

City & Guilds 3667 Level 2 Unit 102 Fibre Optic Cabling in an Internal Environment.

Fibre Optic Splicing in LAN DataComm's

COURSE CONTENT HEALTH & SAFETY: INTRODUCTION

SHAW ACT: It's the law! Using risk assessments What are the hazards of working on fibre optic cabling systems? Summary

SAFETY WITH FIBRE OPTICS

© Broad bandd areer | 1/17 /201 Working with fibre optics Hazardous substances Fibre offcuts Optical power Laser safety standards Good practices,

THE USE OF FIRE OPTICS IN LANS

Communications Benefits and drawbacks of fibre Basic components Fibre infrastructure in a LAN Fibre infrastructure for CCTV

OPTICAL FIBRES

What is light? Electromagnetic spectrum Wavelengths & frequencies SI number units Optical fibre structure How light travels along a fibre Multimode & singlemode fibres Operational parameters Singlemode fibre vs multimode fibre

FIBRE OPTIC CABLES

Fibre manufacturing

Fibre types for datacomms

Outdoor cables: characteristics Indoor cables: characteristics Cable types

FIBRE OPTIC CONNECTORS Connector basics & types

FIBRE OPTIC LAN SYSTEM COMPONENTS

Cabinets, racks, frames Patch panels Transmitters (light sources) Receivers (detectors)

CHOOSING AN INSTALLATION METHOD

Direct termination methods Splicing on pigtails Fusion splicing Mechanical splicing Fusion vs mechanical splicing Pre-terminated fibre assemblies

JOINING FIBRES IN A DATACOMMS ENVIRONMENT

Definitions Causes of loss Performance requirements

INSPECTING & CLEANING CONNECTORS

Why do we inspect connectors? Why do we clean connectors? Cleaning equipment & technology Connector inspection equipment Inspection pass/fail criteria Connector care: do's and don'ts

PUTTING FIBRE OPTIC CABLE IN PLACE

Handling fibre optic cable Special issues Cable laying on short routes Cable pulling on external routes Blown fibre and blown cable

FIBRE OPTIC CABLE MANAGEMENT

What is cable management? Why is cable management needed? Where is it particularly critical? How can you manage cable?

CABLE PREPARATION

Overview of the process Cable preparation tools Fibre coatings Stripping tools for fibre coatings Cleaning chemicals & techniques Sample procedure

TERMINATION PROCEDURES

Epoxy polish Anaerobic adhesive Hot-melt

CLEAVING FIBRES

Fibre cleaving Problems when cleaving

FUSION SPLICING

Fusion splicing procedure Splicing parameters Problems after fuse Splice machine maintenance Splice machine cleaning Electrode care

MECHANICAL SPLICING Procedures

CONTINUITY TESTING Testing cabling: continuity

ENSURING A GOOD QUALITY INSTALLATION

Quality assurance Installation procedure

POLARITY IN FIBRE OPTIC INSTALLATIONS

Simplex installations Duplex installations Labelling

TESTING DATACOMMS LINKS AND CHANNELS

What are we testing? Insertion loss acceptance criteria Optical power & loss measurement (ILM) Insertion loss measurement Validity of results & Modal effects Reference grade test cords Compiling a test report

OTDR INTRODUCTION

How does an OTDR work? Inside the OTDR Summary

OTDR CAPABILITIES

Distance measurements Fibre loss measurements Splice loss measurements Connector losses

OTDR LIMITATIONS

Dynamic zone Dead zone Resolution

USING THE OTDR

Step by step guide Manipulating the trace Measurement parameters

OTDR MEASUREMENT CONFIGURATIONS

Cable on a drum Installed cable before termination Connectorised systems

COMMON OTDR ISSUES

Poor launch conditions Interfacing with bare fibres Ghosts Fibre mismatches & saturation

ASSESSMENTS

Online multiple choice assessment Installation exercise Testing installation Completing documentation

COURSE SUMMARY

This intensive 5-day course will provide you with the knowledge and skills that you need to install, splice, terminate and test fibre optic cabling in a typical datacomms environment,

This is characterised by low fibre count cables (typically less than 24 fibres) terminated in patch panels/equipment racks.

This course focuses on the components, equipment and working practices that are typically used for local area networks, where most of the key tasks have to be performed on either multimode or singlemode cabling that is typically indoors.

The knowledge and skills acquired can also be applied to fibre optic systems used for CCTV, security, industrial process control and sensor applications.

LEVEL OF AWARD

City & Guilds 3667 Level 2 Unit 102, 40 recommended guided learning hours 6 QCF credits

COURSE PRE-REQUISITES

Optical fibre is very small so you will need reasonable eyesight (or suitable glasses – contact lenses), not be colour blind and have the ability to work with your hands.

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- Up-to-date, well structured courses written by experienced trainers to meet business and learner needs
- Comprehensive, illustrated, indexed, course.
- Study material written in plain English
- The best learning environment as near to real working environment as possible.
- Study techniques including online and home
- hands-on practical exercises using a wide range of equipment
- Focus is on the practical with needless theory omitted



COURSE OBJECTIVES

At the end of this course you will be able to:

- recognise how and why fibre optic cabling is. Used for communications systems
- Recognise how optical fibres work and the issues that can affect performance
- Recognise and use the correct terminology and current standards
- Identify typical components and explain their uses
- Work safely with optical fibres in an internal environment
- Follow recommended installation procedures
- Prepare fibre optic cabling for connectorisation and splicing
- Terminate fibre optic cabling by fitting connectors
- Terminate fibre optic cabling by fusion and mechanical splicing
- Test fibre optic links using recognised procedures

COURSE DURATION

This course requires your attendance for five days, in order to complete theory assessment tests. Practical activities and practical assessment.

However We require you to study the training material sent to you or presented to you online. This material will have a number of knowledge reviews contained within it and must be completed before attendance at the training centre:

We require this so that four days of the period of time you are with us. Consists of practical training and practice. Thus ensuring that when you leave us, you are competently able to do the job.

No other training provider provides this level of practice.

TO BOOK A PLACE AND DISCUSS COSTS PLEASE CALL 059 917 5249