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| 1146 - Optical Fibre Cabling | |  |
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Content approval

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**Version History**

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| Version No. | Date | Author | Comments |
| Issue 9 | 21-May-2019 | Quality Standards & Accreditation | Document review. Links to external sources validated/updated where appropriate. Author/Approver/Publisher details amended. Change of approver. Ref to K002 (retired module) removed. |
| Issue 8 | 10-Dec-2018 | Quality Standards & Accreditation | Document review. Links to external sources validated/updated where appropriate. Author/Approver/Publisher details amended. BT logo replaced with Openreach logo. Module guidance & NASA checklist have been aligned. Obsolete components removed, Questions revised, cabling requirement revised. |
| Issue 7 | 06-Apr-2018 | Quality Standards & Accreditation | Document review. Links to external sources validated/updated where appropriate. Author/Approver/Publisher details amended. Change of approver. Coaching limit amended to 30% of ‘c’ markings. Module guidance & NASA checklist have been aligned. Training course validated as still current. |
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| Issue Draft 0a | 16-Apr-2010 | Chief Engineer AEI Accreditation | This document is in the new ISIS format and replaces Module K6 issue 5 which is held in archive on live link. |

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# Introduction

The Openreach Accreditation process is an integral part of the Openreach Network Quality Programme (OQP). It is designed to focus on the skills and knowledge of individuals who are required to work on the access network, in order to improve quality of personal workmanship.

The Accreditation process is managed on its own unique data records management system NASA, which is part of FPQ, and builds on the basic criteria that only the line manager knows what his or her people do. It is from this starting point when a manager determines a person’s skill and assigns them to that skill on NASA that the process begins.

This ISIS is reviewed and updated annually. Between reviews any changes are communicated using Access Engineering Communications (AEC).

Links to ISIS, AEC’s, Accreditation documents and other Accreditation modules can found in the

[Technical Library](https://intra.bt.com/bt/openreach/chief-engineer/network-evolution/interface-team/organisation-network_reliability_home_page/aei_library/Pages/index.aspx)

In order to comply with the requirements of this Accreditation Module the Assessor must follow the procedure below

* Allow the time shown for the delegate to complete
* Explain that reference documentation can be used
* The criteria for all sections must be fulfilled in order to meet the requirements for this module

# Scope

The module target audience: Engineers working on the Openreach network including BT Northern Ireland and External Suppliers (Contractors)

# Description

This module consists of two parts: a questionnaire and a practical assessment.

Content: This assessment will a questionnaire to test the delegate’s knowledge of fibre optic cabling, and the completion of a ‘live’ optical fibre cabling job with SDMB5/COF200 or ≥ 4tube 5mm BFT to the correct quality standard.

Duration: Variable

# Measurement

Upon completion the assessor will record the results against the standard required in the module guidance, and will also be required to enter this onto the NASA database (link below)

In addition the delegate’s Line Manager should be informed of the results and any recommendations or areas identified for development. The Line Manager will then update the delegate’s personal file as required.

You must not coach more than 30% (3) of ‘C’ markings during this assessment.

Post Assessment: Enter results on [**NASA**](http://dyl00509app02.nat.bt.com:61138/cdsd/www_startup.startup) database

# Safety

1. If the delegate displays a disregard for, or lack of knowledge of safety, then STOP THE ASSESSMENT - re-assessment required - refer to –safety module for guidance

# Method

Task:

Questionnaire: The delegate will answer as many questions as possible

Practical: The delegate must complete one live optical fibre cabling job to the quality standard.

Method:

Questionnaire: Distribute the questionnaire. Explain that reference documentation may be used and allow a maximum of 30 minutes for the delegate to complete. Please note 80% is the minimum pass criteria.

Practical: As a prerequisite, the delegate must meet the following criteria, i.e. to have successfully passed the following accreditation modules & Course(s).

