

openreach

ISIS practice  
For Openreach people and Partners

NWK/NNS/V047

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# ***Guidance Notes for Fibre Quality Checks***

## ***About this document ...***

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### **Content approval**

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by Marc Henson, Network Quality, Standards & Accreditation Specialist

## Version History

Version No.	Date	Author	Comments
Issue 16	09-May-2023	Quality Standards Network Performance	Document review. Links to external sources validated/updated where appropriate. Author/Approver/Publisher details amended. Defect F0195 updated to remove the need for PCA (tree guard). Defect F0105 updated to include temp placement of coils/equipment. Defect F0192 updated to incl temp coils. Defect I6226 description updated. Defect G1001, additional guidance added. Defect P8230 updated to reflect current standards
Issue 15	09-May-2022	Quality Standards Network Performance	Section 7.4 amended to reflect current policy.
Issue 14	14-Apr-2022	Quality Standards Network Performance	Sections 19.12 & 19.13 additional guidance added to both items. Privacy changed to none.
Issue 13	30-Nov-2021	Quality Standards Network Performance	Sec 7.5 F0377 wording amended. Changed privacy from None to Internal and included Partners as audience.
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			in an internal environment.
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Issue Draft 0b	31-Mar-2011	Allan Lupton	typo errors
Issue Draft 0a	31-Mar-2011	Allan Lupton	initial merge

## Table of Content

<b>1</b>	<b>INTRODUCTION</b>	<b>11</b>
<b>2</b>	<b>SCOPE</b>	<b>11</b>
<b>3</b>	<b>QUALITY CHECKS AND INDEPENDENT AUDITS</b>	<b>11</b>
<b>4</b>	<b>GENERIC &amp; MISCELLANEOUS ITEMS</b>	<b>12</b>
<b>5</b>	<b>OPTIC FIBRE CLOSURES</b>	<b>15</b>
5.1	A2518 (DL) N2413 (C) SCORE 10	15
5.2	F4377 SCORE 10	19
5.3	F4378 SCORE 5	20
5.4	F4384 SCORE 10	20
<b>6</b>	<b>BENDING DIAMETER</b>	<b>21</b>
6.1	F0214 (DL) N1158 (C) SCORE 10	21
6.2	F1111 (DL & C) SCORE 10	21
<b>7</b>	<b>LABELLING</b>	<b>22</b>
7.1	F0105 (DL) N2414 (C) SCORE 5	22
7.2	A2151 (DL) N4212 (C) SCORE 5	24
7.3	F0375 SCORE 5	24
7.4	P8264 SCORE 5	25
7.5	F0377 (DL & C)	25
<b>8</b>	<b>SUPPORT AND RESTRAINT</b>	<b>26</b>
8.1	A2522 (DL) N2214 (C) SCORE 10	26
8.2	F0201 (DL) N4413 (C) SCORE 5	27
8.3	F0103 (DL) N4410 (C) SCORE 5	27
8.4	P8237 SCORE 10	27
8.5	F0193 SCORE 10	28
8.6	F0194 SCORE 5	28
<b>9</b>	<b>BLOWN FIBRE TUBE JOINTING</b>	<b>29</b>
9.1	F0101 (DL) N2107 (C) SCORE 10	29
<b>10</b>	<b>BLOWN FIBRE TUBE SEALING</b>	<b>29</b>
10.1	A2510 (DL) N/A (C) SCORE 5	29
<b>11</b>	<b>CABLE PREPARATION</b>	<b>30</b>
11.1	A2512 (DL) N2110 (C) SCORE 10	30
<b>12</b>	<b>FIBRE IDENTITY</b>	<b>31</b>
12.1	A2514 (DL) N2111 (C) SCORE 5	31
<b>13</b>	<b>FIBRE SPLICING</b>	<b>31</b>
13.1	A2516 (DL) N2112 (C) SCORE 10	31
13.2	F1088 (DL) N/A (C) SCORE 10	31
<b>14</b>	<b>CUSTOMER TERMINATIONS</b>	<b>32</b>
14.1	A2504 (DL) N2108 (C) SCORE 10	32

14.2	F0411 (DL) N2153 (C) SCORE 10	32
14.3	F0308 (DL) N2311 (C) SCORE 10	32
14.4	F0204 (DL) N1154 (C) SCORE 5	33
14.5	F0509 (DL) N1152 (C) SCORE 10	33
14.6	F0207 (DL) N2144 (C) SCORE 10	34
14.7	F0211 (DL) N2148 (C) SCORE 10	34
14.8	F0212 (DL) N/A (C) SCORE 5	34
14.9	F0302 (DL) N/A (C) SCORE 10	35
14.10	F0303 (DL) N2511 (C) SCORE 10	35
14.11	F0304 (DL) N/A (C) SCORE 10	35
14.12	F0305 (DL) N/A (C) SCORE 10	35
14.13	F0307 (DL) N/A (C) SCORE 5	36
14.14	F0402 (DL) N2152 SCORE 10	36
14.15	F0401 (DL) N2151 (C) SCORE 5	36
14.16	F0404 (DL) N2246 (C) SCORE 10	37
14.17	F0407 (DL) N2247 (C) SCORE 5	37
<b>15</b>	<b>WASTE MATERIALS</b>	<b>37</b>
15.1	A2526 (DL) N2215 (C) SCORE 5	37
15.2	G1012 (DL) SCORE 10	38
<b>16</b>	<b>BOOKING PRACTICES</b>	<b>38</b>
16.1	F0110 (DL) N4215 (C) SCORE 5	38
16.2	F0190 SCORE 10	38
<b>17</b>	<b>DEFECT REPORTING</b>	<b>39</b>
17.1	G1002 (DL) G0002 (C) SCORE 10	39
17.2	G1005 (DL) G0007 (C) SCORE 10	40
17.3	F0109 (DL) G0012 (C) SCORE 5	41
17.4	F0404 (DL) N2246 (C) SCORE 10	41
17.5	F0407 (DL) N2247 (C) SCORE 5	41
<b>18</b>	<b>FIBRE CABLING</b>	<b>42</b>
18.1	F0509 (DL) N1152 (C) SCORE 10	42
18.2	F0414 (DL) N1151 (C) SCORE 10	42
18.3	F0512 (DL) N1153 (C) SCORE 10	42
18.4	A2922 (DL) N1115 (C) SCORE 5	43
18.5	A2948 (DL) N1118 (C) SCORE 5	43
18.6	A2630 (DL) N1102 (C) SCORE 10	43
18.7	F1108 (DL & C) SCORE 10	44
18.8	F1138 (DL & C) SCORE 5	44
18.9	F4153 SCORE 5	45
18.10	P8261 SCORE 10	45
18.11	P8230 SCORE 5	45
18.12	P8231 SCORE 10	46
18.13	P8263 SCORE 5	46
18.14	F0192 SCORE 10	47
18.15	F0199 SCORE 10	47
18.16	F0233 SCORE 5	48
18.17	F0232 SCORE 10	49

18.18	I6210 SCORE 5	49
18.19	P8929 SCORE 10	50
<b>19</b>	<b>FTTP L2C SCORESHEET GUIDANCE</b>	<b>50</b>
19.1	G0075 SCORE 5	50
19.2	I6226 SCORE 10	51
19.3	I6216 SCORE 5	51
19.4	I6902 SCORE 10	53
19.5	I6904 SCORE 10	54
19.6	I6909 SCORE 10	54
19.7	I6270 SCORE 10	54
19.8	I6272 SCORE 10	55
19.9	P6253 SCORE 10	55
19.10	I6248 SCORE 5	56
19.11	I6244 SCORE 5	56
19.12	F1124 SCORE 10	57
19.13	F1154 SCORE 5	58
19.14	F1126 SCORE 10	58
19.15	F1156 SCORE 5	58
19.16	F1088 SCORE 10	59
19.17	F1091 SCORE 10	59
19.18	H7108 SCORE 10	59
19.19	I6090 SCORE 10	60
19.20	S0080 SCORE 10	60
19.21	S0081 SCORE 10	61
19.22	G1001 SCORE 10	61
19.23	F4502 SCORE 5	61
19.24	A2131 SCORE 5	62
19.25	G1003 SCORE 5	62
19.26	V3720 SCORE 5	62
19.27	F1087 SCORE 10	63
19.28	F1093 SCORE 10	63
19.29	F1094 SCORE 5	63
19.30	I6345 SCORE 10	64
19.31	F4410 SCORE 10	64
19.32	F0502 SCORE 5	65
19.33	F6218 SCORE 10	65
19.34	F1085 SCORE 5	65
19.35	F1086 SCORE 5	65
19.36	F1112 SCORE 10	66
19.37	F1142 SCORE 5	66
19.38	F1130 SCORE 10	66
19.39	F1160 SCORE 5	67
19.40	F1132 SCORE 10	67
19.41	F1162 SCORE 5	67
19.42	F1191 SCORE 10	67
19.43	F1193 SCORE 10	68
19.44	F1118 SCORE 10	68
19.45	F1148 SCORE 5	69
19.46	F1120 SCORE 10	69



19.47	F1150 SCORE 5	70
19.48	F1104 SCORE 10	70
19.49	F1134 SCORE 5	70
19.50	A2044 SCORE 10	71
19.51	A2046 SCORE 5	71
19.52	F1121 SCORE 10	71
19.53	F1151 SCORE 5	72
19.54	E6253 SCORE 10	72
19.55	F1122 SCORE 10	73
19.56	F1152 SCORE 5	73
<b>20</b>	<b>POLE TOP CBT'S</b>	<b>74</b>
20.1	P8100 SCORE 10	74
20.2	P8198 SCORE 10	74
20.3	P8200 SCORE 5	74
20.4	P8229 SCORE 10	75
<b>21</b>	<b>CABLE CHAMBERS</b>	<b>75</b>
21.1	F0520 (DL) N/A (C) SCORE 5	75
21.2	F0413 (DL) N/A (C) SCORE 10	75
21.3	F0414 (DL) N1151 (C) SCORE 10	76
21.4	F0415 (DL) N/A (C) SCORE 10	76
21.5	F0416 (DL) N/A (C) SCORE 5	76
21.6	F0509 (DL) N1152 (C) SCORE 10	77
<b>22</b>	<b>FIBRE DROP CABLE (FDC)</b>	<b>77</b>
22.1	A2420 (DL) N/A(C) SCORE 10	77
22.2	A2422 (DL) N3308 (C) SCORE 5	77
22.3	A2502 (DL) N4211(C) SCORE 10	78
22.4	A2922 (DL) N1115 (C) SCORE 5	78
22.5	A2954 (DL) N/A(C) SCORE 10	78
22.6	F0197 SCORE 10	79
22.7	F0198 SCORE 5	79
22.8	A2712(DL) N1103(C) SCORE 10	80
22.9	F0414(DL) N1151(C) SCORE 10	80
22.10	A2518(DL) N2413(C) SCORE 10	80
22.11	I6234(DL) N3104(C) SCORE 5	81
22.12	A2151(DL) N4212(C) SCORE 5	81
22.13	F4385 SCORE 10	81
22.14	F0195 SCORE 10	82
<b>23</b>	<b>CONNECTORISED MDU ITEMS</b>	<b>82</b>
23.1	F1171 SCORE 10	82
23.2	F1175 SCORE 10	83
23.3	F1173 SCORE 5	83
23.4	F1177 SCORE 5	83
23.5	F1179 SCORE 10	83
23.6	F1181 SCORE 5	84
23.7	F1183 SCORE 10	84
23.8	F1185 SCORE 5	84

23.9	F1187 SCORE 10	85
23.10	F1189 SCORE 5	85
23.11	F1195 SCORE 10	85
23.12	F1119 SCORE 5	86
23.13	F1149 SCORE 10	86
<b>24</b>	<b>LINE MANAGEMENT CHECKS ONLY</b>	<b>86</b>
24.1	F0501 (DL) SCORE 5	86
24.2	F0504 (DL) SCORE 5	87
24.3	F0505 (DL) SCORE 10	87
24.4	F0517 (DL) SCORE 10	87
24.5	F0518 (DL) SCORE 10	88
24.6	F0408 (DL) SCORE 5	88
24.7	A2008 (DL) N4203 (C) SCORE 1	88
24.8	ADDITIONAL LINE MANAGER CHECKS - UNDER DEVELOPMENT	89
<b>25</b>	<b>SS 524 SPECIFIC ITEMS</b>	<b>90</b>
25.1	F0300 – ACTION POINT (10PTS)	90
25.2	F0376 – ACTION POINT (10PTS)	90
25.3	F0398 – COACHING POINT (5PTS)	91
<b>26</b>	<b>REFERENCES</b>	<b>91</b>
<b>27</b>	<b>ENQUIRIES</b>	<b>91</b>

# 1 *Introduction*

This document is intended as a guide for those people carrying out Quality Checks in the access network, enabling the person doing the quality check to more clearly describe the quality of the finished task. The document layout is designed to give quick and easy referencing by product area e.g. Optic Fibre closures, cabling & labelling etc.

This document references the Quality Standards and check criteria to be applied by Openreach people and contracted suppliers when working on One fibre Network (OFN) plant, cables and equipment. This includes the criteria for Quality Checks and Independent Audits showing the relevant FPQ category codes and specific guidance.

Each section is broken down using the checks item number. *Direct labour items identified by (DL) and contract items by (C)*. Each item will have a **Scope:** statement provided as required.

*Note:* **The CANDID item codes for Contractors are currently being developed to match the current FPQ checklist content and this ISIS will be updated when they are available.**

All check items are described fully in script below the Item Code title with specific information where required in bullet point format.

# 2 *Scope*

This document provides guidance for completing relevant FPQ scoresheets used for checking/auditing OFN construction work and L2C provision. The checks may be carried out as “in progress” or “retrospective” on completed work.

# 3 *Quality Checks and Independent Audits*

The following standards will be checked during quality checks and independent audits completed by Openreach people and their contracted suppliers. This will be in accordance with their agreed quality checking and audit strategy. All results will be input into FPQ, or agreed alternative.

The objective is to provide clear guidance on the elemental part of each Quality Check, as defined by the Quality of Personal Workmanship programme.

