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Identification Marking of Optical Fibre Cables

About this document ...

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Content approval

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Issue 21	17-Jun-2021	Carl Morrell	New label introduced
Issue 20	05-Mar-2021	Carl Morrell	Appendix A update
Issue 19	30-Nov-2020	Carl Morrell	Section 1.1 update
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Issue 12	18-Apr-2011	Chief Engineer's Office Technical Documentation team	Document reviewed.Change of author. (DCC1276FPD)
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Issue 10	29-Jun-2009	Chief Engineer AEI Technical Documentation Team	ES Memo 4/2008 included in text. Amendment to label diags. in sec 3.1 & 3.2. Also change of Author & Approver DCC 288
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Issue 8	10-Jul-2006	Ian Gauntlett	Document converted to only cover marking of optical fibre cables. Information on restriant and support of optical fibre cables now contained in ISIS EPT/CJT/G010. New document author and approver.
Issue 7	24-Nov-2005	Carl Morrell	Section 1.1 updated re positioning of labels either side of fire doors / fire breaks. Andrew Field NRE573.
Issue 6	22-Jul-2004	Carl Morrell	Document refers to Blown Fibre Cables & Sub-duct. Changes to labelling for

			deep level tunnels.
Issue 5	9-Sep-2002	Carl Morrell	Section 4 amended
Issue 4	7-Jul-2000	Carl Morrell	Change of ownership
Issue 3	19-Oct-1998	Dave Levitt	EDRS format
Issue 2	1-Mar-1993	John Greene	Original ISIS document

Table of Content

1 *Introduction*

Optical cable routes shall be easily identified and clearly marked.

This document describes the identification methods that shall be used and the locations where identification marking shall be applied.

1.1 Underground structure locations requiring marking

This section describes the requirements for cable identification and labelling within underground locations for all optical cables (for optical cables installed using the overblow technique please refer to clause 1.2).

1. **Pull through points**
2. **Jointing points**
3. **Cable chambers**:
   - On all cables within 500mm of the duct seal
   - Adjacent to any joint within the cable chamber
   - At 50 metre intervals within the cable chamber
4. **Tunnels and Deep Level Tunnels**:
   - At a point 4 to 8 metres either side of any fire doors / fire breaks
   - Adjacent to all joints
   - All jointing bay points – these bays are widened areas within the tunnel / deep level tunnel that allow for a change of cable direction or access to a higher level
   - Either side of the duct face that interfaces with the tunnel / deep level tunnel shaft / access
   - At a point immediately prior to shaft entry
   - At the bottom of the shaft
   - If any horizontal cable lengths >600 metres remain unmarked after the above requirements have been adhered to additional marking shall be applied at 600 metre intervals.

1.2 Labelling Requirements for Optical Cables and Subduct when Overblowing

For optical cables that have been installed using the overblow technique, the requirements detailed in clause 1.1 should, where possible, be adhered to. However, where it is impractical or commercially un-viable, for example in locations that require de-silts or traffic management, a concession to labelling in every box along the route is given.

Where it has been deemed either inmpractical or commercially un-viable to label in every box along the route, the following rules shall apply.

- All boxes along the route where it is practical to do so shall be labelled in accordance with clause 1:1
- The overblown cable together with the existing cable present in the subduct must be recorded on BT systems such as PIPER to ensure the overblown cable can be identified along the route.

1.3 Internal locations within buildings

This section describes the requirements for cable identification and labelling within Exchange / building locations for all optical cables.

Internal OFF/OFR Location

Within 300mm of cable butt entering tray or sub-rack location.

Within 300mm of frame top entry point to overhead cable run.

2 *Identification Methods*

The identification methods below shall be used.

1. Identify the optical cable (Yellow tape)
2. Identify the cable (Cable Marker Labels)

3 *Cable Marker Labels*

On new provision or repair cabling works, all optical cables in external environments must be clearly identified using the CABLE MARKER LABEL OPT/COP (Item code 108548).

All optical cables in internal environments must be clearly marked using the wrap-around Laminate Marker Label Optical (Item code 006892) or the zip tied CABLE MARKER LABEL OPT/COP (Item code 108548).

The labels shall be clearly printed with the required information using a Pen Marker No.1 (Item code 129408).

