

Perform corrective maintenance on an optical fibre network

Overview

This standard is concerned with carrying out corrective maintenance/fault management of optical fibre cable transmission networks to ensure network availability and high-quality network transmission.

It involves planning and performing corrective maintenance, and testing the outcomes within the agreed response times.

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Performance criteria

You must be able to:

1. Agree response times for service level agreements with the customer
2. Obtain current specification and drawings of the optical fibre network infrastructure relevant to the fault notification in line with organisational standards
3. Set up and calibrate optical fibre test instruments according to manufacturer's instructions and organisational standards
4. Test optical fibre cable networks using approved test methods to identify faults in line with organisational standards
5. Locate the physical location of the fault in reference to the layout plans and drawings
6. Coordinate excavation, preparation of jointing and pulling of cables following organisational procedures
7. Carry out repair activities following organisational standards and within the timescales specified in service level agreements
8. Carry out tests to confirm the integrity of the repairs
9. Record all work undertaken and test results to organisational standards

Knowledge and understanding

You need to know and understand:

1. The factors involved in selecting optical fibre cable to meet operating requirements
2. The performance characteristics of optical fibre , including refraction, polarization, attenuation and dispersion
3. The different wavelength bands used for optical communication and their usability and transmission loss characteristics
4. The typical design values and margins for optical transmission signal strength and quality
5. The functionality of industry standard optical equipment including: cleaver, mechanical and fusion splicing kit, protection sleeves, fibre stripper, fibre reinforced plaster, jointing
6. The functionality of optical test equipment including Optical Time Domain Reflectometer (OTDR), power meter and light meter,
7. The expected optimal values for OTDR, power meter and light meter test results
8. The purpose utility of route diagrams and how to use them
9. The standard trenching, optical fibre cable laying, splicing, jointing, blowing and back-filling process for installation of optical fibre cables
10. The different types of optical fibre connectors that can be used and their limitations
11. The different fibre termination methods and how to apply them

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