## 4 ***Generic & Miscellaneous items***

Fibre checklists contain Generic, Miscellaneous and some copper check items that are common to all types of checklists and the guidance for these items are contained in Guidance Notes for Access Network Quality Checks which can be accessed from the ISIS link below

ISIS NWK/NNS/V046

The table below lists these common items:

Item Code (DL)	Item Code (C)	Score	Item Description
A2126	N4204	5	All records prints and A154 legible, clean, updated, certified and forwarded
A2128	N4205	5	Booking practices correct.
A2131	N4207	5	Defects on site reported via A1024.
A2151	N4212	5	Joint/cable/cabinet marked or labelled correctly
A2230	N3206	5	Cable provided as per WI's. Any departure from estimate correctly agreed and recorded at planning
A2422	N3308	5	Cable feeds correctly run and fixed. Capping correctly sited and fastened.
A2424	N3309	5	Maximum span distance not exceeded
A2426	N3408	5	Pole loadings not exceeded
A2630	N1102	10	Ducts / cable holes worked on sealed correctly to standard.
E6253	N3328	10	Overhead carriageway heights correct for the existing cable/dropwire on the circuit/site worked on.
P6253	N3325	10	Overhead carriageway heights correct for the newly erected/replaced cable/dropwire on the circuit/site worked on.
G1001	G0001	10	The POI / work location information supplied is correct
G1002	G0002	10	Any observed open Joints in worksite closed / reported
G1003	G0003	5	Worksite left tidy. BT / Contractor rubbish removed
G1005	G0007	10	Observed open fibre joints in work site closed or reported to the FRAC

**UNCONTROLLED IF PRINTED***Guidance Notes for Fibre Quality Checks**Generic & Miscellaneous items*

Item Code (DL)	Item Code (C)	Score	Item Description
G9001	G9001	10	Product item not covered elsewhere in product checks

Item Code (DL)	Item Code (C)	Score	Item Description
I6018	N2226	5	Desiccant packs replaced, where appropriate, clearly labelled with UIN or signature, dated and correctly positioned as appropriate.
I6090	N2242	10	External cable within building conforms to fire regulations
I6234	N3104	5	Dropwire/CAD has Sleeve 2A correctly fitted where required
I6246	N3320	5	Cable entry through wall agreed with customer
I6248	N3321	5	Dropwire entry to premises sealed with approved sealant. External drip loop provided.
I6270	N3327	10	Overhead power separation correct for cable/dropwire.
I6272	N3326	10	Non-carriageway heights and clearances correct for cable/dropwire on the circuit/site worked upon in association with the work site identified for checking.
I6902	N3212	0	Wire/cable across carriageway above 5.2m minimum climb height
I6904	G0011	10	Engineer has reported wire/cable across carriageway less than 5.2m via A1024
I6906	N3241	0	If pole worked on is pre 2000 and the test date is pre 2000 or it is a 1990/1991 pole from Supplier 1 with a test date before September 2011- mark Bel Std, for other poles worked on mark Chk OK or if no pole was worked on mark NC
I6907	N3243	5	Pre climb check label fixed to the pole correctly
I6908	N3242	0	If item code I6906 was below standard and job was not completed by the use of Hoist - mark Bel Std, if Hoist was used mark Chk OK or if I6906 was not Bel Std mark NC.
I6992	N4414	5	Correct replacement of high security equipment provided on UG frames and covers to protect the network - or A1024 submitted if replacement equipment is not held.
F0414	N1151	10	On newly installed cable/sub duct/BFT (blown fibre tube). All ends sealed correctly

## 5 **Optic Fibre Closures**

### 5.1 **A2518 (DL) N2413 (C) Score 10**

**Item Description:** Approved joint closure applied correctly

**Scope:** All fibre joints worked on

**Points of product reference:** [EPT/ANS/A009](#)

**Specific guidance:**

- No external fibre joint must be provided in an internal environment – if this has been done mark item as below standard

*Note:* When an “In progress” check is being performed then the following checks should also be observed.

- Is/are the ‘O’ ring/s present, in good condition and clean
- Are all ‘meeting faces’ clean
- Are ports sealed using resin 9B where required (As per closure instructions)

#### 5.1.1 **Blown Fibre Closure No 1A**

- Are all clamps present and in good condition (there is NO requirement for these clamps to have the faces meet as this will damage the clamps. The thumbscrews should be finger tight only)
- Are all spare ports correctly sealed
- Is there evidence of heat being applied to all of the shrinkdown
- Are the shrinkdown materials free from bubbles, splits or cracks
- Foils correctly fitted and visible
- If Kits repair 11 used to repair a port, has a scop been fitted as required e.g. 5mm BFT 1 tube and 5mm BFT 2 tube
- Pressure relief valve present (Refer to Cat Code A2500)

#### 5.1.2 **Kits Joint Closure 2 Series (Blown fibre)**

- Is there evidence of the glue flowing at each cable position
- Is there evidence of required heat being applied to all of the Shrinkdown
- Foils correctly fitted and visible

- SCOPS correctly fitted as required e.g. BFT1/5mm or BFT2/5mm
- Cables circumference abraded
- If there are two or more cables per end, cable branch clips present and branch clip glue has melted
- Max. of 3 cables at each end (maximum cable diameters not exceeded)
- Rail positioned correctly and aligned alongside largest cable
- Has a pressure relief valve been fitted (Kit 817B) (Refer to Cat Code A2500)

#### **5.1.3        Blown Fibre Closure No 3A**

- No Visible gaps between mating surfaces of the half shells at the position of the bolts
- Check that indicator posts are flush with the surface
- Ensure grip tape is visible in all cabled ports
- All bolts and washers present
- All clips (snap fits) are locked in position
- Has a pressure relief valve been fitted (Kit 817B) (Refer to Cat Code 2500)

#### **5.1.4        Blown Fibre Closure 4A/4B**

- No Visible gaps between mating surfaces of the half shells at the position of the bolts
- Check that indicator posts are flush with the surface
- Ensure grip tape is visible in all cabled ports
- All bolts and washers present
- All clips (snap fits) are locked in position
- Has a pressure relief valve been fitted (Kit 817B) (Refer to Cat Code 2500)

#### **5.1.5        Otian Generic Joint 2A**

- Clamp in sound condition and fitted
- All ports correctly sealed
- Evidence of heat applied to all of shrinkdown material worked on
- Branch clip fitted to oval port



- Shrinkdown material free from splits, cracks, bubbles
- Foils fitted correctly
- If 'COF 200/201/202' installed are SCOPs fitted
- If Blown fibre present has a pressure relief valve been fitted (Refer to Cat Code 2500)

#### **5.1.6            Otian Generic Joint 3A**

- Clamp in sound condition and fitted correctly
- All ports correctly sealed
- Foils fitted correctly
- If 'COF 200/201/202' installed are SCOPs fitted
- Branch clip fitted to oval port
- Port shrinkdown fitted correctly i.e. Arrow towards base of closure
- Evidence of heat applied to all of shrinkdown material worked on
- Shrinkdown material free from splits, cracks, bubbles.

#### **5.1.7            Kit Joint Closure No 7 (Pedcap R6)**

- Maximum number of 3 cables (Excluding Valve) not exceeded
- Shrinkdown material free from splits, cracks, bubbles
- Is there evidence of required heat being applied to whole of the Shrinkdown part
- Smooth profile of heatshrink has been obtained

*Note:* The end of the shrinkdown has been designed so that it will remain “flared” on recovery. Therefore this **will not** constitute any defect.

- If closure pressurised, e.g. as part of CJ network, has a valve been fitted?

#### **5.1.8            Joint Closure No 11 D, E, F**

- Clamps in sound condition (11D Only)
- Thumb screws tightened to close the gap only (Further tightening will damage the clamp)
- All ports correctly sealed

- Foils fitted correctly
- Evidence of heat applied to all of shrinkdown material worked on
- Shrinkdown material free from splits, cracks, bubbles
- If 'COF 200/201/202' installed are SCOPs fitted
- If Blown fibre present has a pressure relief valve been fitted (Refer to Cat Code 2500).

#### **5.1.9            Joint Closure No 12A**

- Clamp in sound condition
- All ports correctly sealed
- Foils fitted correctly
- Evidence of heat applied to all of shrinkdown material worked on
- Shrinkdown material free from splits, cracks, bubbles
- If 'COF 200/201/202' installed are SCOPs fitted
- If closure pressurised, e.g. as part of CJ network, has a valve been fitted?
- If Blown fibre present has a pressure relief valve been fitted (Refer to Cat Code A2500)

#### **5.1.10          Joint Closure 13A**

- All ports correctly sealed
- Foils fitted correctly
- Evidence of heat applied to all of shrinkdown material worked on
- Shrinkdown material free from splits, cracks, bubbles
- If closure pressurised, e.g. as part of CJ network, has a valve been fitted?
- If 'COF 200/201/202' installed are SCOPs fitted

#### **5.1.11          144F Small Element Joint**

- Clamp in sound condition
- All ports correctly sealed
- Foils fitted correctly

- Evidence of heat applied to all of shrinkdown material worked on
- Shrinkdown material free from splits, cracks, bubbles
- If 'COF 200/201/202' installed are SCOPs fitted
- If Blown fibre present has a pressure relief valve been fitted (Refer to Cat Code 2500)

## 5.2 F4377 Score 10

**Item Description:** TM Closure, port and cable installation critical items

**Points of reference:** [EPT/ANS/A040](#) & [EPT/COF/D945](#)

**Guidance:**

- Correct port kit used for cable type and assembled as per instructions contained in EPT/COF/D945 section 2
- Cable correctly anchored in port kit, no excessive strength member protruding through clamp
- Tape not mandatory on 36f 4 way entry (088362), steel strength members cut as per instructions
- Port kit fully inserted into joint chassis, gland nut tight. Allow ¼ turn for settlement of gland.
- Spacer washers (where required) fitted. Depending on cable configuration may not be fully tight against the joint body.
- Clamp correctly fitted & not defective
- O ring present and free from grease and dirt
- Protective tray/chassis/SASA covers replaced
- Looped cables must be provided in oval port
- Looped/spare elements correctly stored.
  - Velcro/clear door replaced on L/XL, plastic sleeve fitted if oval entry kit provided
  - Velcro retraining strap on S/ M
- BFT cap sealing, waterblock correctly fitted
- No excessive loops of cable left in jointbox (ABC measurement)
- No loops of cable left on a pole.
- 33Kv ADSS crossing: Joint(s) >1 span back from crossing

## 5.3 F4378 Score 5

**Item Description:** TM Closures, ports and cable installation non critical items.

**Points of reference:** [EPT/ANS/A040](#)

**Guidance:**

- Port capacity maximised with use of correct entry kit and utilisation of spare cable entries.
- Oval port used for non-looped cables (i.e. 2 cut cable ends) where a serviceable circular port exists
- Missing or incorrect cable ties on ports

*Note:* Labelling of joint, cables & trays etc. under item F0105

## 5.4 F4384 Score 10

**Item Description:** TM Fibre routing, Splicing & SASA critical items

**Points of reference:** [EPT/ANS/A040](#)

**Guidance:**

- Correct splice protector used for tray type and seated in correct tray position
- Fibres spliced as per FNC
- No fibres liable to damage by incorrect routing in chassis or tray
- Sufficient spare fibre left in trays for jointing (Approximately 4 wraps)
- Elements correctly presented to chassis with no excessive bends
- Element coating stripped in specified location.
- Correct race way used:
  - Left: Incoming fibres
  - Right: Outgoing fibres
- SASA fitted in correct location
- Planned type of SASA fitted (16 or 32 way)
- SASA Input/output fibres correctly routed
- Spare SASA outputs stored in chassis or spare tray

*Note:* Transportation tubing (e.g. OTIAN Element Support Tube 3A) is not required from COF cable butt to chassis.

## 6 *Bending Diameter*

### 6.1 F0214 (DL) N1158 (C) Score 10

**Item Description:** Minimum bending diameter of cable/fibres/sub duct/BFT not compromised.

**Scope:** All cable/fibres/sub duct/BFT worked on

**Points of product reference:** [EPT/ANS/A004](#)

**Specific guidance:**

- COF 200 cables should have a bend diameter of no less than 400mm
- COF 201 12 to 72 fibre cables should have a bend diameter of no less than 200mm
- COF 201 96 and 144 cables should have a bend diameter of no less than 350mm
- COF 202 (Hot Site) cables should have a bend diameter of no less than 400mm
- 1 Tube sheathed PVC,PE and RFH 230mm
- 2 Tube sheathed PVC,PE and RFH 230mm
- 4 Tube sheathed PVC,PE and RFH 400mm
- 7 Tube sheathed PVC,PE and RFH 450mm
- Fibres correctly routed using correct transport/management tubes from cable butts to splice tray using appropriate bend managers.

### 6.2 F1111 (DL & C) Score 10

**Item Description:** Aggregation node, Splitter node & Fibre DP Joint Cable Loops critical items

**Scope:** All cables installed/worked upon with the job/estimate number in association with the work site identified for check

**Points of Reference:** [EPT/ANS/A009](#), [EPT/COF/D945](#), [EPT/COF/C009](#) & [EPT/ANS/A040](#)

**Specific Guidance:**

- Slack/no slack network policy followed please use ISIS NWK/LNK/C573 for specific guidance
- Connectorised New Sites up to 12 x 30m of cable can be coiled and stored in a JUF 4. Coil the cable to a diameter of 250mm
- TM joints - Are any excessive lengths/ loops of cables left in joint boxes or coils left on poles?
- Cable coiling bracket must be fitted in the lower pole envelope above the capping or a minimum height of 2m above the ground & a minimum of 450mm below the first climbing step & not projecting above or below these points.
- The arms of the cable coiling bracket shall not project into the highway/footway or any other area of hazard.

*Note:* The overriding requirement is that safe ladder placement & SAFE climbing must not be impeded

## 7 *Labelling*

### 7.1 **F0105 (DL) N2414 (C) Score 5**

(Replaces F0102 F0202 F0206 F0209 F0213 F0301 F0306 & F0510)

**Item Description:** Joint (inside & outside) cable / sub duct / BFT / tray / shelf / termination unit / jumper marked or labelled correctly.

**Scope:** All plant worked on

**Points of product reference:** EPT/COF/D525, EPT/ANS/A040 & NWK/LNK/C620

**Specific guidance:**

- If new or replacement cables are installed are they fitted with correct label with all information fields filled in as required
- Newly provided joint closures labelled with a minimum of planned T code
- Additional/unplanned joints where no planned T-Code exists:
  - Closure marked with a minimum of: estimate, ON number, UIN and date.
  - Joint location recorded on jobpack return/GeoHub to enable line plant record update
- UBB warning label attached where required
- Optical cables have yellow stripe identifier, if not, are marked with yellow tape
- Shrinkdown materials signed, dated and Est. Not written using gold pen

- If a Node has been newly created then the Node Identity should be clearly visible on the dome of the closure
- “Starburst” Laser warning label attached (**new work only**)
- Cables provided correctly marked/labelled close to cable butts
- All Element/Fibre/Circuit details entered on to splice tray covers
- All trays clearly numbered
- Fibre trays labelled as per FNC
- Details entered on to local record sheet
- Tubes/Elements colleted (not required where tubes have their own unique tube number and/or colour stripe name printed at 50mm intervals). In COF 200 fibre elements may not be coloured so would therefore need to be colleted for future identification
- Spare or Dark fibres clearly identified in separate trays where applicable
- Blown Fibre joints/gas seals - have all tubes been colleted correctly (not required where tubes have their own unique tube number and/or colour stripe name printed at 50mm intervals).
- Tray identity provided
- Local records updated (i.e. Cabinet Door or Local recording sheet)
- Safety labels provided (i.e. Starburst laser label)
- UBB markings provided on trays/cabinet where applicable
- Circuit details recorded on tray covers/lids
- If circuit live, has it been correctly identified prior to work commencing
- Circuits checked for UBB circuits prior to work commencing
- Laser warning label fitted to front cover where applicable (some covers come with labels pre-fitted)
- All Element/Fibre/Circuit details entered on to splice tray covers
- Information entered onto Identification Flag (where applicable)
- “Pig Tails” labelled
- Elements/tubes colleted (not required where tubes have their own unique tube number and/or colour stripe name printed at 50mm intervals).
- Jumpers/Tails correctly marked and labelled
- Cables / subducts correctly marked/labelled
- If new or replacement cables are installed are they fitted with correct label with all information fields filled in as required

- Optical cables, including blown fibre tubing and subduct monobore have yellow stripe identifier, if not, are marked with yellow tape at all workpoints.

*Note:* Subduct monobore 5 does not require marking with yellow tape as it is already marked with a yellow stripe.