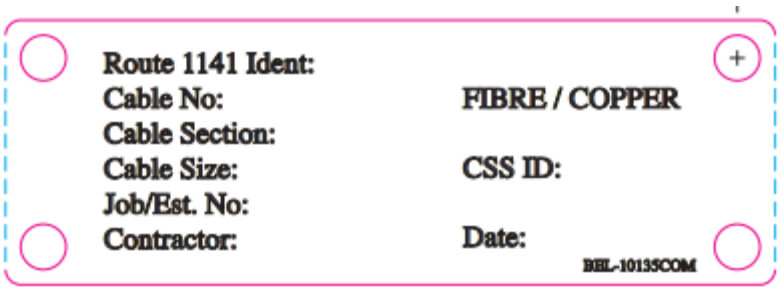
3.1 CABLE MARKER LABEL OPT/COP (Item code 108548)

This is a 'Tag' marker label system that is used to identify optical (and copper) cables in external and internal environments, both Underground and Overhead. The label is a single, white, UV stable design for internal & external use, overhead & underground - black writing on white label. The installer provides the standard information and circles, or crosses off, the relevant fibre/copper option.

All labels should be attached to the cable using Straps Cable Fixing 1A and fitted as close to the sheath as possible.

Note: The Straps Cable Fixing shall be cut such that no sharp edges are present.

The label size is 100mm x 35mm, coloured white and has the printed detail shown.



Whilst tightening, the zip tie ensures they are fitted as close to the sheath as possible, the zip buckle and the edges of the label can stick up. This can leave labels vulnerable to snagging, twisting and tearing, resulting in cables being difficult to identify. In order to ensure that the profile of the label is kept as low as possible, it is recommended that, where labels are at risk of damage, the zip tie at each end should be wrapped twice in Tape Plastic Adhesive 25mm. This should stop the labels and zip ties being snagged and damaged during normal work activities.

On cables less than 25mm diameter, the label sticks out further in the middle, therefore it's recommended that a 3rd zip tie should be fitted at this point. This will be free to slide and not obscure any lettering (previously issued yellow example shown below – now white labels).

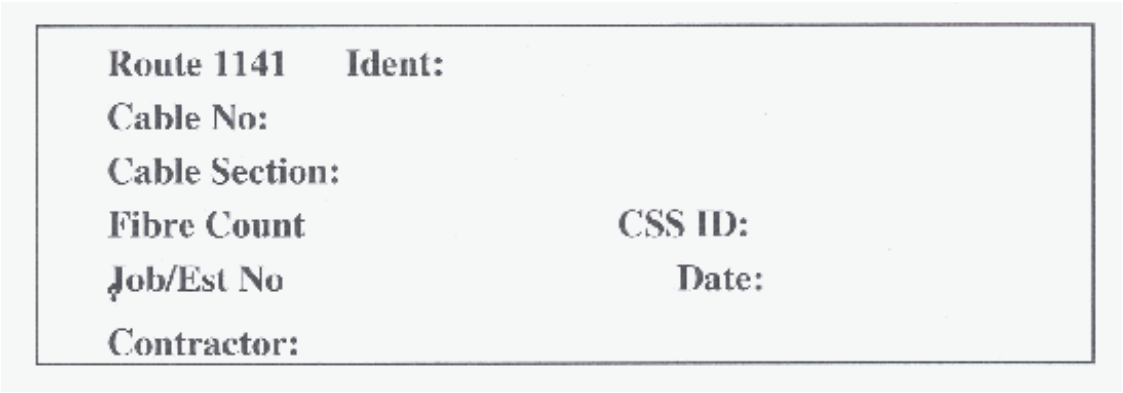
3.2 Laminate Marker Label Optical

This label is used to identify optical cables in internal environments only.

Caution: The Laminate Marker Label Optical is not suitable for use in external environments.

The label is a self-laminating wrap around design with a yellow coloured 35mm x 80mm data panel and a transparent tail. To apply the label, ensure that the cable is free from dirt, grease and other debris at the position where the label is to be affixed. Peel off the backing and apply the top edge of the label to the cable and tightly wrap around allowing the transparent tail to fully encapsulate the printed surface. Keep the surface smooth and free from air pockets between the laminate.

Note: Small air pockets on the label may be smoothed out using a suitable blunt tool e.g. the barrel of the Pen Marker 1A.



4 *Identification Marking of Optical Fibre Cables in External Environments*

The JRF 10 and MR 2 are illustrated as a guide to show optical fibre cables in footway boxes and manholes should be marked (see Figures 1 and 2).

Note: Where cables are installed in Sub Ducts the markings and identification will be the same.

