

## IEC 60794-1-22 Optical Fibre Cables –Part 1-22: Generic Specification – Basic Optical Cable Test Procedures –Environmental Test Methods – Method F13 – Microduct Pressure Withstand- Testing Equipment

### Description

#### 15.1 Object

The purpose of this test is to verify that microduct is capable of withstanding the maximum internal pressure used for blowing of microduct cable or fibre unit.

#### 15.2 General

This test ensures safe operation over a range of temperatures. The test pressure is chosen to be either the maximum working pressure of the microduct or a multiple of this as stated in the DS. The controlled area is a heating/cooling chamber in the event that the DS requires testing above or below ambient temperatures. Typical ranges are  $-20^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ . In general polymer microducts will have a reduced tolerance to pressure as the temperature is increased.

#### 15.3 Samples

Equal lengths L of microduct approximately 1 m long are cut from a production length. The ends shall be cut carefully, ensuring that they are not crushed. This will prevent air leaks from around the connectors. This test must be conducted in a controlled area so that there is no danger from flying fragments should the microduct fail.

The microduct samples shall be conditioned at the test temperature for a minimum of four hours before testing.

#### 15.4 Test equipment

The pressure source shall be agreed between customer and supplier. Typically it is a compressor or gas bottle. Personal protective equipment (PPE) is recommended (goggles or full-face mask and gloves).

#### 15.5 Procedure

One end of the microduct is inserted into the pressurizing device. A fully blocking end cap (usually metal) is fitted to the opposite end. The pressurizing device is activated and the pressure slowly increased to the specified level. The sample is left pressurised for 30 min (unless otherwise stated in the Detail Specification).

The sample is observed for leaks at all times, it may be useful to place the microduct in a container of water to look for leaking air bubbles. After 30 min (unless otherwise stated in the DS) the air source is disconnected and the sample removed. PPE should be worn when entering the test area.

Ten samples shall be tested, unless otherwise stated in the Detail Specification.

#### 15.6 Requirements

All samples shall withstand the applied pressure with no leakage during test and no visible damage after test

#### 15.7 Details to be specified

- a) sample length: 1 m unless otherwise specified);
- b) test pressure: according to the Detail Specification;

- c) duration: according to the Detail Specification;  
d) number of samples: 10, unless otherwise specified in the Detail Specification.



### Hydrostatic Pressure Tester according to IEC 60794-1-22 Method F13

- According to ISO 1167 , ASTM D1598 and ASTM D 1599 //
- Including 2 separate pressure control lines up to 100 bar //
- Connection to computer is USB port //
- Software is included //
- European pump, sensors, and valves //
- Main pump is Italian //
- Including bypass system for pump safety //
- Each line has a separate module controller for easy service purposes //
- Data is saved in TDMS database to keep it in case of a power failure //
- Report out in MS WORD //
- Manual charge and discharge hand key//
- Automatic pressure control //
- Pressure rate control //
- Accumulators with dial pressure gages for double check the accuracy of digital pressure on the computer //
- Airless system //
- Maximum accuracy, a long service life, and a user-friendly system, combined with flexibility //
- High-precision pressure regulation, selectively regulated input pressure in each Line //
- Quick system calibration easily by the operator and calibration data saved in the controller modules //
- Convenient operation, evaluation of results and clear visualization via LabVIEW and windows based software //
- Operator access to all important settings from the front panel //
- PLC based control of the pressure channels //
- Pressure gauge for checking each line actual pressure on accumulators //
- High-quality unit components guarantee long service life //
- Along with AHP data logging software quarantine keeping of data in power break cases //
- Ramp control capabilities for each line pressure //
- European components of valves, sensors and pump //
- Including high pressure accumulators //
- Training video is included //
- online support for the software

## Category

1. Equipment for Standards
2. Standards

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