the full range of climatic conditions encountered in the UK and may be exposed to sunlight for a significant period.

6.4.1. Table 8: ENA TS 12-24 Class 2 Ducts & Accessories

APPROVED DESCRIPTION (FOR PURCHASING AND PRODUCT LABELLING)	SP ENW COMMODITY CODE
Cable duct, non-coilable, uPVC, single socket, red, 38/32mm (OD/ID), 2m length	229586
Cable duct accessory, uPVC, coupling (slip), red, 32mm internal diameter duct	229091
Cable duct accessory, uPVC, hockey stick, 2-part, red & white, 400mm bending radius, 32mm internal diameter duct Dimensions as per Drawing I-400D4-GA-001)	229512
Cable duct accessory, uPVC, preformed bend (single socket end), 22.5°, red, 400mm bending radius, 32mm internal diameter duct	229482
Cable duct accessory, uPVC, preformed bend (single socket end), 45°, red, 400mm bending radius, 32mm internal diameter duct	229474
Cable duct accessory, uPVC, preformed bend (single socket end), 90°, red, 400mm bending radius, 32mm internal diameter duct	229466
Cable duct accessory, uPVC, saddle (with 8mm fixing holes), white, 32mm internal diameter duct	229504

6.5. Class 3 Ducts

These ducts shall meet the requirements of ENA TS 12-24, Class 3.

6.5.1. Table 9: ENA TS 12-24 Class 3 Ducts

APPROVED DESCRIPTION (FOR PURCHASING AND PRODUCT LABELLING)	SP ENW COMMODITY CODE
Cable duct, coilable, HDPE, red, 38/32mm (OD/ID), 50m length	234966
Cable duct, coilable, HDPE, red, 63/52mm (OD/ID), 50m length	229580

6.6. Fibre Optic Cable Sub Ducts

Fibre optic sub-ducts shall be manufactured as HDPE solid wall cable ducts featuring a bonded low friction dry liner and designed in accordance with BSEN 61386-24.

The ducts shall be supplied complete with 8kN polypropylene or equivalent rot-proof draw rope. Sub ducts to this specification shall be designed to with withstand minimum installation tensions of 110kg and minimum bend radius of 0.45m.

The ducts shall be supplied on returnable wood drums or in coils.

6.6.1. Table 10: Telecom Sub Ducts

APPROVED DESCRIPTION (FOR PURCHASING AND PRODUCT LABELLING)	SP ENW COMMODITY CODE
Telecom roped sub-duct, Black HDPE, 31mm OD/25mm ID with 8kN pulling rope. One-way, supplied on drum of 3500m length.	229717
Telecom roped sub-duct, Black HDPE, 31mm OD/25mm ID with 8kN pulling rope. Two-way, supplied on drum of 2 x 1750m length.	229716
Telecom roped sub-duct, Black HDPE, 31mm OD/25mm ID with 8kN pulling rope. Four-way, supplied on drum of 4 x 500m length.	229738
Telecom roped sub-duct, Green HDPE, 25mm OD/20mm ID with 8kN pulling rope. One-way, supplied on drum of 2000m length.	660216

6.7. BS EN 61386-1 Very Heavy Impact Conduit and Accessories

Very heavy impact conduit and accessories shall meet the requirements of BS EN 61386-1. Saddles shall be black “flat type”.

6.7.1. Table 11: BS EN 61386-1 Very Heavy Impact Conduit

APPROVED DESCRIPTION (FOR PURCHASING AND PRODUCT LABELLING)	SP ENW COMMODITY CODE
Cable conduit, PVC, very heavy impact, black, 25/20mm, 3m length	229720
Cable conduit, PVC, very heavy impact, black, 32/27mm, 3m length	229721

6.7.2. Table 12: BS EN 61386-1 Very Heavy Impact Conduit Accessories

APPROVED DESCRIPTION (FOR PURCHASING AND PRODUCT LABELLING)	SP ENW COMMODITY CODE
Cable conduit accessory, uPVC, coupling, black, 25mm OD conduit	229726
Cable conduit accessory, uPVC, coupling, black, 32mm OD conduit	229727
Cable conduit accessory, uPVC, saddle, black, 25mm OD conduit	229728
Cable conduit accessory, uPVC, saddle, black, 32mm OD conduit	229729
Cable conduit accessory, uPVC, 90°, black, 150mm bending radius, 25mm OD conduit with 2 Black Couplings	229724
Cable conduit accessory, uPVC, 90°, black, 200mm bending radius, 32mm OD conduit with 2 Black Couplings	229725

6.8. BS EN 61386-23 Flexible Conduit

This flexible conduit and accessories shall meet the requirements of BS EN 61386-23.