- Optical cables, including blown fibre tubing and subduct monobore, labelled at all workpoints with Yellow Cable Marker Optical and all relevant fields legibly completed in indelible pen
- This includes temporary placement of coils or equipment not to exceed 45 calendar days

## **7.2            A2151 (DL) N4212 (C) Score 5**

**Item Description:** Joint/Cable/Cabinet marked or labelled correctly.

**Scope:** All cabinets replaced or joints & cables worked upon in association with the work site identified for checking

**Points of product reference:** [NWK/NNS/V046](#)

**Specific guidance:**

- All cabinets replaced or joints & cables worked upon in association with the work site identified for checking
- See [NWK/NNS/V046](#)

## **7.3            F0375 Score 5**

**Item Description:** CBT/cable labelled correctly (Using permanent marker pen e.g. Gold/White and marked with CBT ID, Cable label & Yellow tape on UG SST cable)

**Points of reference:** [EPT/ANS/A040](#)

**Guidance:**

- Yellow Cable Marker Optical label fitted to SST cable
- Front face above the ports legibly labelled with node ID using permanent marker (e.g. gold/white marker pen)
- Body of Connector Multiport (Squid) marked node ID using permanent marker (e.g. gold/white marker pen)
- If mounted on a MOBRA, where possible label the rear face of the CBT to aid identification (not mandatory)
- SST cable marked with yellow tape in the UG network only. Yellow tape is NOT required on poles



Only one cable marker label is required per cable at a single workpoint i.e. CBT and TM joint located in same jointbox/pole, 1 label required on SST

## 7.4 P8264 Score 5

**Item Description:** OH fibre drop identification label provided on required poles (wooden = board, hollow = adhesive)

**Points of reference:** [EPT/ANS/A040](#)

**Guidance:**

- No longer required to provide on any Openreach poles
- Label MUST still be attached to DNO poles as part of the license.

**Warning: Except Electricity Northwest poles**

## 7.5 F0377 (DL & C)

**Item Description:** Pole labelled correctly with CBT ID(s) (Using strips aluminium, punch set & pins steel just below “Caution Overhead Fibre” label). 3M mark not obscured

**Scope:** All build work & L2C work on wooden poles

**Points of Reference:** [AEI/AEC/B343](#) & [EPT/ANS/A040](#)

**Specific Guidance:**

- Only Openreach CBT's will be labelled

*Note:* Other Licensed Operators may have attached their own CBT's which may or may not be labelled

- Labels are not to be attached to DNO poles
- Label to be attached just below the 3M mark making sure that the 3M mark not obscured
- This work will be carried out by Chief Engineers, FND and partners at build stage and retrospectively by Service Delivery (SD) on Lead 2 Cash (L2C) installation visits
- As subsequent CBT's are fitted then another strip must be added below the existing strips

*Note:* This new process will run alongside the existing process of labelling CBT's using gold pen on body of CBT and the fixing of the yellow label on cable at base of CBT

## 8 *Support and Restraint*

The following detail the requirements for supporting and restraining joints for both Otian and Pre-Otian plant, these checks are those required to meet the standard on a retrospective audit. In addition to these, while performing an “In Progress” check then the joint should be firmly secured while any work is taking place. Failure to do this would constitute as a defect and should be acted upon immediately to save any loss of service to circuits associated with the plant being worked on.

### 8.1 **A2522 (DL) N2214 (C) Score 10**

**Item Description:** All fibre joints worked on correctly supported and restrained.

**Scope:** All joints & cables in association with the work site identified for checking. Applies to all cables worked on including any moved during cabling and jointing activities.

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

#### 8.1.1 **Pre-Otian (Legacy)**

- Is the Joint adequately supported using Cable supports No1 (Flat Bars) and restrained using straps cable fixings.

*Note:* Joint to Flat Bar: Straps cable fixing 10A or equivalent; Flat Bar to bearers: Straps cable fixing 1A

- Are cables supported using Cable supports No 1 (Cables to Flat Bar and Flat Bar to bearers? As detailed in ISIS [EPT/COF/D525](#)).

#### 8.1.2 **Otian**

- Is the joint restrained using a Mobra
- Is the Mobra secure
- Are the Joint anchor bolts/pins in place
- Is the Support strap fitted (Nylon strap or metal band at top of mobra to support the top of the joint).
- If no Mobra has been fitted are the joint and cables adequately supported using Cable supports No1

*Note:* Joint to Flat Bar: Straps cable fixing 10A or equivalent Flat Bar to bearers: Straps cable fixing 1A

## **8.2 F0201 (DL) N4413 (C) Score 5**

**Item Description:** Observed fibre joints/cables supported and restrained.

**Scope:** All fibre joints / cables in the work point being checked

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

The following details the requirements for all **fibre** closures and cables which can be **observed** as being unsupported or restrained where approved methods of restraint are available. **Observed** meaning **clearly** visible without the movement of any other joints or cables which may be present in the same work point(s)

The definition of an observed unrestrained joint is when it can be seen that:

- A joint is not supported in any way, where support is possible e.g. Channels and bearers, Mobras etc.

## **8.3 F0103 (DL) N4410 (C) Score 5**

**Item Description:** All copper joints/cable within work point location correctly supported and restrained.

**Scope:** All joints & cables in association with the work site identified for checking. Applies to all cables worked on including any moved during cabling and jointing activities (copper).

**Points of product reference:** [EPT/ANS/A003](#)

**Specific guidance:**

- See item I6019 in ISIS [NWK/NNS/V046](#)

## **8.4 P8237 Score 10**

**Item Description:** Cables correctly supported & restrained, min bending maintained.

**Points of reference:** [EPT/ANS/A040](#) & [EPT/ANS/A004](#)

**Guidance:**

- Cables correctly supported & restrained using a flatbar where channels and bearers exist. If flatbar is not achievable then a section cut from Kit Joint Support 1A can be used instead of the flatbar

- Where no channels and bearers present or in a non standard box then Kit Joint Support 1A in a correct “A” frame form is the acceptable minimum standard
- Bend radius for cable type maintained

## **8.5 F0193 Score 10**

**Item Description: MOBRA/joint support critical items**

**Points of reference:** [EPT/ANS/A040](#) & [EPT/COF/D897](#)

**Guidance:**

- No drill MOBRA only expanded to grip brick or concrete jointboxes
- Modular box corner brackets fitted in JMF 4/6 boxes
- MOBRA & arm correctly assembled with nuts correctly tightened
  - Bolt thread protruding through blue Nyloc nut
- Mobra correctly sited in jointbox
- Med & Small TM joints permissible on Flat Bar
- Best achievable solution used for pre-cast (JB23/6) or non-standard boxes (e.g. grey tube)

## **8.6 F0194 Score 5**

**Item Description: MOBRA/joint support non critical items**

**Points of reference:** [EPT/ANS/A040](#) & [EPT/COF/D897](#)

**Guidance:**

- Grub screw tightened

## 9 *Blown Fibre Tube Jointing*

### 9.1 F0101 (DL) N2107 (C) Score 10

**Item Description:** B.F tubing jointed/sealed correctly and pressure valve fitted at blown fibre tubing joint where appropriate.

**Scope:** All joint closures containing BFT with the exception of the In-line Mechanical Joint Closures Small and Large fitted with Port Reducers Blown Fibre 4 Tube (Grey) and 7 Tube (Grey).

**Points of product reference:** [EPT/ANS/A009](#)

**Specific guidance:**

- Has the pressure relief valve been fitted
- All BFT closures fitted must have a pressure relief valve fitted. If a closure has been re-entered/closed it is still a requirement for a pressure relief valve to have been fitted. If it is not possible to fit a valve, then the joint **must** be reported to the FRAC.

**In progress checks on joint**

- Tubes undamaged when sheathing removed
- Have all tubes been joined correctly
- Have all spare/stumped tubes been sealed correctly

## 10 *Blown Fibre Tube Sealing*

### 10.1 A2510 (DL) N/A (C) Score 5

**Item Description:** Gas seals applied to tubing - individual and main.

**Scope:** All tubing worked on.

**Points of product reference:** [EPT/ANS/A009](#)

**Specific guidance:**

#### 10.1.1 BFT Joint Positions

- Tubes fitted with water block connections (Resin type or connector type)
- Spare tubes capped
- Cable blocked in port using resin 9A, where applicable (Resin must cover the cable but). This also applies to COF cables.

## **10.1.2 Customer End Applications**

### **10.1.2.1 Otian Blown Fibre Gas Seal Boxes**

- Gas seal box constructed correctly
- Used tubes fitted with gas block connections
- Used tube/s gas block connectors tightened
- Spare tubes capped
- Incoming cable blocked using resin 9A (Resin must cover cable butt)

### **10.1.2.2 Other Otian termination units where Blown Fibre cable has been introduced with no seals being fitted before the termination units.**

- Blocking cone fitted correctly
- Incoming cable/s blocked using resin 9A (Resin must cover cable butt)
- Used tube/s fitted with gas block connectors
- Used tube/s gas block connectors tightened
- Spare tubes capped

# **11 Cable Preparation**

## **11.1 A2512 (DL) N2110 (C) Score 10**

**Item Description:** Cable preparation prior to jointing, including degreasing fibres, fitting of continuity wire/s, routing of fibres & fitting of trays

**Scope:** All cable / joint / CTU's worked on.

**Points of product reference:** [EPT/ANS/A009](#)

**Specific guidance:**

- Continuity wires terminated to cables and joint termination point as per instructions (Where COF 200 has been installed then the copper conductor should be terminated along with the continuity wires)
- Fibres degreased before laying into trays
- Correct 'breakout manifolds'/transport tubes used
- Trays correctly attached to Joint/Customer terminating unit

## 12 *Fibre Identity*

### 12.1 A2514 (DL) N2111 (C) Score 5

**Item Description:** Fibres identified prior to splicing

**Scope:** Node / Joint being worked on

**Points of product reference:** [EPT/COF/B011](#)

**Specific guidance:**

- Fibre/s correctly identified using visual light source
- Fibre/s correctly identified by tray/element/colour

## 13 *Fibre Splicing*

### 13.1 A2516 (DL) N2112 (C) Score 10

**Item Description:** Fibres spliced as per works instructions

**Scope:** Node / Joint being worked on

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Spare/ Dark fibres stored correctly as per work/joint instructions
- Correct splice protector used
- Splice correctly stored in splice tray

### 13.2 F1088 (DL) N/A (C) Score 10

**Item Description:** Correct Fibre cleaning kit used and used as per specification

**Scope:** Node / Joint being worked on

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Correct current approved cleaner used

## 14 *Customer terminations*

This section includes cable, fibre, rack, shelf, tray and Jumper management

### 14.1 **A2504 (DL) N2108 (C) Score 10**

**Item Description:** Customer Termination unit installed correctly and as per customer requirement

**Scope:** Intl & extnl customer terminations worked on

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Termination unit/s fitted in agreed position with customer
- Termination unit/s fitted in accordance with the manufacturers instructions

### 14.2 **F0411 (DL) N2153 (C) Score 10**

(Replaces F0309 F0208 F0203)

**Item Description:** Construction & Integrity of Joint / Termination unit / rack / tray / shelf worked upon maintained/reported as appropriate

**Scope:** All plant worked on.

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- If other plant moved to allow access has it been correctly re-installed
- If UBB present has Oswestry control been contacted prior to work commencing
- If termination unit damaged or defective has it been reported to the FRAC if BT/Openreach plant or to the customer if customer owned.
- Correct support and restraint of shelf/tray/rack maintained, assuring security of other circuits
- Shelf correctly mounted within rack/cabinet
- Trays correctly mounted within shelf as appropriate
- Tray bend managers present and correctly installed
- Tray segregation unit installed correctly

### 14.3 **F0308 (DL) N2311 (C) Score 10**

**Item Description:** Gas Seals applied correctly where applicable.

**Scope:** Intl & extnl customer terminations worked on



**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

Gas seals applied correctly where applicable

## **14.4 F0204 (DL) N1154 (C) Score 5**

**Item Description:** Cables provided correctly routed

**Scope:** Racks / Cabinets worked on

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Cable(s) provided and correctly routed
- All cables provided must be introduced into racks/cabinets at correct entry points
- Cables correctly routed from rack/cabinet entry to point of termination

## **14.5 F0509 (DL) N1152 (C) Score 10**

(Replaces F0205)

**Item Description:** All fibre Cables/ Sub ducts / BFT worked on correctly supported and restrained.

**Scope:** All joints & cables in association with the work site identified for checking. Applies to all cables worked on including any moved during cabling and jointing activities.

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Cable(s) provided/worked on restrained correctly
- Cables provided correctly restrained prior to entering cabinet/rack/termination unit i.e. trunking provided where required
- Cables correctly restrained withincabinet/rackalong vertical length
  - Minimum of 1 x SCF at each vertical cable anchor point
- Cables correctly restrained at provided anchorage points as appropriate
  - Minimum of 2 x SCF at cable termination assembly
- Central strength members cut to correct length and correctly restrained
- Central strength members correctly protected as appropriate

## **14.6 F0207 (DL) N2144 (C) Score 10**

**Item Description:** Fibres provided/worked on correctly contained/protected from cable butt to splicing tray

**Scope:** Termination unit / rack / tray / shelf worked on

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Fibres correctly contained from cable butt to segregation unit
- Fibres protected from cable butt to tray/shelf (pre otian type racks)
- Fibres correctly protected and contained between trays
- Transport tubing connected correctly

## **14.7 F0211 (DL) N2148 (C) Score 10**

(Now includes F0210 & F0406)

**Item Description:** Fibres worked on correctly routed within tray/shelf

**Scope:** Termination unit / rack / tray / shelf worked on

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- All fibres following correct routing for tray type
- Appropriate amount of slack left to allow for subsequent re-splicing
- Spare fibres correctly contained/located within tray as appropriate
- Fibres correctly routed/transported between trays/shelves
- All fibres within trays/shelves worked on must be located and contained as appropriate for the tray/shelf type. Fibres must not be allowed to become trapped or exposed to potential damage

## **14.8 F0212 (DL) N/A (C) Score 5**

**Item Description:** Tray/fibre worked on prepared correctly

**Scope:** Termination unit / rack / tray / shelf worked on

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Fibres degreased prior to introduction to tray/shelf
- Fibre splices correctly located as per tray/shelf type
- Correct splice protector used for tray type

- Fibres correctly cleaned prior to cleaving

#### **14.9 F0302 (DL) N/A (C) Score 10**

**Item Description:** Jumpers provided correctly routed

**Scope:** Termination unit / rack / tray / shelf worked on

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Jumper enters rack/cabinet at correct point of entry
- Jumper correctly routed from access point to termination point
- Jumper managed onto tray via bend manager
- Jumper slack formed over “hedgehog” (pre Otian bend manager)
- Jumper slack correctly formed round mandrill
- Jumper correctly managed between racks/cabinets

#### **14.10 F0303 (DL) N2511 (C) Score 10**

**Item Description:** Correct jumper type provided

**Scope:** Termination unit / rack / tray / shelf worked on

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Fire resistant type/non-fire resistant type
- Correct jumper/ tail type installed

#### **14.11 F0304 (DL) N/A (C) Score 10**

**Item Description:** Jumpers provided in continuous length

**Scope:** Termination unit / rack / tray / shelf worked on

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- New jumper to be provided in continuous length
- Where existing splices are not and cannot be housed in tray. (i.e. splices in vertical rises of rack already installed) Has inline splice kit been applied and managed correctly

#### **14.12 F0305 (DL) N/A (C) Score 10**

**Item Description:** Restraint of fibre jumpers/tails provided

**Scope:** Termination unit / rack / tray / shelf worked on

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Jumper/tail restrained within cabinet/rack/tray
- Jumper strength member restrained using correct method for termination type
- Aramid restraint fixing installed when required

#### **14.13 F0307 (DL) N/A (C) Score 5**

**Item Description:** Replaced jumpers recovered where appropriate

**Scope:** Termination unit / rack / tray / shelf worked on

**Points of product reference:** [EPT/ANS/A007](#)

**Specific guidance:**

**ONLY** applies to jumpers being replaced or removed from trays to allow for new or additional jumpers to be installed

- If jumper cannot be safely recovered the cut jumper end must be correctly protected

#### **14.14 F0402 (DL) N2152 Score 10**

**Item Description:** Fibre Cables/Jumpers provided or worked upon correctly restrained within closure / termination unit

**Scope:** Termination unit / rack / tray / shelf worked on

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- All introduced cables (including Tails) correctly restrained.
- Cable clamps correctly fitted
- Central strength members correctly restrained.