If there is more than one joint in a structure see Figure 3.

Figure 1 (Below) - Securing and Marking Optical Fibre Cables

Pull Through Points

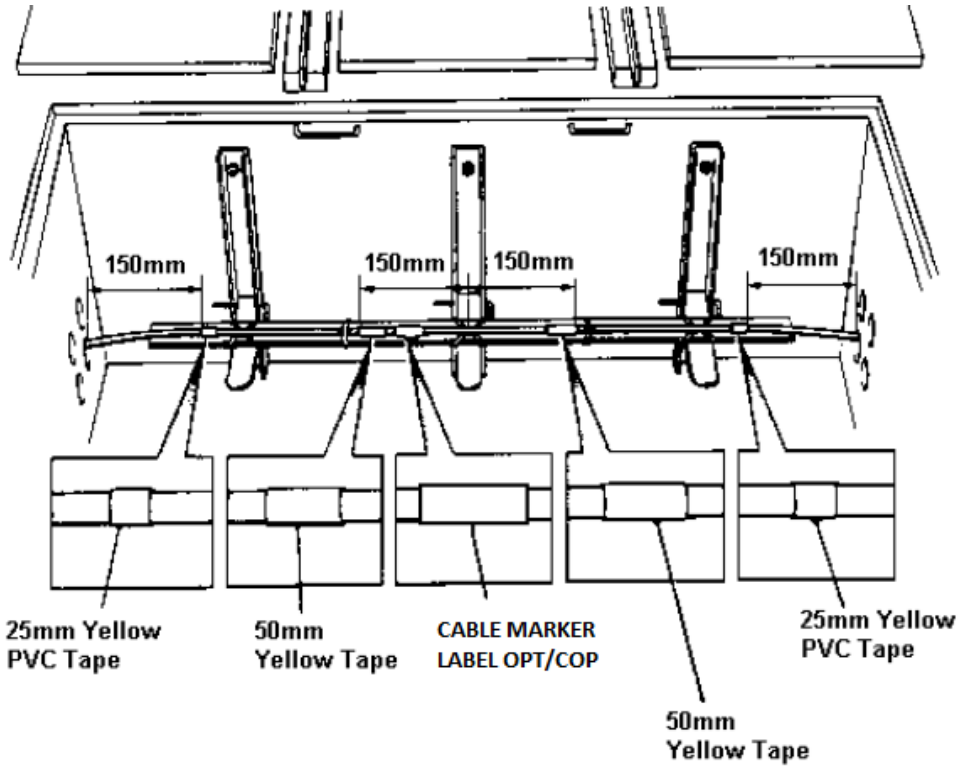
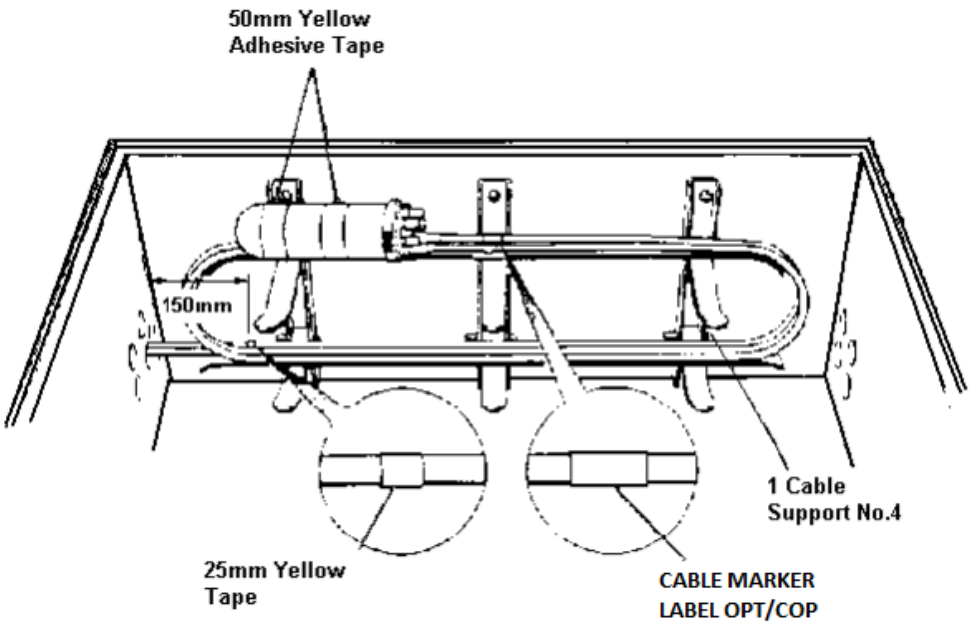


