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NPS/001/025 – Technical Specification for Cable Guard

1. Purpose

The purpose of this document is to detail the technical requirements for cable guards required for the protection of cables fitted to poles and buildings on the Northern Powergrid (the Company) distribution networks.

This document supersedes the following documents, all copies of which should be destroyed;

Document Reference	Document Title	Version	Published Date
NPS/001/025	Technical Specification for Cable Guard	4.0	March 2017

2. Scope

This document applies to guards and earth lead casings designed to protect cables from inadvertent damage or vandalism. BS EN61386-1 Conduit systems for cable management – Part 1: General requirements, has been adopted as a standard for the product range as no specific standard exists.

The product described within this specification shall comply with all current versions of the relevant International Standards, British Standard Specification and all relevant Energy Network Association Technical Specifications (ENATS) current at the time of supply.

This specification includes the following appendices:

- Appendix 1 – Schedule of Components
- Appendix 2 – Self Certification Conformance Declaration
- Appendix 3 – Addendum to Suppliers Requirements
- Appendix 4 – Technical Information Check List

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3. General

3.1. Application

Cable guards and earth lead casings are used to protect conductors and cables attached to poles from inadvertent damage or vandalism. An anti-vandal earth lead casing is required for areas prone to high levels of vandalism or cable theft. It shall exceed the impact and mechanical properties of the standard guards and have additional fixing holes.

Cable guards and earth lead casings shall be designed for attachment to wood and steel poles with nails, screws or steel 'bandit' tape.

Cable guards shall be manufactured from ultra violet stabilised material tested in accordance with BS 2782-5 Methods of Testing Plastics.

3.2. Construction

Product dimensions shall be as detailed in the following drawings: -

- 1) 1.09.101.0149 Sheet 3 – Earth Lead Casing.
- 2) 1.09.101.0171 Sheet 1 – Cable Guards for Wood and Steel Poles.

The list of items covered by this specification is detailed in Appendix 2.

The guards shall be free from sharp edges, burrs or surface projections which are likely to damage insulated cables or inflict injury to the installer.

They shall be manufactured from PVC, heavy duty polyethylene or similar material that is UV stable, creosote and impact resistant as required to conform to this specification. A galvanised guard is available for areas prone to vandalism or at high risk of impact (BS EN 1461 Hot dip galvanized coatings on fabricated iron and steel articles).

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3.3. Classification

BS EN 61386 – 1 provides classification options for a number of technical properties. Several of these key properties are listed below and should be used as a guide. Appendix 2 shall be completed by the supplier with confirmation and comments regarding compliance with this or alternative specifications.

Properties	Level	BS EN 61386 - Code
Resistance to compression	Heavy compression strength	4
Resistance to impact	Heavy impact strength	4
Minimum permanent application and installation temperature	- 25° C	4
Maximum permanent application and installation temperature	+ 90° C	2
Resistance to bending	Flexible	4
Electrical properties	With electrical insulating properties	2
Resistance to ingress of solid objects	Protect against solid foreign objects of 2.5mm dia. and greater	3
Resistance to ingress of moisture	Not declared	0
Corrosion resistance of metallic and composite conduit systems	Low protection inside and out	1
Tensile strength	Medium	3
Resistance to flame propagation	Flame propagating	2
Suspended load capacity	None declared	0
UV stability		BS 2782-5

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4. References

4.1. External Documentation

Reference	Title
BS 2782-5: 1999	Methods of Testing Plastics
BS EN 1461: 2009	Hot dip galvanized coatings on fabricated iron and steel articles.
BS EN 61386; Part 1: 2008 + A1: 2019	Conduit systems for cable management – Part 1: General requirements

4.2. Internal Documentation

Reference	Title
N/A	

4.3. Amendments from Previous Version

Reference	Description
4.1 External Documentation	Document revisions updated
6.0 Authority for issue	Details of author, technical assurance and authoriser

5. Definitions

Term	Definition
The Company	Northern Powergrid

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6. Authority for Issue

6.1. CDS Assurance

I sign to confirm that I have completed and checked this document and I am satisfied with its content and submit it for approval and authorisation.

