



Certified Optical Fibre Installer (COFI) for South Africa



TransAfrican
Fibre Services



This course is delivered under license by OTT's partner in South Africa, TransAfrican Fibre Services

Purpose

This course is designed for installation and maintenance staff working on a range of fibre optic networks including enterprise & outside plant networks for datacoms and telecoms applications. It provides a broad knowledge of the components and equipment used and highlights good working practices in order to inspire a professional approach to the job role.

Practical sessions build the skills required to install, joint, terminate and test fibre optic cabling links that may contain either multimode or singlemode fibre.

This course may be supplemented by additional training for specialist environments such as harsh environments including mining, industrial or military applications, or FTTx applications with Passive Optical Networks (PONs).

Our intention is to provide the 'very best of class' installation training for customers that require professional staff trained up to meet the standards required to build and maintain quality fibre optic installations in the South African marketplace.

Features

- hands-on practical sessions using a range of equipment
- comprehensive, easy to read, course manual
- pass the assessment to gain Certified Optical Fibre Installer (COFI) status



Optical fibre is very small so good eyesight (or appropriate glasses) and good hand skills are required for this course.

Key outcomes

- ✓ appreciate how optical fibres work and the issues that can affect performance
- ✓ identify link components and appreciate why different types are required for different environments
- ✓ handle fibre optic cable and components correctly to ensure optimum performance
- ✓ appreciate the importance of cleanliness when handling fibre optic connectors
- ✓ carry out inspection of fibre optic connectors
- ✓ work safely on fibre optic networks
- ✓ prepare fibre optic cabling for fitting connectors or splicing
- ✓ terminate fibre optic cables by splicing on pre-terminated pigtails or using pre-polished connectors
- ✓ joint fibre optic cables by fusion splicing and manage fibres in a splice closure
- ✓ test fibre optic links according to relevant standards
- ✓ test patch cords correctly
- ✓ carry out continuity and insertion loss testing
- ✓ use an OTDR correctly for optimum testing of fibre optic links





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The syllabus



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BECOMING A COFI

- ❑ Types of fibre networks
- ❑ Key skills and tasks

COMMS and LIGHT

LIGHT & WAVELENGTHS

- ❑ Electromagnetic spectrum
- ❑ Wavelengths/frequencies
- ❑ Speed of light

COMPONENTS

OPTICAL FIBRE FOR COMMS NETWORKS

- ❑ Guiding light
- ❑ Fibre characteristics
- ❑ Fibre types
- ❑ Operational issues

FIBRE OPTIC CABLES

- ❑ Cable performance issues
- ❑ Typical constructions
- ❑ Cables for different environments

CONNECTORS

- ❑ Connector basics
- ❑ Connector styles
- ❑ Connector performance

ENTERPRISE SYSTEM COMPONENTS

- ❑ Cabinets, racks & frames
- ❑ Patch panels
- ❑ Transmitters & Receivers

TELECOMS SYSTEM COMPONENTS

- ❑ Splice or joint closures
- ❑ Termination location components
- ❑ Optical Distribution Frames

INSTALLATION ISSUES

CABLE HANDLING

- ❑ Cable handling & management

SAFETY WITH FIBRE OPTIC TECHNOLOGY

- ❑ Safe working with fibre
- ❑ Hazardous substances
- ❑ Fibre offcuts
- ❑ Optical power
- ❑ Laser safety issues
- ❑ Good practices checklist

JOINING FIBRES

- ❑ Definitions
- ❑ Causes of loss
- ❑ Performance standards

INSPECTING & CLEANING CONNECTORS

- ❑ Why do we inspect & clean connectors?
- ❑ Inspection standards
- ❑ Inspection equipment
- ❑ Cleaning equipment
- ❑ Connector care

POLARITY IN BASIC INSTALLATIONS

- ❑ Simplex installations
- ❑ Duplex installations

INSTALLATION TASKS

CABLE PREPARATION

- ❑ Overview and tooling
- ❑ Fibre coatings
- ❑ Cleaning techniques
- ❑ Sample procedure

CLEAVING FIBRES

- ❑ Fibre cleaving
- ❑ Potential issues

TERMINATION PROCEDURE

- ❑ pre-polished connectors

FUSION SPLICING

- ❑ Procedure
- ❑ Splicing parameters
- ❑ Potential issues
- ❑ Splicer maintenance

JOINING EXTERNAL CABLES

- ❑ Working outdoors
- ❑ Workspace planning
- ❑ Preparation
- ❑ Splicing the fibres
- ❑ Completing the job

ROUTINE TESTING

WHY, HOW & WHEN TO TEST

- ❑ Continuity checking

- ❑ Insertion loss measurement
- ❑ OTDR testing

CONTINUITY TESTING

- ❑ Continuity checking

INSERTION LOSS TESTING

- ❑ Optical power & loss budgets
- ❑ Equipment
- ❑ Insertion loss measurements
- ❑ Reporting

OTDR TESTING

WHY USE AN OTDR?

- ❑ What is OTDR testing & what can it do for us?

OTDR CAPABILITIES

- ❑ Distance measurements
- ❑ Fibre loss measurements
- ❑ Splice loss measurement
- ❑ Connector losses
- ❑ Link return loss

OTDR LIMITATIONS

- ❑ Dynamic range
- ❑ Dead zone
- ❑ Resolution

TEST CONFIGURATIONS

- ❑ Cable on a drum
- ❑ Installed cable before termination
- ❑ Connectorised systems

USING THE OTDR

- ❑ Step by step guide
- ❑ Manipulating the trace
- ❑ Measurement parameters

OTDR ISSUES

- ❑ Poor launch conditions
- ❑ Interfacing with bare fibres
- ❑ Ghosts
- ❑ Fibre mismatches

ASSESSMENT

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- ❑ Theory assessment
- ❑ Practical installation assignments:
 - Multimode fibre: Enterprise system
 - Singlemode fibre: Telecoms system
- ❑ Testing installation
- ❑ Completing documentation