#### **14.15 F0401 (DL) N2151 (C) Score 5**

**Item Description:** Customer lead in unit fitted as required.

**Scope:** Customer lead-in unit

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Customer lead in unit fitted as per instructions

## **14.16 F0404 (DL) N2246 (C) Score 10**

**Item Description:** Fibres other than those provided/worked upon correctly contained/protected from cable butt (worked on) to splicing tray

**Scope:** Termination unit / rack / tray / shelf worked on

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Existing fibres protected when working and replaced if not contained

## **14.17 F0407 (DL) N2247 (C) Score 5**

**Item Description:** Other observed Fibres correctly routed within shelf as appropriate or reported.

**Scope:** Termination unit / rack / tray / shelf worked on

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Other observed Fibres correctly routed within shelf as appropriate or reported.

# **15 *Waste materials***

## **15.1 A2526 (DL) N2215 (C) Score 5**

**Item Description:** Scrap cable/fibre removed and disposed of correctly.

**Scope:** In progress check only

**Points of product reference:** [EPT/COF/D050](#)

**Specific guidance:**

Scrap cable/fibre removed & disposed of correctly

- Scrap fibre cable been removed from work site
- Fibre off cuts/ends removed from work site
- Fibre off cuts/ends disposed of correctly e.g. Are Cin Bins used?

## 15.2      **G1012 (DL) Score 10**

**Item Description:** Waste left inside and/or outside PCP/SCP/DSLAM that can cause damage to health and/or the environment

**Scope:** All PCP/SCP/DSLAM's

**Points of Reference:** [EPT/ANS/A024](#)

**Specific Guidance:**

- Due to the health risk to engineers/partners and the environmental impact rubbish bags, face masks, gloves, food scraps, food wrappers, drink cans/cups, cardboard, batteries etc. must be removed from PCP/SCP/DSLAM
- It is not permissible to leave bags with the intention of them being used to deposit rubbish of any kind in PCP/SCP/DSLAM

*Note:*      Non health/environmental waste is covered by G1003 "worksite left tidy rubbish removed & redundant equipment recovered"

# 16      ***Booking Practices***

## 16.1      **F0110 (DL) N4215 (C) Score 5**

**Item Description:** Routing verification

**Scope:** All work included in the job/estimate in association with the work site identified for check.

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- All changes to planned routings must be formally recorded on completion of fibre provision

## 16.2      **F0190 Score 10**

**Item Description:** Have the Joints / cables been fitted as per job pack instructions unless a DFE has been raised and authorised?

- All cables/plant fitted as per job pack
- Any deviations recorded and returned with appropriate DFE if required

- Additional information should be sought from supplier/PM when achievable if plant is assumed to be installed in alternative location before issuing a defect.

## 17 ***Defect Reporting***

### 17.1 **G1002 (DL) G0002 (C) Score 10**

**Item Description:** Observed open joints in work site closed or reported using the A1024 process for Copper

**Scope:** All non-fibre closures within worksite.

**Points of product reference:** [EPT/ANS/A024](#)

**Specific guidance:**

*Note:* Observed open joints are those **not** being worked on, but are present in the same Worksite as the work in hand; they should be closed on the day or reported using an A1024 with a defect code of 461 for copper.

Definition of an Open **Copper** Joint is, where it can be seen that:

- Wires/conductors are visible.
- Plastic bag or other unapproved method has been used as a closure.
- A pedcap or heat-shrink closure that has been re-closed using adhesive tape.
- An expanding plug joint with defective collars, missing or broken plugs or bolts.
- 30, 31 or 32 series closures that have missing domes or clamps, broken clamps or unsealed entry ports, including resin closures without resin.
- 34 series closures that have missing bolts closure faces that do not meet as per instructions or unsealed entry ports.
- Any non-standard strap between joints, e.g. jumper wire, dropwire or internal cable
- Closures with damage to the external fabric that allows the ingress of moisture.
- Denso tape or tape sealing, except where it is provided as a protective wrap on some lead sheathed cables and joints.
- Adhesive tape closures, without tape.
- Sheet Rubber Adhesive closures with plastic straps and no evidence of orange "Tape Temporary Closure" having been used.
- Sheet Rubber Adhesive closures with no clips, strips or tape fitted.

- Sheet Rubber Adhesive which is open allowing ingress of moisture.
- Stumped cable ends that have not been sealed using caps sealing.

**Copper** Items **NOT** classed as – *Obviously Open*:

- A correctly sealed, but obsolete closure.
- Closure with incorrectly positioned/or no SCOPs visible.
- Excess cable diameters on closures.
- Excess cables in port or joint end.
- Missing branch clips.
- Cables in joints that can only be deemed loose by pulling them.

## 17.2      **G1005 (DL) G0007 (C) Score 10**

**Item Description:** Observed open Fibre joints in worksite, closed or reported to the FRAC

**Scope:** Worksites where there is more than 1 fibre joint present.

**Points of product reference:**

**Specific guidance:**

*Note:* Observed open joints are those **not** being worked on, but are present in the same Worksite as the work in hand. When in Exchange cable chambers the work area is described as directly above or below and immediate to the left and right of the plant being worked on. Defects found on joints within this area should be closed on the day or reported to the **FRAC**

Definition of an Observed Open **Fibre** Joint is, where it can be seen that:

- An unapproved or no closure has been fitted
- A heatshrink type closure which has been closed using tape or other unapproved means
- Burst or excessively damaged shrinkdown materials
- A closure which has broken or missing clamps
- Closures with damage to the external fabric that allows the ingress of moisture.
- Stumped cable ends that have not been sealed using caps sealing.
- Blown fibre closures that have missing bolts, closure faces that do not meet as per instructions or unsealed entry ports.

**Fibre** items not classed as obviously open:



- 11D, Blown Fibre closure 1A with clamps which do not have the faces of the clamps meeting
- Closure with incorrectly positioned/or no SCOPs visible.
- Missing or incorrect branch clips.
- Missing or damaged heat protection foils

### **17.3 F0109 (DL) G0012 (C) Score 5**

**Item Description:** Observed fibre defects reported to the FRAC

**Scope:** Internal check

**Points of product reference:**

**Specific guidance:**

- All observed fibre defects/damage identified on site reported to FRAC

### **17.4 F0404 (DL) N2246 (C) Score 10**

**Item Description:** Fibres other than those provide/worked on correctly contained/protected from cable butt to splicing tray

**Scope:** Internal check

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Observed unprotected fibre (those **Not** worked on within same work point) reported to the FRAC when judged impractical to repair on site

### **17.5 F0407 (DL) N2247 (C) Score 5**

**Item Description:** Other observed fibres correctly routed within tray/shelf as appropriate or reported

**Scope:** Internal check

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Other fibres within tray/shelf worked on reported to FRAC or remedied where observed as being routed incorrectly and presenting potential fault liability

# 18 *Fibre Cabling*

## 18.1 F0509 (DL) N1152 (C) Score 10

**Item Description:** All fibre Cables/ Subducts / BFT worked on correctly supported and restrained.

**Scope:** All fibre Cables / Sub ducts / BFT worked on includes any moved to facilitate work.

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Any plant moved to allow for cabling to be restrained on completion
- Newly installed cables correctly restrained at all work points
- Newly installed Subduct restrained at all work points where practically possible.

## 18.2 F0414 (DL) N1151 (C) Score 10

(Replaces F0511 F0521)

**Item Description:** Provided / worked upon cables / sub duct / BFT ends correctly sealed

**Scope:** All fibre Cables / Sub ducts / BFT worked on.

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Ends of Sub Duct have been correctly sealed, during and after cabling operations have taken place.
- Sub Duct Joints have been correctly applied with all seals present at ends (Where cable leaves Sub Duct).
- Cable/sub duct / BFT correctly sealed

## 18.3 F0512 (DL) N1153 (C) Score 10

(Includes F0522)

**Item Description:** Fibre Cables/Subducts/BFT provided correctly when routed through structure.

**Scope:** All fibre Cables / Sub ducts / BFT worked on.

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Cables, sub ducts and BFT correctly provided and routed through structure
- All newly installed fibre cables/BFT must be correctly routed utilising all racking and support as appropriate and as required. At no time must a cable/BFT be situated in a manner which compromises the cable chamber access/exit points

## **18.4            A2922 (DL) N1115 (C) Score 5**

**Item Description:** Sufficient cable left for jointing & ends properly sealed

**Scope:** Cables worked on.

**Points of product reference:** [EPT/ANS/A004](#)

**Specific guidance:**

- Cable correctly sealed using the appropriate caps sealing.
- Clear visible signs of circumferential abrasions below the caps sealing
- If Blown Fibre Tubing Sealing Kit used, the mastic tape must be clearly visible below the cap.
- Sufficient length of cable left, as per jointing requirements.

## **18.5            A2948 (DL) N1118 (C) Score 5**

**Item Description:** Excess lubricant removed after cabling/sub duct /BFT installation

**Scope:** All cabling / sub duct / BFT operations.

**Points of product reference:** [EPT/UGP/E041](#)

**Specific guidance:**

- Excess lubricant cleaned from cable(s) and duct mouth(s)

## **18.6            A2630 (DL) N1102 (C) Score 10**

**Item Description:** Ducts / Cable holes worked on sealed to correct standard

**Scope:** All work points identified for checking.

**Points of product reference:** [EPT/ANS/A003](#)

**Specific guidance:**

- Ducts and cables holes sealed correctly

## **18.7 F1108 (DL & C) Score 10**

**Item Description:** COF205 Installation critical items

**Scope:**

**Points of Reference:** [EPT/ANS/A045](#)

**Specific Guidance:**

- Strength member clamp fitted on retainer plate
- Strength member cut 45mm from cable butt and tightly secured under strength member clamp
- COF elements routed behind strength member plate
- LHS port use for input cable
- 400mm stub of COF 205 provided in RHS port
- Foam port seal replaced and plate tightened
- 600mm transport tubing provided over element
- Transport tubing colours align with fibre element colours
- Elements stripped 160mm from cable butt to be within retainer area
- Tubing fed up lower mandrel to fibre retainer slot – Input side
- Black rubber water block fitted correctly in fibre retainer
- Fibre element removed within retainer area - approx. 20mm above black water block
- Fibres fed up LHS of trays

## **18.8 F1138 (DL & C) Score 5**

**Item Description:** COF205 Installation non critical items

**Scope:**

**Points of Reference:** [EPT/ANS/A045](#)

**Specific Guidance:**

- Transport tubing provided 30mm from end of cable butt
- Sub duct connector provided to SDMB6
- 10mm flexible Kopex provided

## **18.9 F4153 Score 5**

**Item Description:** Cables installed in accordance with the new Slack Network guidance

**Points of reference:**

**Guidance:**

- Do newly installed cable lengths meet the required standard for “slack Network” according to the tables in [NWK/LNK/C573](#)

## **18.10 P8261 Score 10**

**Item Description:** OH Cables routed and dressed away from pole climbing step positions, Minimum cable bend radii maintained

**Points of reference:** EPT/ANS/A040 & EPT/OHP/B073

**Guidance:**

- Cables routed away from climbing steps giving unobstructed access for placement of the climber’s hands and/or feet on steps  
Obstructed is defined as:
  - Cables which will require moving to allow foot or hand placement
  - Cables routed in a manner which risks entanglement of the climber
- Cables not in contact with step metalwork
- Cables left in a manner which would compromise safe access

*Note: Incorrect spacing or fixings etc. which do not pose a safety hazard are checked under item P8230*

- Minimum cable bend radius maintained:
  - SST: 80mm
  - 36f ULW: 84mm
  - COF600: 100mm

## **18.11 P8230 Score 5**

**Item Description:** OH Cable fixed to pole using Strip Aluminium with nails bonding and washers on each side at 450 mm intervals or Cleats Wiring Hybrid (SST only). Cables routed away from ladder placement area.

**Points of reference:** [EPT/ANS/A040](#) & [EPT/OHP/B073](#)

**Guidance:**

- Appropriate sized Strip Aluminium used, saddled over cables & secured with two Nails Bonding & Washers
- Correct spacing maintained
- Ladder placement area avoided with newly provided cables where achievable. Consideration must be given to existing plant, pole orientation and likely ladder location(s) as to the best route for new cables.
  - Provision of “ladder loop”
  - Run straight down the pole to allow V shaped pivot plate to straddle cable(s)

*Note:* Sharing aluminium strips securing copper cabling is acceptable with OFN cables.

- When fixing the SST fibre tail on a pole use Cleat Wiring Hybrid (080809) or Strip Aluminium at 450mm intervals fixed with 2 x Nails Bonding (072034) & Washers Galvanised 19 (073202). The aluminium strip can also be formed into a “C” clip and using 1 x nails bonding and washer galvanised & must be dressed as close to the pole as possible
- 36F Ultra Lightweight Aerial Cable is installed in the overhead network using standard cabling practices as detailed in ISIS EPT/OHP/B011 with the additional requirement as detailed in this document

## **18.12 P8231 Score 10**

**Item Description:** OH Pole capping not provided where required

**Points of reference:** [EPT/ANS/A040](#) & [EPT/OHP/B005](#)

**Guidance:**

- No capping provided leaving cable(s) liable to damage, vandalism or in a manner which constitutes a hazard to general public or livestock
- Capping not fully covering cables(s) at ground level leaving liable to damage
- Where an existing duct does not sit flush with a pole or new cables require slewing at low level protection steel Kopex is permissible for use until the cable(s) are covered by a standard capping

*Note:* **Where a capping has been provided but is deficient see P8263**

## **18.13 P8263 Score 5**

**Item Description:** OH Pole capping incorrectly provided

**Points of reference:** [EPT/ANS/A040](#) & [EPT/OHP/B005](#)

**Guidance:**

- Appropriate sized capping provided on a wall or pole
- Connector Bend “Elephants Foot” fitted to cover duct where required, large capping to floor level acceptable to protect duct/cables
- Capping insecurely fixed to pole/wall with inappropriate or insufficient number of fixings

## **18.14 F0192 Score 10**

**Item Description:** OH Have the Joint (s) been correctly fitted within the bottom pole envelope of space

**Points of reference:** EPT/ANS/A040, EPT/OHP/B058 & NWK/LNK/C620

**Guidance:**

- Joint fitted in prescribed location:
  - Mounting bracket centre 750mm from bottom climbing step tread.
  - Cables above 2m
- TM Joint does not compromise safe access for the climber
- Bracket correctly fitted with supplied coach screws and locking pin inserted
- Bracket correctly orientated
- For roadside poles joint mounted in a location to avoid projection into the carriageway where it may be struck by vehicular traffic
- CBTs cannot be mounted in the lower space envelope unless part of a temporary fix not to exceed 45 calendar days.
- Temporary coil secured safely top and bottom, no lower than 2 metres at its lowest point.
- Temporary plant secured safely (this does not include TM nodes which should be permanently fixed).
- Temporary coils not be greater than 500mm diameter

*Note:* Includes placement of temporary coil/equipment not to exceed 45 calendar days.