		Date
Liz Beat	Governance Administrator	19/08/2020

6.2. Author

I sign to confirm that I have completed and checked this document and I am satisfied with its content and submit it for approval and authorisation.

Review Period - This document should be reviewed within the following time period;

Standard CDS review of 3 years?	Non Standard Review Period & Reason	
No	Period: 5 years	Reason: To align with the 5 year contract award
Should this document be displayed on the Northern Powergrid external website?		Yes
		Date
Steven Salkeld	Policy and Standards Engineer	19/08/2020

6.3. Technical Assurance

I sign to confirm that I am satisfied with all aspects of the content and preparation of this document and submit it for approval and authorisation.

		Date
Ged Hammel	Senior Policy and Standards Engineer	24/08/2020
Mick Emsley	Policy and Standards Manager	21/08/2020

6.4. Authorisation

Authorisation is granted for publication of this document.

		Date
Greg Farrell	Head of System Engineering	28/08/2020

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Appendix 1 – Schedule of Items

The following items are currently stocked by the Company but the opportunity to harmonise may be considered if suitable offers are received.

Commodity Code	Product Item
252492	Type 1 - 40mm internal diameter x 3300mm
252469	Type 2 - 50mm internal diameter x 3300mm
224642	Type 2 Extension Piece - 50mm internal diameter x 400mm
252505	Type 3 - 75mm internal diameter x 3300mm
252454	Type 4 - 100mm internal diameter x 3300mm
235548	Cable Earth Lead Casing – 20mm internal diameter x 3300mm – Standard Type
235550	Cable Earth Lead Casing – 20mm internal diameter x 3300mm – Anti-vandal Type
243085	Cable Guard, Galvanised Steel 3000mm x 150mm. Fixings required are M10 x 50mm galvanised coach screws (commodity code 297754)

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Appendix 2 – Supplier Self Certification Compliance Declaration

No national or international standard exists for this product type therefore BS EN 50086 has been adopted to benchmark the performance criteria. Suppliers are requested to complete the table below and provide comments on compliance with the specification. An additional table shall be completed if more than one product type is offered.

Properties	Comment/Test Evidence Reference
Resistance to compression	
Resistance to impact	
Minimum permanent application and installation temperature	
Maximum permanent application and installation temperature	
Resistance to bending	
Electrical properties	
Resistance to ingress of solid objects	
Corrosion resistance of metallic and composite conduit systems	
Resistance to flame propagation	
Dimensional requirements	
UV Stability	

*Note - Where appropriate type test reports shall be submitted to support any statements provided in the table above

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Appendix 3 – Addendum to Supplier Requirements

Packaging and Delivery Information

To enable the Company to store the product(s) in accordance with the manufacturer's recommendations the Tenderer should provide details of any specific storage or environmental requirements with respect to each tendered product.

The Tenderer shall ensure that each item is suitably packaged and protected to maintain the product and packaging as "fit for service" prior to installation taking account of the potential for an outdoor storage environment. All packaging shall be sufficiently durable giving regard to the function, reasonable use and contents of the packaging.

Where items are provided in bagged/boxed form the material from which the bags are manufactured shall be capable of sustaining the package weight and resisting puncture by the materials within. Tenderer shall submit at the time of tendering the details of the proposed packaging (i.e. materials composition and structure) to be used for each product. Where the Tenderer is unable to provide packaging suitable for outdoor storage then this should be stated at the time of tender.

The Company prefer to receive these products on pallets. Owing to the length of these products they will not usually fit onto standard 1200mm (w) x 1000mm (d) pallets; please provide details of the pallet size that you intend to use.

The Company will give consideration to innovative storage alternatives and any requirements that positively or negatively impact on the company logistics operation will be considered accordingly.

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Appendix 4 – Technical Information Check List

The following information shall be provided by the supplier for technical review by the Company. Additional information shall be provided if requested.

Requirement	Provided (Y/N)
Full product descriptions and part number/reference	
Appendix 2 – Completed self-certification conformance declaration	
Complete set of drawing and data sheets for each variant	
Type test evidence - including all documents referenced when completing Appendix 2	
Product Production Quality Plan	
Packaging/delivery information – as required in appendix 3	