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NPS/001/013 – TECHNICAL SPECIFICATION FOR GALVANISED STEEL STAY WIRE

1. Purpose

The purpose of this document is to detail the technical specification for galvanised steel stay wire for use on the overhead line distribution networks of Northern Powergrid.

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

Reference	Version	Date	Title
NPS/001/013	5.0	Oct 2016	Technical Specification for Galvanised Steel Stay Wire

2. Scope

This document applies to galvanised steel stay wire for use on the overhead line networks of Northern Powergrid. Used in conjunction with helical ties and other fittings the wire is used to support angle and terminal poles.

Technical documents referenced within this specification refer to the latest versions of the relevant International Standards, British Standard Specifications and all relevant Energy Networks Association Technical Specifications (ENAS) current at the time of supply.

The following appendices form part of this technical specification: -

- Appendix 1 – Self Certification Conformance Declaration
- Appendix 2 – Addendum to Supplier Requirements
- Appendix 3 – Technical Information Check List

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3. Technical Requirements

Galvanised steel stay wire is used to support terminal and angle poles in a vertical plane. It is connected to the pole by means of helical ties and other mechanical fittings.

Galvanised steel stay wire shall be manufactured in accordance with Energy Networks Association Technical Specification (ENA TS) 43-91 Issue 5: 2016 – Stay Strands and Fittings for Overhead Lines.

The type of stay wire shall be 7/4.0mm stranding, grade 1150 and of a high tensile strength manufactured to BS183: 1972 – General purpose galvanised steel strand. Testing shall be carried out as detailed in section 6 of BS183 with the coil dimensions detailed in Table 4.

The galvanised steel stay wire shall have a specified minimum failing load of 101kN (10229kgf). The stay wire should be capable of being cut with a hacksaw or hydraulic cutters.

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4. References

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

4.1. External Documentation

Reference	Title
ENA TS 43-91 Issue 5: 2016	Stay Strands and Stay Fittings for Overhead Lines
BS 183: 1972	Specification for General Purpose Galvanised Steel Stay Wire
BS EN 10218 – 1: 2012	Steel wire and wire products. Test Methods

4.2. Internal Documentation

Reference	Title
n/a	n/a

4.3. Amendments from Previous Version

Reference	Description
4.1 External Documentation	Document version reviewed and updated
6.0 Authority for Issue	Reviewed and updated
Appendix 2 – Addendum to Suppliers Requirements	Label requirements updated

5. Definitions

Term	Definition
n/a	n/a

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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	20/07/2022

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 and Reason	
No	Period: 5 Years	Reason: Update will be dictated by contact renewal date or any significant changes in the specification or documents referenced.
Should this document be displayed on the Northern Powergrid external website?		Yes
		Date
Steven Salkeld	Policy and Standards Engineer	21/07/2022

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	22/07/2022
Joe Helm	Policy and Standards Manager	21/07/2022

6.4. Authorisation

Authorisation is granted for publication of this document.

		Date
Paul Black	System Engineering Manager	25/07/2022

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Appendix 1 – Self Certification Conformance Declaration

Stay Wire covered by ENA TS 43-91 & BS 183 shall comply with the latest issues of the relevant international and British Standards.

ENA TS 43-91 is intended to amplify and/or clarify the requirements of those Standards.

This check sheet identifies the clauses in ENA TS 43-91 and the clauses of the Standards relevant to stay wire for use on current United Kingdom designs of wood pole overhead lines.

The manufacturer shall declare conformance or otherwise, clause by clause, using the following levels of conformance declaration codes.

Conformance declaration codes

N/A = Clause is not applicable/ appropriate to the product

Cs1 = The product conforms fully with the requirements of this clause

Cs2 = The product conforms partially with the requirements of this clause

Cs3 = The product does not conform to the requirements of this clause

Cs4 = The product 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 Reference:

Name:

Signature:

Date:

1.1. Instructions for completion

- When Cs1 code is entered no remark is necessary
- When any other code is entered the reason for non-conformance shall be entered
- Prefix each remark with the relevant 'BS EN' or 'ENATS' as appropriate

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BS 183			ENA TS 43– 91			
Clause / Sub-clause	Requirement	Conformance Code	Clause / Sub-clause	Requirement	Conformance Code	Remarks
5.1.1	Material					
5.1.2	Galvanised to BS 443; 1982					
5.2.1	Outer strand lay – right hand lay					
5.2.2	Lay length – 12 to 18 times nominal diameter.					
Table 3	Strand Size, diameter and minimum Failing Load of 7/4.00mm grade 1150		4.1	Strand Size, diameter and minimum Failing Load of 7/4.00 grade 1150		
6.0	Inspection and testing					
	Packaging as detailed in this specification			Protection and delivery requirements		

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Appendix 2 – Addendum to Suppliers Requirements

Packaging and Delivery

Stay wire shall be delivered in 50m coils with a maximum diameter of 900mm. A durable weatherproof label shall detail the following information: -

- Northern Powergrid commodity code – 231481
- Material, grade and stranding configuration
- Batch date/code
- Gross package weight (kg)

Each coil shall be secured with appropriate ties to ensure that they remain in shape until required for use. Any wire ends or sharp edges shall be protected to prevent injury to the users. There shall be a maximum of 12 x 50m coils per pallet with all items securely fastened to prevent inadvertent movement. Palletised goods shall be supplied on standard 1200mm x 1000mm pallets.

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Appendix 3 – Technical Information Check List

Requirement	Provided (Y/N)
Full product description and part number/reference	
Appendix 1 – Completed self-certification conformance declaration	
Product Data Sheet	
Type test evidence	
Product Quality Plan	
Packaging/delivery information	