## **18.15 F0199 Score 10**

**Item Description:** Other fibre cables (e.g. SST, COF209 A/C and FDC) critical items

**Points of reference:** [EPT/ANS/A040](#)

**Guidance:**

- Correct OH clamp used for cable type
- COF209 96f A/C:
  - Route stability applied where required
  - Correct clamp and cable make off
  - Standard aerial cabling items apply
  - A/C wire heights maintained
- Overhead SST cable:
  - Clamp correctly assembled
  - Correct link (Carabiner or Link Cabling) used to attach clamp to ringhead/bracket
  - Link correctly closed/assembled
  - 1 clamp per link
  - Approx. 10 anti-galloping twists per span
  - ELM/ACD not required
  - Cable can be routed in front of ring
- 4/12 FDC
  - 6mm Orange flash clamp
  - Clamp correctly fitted on pole ringhead or bracket (e.g. UPB, 22)
  - Cable can be routed in front of ring
- Cable(s) routed correctly at pole top to minimise damage from movement and facilitate access to pole top apparatus
- COF600 not provided overhead

## **18.16 F0233 Score 5**

**Item Description: Other fibre cables (e.g. SST, COF209, A/C and FDC)**  
**Non-critical items**

**Points of reference:** [EPT/ANS/A040](#)

**Guidance:**

- Correct number of twists per span to prevent oscillation
- Cable tensioned correctly using the correct technique for the cable used - This is a visual check when retrospective
- Where cables have been replaced has the faulty/redundant cable been recovered?



- All redundant cable and wires been recovered using approved techniques and disposed of properly

## **18.17 F0232 Score 10**

**Item Description: ADSS overhead cable critical items**

**Points of reference:** [EPT/ANS/A040](#) & [AEI/AEC/B301](#)

**Guidance:**

- No ELM/ACD fitted to ADSS cable
- 33Kv ADSS power crossings correctly provided (power separation)
- 33kv power crossing correctly labelled. (Pole & cable)
- Route stability provided where required for ADSS cable(s)
- Correct clamp for ADSS cable type
- Clamp correctly fitted to cable and secured on pole ringhead or bracket (e.g. UPB, 22) as appropriate

*Note:* 33Kv joint position checked under item F4377

## **18.18 I6210 Score 5**

**Item Description: Newly provided dropwire in line of route provided in accordance with working practices and pole loading restrictions.**

**Points of reference:** [EPT/ANS/A011](#) & [NWK/NNS/V046](#)

**Guidance:**

- Newly provided dropwires in line of route do not exceed the maximum for the pole gauge, pole depth and crossing type. (This would not be defected if a wire was renewed or replaced and the number of wires already exceeded the DILOR limit)
- Newly provided bracket 22s do not exceed maximum for pole (1 either side of pole in line of route with the dropwires)
- DP's formally listed on network records NOT fed by a dropwires in lieu of aerial cable

## 18.19 P8929 Score 10

**Item Description:** DILOR (Dropwires in Line of Route) issues considered and identified

**Point of Reference:** [AEI/AEC/B335](#), [EPT/ANS/A014](#) & [EPT/ANS/A040](#)

**Guidance:**

- Where a pole has no stay or wires in an opposing arc and it has been determined that DILOR applies, has the number of dropwires been exceeded in line of route as per table 1 in [AEI/AEC/B335](#)
- Where a pole has a stay fitted, or wires applying an opposing load and it has been determined that DILOR applies, has the number of dropwires been exceeded in line of route as per table 2 in [AEI/AEC/B335](#)
- Has all pole top loading and route stability issues in accordance with DILOR been considered when spanning new fibre cable

# 19 *FTTP L2C Scoresheet Guidance*

L2C Scoresheet 578 (Connectorised) and 562 (Legacy)

Common Items

## 19.1 G0075 Score 5

**Item Description:** Correct tools available and being used appropriately for the work being undertaken

**Points of reference:**

**Guidance:**

- Ensure correct tools are carried
- Ensure tools are defect free and used correctly
- Check that any tools that are in date if covered by Esi test

## 19.2 I6226 Score 10

**Item Description: Existing dropwire recovered and replaced with FODW, RFOD or Hybrid cable**

**Points of reference:** [EPT/COF/C004](#)

**Guidance:**

- To avoid pole overloading, the existing copper drop at the end user premises must be recovered using the standard practices detailed in EPT/OHP/B011 . Recovery of the existing copper drop cable can be carried out using the cut and draw method to install the new fibre drop cable.
- Existing copper dropwire recovered and replaced with hybrid where achievable
- Permitted exceptions: two services exist in D/W, serving copper DP is in different location to CBT/Manifold, existing fixing is inaccessible

## 19.3 I6216 Score 5

**Item Description: Customers fixing provided/renewed if faulty or defective and maximum span length not exceeded**

**Points of reference:** [EPT/ANS/A011](#)

**Guidance:**

- Only one DW per fixing of closed loop type at customer's premises
- Portacabin lifting eye fixing position used only on short term situations in accordance with spec.
- Wall fixings - If fixed into brick has Eyebolt 1A been securely fastened into the centre of a single brick (not mortar) positioned 3 bricks down and 2 bricks in Or in exceptional circumstances in solid wall with a rendered/harled finish (less than 13mm of render) where it does not cross the carriageway and the span length is less than 40mtr. If rendered wall that does not meet the exceptional circumstance above then the Eyebolt 2A must be used. If bracket 32, has it been fixed into separate bricks (2 or more bricks not mortar) using all 4 fixing points, with 2 Stud expanding No 1 in diagonally opposite holes plus 2 zinc plated screws in the other 2 holes.
- Wall fixings - has bracket 44 or 51 been fixed at least 250mm below roof line and at least 250mm in from edge/corner of wall /window/opening and has it been secured to the wall using 2 bolts expanding 2A or eyebolts expanding 2A fixed correctly?
- Wall fixings – if fixed into stone then eyebolt should be fixed at least 250mm below roof line and 250mm from wall edge or window and in the middle of the stone, where dropwire height allows.

- If External Wall Insulation is fitted has eyebolt 2A to 2C been used? Eyebolt 2C must be used for insulation over 75mm deep
- If fixed into wood has a closed loop bracket 22/32 been securely fixed into substantial timber or has existing suitable fixing been provided in accordance with current craft practice. Is maximum span length 68 metres (for bracket 22/eyebolt 2B) or 40 metres (for bracket 32).
- If fixed through PVC into substantial/sound timber (wood fascia) has bracket 22 or 32 only been used?
- If fixed through PVC into substantial/sound timber (wood fascia) has bracket back been sealed correctly?
- If fixed through PVC into substantial/sound timber (wood fascia) have correct screws for fixing situation been used?
- If fixed through PVC into substantial/sound timber (wood fascia) is sound timber in evidence behind the bracket (visual check)?
- If fixed through PVC into rafter end only (no sound timber found) has bracket 22 only been used?
- If fixed through PVC into rafter end only (no sound timber found) has bracket back been sealed correctly?
- If fixed through PVC into rafter end only (no sound timber found) have correct screws for fixing situation been used?
- If fixed through PVC into rafter end only (no sound timber found) are rafter ends in evidence behind the bracket?
- If bracket fixed into PVC only is it a non-road crossing situation (standard road crossing definition used for low wires)?
- If bracket fixed into PVC only has bracket 22 only, been used?
- If bracket fixed into PVC only maximum span length of 50metres must not be exceeded?
- If bracket 22 is fixed into PVC only, for fascia boards 20mm or more in thickness, then road crossing drop wires with a maximum span length of 68m are allowed.
- If bracket fixed into PVC only has bracket back been sealed correctly?
- If bracket fixed into PVC only have correct screws for fixing situation been used?
- No wires to be attached to the eyebolt 2A fixings in a bracket 44, 1 wire only to be attached to the closed loop of the bracket 44 and 51.
- No more than 68 metre span to be used with bracket 44 and 51.
- Bracket 22 fitted correctly on BISF houses and Metal clad buildings using sound flat surfaces, silicone sealant and multi grip pop rivets.

- If dropwire has been provided, renewed, re-erected, or retensioned from the pole to the customer's premises (not applicable to pole tester work), is the dropwire fixing the current approved type? Is the dropwire fixing free from faults and defects?
- If dropwire has been worked on at EU fixing, and no Overhead span work was undertaken (provide, renew or re-tension), is any unapproved dropwire fixing securely fixed?
- Chimney not used to provide a new drop wire.
- Revised Rules for Chimney Fixings followed correctly.
- Chimney bracket not used to renew or re-tension a drop wire if chimney is in a poor state of repair or leaning, wire is under trees or it crosses a carriageway and 5.9m cannot be achieved.
- If CAD55M - Has 55m maximum span length been exceeded to customers fix (maximum span length is 55 metre using eyebolt or bracket 22/44 and 40 metre max using Bracket 32 at customer fix) or between poles? - if yes award defect accordingly.(68 metre maximum for non-carriageway situations)
- DW 15 has a maximum 68 metre span length for all situations
- Is the span length within limits for wire / cable type and location e.g. road crossing / non-road crossing
- If span length is greater than the maximum quoted for cable/dropwire type defect under G9001.
- If work is undertaken as part of an external wall insulation (EWI) scheme the following must be provided:
  - Eyebolt 2B provided for depths of up to 75mm (65mm EWI + 10mm finish)
  - Eyebolt 2C provided for depths greater than 75mm (100mm EWI + 10mm finish)
  - 25mm of clear silicone provided on eyebolt sleeve below washer
  - Eyebolt protrudes above EWI finish
  - Fascia fixing can only be used / provided where the wire height cannot be achieved by providing eyebolt 2B or 2C in brickwork.

## 19.4 I6902 Score 10

**Item Description: Existing wire/cable across carriageway above 5.2m minimum climb height**

**Points of reference:** [EPT/ANS/A013](#)

**Guidance:**

- Worksite refers to any pole climbed and poles / end users premises covered by the HOLD check and 3 span rule.

- All wires/cables worked on , including provision in situ jobs, must be checked even if the wire from the last pole to the end user worked on does not cross the carriageway
- Worksite has a wire or cable across the carriageway below the minimum climb height of 5.2m - Mark as below standard

## **19.5 I6904 Score 10**

**Item Description: Engineer has reported wire/cable across carriageway less than 5.2m via A1024**

**Points of reference:** [EPT/ANS/A013](#)

**Guidance:**

- Mark below standard if a pole accessed in contravention to any elements of the pre work assessment
- The following may need to be checked by the Assessor if a hoist was used
  - Pre-climb label attributable to hoist operative
  - Checking job notes for evidence a hoist was used
  - Contacting the Work/Hoist control hoist usage.
  - Pre-work check – This refers to when using access equipment such as a hoist or scaffolding
  - This is a not checked item for engineers NOT working at height such as the removal of pole capping

## **19.6 I6909 Score 10**

**Item Description: Pre Climb Check Label provided, label details correct and traceable to engineer / job**

**Points of reference:** [EPT/OHP/C022](#)

**Guidance:**

- Label provided on pole
- Correct details added to label UIN & date (Openreach) or UIN & date (Contract) – if Contractors have BT UINS that is acceptable to use.

## **19.7 I6270 Score 10**

**Item Description: Overhead power separation correct for cable/dropwire**

**Points of reference:** [EPT/PPS/B037](#), [EPT/PPS/B038](#) & [EPT/PPS/B046](#)

**Guidance:**

- Applies to overhead flying wires, joint user poles and end users premises only
- Applies on Underground checklists only for BT & tail provision and renewals on a joint user pole or a BT pole where an electric attachment has been fitted.
- Minimum separation distance (50mm) on newly provided cables between parallel cables on customer premises
- Minimum bridging distance (25mm) on newly provided cables.
- All above ground power separation maintained in accordance with current Openreach requirements. See Overhead Power Glovebox guide
- Separation must also be maintained from pole fittings and stays
- No attachments or cables to High Voltage poles,
- New attachments compliant with DNO policy
- An A1024 (Low wire defect code) must be raised for existing flying wires in contact with power
- An A1024 defect code 540 must be raised for BT plant connected to an HV DNO pole

## **19.8 I6272 Score 10**

**Item Description: Non-carriageway heights & clearances correct for cable/dropwire on the circuit/site worked upon**

**Points of reference:** [EPT/ANS/A013](#)

**Guidance:**

- To apply to the currently defined crossing types 2 - 6 & 8 - 15 in the point of reference above.

## **19.9 P6253 Score 10**

**Item Description: Overhead carriageway heights correct for the newly erected cable / dropwire on the circuit/site worked on**

**Points of reference:** [EPT/ANS/A013](#) & [EPT/ANS/A014](#)

**Guidance:**

- If new dropwire/cable has been provided and erected to the minimum height requirements - mark Check OK
- If 5.9m (wires) or 5.6m (cables) was achievable but not achieved e.g. by re-fixing mark below standard.
- If 5.9m (wires) or 5.6m (cables) could not be achieved but wire was erected as high as possible above 5.5m (where permissible) – mark as checked OK and complete A2131 for A1024 submitted.