Figure 2 (Below) - Single Jointing Points

Cables Entering Structures from One Side



Cables Entering Structures from Both Sides of Structure

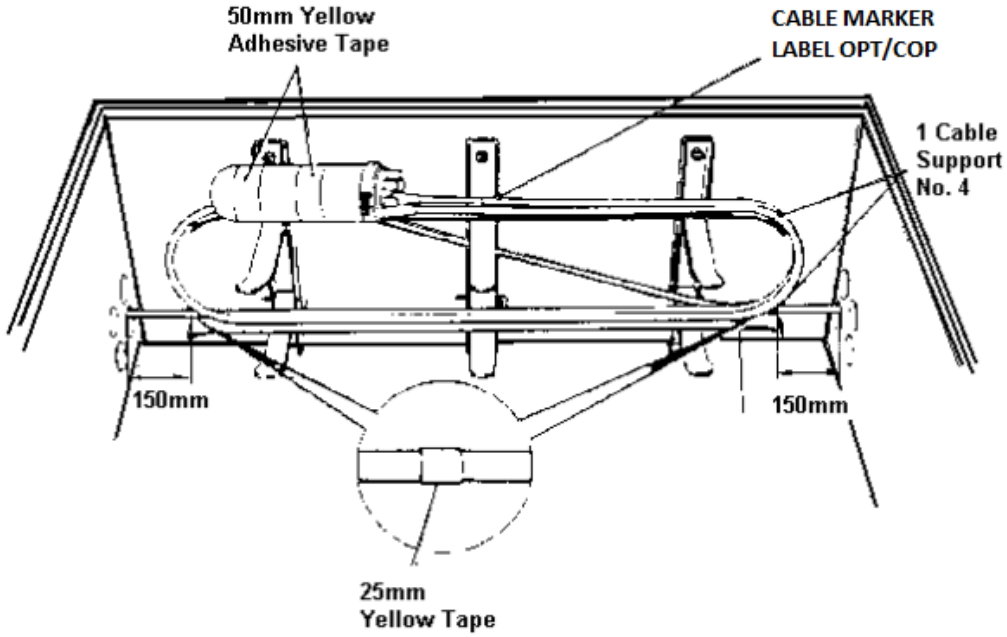
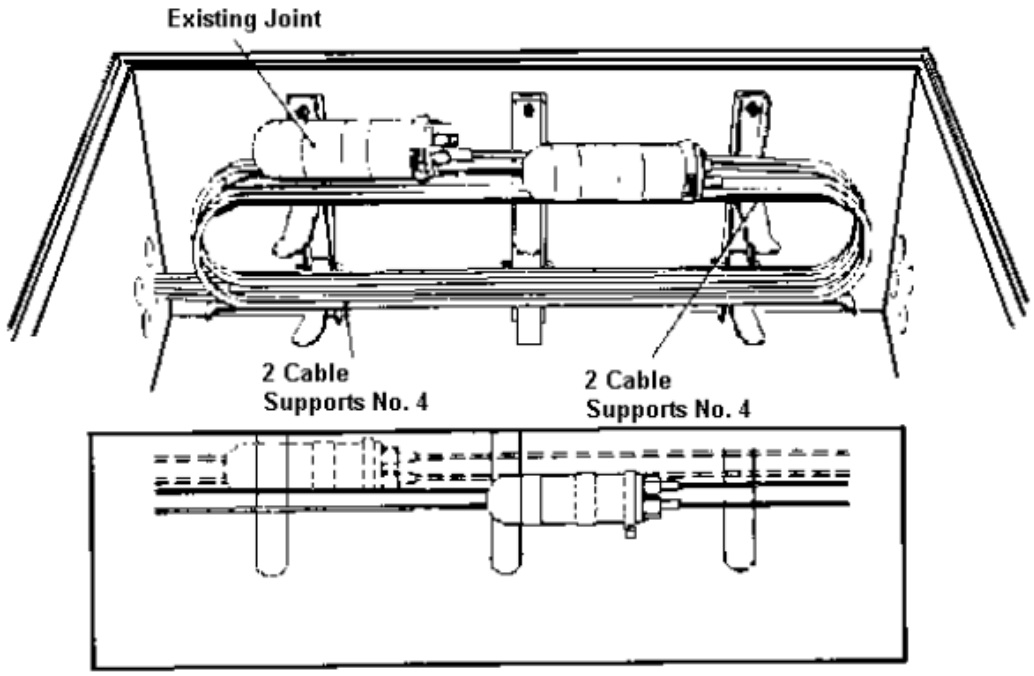
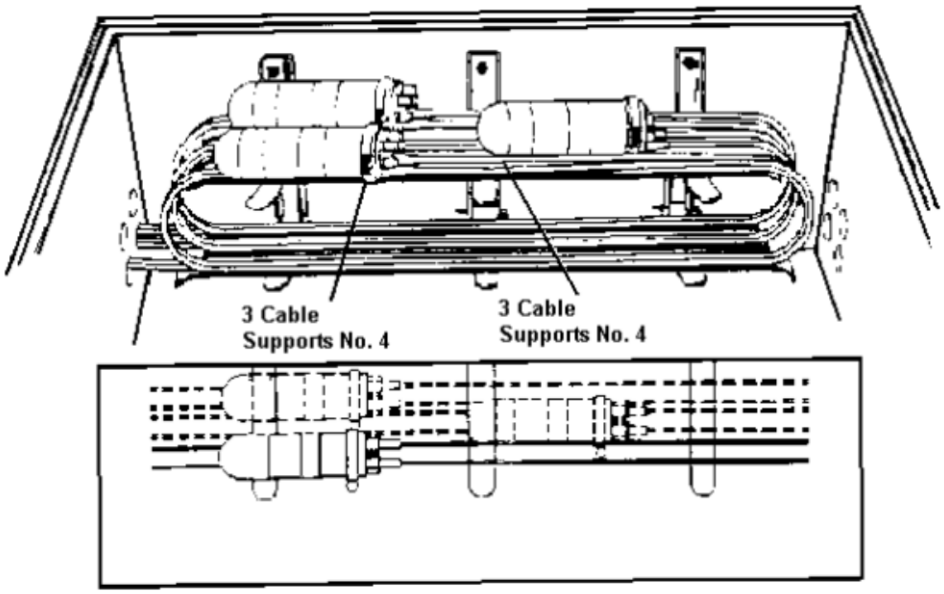