* ORCBL001
* ORCBL002
* K008 Hand Rodding in the U/G Network

The delegate will then provide a fibre optic cable/sub-duct, which involves the initial set up, the use of the duct motor, as well as the relevant rodding and winching techniques, i.e. in line with the current safety and quality standards, and/or the relevant manufacturer’s instructions...

# Delegate’s Details

|  |  |
| --- | --- |
|  |  |
| Module No | AEI/ACC/K006 |
| Module ID | 1146 |
| Title | OPTICAL FIBRE CABLING |
| Date |  |
| Delegate’s name |  |
| UIN/Licence No |  |
| OUC |  |
| Assessor’s name |  |
| Assessor’s UIN |  |
| Questionnaire | PASS / FAIL |
| Practical | PASS / FAIL |
| Notes |  |

Questionnaire Score:

|  |  |  |
| --- | --- | --- |
| Total possible | Total Correct | Pass ≥ 80% |
| 18 |  | 14 |

Practical Score:

|  |  |  |
| --- | --- | --- |
| Total C Pointers | Total C Coached | Pass ≤ 30% |
| 12 |  | ≤ 4 |

DAP: Recommended Action

# Questionnaire

|  |  |  |  |
| --- | --- | --- | --- |
| Q1 | When taking a COF 200 into a building (either exchange or customer) what is the correct procedure for terminating the sub duct? |  |  |
|  |  |  | 1 |
| Q2 | Can SDMB5 be jointed in curved sections? |  |  |
|  |  |  | 1 |
| Q3 | What is minimum bend radius for SDMB5? |  |  |
|  |  |  | 1 |
| Q4 | Name two methods which can be used to seal a BFT after installation in a duct? |  |  |
|  | a) |  | 1 |
|  | b) |  | 1 |
| Q5 | On completion of BFT cabling operations how must the tubing be left awaiting jointing? |  |  |
|  |  |  | 1 |
|  |  |  | 1 |
|  |  |  | 1 |
|  |  |  |  |
| Q6 | Which fibre cables require labelling in every underground structure? |  |  |
|  |  |  | 1 |
| Q7 | Which fibre cables require yellow tape in every underground structure? |  |  |
|  |  |  | 1 |
| Q8 | When are you responsible for restraining existing fibre cables/joints in underground structures you have entered? |  |  |
|  |  |  | 1 |
| Q9 | What is inserted into the SDMB5 to allow attachment to rods or rope? |  |  |
|  |  |  | 1 |
| Q10 | On completion of your cabling operations you notice an open joint. What action must be taken? |  |  |
|  |  |  | 1 |
| Q11 | What can be used to provide additional support to fibre cables in underground structures? |  |  |
|  |  |  | 2 |
| Q12 | What must be fitted to a swivel used for BFT cabling? |  |  |
|  |  |  | 1 |
| Q 13 | What is the minimum bend radius of 5mm 4BFT? |  |  |
|  |  |  | 1 |
| Q14 | When is it permissible to leave a fibre cable, or sub-duct open after cabling operations are complete? |  |  |
|  |  |  | 1 |