- Unstayed construction for single spans of aerial cable compliant with policy

**Note:** When retrospectively checking overhead wires/cables a tolerance of 100mm is permitted against the specified construction height of 5.9m/5.6m (and 5.5m where permissible). The check must ascertain that all wires/cables on the estimate being checked against min construction height have not settled below 5.8m /5.5m (and 5.4m where permissible). This tolerance is specific to the 5.9m/5.6m (and 5.5m where permissible) wire/cable height rule and does not apply to any other wire clearances i.e. power separation and flying wires etc. - Minimum clearances and any likelihood of settlement should be factored in at the design & construction stage ensuring said minimum clearances are never compromised thereafter

## **19.10 I6248 Score 5**

**Item Description: On all wires erected entry to premises sealed with approved sealant. External drip loop provided**

**Points of reference:** [EPT/ANS/A011](#)

**Guidance:**

- Applies to all wires and cables except aerial cable (see I6246)
- Check position was agreed if customer is available during check.
- Dropwire not entering customer premises through UPVC door or window frame
- Where the cable enters the premises a suitable external drip loop is provided at the premises entry point
- The premises entry hole has been be sealed with an approved sealant

## **19.11 I6244 Score 5**

**Item Description: Customer lead-in correctly routed and cleated neatly**

**Points of reference:** [EPT/ANS/A011](#)

**Guidance:**

- Includes loose existing lead in's not worked on if customer visited.
- Customer lead-in correctly routed and cleated neatly
- Capping 25 provided and correctly fitted on new site activities and securely replaced if removed during any provision / repair activity
- Correct fastenings used
- SCF12A used to secure dropwire / CAD to bracket 44 or 51
- If work is undertaken as part of an external wall insulation (EWI) scheme the following must be provided:



- Push in cable Tie mounts (CH8) only used to attach lead in to EWI finish
- Clear silicone provided in tie mount hole
- SCF1A used to secure lead in to tie bolt & excess length removed with no sharp SCF1A ends left.
- Correct cleats used with masonry nails where required

## **19.12 F1124 Score 10**

### **Item Description: CSP Provision critical items**

**Points of reference:** [EPT/COF/D888](#)

#### **Guidance:**

- Stock deployed in the correct orientation for cable type
- Gas blocked installed and secured in the cradle if required
- External input cable installed using left, middle port and routed clockwise
- Internal output cable installed using correct port and routed anti-clockwise
- Installed at the correct height
- Existing cover 101 or BT 66 replaced
- Copper conductors stored in bottom right corner using lower rear entry
- Split Collet is provided on Prysmian 4 fibre armoured cable
- Correct amount of slack left
- Bend radius not compromised
- Outer sheath removed 20mm above cable strain relief
- Protector Splice 5A used and correctly stored in splice cradle

#### **Legacy CSP**

- 6 (BFD T) - 3mm (Locking tube) connector correctly fitted and located in CSP
- 3mm Turquoise locking tube correctly routed through hinge and in figure of 8
- Gas seal correctly activated and located in tray
- BFB correctly routed to splicing tray, sufficient fibre for splicing
- EZ Bend cable grommet fitted, cable butt correctly positioned and secured with SCF
- EZ Fibre routed to splicing tray, sufficient fibre for splicing
- Correct Splice protector correctly applied and located correctly in tray
- Suitable EZ Bend cable used
- Bend radius maintained

- Dropwire and / or lead in connected/ terminated correctly within CSP

### **19.13 F1154 Score 5**

**Item Description: CSP Provision non critical items**

**Points of reference:** [EPT/COF/D888](#)

**Guidance:**

- CSP located in an accessible location
- CSP lid correctly fitted
- Correctly fixed: Cleats or staples (internal)
- Inner sheath removed 20mm above cable strain relief
- Cable stored inside the slack storage tray (outer clips not permitted)

### **19.14 F1126 Score 10**

**Item Description: End User Internal Equipment critical items**

**Points of reference:** [EPT/ANS/A046](#)

**Guidance:**

- Clear Silicone Sealant applied correctly to the CSP CLI
- Bend radius (15mm) of the CPC not compromised
- CPC connector cleaned prior to connection
- BBU correctly installed and connected
- NTE 5 provided with SSFP and longer screws

### **19.15 F1156 Score 5**

**Item Description: End User Internal Equipment non critical items**

**Points of reference:**

**Guidance:**

- Correct CLI conduit kit used for thickness of wall
- CPC stapled/cleated correctly
- Modem securely mounted within 1m of power socket
- CAT5 cables provided with cleats only beyond ONT
- No trailing wires left

## **19.16 F1088 Score 10**

**Item Description:** Correct Fibre cleaning kit used and used as per specification

**Points of reference:** [EPT/COF/C004](#) & [AEI/AEC/B331](#)

**Guidance:**

- It is mandatory that each and every connection is cleaned using the new stickler kit. It is mandatory to use the items within this kit every time a fibre is connected/spliced (IP check only)

## **19.17 F1091 Score 10**

**Item Description:** Optical loss measurement taken at ONT and within tolerance

**Points of reference:** [EPT/COF/D956](#)

**Guidance:**

- All connectors cleaned prior to testing
- Reading better than -27.5dBm at 1490nm
- ONT achieves sync

## **19.18 H7108 Score 10**

**Item Description:** Did the engineer test and demonstrate the product / service and use the words "test and demonstrate" to the customer

**Points of reference:**

**Guidance:**

- On jobs/activities where multiple check sheets are input only 1 [one] check sheet needs marking
- Mark item as not checked if the activity being checked is not the final customer activity e.g. pair proves.
- Mark item as not checked if the activity being checked was closed by the WMC e.g. for a cable length changeover by ND or 2nd stage repair engineers.
- If an engineer documents in the job notes a valid reason why he / she failed to test and demonstrate to the end user/agent then they should not be defected – mark item as Checked OK.

- Check, on CSS or WM, that notes have been added to prove that a test and demonstrate has been executed and that the end-user /agents name has been recorded in the notes. e.g. " T&D Mrs Smith'" would be acceptable but T&D or CWWC with no end user name would not be. In CSS for repair use CSS DFRN transaction and for provision use DWI transaction or use WM Live / Taskforce notes e.g. if NEO task closed as 172\* or CSS note truncation is suspected
- Some T & D notes may be entered by a different Engineer ID and this is acceptable as long as it was done before job completion.
- For hard network faults where there is no need to visit the EU i.e. those faults not covered by the check item description the following notes format will apply:
  - If agreed OK with End User whilst at POI - 'FT2 Job Closure LTOK confirmed with 'insert EU name'.
  - If End User not available - 'FT2 Job Closure - LTOK but unable to confirm with EU'
- On repair tasks - for 82.7 clears (unless no access) and for faults cleared by visiting EU premises then full T&D must be completed at EU premises and EU/agents name recorded.
- If it was not necessary to travel to EU to perform a PQT has the relevant 'FT2 job closure LTOK' note been added to reflect EU availability?

## **19.19 I6090 Score 10**

**Item Description: External cable within building conforms to fire regulations**

**Points of reference:** [EPT/ANS/A016](#)

**Guidance:**

- Cables provided conform to fire regulations
- Polyethylene insulated cables should not be run more than 2 metres within an internal area

## **19.20 S0080 Score 10**

**Item Description: Fire stopping correctly provided (where required) to any new or existing hole (worked on) in building fabric within end user premises**

**Points of reference:** [AEI/AEC/B313](#) & [SFY/CSP/B049](#)

- Correct fire stopping used to seal new and worked on cable hole(s)

## **19.21      S0081 Score 10**

**Item Description:** All newly provided cables within end user premises secured with appropriate fireproof fixings

**Points of reference:** [AEI/AEC/B313](#) & [SFY/CSP/B049](#)

**Guidance:**

- Correct fixings used to secure internal cabling and trunking

## **19.22      G1001 Score 10**

**Item Description:** The POI / work location information supplied is correct

**Points of reference:** [EPT/ANS/A024](#)

**Guidance:**

- POI details recorded in accordance with ISIS EPT/ANS/A024
- Records updated/notes added where appropriate
- All records, prints and A154s legible, clean, updated, certified and forwarded
- If not possible to identify the location from details supplied the quality checker must attempt to ring/contact either the engineer/coach/manager/co-ordination office as applicable for any additional information that may assist in identifying the site
- Quality checkers must seek clarification if insufficient information available or unable to find job at first attempt
- CD applies if sufficient information is not obtainable within 30 mins period on site. If sufficient information is obtained within 30 mins, G1001 should be marked OK and A2128 should be marked Below Standard
- Minor clerical errors should not lead to CD being applied

## **19.23      F4502 Score 5**

**Item Description:** If changes made to planned job, have the record updates been completed/requested correctly

**Points of reference:**

**Guidance:**

- Any changes requested/completed correctly

## **19.24      A2131 Score 5**

**Item Description: Defects on site reported via A1024**

**Points of reference:** [NWK/NNS/V018](#)

**Guidance:**

- Checked on every job type.
- For MDF only check block(s) worked on
- No A1024 has been raised where a defect exists (mark below standard)
- A1024 submitted and is not required (mark below standard)
- A1024 labels must not be fitted to Joint User poles
- Pair Changes - Information recorded on the A1024 system should include location of both ends of the pair change, cable size and conductor size (if not 0.5)

## **19.25      G1003 Score 5**

**Item Description: Worksite left tidy. OR / Contractor rubbish removed**

**Points of reference:**

**Guidance:**

- Above and/or below ground - Business waste consists of any wire, connectors, cable sheath, steel armouring, tape, excess spoil, rubbish bags, pole fixings, closures, excavated waste, cable etc. (this is not a complete list).
- This is NOT intended for insignificant quantities of Openreach or contractor rubbish/scrap such as small quantities of off-cut wire or a few crimps. This should be removed and disposed of safely by the quality checker
- Cover/lid not causing a tripping hazard (due to soil not being removed around frame and cover).
- Above and/or below ground - Any other waste brought to and left on site
- On MDFs – This is an in progress check only
- At the MDF/Frame - no wire/rubbish left after termination in the near vicinity of blocks worked upon

## **19.26      V3720 Score 5**

**Item Description: Quality of Job notes for CP don't contain technical jargon/abbreviations, clearly states reasons for any delay, what action taken, engineers involvement, who is dealing, action required to resolve and when?**

**Points of reference:**

**Guidance:**

- Details what action has been taken (if no action explain why)
- Details what the next steps are (e.g. Passed to survey team for review)
- Details when the next update will be provided (if the date is a long way in the future, it's good practice to provide regular updates to confirm that everything is progressing to plan).
- Abbreviations, technical terms or jargon avoided
- The problem is stated, what is being done to resolve it and when it's likely to be resolved
- Reasons for any delay clearly explained
- Regular updates provided if things change or further delays are expected

**19.27 F1087 Score 10**

**Item Description: Internal fibre cable installed correctly**

**Points of reference:** [EPT/COF/C004](#)

**Guidance:**

- Minimum cable bend radius maintained
- Correct fixings used and spaced correctly
- Not liable to damage

*Note:* Fire proof fixing checked under S0081

**19.28 F1093 Score 10**

**Item Description: Activation of ONT correctly carried out**

**Points of reference:** [EPT/COF/C004](#)

**Guidance:**

- Activation process initiated prior to starting the installation

**19.29 F1094 Score 5**

**Item Description: ONT correctly installed**

**Points of reference:** [EPT/COF/C004](#)

**Guidance:**

- Modem securely mounted within 1m of power socket
- Agree the cable entry point and ONT location, power up and activate the ONT
- Run the connectorised drop cable from the CBT to end customer premises. If this activity was not carried out at P&B, refer to section 5
- Strip back the drop cables outer sheath at the end user premises, refer to section 6
- Pass the drop cable into the end user premises and route to the ONT, refer to section 6
- Install the field fit connector (FFC), refer to section 6.4
- Clean connector on FFC and power meter & take power reading.
- Connect the FFC into the ONT
- Authenticate hub and perform GEA FTTP service test.
- Connect the connectorised drop cable into CBT (Not required if carried out at P&B stage)
- CAT5 cables provided with cleats only beyond ONT
- NTE 5 provided with SSFP and longer screws
- CPC connector cleaned before connection
- No trailing wires left

## **19.30 I6345 Score 10**

**Item Description: OGEA test carried out and recorded**

**Points of reference:** [EPT/COF/C008](#)

**Guidance:**

- Test carried out satisfactorily
- Test recorded on appropriate system(s)
- Did the engineer test and demonstrate the product/service and use the words test and demonstrate to the customer. The customer name must be recorded in the job notes. e.g. "T&D Mr John Smith"

**Connectorised Items SS578**

## **19.31 F4410 Score 10**

**Item Description: Are there any excessive lengths/loops of cables left in joint boxes and Minimum bend radii not compromised**

**Points of reference:** [EPT/ANS/A004](#)

**Guidance:**



- No excessive cable left in box
- Bend radii not compromised

### **19.32 F0502 Score 5**

**Item Description: Drawrope spliced, loose ends taped to the pulling side of splice and cable connected correctly to rope**

**Points of reference:** [EPT/UGP/E044](#)

**Guidance:**

- Correct method used (eye & tucked splice method)
- At least 4 tucks on each side
- Loose ends taped correctly

### **19.33 F6218 Score 10**

**Item Description: OH - Correct clamp used for relevant cable and correctly fitted**

**Points of reference:** [EPT/COF/C004](#)

**Guidance:**

- Correct type clamp used
- Yellow tip clamp wrapped around copper& fibre, unmarked clamp copper separated and cable tied to clamp
- Clamp correctly attached to pole ringhead/bracket
- Clamp wrapped around cable, no excessive bend/twist evident

### **19.34 F1085 Score 5**

**Item Description: OptiTap connector correctly inserted into CBT with arrow facing upwards and lock nut fully tightened**

**Points of reference:** [EPT/COF/C004](#)

**Guidance:**

- Locking ring correctly tightened with no movement evident when light pressure applied with finger & thumb

### **19.35 F1086 Score 5**

**Item Description: Protective dust caps screwed together and tightened**

**Points of reference:** [EPT/COF/C004](#)

- Protective dust caps screwed together and tightened

**Legacy Items SS562**

**19.36 F1112 Score 10**

**Item Description: Aggregation node, Splitter node & Fibre DP Joint Closures critical items**

**Points of reference:**

**Guidance:**

- Existing joint closure practices

**19.37 F1142 Score 5**

**Item Description: Aggregation node, Splitter node & Fibre DP Joint Closures non critical items**

**Points of reference:**

**Guidance:**

- Existing joint closure practices

**19.38 F1130 Score 10**

**Item Description: Splitter Node fibre Routing critical items**

**Points of reference:** [EPT/ANS/A025](#)

**Guidance:** Included but not limited to

- All fibres following correct routing for tray type
- Appropriate amount of slack left to allow for subsequent re-splicing
- Fibres correctly routed/transported between trays/shelves
- All fibres within trays/shelves worked on must be located and contained as appropriate for the tray/shelf type. Fibres must not be allowed to become trapped or exposed to potential damage
- Existing fibres protected when working and replaced if not contained

## **19.39 F1160 Score 5**

**Item Description: Splitter Node fibre Routing non critical items**

**Points of reference:**

**Guidance:** Including but not limited to

- Other observed Fibres correctly routed within shelf as appropriate or reported
- Spare fibres correctly contained/located within tray as appropriate

## **19.40 F1132 Score 10**

**Item Description: Fibre DP Fibre routing critical items**

**Points of reference:**

**Guidance:**

- All fibres following correct routing for tray type
- Appropriate amount of slack left to allow for subsequent re-splicing
- Fibres correctly routed/transported between trays/shelves
- All fibres within trays/shelves worked on must be located and contained as appropriate for the tray/shelf type. Fibres must not be allowed to become trapped or exposed to potential damage
- Existing fibres protected when working and replaced if not contained

## **19.41 F1162 Score 5**

**Item Description: Fibre DP Fibre routing non critical items**

**Points of reference:**

**Guidance:**

- Other observed Fibres correctly routed within shelf as appropriate or reported
- Spare fibres correctly contained/located within tray as appropriate

## **19.42 F1191 Score 10**

**Item Description: 32AP Prysmian Joint range external critical items**

**Points of reference:** [EPT/COF/D913](#)

**Guidance:**

- Correct joint used for situation (toggle colour)

- Correct port usage for output 4mm BFT – port 4 (7BFT) port 8, 7, 6, 5 (7/12 BFT)
- 1.3m of 25mm Flexible Black Kopex Tubing provided correctly on all output BFT
- 25mm Flexible tubing fitted in gland and gland tightened
- Small 'O' ring from port bung provided on 25mm Flexible Black Kopex Tubing (7<sup>th</sup> ridge)
- Tube Spreader used
- Sealant 10B provided to top of Round port
- BFT cut minimum of 70mm from top of port.
- 4mm End Stop fitted on each installed output BFT tube

## **19.43 F1193 Score 10**

**Item Description: 32AP Prysmian Joint range internal critical items**

**Points of reference:**

**Guidance:**

- 25mm Flexible tubing fitted in gland and gland tightened
- Small 'O' ring from port bung provided on 25mm Flexible Black Kopex Tubing (7<sup>th</sup> ridge)
- Tube Spreader used
- Sealant 10B provided to top of Round port
- BFT cut minimum of 25 mm from top of port.
- 5mm End Stop fitted on each installed tube
- Input BFU fitted with 4mm x 3mm water block (STR - 5mm x 3mm?)
- BFU sheath removed 20mm above water block
- Transport tubing provided to top of retention slot
- Fibres routed up LHS of trays

## **19.44 F1118 Score 10**

**Item Description: HCSC trays critical items**

**Points of reference:** [EPT/COF/C005](#) & [EPT/COF/C006](#)

**Guidance:**

- All fibres routed and stored correctly – critical (liable to damage)

