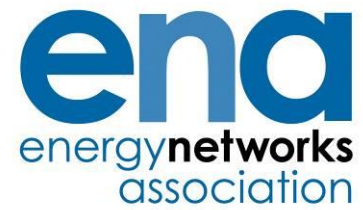


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Engineering Recommendation TELE.3

Issue 1 2016

Code of practice for overhead to underground
optical cable connections

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Foreword

This Engineering Recommendation (EREC) is published by the Energy Networks Association (ENA) and comes into effect from date of publication. It has been prepared under the authority of the ENA Engineering Policy and Standards Manager and has been approved for publication by the ENA Electricity Networks and Futures Group (ENFG). The approved abbreviated title of this engineering document is "EREC TELE.3".

This is the first issue of EREC TELE.3 and does not cancel or replace any other document. The document does make general reference to IEC 60794-1-2 and publications relating to safety, overhead lines and security. However, TELE.3 can be read as a standalone document.

EREC TELE.3 is a code of practice describing overhead to underground connections for optical cable systems on overhead power lines. The document presents typical installation systems and considers both new build and retrofit situations.

Drawings and photographs in this document are for illustrative purposes only; they are not a recommendation for a particular product or manufacturer. Drawings and photographs have been reproduced with permission of the copyright owner.

This document is designed to be used by engineers involved in the design and installation of optical cable systems on overhead power lines. It is assumed that those engineers reading this document have a working knowledge of the technology and components of optical cable systems and are familiar with ENA TS 43-126 Parts 1 to 4.

Where the term "shall" or "must" is used in this document it means the requirement is mandatory. Where the term "should" is used in this document it means the provision is a recommendation. The term "may" is used to express permission.

Introduction

There have historically been many different solutions implemented for the connection and routing of an overhead cable to an underground cable whether at a breakout location or a terminal location. This has led to bespoke engineering on almost every installation. This causes increased difficulty during installation and maintenance and leads to higher costs. Security of the optical system has also been at risk due to inadequate mechanical protection of cables at or near ground level.

This EREC addresses these issues describing the physical arrangement and security of overhead to underground connections from ground level to the splice enclosure on towers and poles. Consistent engineering practice will lead to reduced costs and ensure a greater level of security.

1 Scope

This EREC describes overhead to underground connections for optical cable systems on overhead power lines. The engineering and security requirements for existing and new cable installations from ground level, or the first chamber if in the vicinity of the tower or pole, up to the splice enclosure are considered. Environmental and mechanical requirements of splice enclosures are also considered.

Splicing arrangements and fibre management within the splice enclosure are beyond the scope of this document.

2 Normative references

The following referenced documents, in whole or part, are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Standards publications

BS EN 60529:1992+A2:2013, *Degrees of protection provided by enclosures (IP code)*

EN 60794 ed3 (2014) - *Optical fibre cables - Part 1-2: Generic specification - Cross reference table for optical cable test procedures*

IEC/TR 62263 ed1.0, *Live working – Guidelines for the installation and maintenance of optical fibre cables on overhead power lines*

Other publications

[N1] LPS 1175 Issue 7.2, *Loss Prevention Standard – Requirements and testing procedures for the LPCB approval and listing of intruder resistant building components, strongpoints, security enclosures and free-standing barriers (BRE Global Ltd., 2014)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

ADSS

all dielectric self-supporting optical fibre cable that can support its own weight in a short or long span