# Modular Guidance NASA Output (Practical)

|  |  |  |  |
| --- | --- | --- | --- |
| Task / Assessment | Assessment Pointers |  | Scoring Guidance |
| Questionnaire | >80% | X |  |
| Safety & Risk Assessment. | * Delegate trained? (appropriate courses) * Ensure personal safety is observed, i.e. Gloves and Eye shields should be worn where applicable * Injury due to incorrect manual handling and lifting. * Possible injury to back and/or hands because of incorrect cover lifting practices * Gas, water, effluent and waste contamination of structure. * Rat infestation and poison bait. * Slips, trips and falls * Lack of co-ordination between the team whilst work is in progress. * Use of equipment involving high tensions. * Rotating machinery, including cable drums. * Possible Lead contamination when recovering lead sheathed cable. * Possible obstruction of highway which could put other road users at risk * Improper discharge of water pumped from structure. * The on site risk assessment should carried out by the Delegate   The on site risk assessment should carried out by the Delegate –  (Refer to module A9 :- UG safety) | X  X  X  C  X  X  X  X  X  X  X  X  X  X |  |
| Mechanical Roding or Duct Motoring | * Identify and use the preferred method when using rodding equipment * Correctly install Guides Rod Flexible and a Clamp 13A when required * When using a Duct motor, observe all the safety precautions for compressed air | C  X  X |  |
| Pulling Guides | * Correct guides cabling used and correctly installed in order to ensure that the cable is guided and protected from the cable drum through intermediate boxes to the final position. * Pulling rope guarded whilst under tension, specifically from the winch to the duct entry | X  X |  |
| Cable Preparation | * Ensure the cable is correctly sealed prior to installation for the following, blown fibre tubing, COF type and sub ducts. * Correct connector, Cable end prepared correctly dependent upon type:- * Ensure the correct grip, swivel and fuse are used and fitted correctly * Ensure the correct rope type is being used and is in a satisfactory condition. | X  C  C  X |  |
| Cable Lubrication | * Gloves & eye shields must be worn * Use disposable gloves or keep a set specifically for this task * Avoid all spillages, * If spillages do occur - clean them up! * Clean all the excess lubricant from the cable on completion. | X  C  X  X  C |  |
| Winching/Cable Installation | * Ensure that all the safety devices fitted to the winches are operational, that all the safety guards are fitted, and that the emergency stop buttons are operational etc. * Correct delegate position for either hand tailed or self tailing operation * Correctly use and observe all safety precautions when operating the winch. * Ensure that no person(s) are in the cable chambers while any cabling operations are taking place. * Good communications should be maintained before and during all cabling operations * Release of tension when necessary to enter chamber * Winching stopped if operator is distracted | X  X  X  X  X  X  X |  |
| Post Installation | * Sufficient cable should be left for jointing * Ensure that all blown fibre tubing, COF type and sub duct cable is correctly re-sealed after installation * All newly installed fibre cable and sub duct should be correctly restrained * Any fibre joints worked on or moved should be correctly restrained * All observed fibre joints or cables should be correctly restrained * The bend radius must be maintained. (as per ISIS) * Yellow tape should be applied where required. * Labels should be fitted at all the accessible points with the correct information on. * All anti creepage devices should be replaced correctly * All Exchange or Customer premises duct should be re-sealed correctly | X  X  C  X  C  X  X  X  C  X |  |
| Drum trailer end | * Delegate not within "safe" area * Not "feeding" off drum | X  C |  |
| Equipment | * The correct equipment should be held & be in good condition | X |  |
| General items | * The worksite should be left tidy, with all the rubbish removed from the work point. * Chambers guarded * All observed fibre defects must be reported to the FRAC * All other defects - A1024 must be submitted and reported * Safe working practices | C  X  X  C  X |  |

# References

* EPT/ANS/A004 - Optical Cable Underground Installation & Recovery
* EPT/UGP/E036 - Trailer winch no.2
* EPT/UGP/E043 - Cabling in duct Manual
* EPT/UGP/E044 - Cabling in duct Manual Underground cabling ropes and attachments
* EPT/UGP/E045 - Cabling in duct Manual Cabling guides and rigging
* EPT/UGP/E046 - Cabling in duct Manual Underground cable installation
* NWK/NNS/V047,
* SFY/CSP/B039 - Safe working practices for optical fibre systems
* EPT/COF/D525 - Support restraint and marking of optical fibre
* EPT/UGP/E041 - Sub-Duct Mono-Bore Installation & Cable
* EPT/UGP/E050 - Cabling in duct manual sub-duct mono-bore
* AEC’s
* [Technical Library](https://intra.bt.com/bt/openreach/chief-engineer/network-evolution/interface-team/organisation-network_reliability_home_page/aei_library/Pages/index.aspx)

END OF DOCUMENT