Figure 3 (Below) - Multiple Jointing Points

Two Joints in a Structure



Three Joints in a Structure

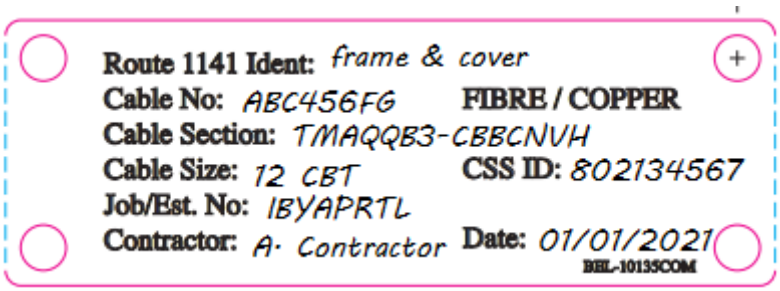


5 *Identification of Civil Engineering works*

CABLE MARKER LABEL OPT/COP (108548) is to be used and filled out with a Pen Marker No1 (129408) with the required information:

The label shall be attached by Straps Cable Fixing 1A to the chamber ironwork or other suitable fixture in the joint box fabric

Cabinets are to be marked with Pen Marker No1 inside the opening door leaf.



Where a civils activity has taken place to provide a cabinet or PCP reshell, all details shown below will be written in a durable indelible marker pen (e.g. Pen Marker No1) on the inside top right corner of the door.