- COF 205 stripped using correct tool or peg
- Fibres / tubing routed correctly via tube holder and retainer provided (AN,SN & FDP)
- Element support tube provided over fibres from gas block to under tube holder cover
- Fibre elements / bundles stripped in top section of tube holder
- No fibres stored in dark storage area (DSA)
- All side A to side B routing through DSA
- Fibres routed to correct Address point trays as per job pack
- Minimum of 1 metre of spare fibre stored (minimum of 4 loops in tray)
- Correct port sequence used to feed distribution COF205 & BFT
- Minimum 3.8m loop (FDP,AN&SN) stripped within joint butt to butt
- Used elements cut in middle of loop
- 30mm splice protectors used in HCSC & HCSE trays and correctly positioned
- 45mm splice protectors used in SSTA trays and correctly positioned
- Fibres cleaned using IPA cleaning pads
- Fibres correctly prepared and spliced
- Splices achieve maximum splice loss limit
- FDP working elements positioned behind the spare elements
- Unused elements stored in plastic bag between frame or under trays

## **19.45 F1148 Score 5**

**Item Description: HCSC trays non critical items**

**Points of reference:** [EPT/COF/C005](#) & [EPT/COF/C006](#)

**Guidance:**

- Correct port sequence used to feed distribution COF205 & BFT
- All storage and address trays correctly labelled as per FNC (Cable ID/Element/Fibre)
- All fibres routed and stored correctly – non critical (incorrect route)

## **19.46 F1120 Score 10**

**Item Description: UG Manifold critical items**

**Points of reference:** [EPT/COF/D884](#)

**Guidance:**

- Correct port used
- Manifold correctly re-assembled and hand tightened
- Bend radius on all cables is maintained at all times
- Manifold secured/restrained correctly
- Secured correct distance from wall

**19.47 F1150 Score 5**

**Item Description:** UG Manifold non critical items

**Points of reference:** [EPT/COF/D884](#)

**Guidance:**

- Plug removal tool used to remove port plug
- Manifold lower body labelled correctly
- Drop tube fully and correctly inserted (mark should just be visible)

**19.48 F1104 Score 10**

**Item Description:** OH manifold critical items

**Points of reference:** [EPT/COF/D884](#)

**Guidance:**

- Correct port used
- Drop tube fully and correctly inserted
- Manifold correctly re-assembled and hand tightened
- Bend radius on all cables is maintained at all times

**19.49 F1134 Score 5**

**Item Description:** OH manifold non critical items

**Points of reference:** [EPT/ANS/D884](#)

**Guidance:**

- Replaced/secured in bracket correctly
- Drop tube fully and correctly inserted (mark should just be visible)

## **19.50      A2044 Score 10**

**Item Description: Pole mounted FDP critical items**

**Points of reference:** [EPT/COF/C006](#) & [EPT/ANS/A045](#)

**Guidance:**

- BFT and 3mm tubing correctly connected to 4mm to 3mm connector
- 2m spare fibre left after BFT 4mm connector and routed through 3mm tubing and water block
- Tubing / bundle/ fibre bend radii maintained (min 30mm)
- Locking tube not stretched
- Blue Locking / water block activated
- BFU coating removed 20 mm beyond locking / water block
- Fibres routed and stored correctly
- Correct splice protectors used
- FDP cover closed and locked correctly

## **19.51      A2046 Score 5**

**Item Description: Pole mounted FDP non critical**

**Points of reference:** [EPT/COF/C006](#) & [EPT/ANS/A045](#)

**Guidance:**

- Maximum 12 splices per tray (3/slot for EU trays and 2 per slot for storage trays)

## **19.52      F1121 Score 10**

**Item Description: BFDT / Hybrid cable - pole critical items**

**Points of reference:** [EPT/COF/D890](#)

**Guidance:**

- Correct clamp used and fitted correctly
- Clamp wrapped round BFDT/Hybrid, not the other way round
- Bend radii not compromised
- SCF1A if used, must be cut flush so as no hazard is present

## **19.53 F1151 Score 5**

**Item Description:** BFDT / Hybrid cable - pole non critical items

**Points of reference:** [EPT/COF/D890](#)

**Guidance:**

- Long straight edge positioned at bottom
- BFDT/hybrid routed over ring head
- Copper pair stripped back 150mm from clamp end and secured to clamp
- Copper pair secured to pole using current methods
- OH fibre drop identification label provided above pole label on all poles (wooden = board, hollow = adhesive)
- Hybrid cable provided and existing dropwire recovered unless exceptions apply
- Reforming tool used when connecting BFDT
- Hybrid copper cable separated using Hybrid Stripping tool

## **19.54 E6253 Score 10**

**Item Description:** Overhead carriageway heights correct for the existing cable / dropwire on the circuit/site worked on where correct height is achievable

**Points of reference:** [EPT/ANS/A013](#) & [EPT/ANS/A014](#)

**Guidance:**

- If an existing dropwire/cable within the 3 span rule (on the circuit being worked on) is low, but could obviously have been re-tensioned, raised or renewed to meet the correct clearance - mark as below standard
- If an existing low dropwire/cable within the 3 span rule (on the circuit being worked upon) could not be raised - mark as not checked and complete item I6904 for wires less than 5.2m
- Re-tensioned dropwire/cable avoids fixed structure (e.g. lamp posts, gable ends etc.)
- Unstayed construction for single spans of aerial cable compliant with policy

*Note:* When retrospectively checking overhead wires/cables a tolerance of 100mm is permitted against the specified minimum re-tension height of 5.5m (The check must ascertain that all wires/cables on the estimate being checked against min re-tension height have not settled below 5.4m. This tolerance is specific to the 5.5m wire/cable height rule and does not apply to any other wire clearances i.e. power separation and flying wires etc. - Minimum clearances and any likelihood of



settlement should be factored in at the design & construction stage ensuring said minimum clearances are never compromised thereafter

## **19.55 F1122 Score 10**

**Item Description:** BFDT / Hybrid cable – end user critical items

**Points of reference:** [EPT/ANS/A046](#)

**Guidance:**

- Correct customer fixing used.
- Hybrid copper cable connected to existing drop wire / lead in at AGC provided under eaves or in existing AGC / BT 66 position.
- AGC correctly provided and terminated.
- Any defective or obsolete lead in must be replaced in accordance with existing overhead standards. This may be completed on the second stage visit.
- Any defective / new lead in provided in continuous length using cable down lead.
- Only 1 Hybrid copper joint allowed on customers premises

## **19.56 F1152 Score 5**

**Item Description:** BFDT / Hybrid cable – end user non critical items

**Points of reference:** [EPT/ANS/A046](#)

**Guidance:**

- Copper dropwire recovered replaced with Hybrid cable unless permitted exceptions exist
- Hybrid copper cable stripped from tube and attached to clamp with 3 x SCF1A, cut flush, at both ends and middle of clamp
- Hybrid BFDT connected to single tube PE BFT and 6mm BFDT connectors at fixing position (if required)
- Cleats wiring round black 6mm only used for BFDT. (IC: 072356) NOT D/W Cleats
- BFDT / Hybrid copper cable cleated every 400mm
- 3mm black cleats used for hybrid copper cable at customers premises

## 20 Pole Top CBT's

### 20.1 P8100 Score 10

**Item Description:** Are CBT protective dust caps fitted and fully tightened on all the ports?

**Points of reference:** [EPT/ANS/A040](#)

**Guidance:**

- CBT port protective covers correctly replaced following testing
- Port cover screwed tightly into port. Firm pressure or tool required for removal.

### 20.2 P8198 Score 10

**Item Description:** OH CBT correctly fixed in top pole envelope

**Points of reference:** [EPT/ANS/A040](#) & [EPT/OHP/B058](#)

**Guidance:**

- Plant sited in correct envelope of space
- CBT body excluding the shrinkdown cable tail shall be sited in the top pole envelope
- Where out of spec or non-standard stepping exists consideration should be given to ensure the CBT is located in the best achievable position which does not impede safe access for a climbers belt
- CBT securely screwed using appropriate type and number of fixings
- Correct machine screw for CBT on steel Back to Back mounting bracket

*Note:* For or 15 Way Split Ring (Crown Type) or non-standard poles where the ring has been fitted excessively low it is permissible to fit CBTs above the ring if space exists. Each pole must be individually assessed to ensure the fixing is in sound timber and the CBT can be safely accessed and all ports are accessible for L2C connectivity

*Note:* Corning black plastic mounting brackets checked under P8200

### 20.3 P8200 Score 5

**Item Description:** OH Top & bottom mountings fitted and 2 x SCF1A provided at cable butt moulding on pole

**Points of reference:** [EPT/ANS/A040](#) & [EPT/COF/C005](#)

**Guidance:**

- Corning type CBTs provided with correct number of black plastic standoff adaptors when mounted on a wooden pole
- Butt moulding secured to bottom mounting with 2 x SCF
- Commscope type correctly fitted in supplied mounting bracket
- Black plastic mountings not required on steel bracket (single mounting required to secure Corning type CBT)

## **20.4 P8229 Score 10**

**Item Description:** OH Steel CBT back to back mounting bracket correctly fitted (Top pole envelope & correct fixings)

**Points of reference:** [EPT/ANS/A040](#) & [EPT/COF/C005](#)

**Guidance:**

- Steel bracket securely fixed
- Correct size and number of screws provided
- Location within top pole envelope

# **21 Cable Chambers**

## **21.1 F0520 (DL) N/A (C) Score 5**

**Item Description:** Correct seal provided at cable riser points.

**Scope:** All work points identified for checking.

**Points of product reference:** [EPT/ANS/A003](#)

**Specific guidance:**

- Seal provided correctly at cable riser points

## **21.2 F0413 (DL) N/A (C) Score 10**

**Item Description:** No sub-duct provided into cable chamber

**Scope:** Newly installed Fibre cables

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Sub-duct mono bore does not enter cable chamber

### **21.3 F0414 (DL) N1151 (C) Score 10**

**Item Description:** Provided/worked on cables correctly sealed

**Scope:** All fibre Cables worked on.

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- All cables/BFT provided/worked on have correct method of seal applied
- Caps sealing applied with circumferential abrasions visible below seal
- Blown fibre caps seal applied with correct type and amount of sealant tape applied below cap

### **21.4 F0415 (DL) N/A (C) Score 10**

**Item Description:** Correct Optic fibre cable types provided to joint worked on

**Scope:** All fibre Cables worked on.

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- No non-standard cable types provided to joint worked on
- If no-standard cable types exist, remedy while onsite. If onsite remedy is not possible then report to FRAC

### **21.5 F0416 (DL) N/A (C) Score 5**

**Item Description:** Cable/joint support racking constructed/maintained correctly

**Scope:** All work points identified for checking.

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Structure support/racking in serviceable condition
- If new racking has been provided has it been constructed correctly
- If defective support racking observed has it been reported to A1024 duty

## 21.6 F0509 (DL) N1152 (C) Score 10

**Item Description:** All fibre cables/BFT worked on correctly supported and restrained

**Scope:** All joints & cables in association with the work site identified for checking. Applies to all cables worked on including any moved during cabling and jointing activities.

**Points of product reference:** [EPT/ANS/A025](#)

**Specific guidance:**

- Cables/BFT provided correctly supported and restrained
- If other cables moved to allow access to cable/joint being worked on have they been re-restrained

# 22 *Fibre Drop Cable (FDC)*

Score Sheets 355 & 655 only

## 22.1 A2420 (DL) N/A(C) Score 10

**Item Description:** FDC correctly attached and routed on pole(s) / EU premises.

**Scope:** All work points identified for checking.

**Points of product reference:** [EPT/COF/D879](#)

**Specific guidance:**

- FDC Bend radius not compromised
- FDC not damaged, crushed or kinked
- Correct clamp used and fitted correctly (straight edge at bottom [pole and EU])
- FDC routed on pole away from ladderplacement area
- FDC routed under ring head
- Collar hollow pole 2 used on hollow pole (carrier pole in line of route only)
- Correct cleats used at EU premises

## 22.2 A2422 (DL) N3308 (C) Score 5

**Item Description:** Cable feeds correctly run and cleated. Capping correctly sited and fastened.

**Scope:** All cable feeds provided on the Job/Estimate No. in association with the work site identified for check.

**Points of reference:** [EPT/ANS/A012](#)

**Specific guidance:**

- FDC subduct secure and covered.
- FDC secured to pole correctly (aluminium strips & nails bonding/washers)
- FDC & subduct behind capping.
- FDC subduct 500-700mm on pole.

## **22.3            A2502 (DL) N4211(C) Score 10**

**Item Description:** Minimum bending radius of fibre cable/BFT not compromised.

**Scope:** Cables, BFT & Fibres Installed /Jointed on the Job / Order No identified for check must be inspected.

**Points of reference:** [EPT/COF/D841](#)

**Specific guidance:**

- FDC all bend radii minimum 30mm in all situations e.g. EU/poles/boxes & cables awaiting jointing/terminating.

## **22.4            A2922 (DL) N1115 (C) Score 5**

**Item Description:** Sufficient cable left for jointing

**Scope:** All cable(s) installed for the Job/Estimate No. in association with the work site identified for checking

**Points of reference:** [EPT/ANS/A004](#)

- FDC end sealed, e.g. PVC tape, sleeve 2A
- FDC coiled and secured with cableties to protect bend radii
- FDC minimum 2.5m in joint box
- FDC minimum 4.5m at EU premises left for cabling to termination box

## **22.5            A2954 (DL) N/A(C) Score 10**

**Item Description:** Correct use of Anti Creepage Device (ACD).

**Scope:** All work points identified for checking.

**Points of product reference:** [EPT/COF/D879](#)

**Specific guidance:**

- ACD fitted where required at customer and/or pole(s) with FDC termination or joints.

- Fitted within 20m of EU fixing.
- Correctly fitted to pole(s) and EU premises.
- Cover secure and not warped.
- Minimum of 6 turns.

## 22.6      **F0197 Score 10**

**Item Description:** Fibre locking mechanism (e.g. ELM) critical items

Points of reference: [EPT/ANS/A040](#) & [EPT/COF/D879](#)

**Guidance:**

- Fibre locking only provided to cables where stabilisation of fibre movement is required: 36f ULW, FDC & BFDT.
- Fibre locking mechanism provided at all jointing positions (OH & UG) where overhead cable sections exist
- Correct locking device fitted for cable type:
  - ELM fitted to 36f ULW
  - ACD fitted to 4/12FDC
- Cable correctly wrapped on ELM (5 crosses in centre), Single cable provided per ELM
- 36f ELM Fitted in appropriate location on pole:
  - Bottom pole envelope near joint/capping
  - COF215 tailed CBT, ELM fitted in top pole envelope adjacent to CBT
- ELM not sited in ladder placement area
- 2 x Strap Cable Fixing provided at cable entry/exit point
- 4/12f ACD fitted as per D879
- ELM free from physical damage from incorrect installation
- Incorrect cable wrapped type around ELM
- No excessive cable bend or twist present

## 22.7      **F0198 Score 5**

**Item Description:** Fibre locking mechanism (erg ELM) non- critical items

Points of reference: [EPT/ANS/A040](#)

**Guidance:**

- Incorrect or insufficient fixings used
- 4 x 1" No8 woodscrews should be used on ELM

## **22.8            A2712(DL) N1103(C) Score 10**

**Item Description:** On newly installed cable/sub duct/BFT, all ends sealed correctly.

**Scope:** All cable(s)/sub duct/BFT installed for the Job/Estimate Number in association with the work site identified for checking.

