

Technical Note

Fibre Identification



Title: TN15
Author: Paul Cave
Date: September 2012

From time to time a question arises, 'Is it possible to identify the grade of the installed fibre backbone cable?' This is particularly relevant where a company moves into a building that has been previously occupied and are keen to take advantage of the existing installed cabling system.

This is relatively straightforward with regards to copper cabling, where a tester can be used to see what standard it passes.

With fibre it is not as straightforward as there is no field tester that can actually tell the difference between grades of fibre, the operator is required to input this information.

Furthermore there is a misconception that a colour coding system introduced a number of years ago would provide sufficient information for identification. The coding scheme has its limitations as it only really covers the connectors and patch cords along with the actual cores within a multi-core cable. It is also reliant on all manufacturers following the same scheme, which is not always the case. To give an example of the problem, TIA have at least 3 methods of fibre array colour coding and EN 50174 has one, the manufacturer could have used any one of them.

Many manufacturers haven't incorporated the above to the outer sheath of multi-core fibres which still tend to have a black outer jacket with a legend printed on it, even this may not be visible with legacy installations.

There are ways to make an educated assessment.

Listed below are some different scenarios that can be used on a site to try and differentiate a fibre type.

1. If there are no markings on the cable, check the core size with a microscope and identify it as 50/125 or 62.5/125. Then test it to see what attenuation is in the fibre and the length of the cable, to decide what data speeds can be run on it.
2. Read the sheath of the cable for a part number or type description. If there are markings on the cable you should be able to identify the cable type by the part number and then run the same tests as above to check the attenuation and length.
3. The Fluke DTX will do an application test, i.e. Ethernet 1G or 10G but this is only after the size and type of the fibre has been established.

In conclusion, if there is any doubt, a NEW quality grade of fibre cable should be installed to support future applications. The simple reason for this is that OM3 fibre will support 10G Ethernet over a distance of 300m, OM2 can only support 10G up to 82m - both cables appear identical to the naked eye.

The full details of fibre construction types and application lengths can be found in the Fibre Section of the Excel Encyclopaedia.

This Technical Note has been produced by Paul Cave, Technical Manager – Infrastructure, on behalf of Excel

Excel is a world-class premium performing end-to-end infrastructure solution - designed, manufactured, supported and delivered - without compromise.

www.excel-networking.com