6.8.1. Table 13: BS EN 61386-23 Flexible Conduit

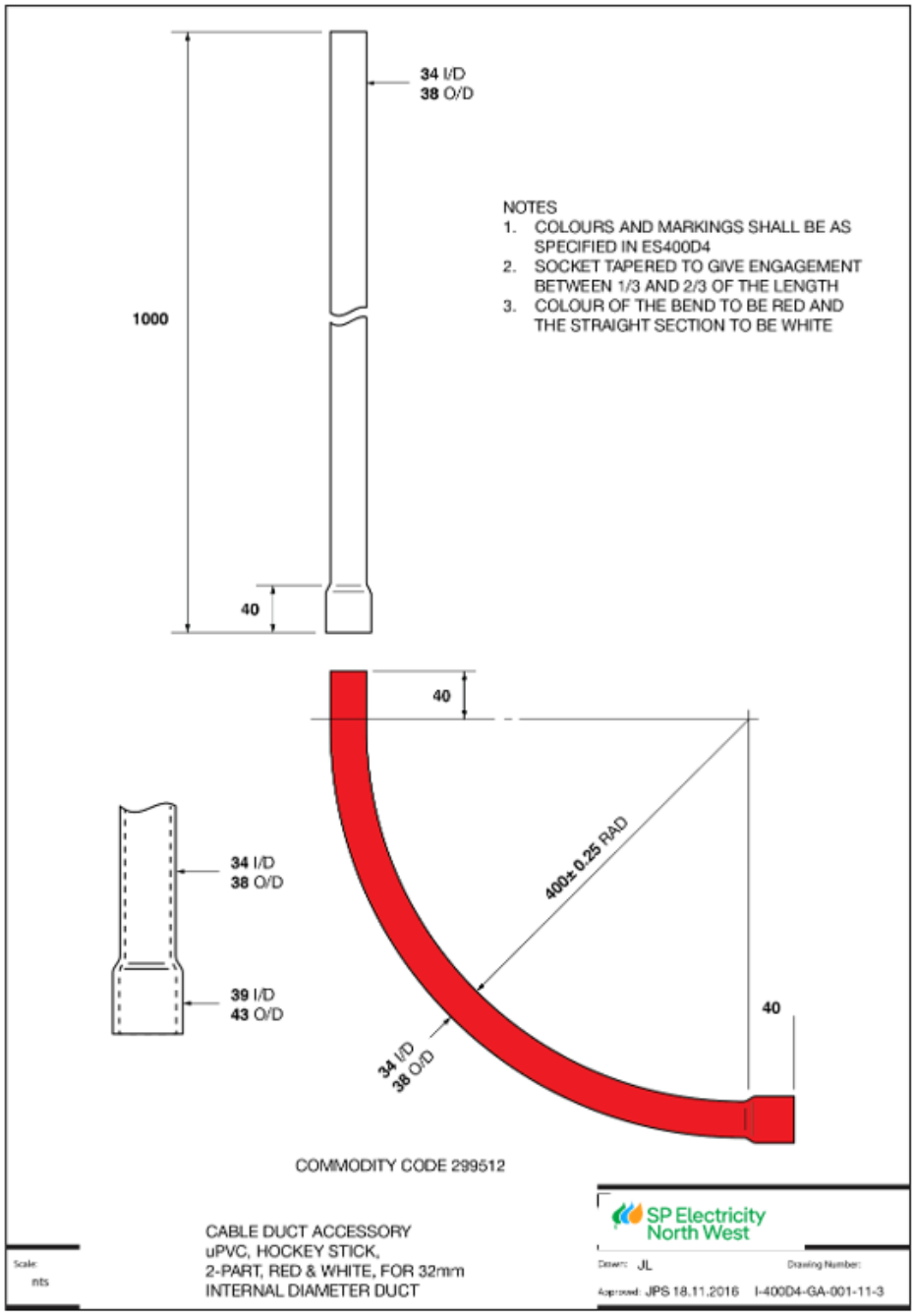
APPROVED DESCRIPTION (FOR PURCHASING AND PRODUCT LABELLING)	SP ENW COMMODITY CODE
Cable duct, flexible conduit, black, 25mm/20mm, 10m length	300334
Cable duct, flexible conduit, black, 32mm/27mm, 10m length	300335

7. Documents Referenced

Health and Safety at Work Act 1974	
Control of Substances Hazardous to Health Regulations 2002	
Manual Handling Operations Regulations 1992	
BS EN ISO 9000:	Quality management systems.
BS EN ISO 14001:	Environmental management systems. Requirements with guidance for use.
BS EN 61386:	Specification for conduit systems for cable management.
BS 5252:	Framework for colour co-ordination for building purposes.
ENA TS 12-24:	Plastic Ducts for Buried Electric Cables.
CP311	SP ENW Equipment Approval Policy and Process
ES001	SP ENW Main Specifications

Appendix A

Cable duct accessory diagram – uPVC, hocky stick, 2-part, red & white, for 32mm internal diameter duct.



Appendix B – 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 =	Clause is not applicable/appropriate to the product/service.
C1 =	The product/service conforms fully with the requirements of this clause.
C2 =	The product/service conforms partially with the requirements of this clause.
C3 =	The product/service does not conform to the requirements of this clause.
C4 =	The product/service does not currently conform to the requirements of this clause, but the manufacturer proposes to modify and test the product in order to conform.

Manufacturer:

Product/Service Description:

Product/Service Reference:

Name:

Company:

Signature:

Section-By-Section Conformance

Section	Section Topic	Conformance Declaration Code	Remarks * (must be completed if code is not C1)
3.1	Product not to be Changed		
3.2	SP Electricity North West Technical Approval		
3.3	Quality Assurance		
3.4	Formulation		
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6.6	Fibre Optic sub-ducts		
6.7	BS EN 61386-1 Very Heavy Impact Conduit and Accessories		
6.8	BS EN 61386-23 Flexible Conduit		

* Applicable specifications shall be stated in the Remarks column where alternatives are quoted within a section. The Remarks column shall also be used to indicate cases where the products or services exceed the quoted specifications.