**Points of reference:** [EPT/ANS/A003](#)

**Specific guidance:**

- FDC must be provided from OH to UG in subduct.

## **22.9            F0414(DL) N1151(C) Score 10**

**Item Description:** Provided/worked upon cables/Sub-duct/BFT ends correctly sealed.

**Scope:** All fibre Cables / Sub ducts / BFT worked on.

**Points of reference:** [EPT/ANS/A025](#)

**Specific Guidance:**

- FDC subduct sealed at pole e.g. compound 16.

## **22.10          A2518(DL) N2413(C) Score 10**

**Item Description:** Approved joint closure applied correctly.

**Scope:** All fibre joints worked on.

**Points of Reference:** [EPT/ANS/A009](#)

**Specific guidance:**

- FDC provided in node joint 4A or generic joint 3A or other existint OTIAN joints only.
- FDC subduct protrudes into port.
- FDC scops and aluminium foil fitted to subduct
- FDC sleeve dropwire 2A end not visible
- FDC resin 9B provided in subduct port



## **22.11 I6234(DL) N3104(C) Score 5**

**Item Description:** Dropwire/CAD has Sleeve 2A correctly fitted to all ends.

**Scope:** All FDC Provided, Renewed, worked upon, that are included on the Job/Order No in association with the work site identified for checking.

**Points of reference:** [EPT/ANS/A006](#).

**Specific guidance:**

- Sleeve dropwire 2A fitted over FDC – EU and joint (IP).

## **22.12 A2151(DL) N4212(C) Score 5**

**Item Description:** Joint/Cable/Cabinet marked or labelled correctly.

**Scope:** All cabinets replaced or joints & cables worked upon in association with the work site identified for checking.

**Points of reference:** [NWK/NNS/V046](#).

**Specific guidance:**

- FDC identification label provided on all poles above pole test label.
- FDC PVC board label on wooden poles
- FDC self adhesive label on hollow poles.

## **22.13 F4385 Score 10**

**Item Description:** Permitted fibre plant correctly fitted to a licenced Joint User (DNO) pole.

**Points of reference:** [EPT/ANS/A040](#), [NWK/LNK/C517](#), [EPT/PPS/B037](#) & [EPT/PPSB038](#)

**Guidance:**

- DNO pole licensed for joint user attachments
- Plant fitted in specified location
- No attachments to Electricity Northwest, other attachments approved by local DNO
- Correct power separation maintained
- Small TM joint, CBT & cables with similar characteristics to dropwire permissible

## 22.14 F0195 Score 10

**Item Description:** COF215 / 36F ULW Cable critical items

**Points of reference:** [EPT/ANS/A040](#), [AEI/AEC/B248](#) & [EPT/COF/D932](#)

**Guidance:**

- 7mm Purple flash clamp 36fULW
- Clamp correctly fitted on pole ringhead or bracket (e.g. UPB, 22)
- Clamp wrapped correctly, cable not twisted around the clamp
- Intermediate Clamp correctly assembled and fixed to pole and used in appropriate location
- Suitable cable used for power crossings

*Note:* Wire height, pre climb label etc. are checked on SS606

## 23 *Connectorised MDU Items*

Connectorised MDU network construction FPQ scoresheet 559 guidance

### 23.1 F1171 Score 10

**Item Description:** NEW Basement Splicing Box – Critical Items

**Points of reference:** [EPT/COF/C007](#)

**Guidance:**

- Splice/Splitter box securely fixed to building fabric using suitable fixings
- Installed as per manufacturer's instructions including but not limited to:
  - Gas seals correctly provided where required on external cables
  - Correct cable entry used for cable type
  - Cable correctly anchored/secured for cable type
  - Splitter outputs (yellow jumpers) not trapped or damaged by lid closure
  - Lid missing or incorrectly provided leaving the unit fault prone or liable to damage/vandalism

## **23.2 F1175 Score 10**

**Item Description: NEW Connectorised Splitter Box - Critical Items**

**Points of reference:** [EPT/COF/C007](#)

**Guidance:**

- Splice/Splitter box securely fixed to building fabric using suitable fixings
- Installed as per manufacturer's instructions including but not limited to:
  - Gas seals correctly provided where required on external cables
  - Correct cable entry used for cable type
  - Cable correctly anchored/secured for cable type
  - Splitter outputs (yellow jumpers) not trapped or damaged by lid closure
  - Lid missing or incorrectly provided leaving the unit fault prone or liable to damage/vandalism

## **23.3 F1173 Score 5**

**Item Description: NEW Basement Splicing Box – Non-Critical Items**

**Points of reference:** [EPT/COF/C007](#)

**Guidance:**

- Lid incorrectly provided (e.g. loose/missing screw)

## **23.4 F1177 Score 5**

**Item Description: NEW Connectorised Splitter Box – Non-Critical Items**

**Points of reference:** [EPT/COF/C007](#)

**Guidance:**

- Lid incorrectly provided (e.g. loose/missing screw)

## **23.5 F1179 Score 10**

**Item Description: NEW Invisilight Cable e.g. 12f Corridor Cable - Critical Items**

**Points of reference:** [EPT/COF/C007](#)

**Guidance:**

- Invisilight cable fully secured to building fabric with adhesive
- Cable routed safely and in a damage free location
- Corner protectors correctly installed where required
- Cable bend radius maintained
- Cable free from damage, kinks or evidence excessive tension applied

*Note: Correct provision of fireproof fixings and firestopping of holes checked under items S0080 & S0081*

## **23.6 F1181 Score 5**

**Item Description: NEW Invisilight Cable e.g. 12f Corridor Cable - Non-Critical Items**

**Points of reference:** [EPT/COF/C007](#)

**Guidance:**

- Excessive adhesive applied detrimental to building aesthetics
- Cable run poorly executed (e.g. sagging or wavy cabling), correct run achievable

## **23.7 F1183 Score 10**

**Item Description: F1183 NEW Other Fibre Cables e.g. EZBend – Critical Items**

**Points of reference:** [EPT/COF/C007](#)

**Guidance:**

Other fibre cable(s) (e.g. EZ bend, COF950) installed correctly

- Cable correctly secured to building fabric, cable tray or in trunking/conduit
- Cable routed safely and in a damage free location
- Cable bend radius maintained
- Cable free from damage, kinks or evidence excessive tension applied

*Note: Correct provision of fireproof fixings and firestopping of holes checked under items S0080 & S0081*

## **23.8 F1185 Score 5**

**Item Description: Other Fibre Cables e.g. EZBend – Non-Critical Items**

**Points of reference:** [EPT/COF/C007](#)

**Guidance:**

- Cable run poorly executed (e.g. sagging or wavy cabling), correct run achievable

## **23.9 F1187 Score 10**

**Item Description: New Floor DP- Critical Items**

**Points of reference:** [EPT/COF/C007](#)

**Guidance:**

- Floor DP securely fixed to building fabric using suitable fixings
- Spool correctly secured
  - Spool lock should be slid up to lock the spool in place with the spool lock screw
  - Spool should be positioned so that the SC connectors are facing down
- 900 Micron tails properly routed and free from damage due to lid closure
- Lid missing or incorrectly provided leaving the unit fault prone or liable to damage/vandalism

*Note: Correct provision of fireproof fixings and firestopping of holes checked under items S0080 & S0081*

## **23.10 F1189 Score 5**

**Item Description: NEW Floor DP- Non-Critical Items**

**Points of reference:** [EPT/COF/C007](#)

**Guidance:**

- Lid incorrectly provided (e.g. loose/missing screw)

## **23.11 F1195 Score 10**

**Item Description: NEW End User Break-Out - Critical Items**

**Points of reference:** [EPT/COF/C007](#)

**Guidance:**

- Breakout securely fixed to building fabric using suitable fixings
- Fibres and SC adaptor stowed securely and free from damage

- Lid missing or incorrectly provided leaving the unit fault prone or liable to damage/vandalism

## **23.12 F1119 Score 5**

**Item Description:** NEW End User Break Out – Non- Critical Items

**Points of reference:** [EPT/COF/C007](#)

**Guidance:**

- Lid incorrectly provided (e.g. loose)

## **23.13 F1149 Score 10**

**Item Description:** NEW MDU Fibre routing and splicing

**Points of reference:** [EPT/COF/C007](#)

**Guidance:**

**Splitter/splice box:**

- Correct splice protector used for tray type and seated in correct tray position
- Fibres spliced as per FNC
- Splitter box jumpers terminated as per FNC
- No fibres liable to damage by incorrect routing in chassis or tray or EU Breakout
- Sufficient spare fibre left in trays for jointing (Approximately 4 wraps)
- Elements correctly presented to chassis with no excessive bends
- Element coating stripped in specified location.

# **24 *Line management checks only***

## **24.1 F0501 (DL) Score 5**

**Item Description:** Correct communications available and used effectively.

**Scope:** Work points identified for checking.

**Points of product reference:** [EPT/COF/D889](#)

**Specific guidance:**

- BT approved radios available

- Radios used effectively

## **24.2 F0504 (DL) Score 5**

**Item Description:** Care taken when other fragile cables are present (Fibre and Coax).

**Scope:** Work points identified for checking.

**Points of product reference:** [EPT/ANS/A024](#)

**Specific guidance:**

- Other fragile cables such as fibre or coax cables supported if moved

## **24.3 F0505 (DL) Score 10**

**Item Description:** Cable/sub-duct/BFT ends correctly sealed during cabling operations.

**Scope:** All Cable/sub-duct/BFT worked on

**Points of product reference:** [EPT/UGP/E041](#)

**Specific guidance:**

- Cable sealed correctly, using correct caps sealing during cabling operations

*Note:* The Blown Fibre Tubing Sealing Kit must **not** be used to seal ends during cabling operations.

## **24.4 F0517 (DL) Score 10**

(Includes F0516)

**Item Description:** Safe working and Fibre/sub duct/BFT cabling practices observed.

**Scope:** All work points

**Points of product reference:** [EPT/COF/B025](#)

**Specific guidance:**

- On site risk assessment performed
- Safety of self and others assured at all times (i.e. site safely guarded)
- Safe management of trailing cables (i.e. extension power cables etc.)
- Safe working practices observed if working at heights
- Personal protective equipment utilised as required
- Safe working practices applied when handling and working with optical fibre cables

- Safe working practices applied when working with Safe blown fibre installation techniques applied

## **24.5 F0518 (DL) Score 10**

**Item Description:** Cable chamber permit to work obtained and validated

**Scope:** Staff engaged in cable chamber work.

**Points of product reference:**

**Specific guidance:**

In progress check only.

Cable Chamber permits to work must be obtained using the appropriate process. The engineers present should demonstrate that they have the sound knowledge or reference material available to assure that the correct permit process is adhered to.

Any associated reference numbers given must be available for validation purposes.

## **24.6 F0408 (DL) Score 5**

**Item Description:** Calibration

**Scope:** All equipment requiring calibration.

**Points of product reference:**

**Specific guidance:** As per calibration procedures

- Has equipment used been calibrated (for some items local calibration practices prior to use apply)
- Is equipment used within calibration date
- Are calibration labels present and legible

## **24.7 A2008 (DL) N4203 (C) Score 1**

**Item Description:** Site specific

**Scope:** All stores, tools and equipment.

**Points of product reference:**

**Specific guidance:** As per relevant ISIS

- All stores, tools and equipment required to complete work position available on site



## 24.8 Additional Line Manager checks - under development

The following Line Manager Check items are in the Fibre checklist range but no check guidance was originally produced when the checklists were introduced as they are outside the scope of Independent Audit.

No Guidance currently available:

The relevant items are in the table below:

Item Code (DL)	Item Code (C)	Score	Item Description
A2004	N4201	5	Work site, cable and joint support set up ready to start work.
A2010	N/A	5	Ductmotor used to rod in ducts containing fibre or lead cables - if not possible to use ductmotor has every effort been made to protect existing network cables.
A2950	N1119	5	Anti creepage devices replaced correctly after cabling.
H7008	N/A	5	Purpose of visit and details confirmed with customer estimating how long job will take. Explained to the End User that Openreach are working on behalf of their Communications Provider.
F0112	N/A	0	Optical Fibre Connector protection, inspection and cleaning activities carried out correctly.
F0405	N/A	5	Other observed Fibres correctly contained/protected/reported from cable butt to splicing tray.
F0211	N2148	10	Fibres worked upon correctly routed within tray/shelf.
F0402	N2152	10	Cables/jumpers provided or worked on, correctly restrained at anchor/restraint points within closure/termination unit.
F0410	N/A	5	Observed cables within closure, correctly restrained at anchor/restraint points as appropriate or reported
F0411	N2153	10	Construction & Integrity of Joint/Termination unit/rack/tray/shelf worked upon maintained/reported as appropriate.
F0502	N/A	5	Drawrope spliced correctly and loose ends taped to the pulling side of splice.
F0503	N/A	5	Drawrope free from broken strands and knots.
F0506	N/A	10	Cable/ Subduct connected correctly to rope.

F0507	N/A	5	Cable adequately lubricated.
F0508	N/A	5	Correct cabling guides used where required.
F0513	N/A	10	Cable/sub-duct/BFT installation fuses correctly applied where required
F0514	N/A	5	Cable/sub-duct/BFT provided in correct duct/bore as appropriate.

## 25 **SS 524 Specific Items**

### 25.1 **F0300 – Action Point (10pts)**

**Item Description:** Has LLT been conducted on 5% of available fibres

**Points of Reference:** EPT/COF/D956, EPT/ANS/A040 & EPT/COF/C008

**Specific Guidance:**

- Correct number of fibres for each individual spine have been tested (mandatory 5%)
- Test to as many different AGG nodes and different elements as possible
- Tests spread evenly across different elements
- Min of 1 fibre per A/N tested
- Correct LLT methodology used

### 25.2 **F0376 – Action Point (10pts)**

**Item Description:** Has the spine been built in line with OFN build standards

**Points of Reference:** EPT/ANS/A040, NWK/LNK/C212

**Specific Guidance:**

- All spine activities (cabling, splicing etc.) completed in accordance with the quality standards in EPT/ANS/A040  
Including but not limited to
  - Spine built as planned, if not TDFS has been approved
  - Correctly supported & restrained
  - All labelling correct
  - No bend radii compromised
  - Fibre cleaning carried out using correct cleaner
  - Nodes/joints closed correctly

## 25.3 F0398 – Coaching Point (5pts)

**Item Description:** Has the correct method of testing been carried out for the required task

**Points of Reference:** EPT/COF/D956, EPT/COF/C008

**Specific Guidance:**

- Correct method of testing used for specific activity carried out.
- Results recorded correctly on correct systems

## 26 *References*

In addition to standard ISIS working practices the following quality standards reference documentation is applicable to the OFN checks and audits.

EPT/ANS/A040 - OFN User Manual for Engineers

EPT/ANS/A014 – Specification for Overhead Route Stability

EPT/COF/D945 - TM Nodes

EPT/COF/C005 - CBT build Practices

EPT/COF/C004 - Connectorised L2C

EPT/COF/C007 - Connectorised MDU Installation Practices

AEI/AEC/B335 – Dropwire in Line of Route (DILOR)

A wider range of information on Access Network, Quality of Personal Workmanship can be found at the [Technical Library](#)

All craft practises are contained in the appropriate ISIS documents that are available from your Manager or BT representative.

## 27 *Enquiries*

Enquiries and document change request should be made with, or sent to the author of this document. Details on page 2

**END OF DOCUMENT**