

<b>Examination Procedure</b>  Rubrik / Title <b>Optical Cables – Attenuation Measurement</b>	Beteckning / Document <b>KBE EP-123</b>
	Utgåva / Issue <b>2 (E)</b>
	Datum / Date <b>2000-10-03</b>
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## 1 Scope

Inspection according to this procedure is to be performed as type inspection, as routine inspection and at installation testing and guarantee inspection.

The test shall be carried out in the factory by the manufacturer and, after installation, by the installer, each of whom shall be responsible for the required equipment and personnel.

The test shall cover attenuation measurements using an OTDR (Optical Time Domain Reflectometer).

A test report shall be compiled by the manufacturer and the installer. It shall be possible for the Purchaser to obtain a copy of the test report upon request.

## 2 Objective

To check the integrity and attenuation of optical cables by measuring with a reflectometer.

The results from routine inspection after manufacturing are to be used as reference for later installation and guarantee inspections.

## 3 Method

### 3.1 General

Optical cables which are to be tested must have been subject to production testing by the manufacturer.

In addition to measuring the attenuation between any two points, it is also possible to detect local attenuation variations and disruptions and to measure splice attenuation and the length of the fibre using the OTDR method.

### 3.2 Standards

IEC 60793-1      Optical fibres. Part 1: Generic specification

### 3.3 Implementation

One end of the optical cable is connected to the OTDR instrument, which is fitted with a monitor showing a length scale on the x axis and a attenuation scale on the y axis. The light source in the

OTDR instrument is a pulsed laser which emits the wavelength for which the optical cable being tested is designed.

### **3.4 Recording**

It shall be possible to obtain a curve drawn by the OTDR instrument. This curve shall be included in the report.

### **3.5 Measurement equipment**

OTDR instrument with three wavelength settings or at least the wavelength for which the optical cable being tested is designed.

## **4 Acceptance Criteria**

Attenuation shall not exceed the values laid down in the Technical Specification.

## **5 Documentation**

Inspections carried out shall be documented by means of inspection certificates or inspection reports. Several inspections within one and the same inspection schedule may be included in the same document.

The document shall include the following information.

- Product inspected

Product, designation, quantity, production number, and reference to the Purchaser's order number shall be specified.

- Identity

The identity of the product in terms of a type-tested design and/or a specification shall be specified if this identity is not shown in a special certificate.

- Examination Procedure

The procedure used for the inspection shall be specified (this Examination Procedure or other procedure agreed upon).

- Measurement equipment

Type of equipment, unit number, calibration data, etc. shall be specified for testing devices, the performance of which is significant to the results.

- Results

Measurement values which are to be documented as per the procedure and any deviations shall be reported.

It shall be evident that the product(s) has/have met the set requirements.

- Inspector

Date and signature of the inspector responsible.