The information required for each activity is:-

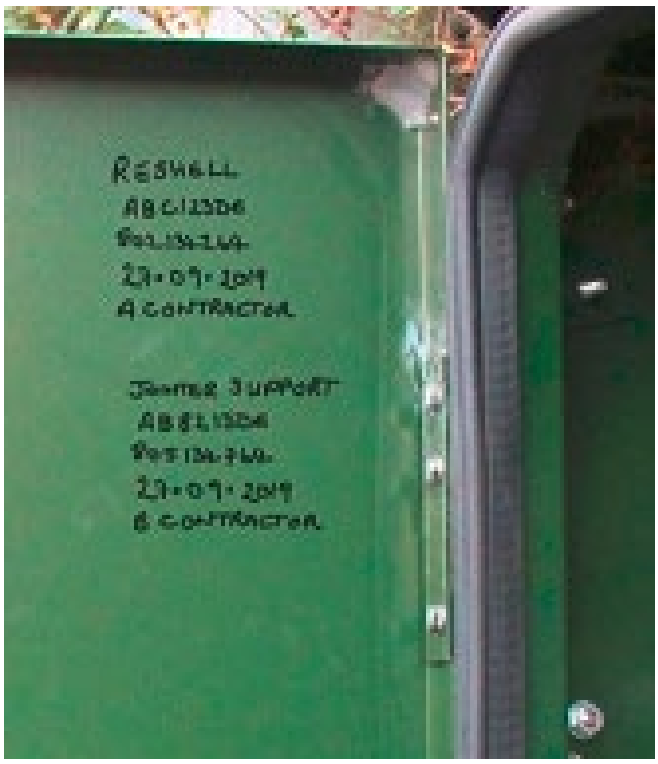
- Task
- Openreach Estimate
- Contract operative UIN

- Date
- Main partner name

Labelling of PCP jointer assist

Where a jointer assist activity as taken place involving a PCP-reshell the details as list below will be written in a durable indelible marker pen (e.g. pen marker No1) on the inside top right corner of the door.

Example of both reshell and jointer support



See ISIS EPT/ANS/A067 - Specification for labelling of Civil Engineering Activities, for further details.

6 *Appendix A – Handheld Printer*

The Chief Engineering team have been issued with a label printer to replace the standard fibre cable labels for UG, OH and internal applications. The handheld printer allows engineers to to move from the standard fibre cable label, which can deteriorate over time (older yellow label examples shown below – can be white or yellow printed), to a new printer labelling system.

Brother Handheld Printer P-Touch E300

Specification for the initial Handheld Printer Label Kit

- Brother Handheld Printer P-Touch E300, includes; Brother BA-E001 Li-ion Rechargeable Battery and 240V Charger (can also take AA cells)
- Optional Extra; Vehicle Charger 12V-24V DC (e.g. RS components 478-4667)
- A range of 'laminated black on yellow' label cassettes are available e.g. *recommended* **Brother TZe-FX641** (flexible ID), as well as optional TZe-S641 (Strong Adhesive) and TZe-641 (Standard)

(This is aimed at fibre cables, but if you need to label copper cables, use Brother Cassette TZe-FX241)

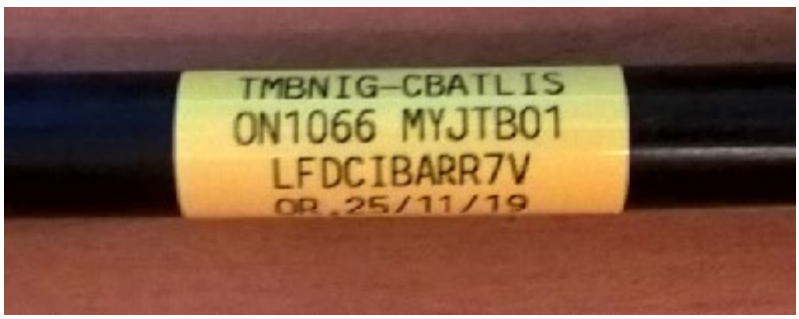
Guidelines for application

Supplier's brochure (see attached)

BROTHER PT E300VP.pdf

Here's a quick setup video to get you up and running (it will make more sense when you have the label printer in front of you !). Optional, Workplace video

- For all cables, the labels may be '**wrapped'** or applied as a '**flag'**, depending on the diameter of the cable (shown below). **Ensure the cable is clean and dry beforehand**.

For cables **12mm diameter or less**, the **Flag** fitting is recommended (Do not trim, leave a little excess length to stick ends together) 	For cables **over 12mm diameter**, the **Wrapped** type fitting should be fine 

- No need to print the full 'field headers', just the actual route ident, t-codes, contractor abbreviated name, date etc.. as shown above
- For Pole mounted CBT's, the labels should be fitted on the cable no more than 300mm below the CBT. They may also be fitted to the CBT itself, instead of the gold Pen Marker 2.

- Item is available on **Local Purchase only**, via iBuy. Obtain a quote from TW Engineering, Anglia house, eagle road, quarry hill industrial park, ilkeston, derbyshire de74rb … Mick Passey Tel 0115-932-3223

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