

White Paper

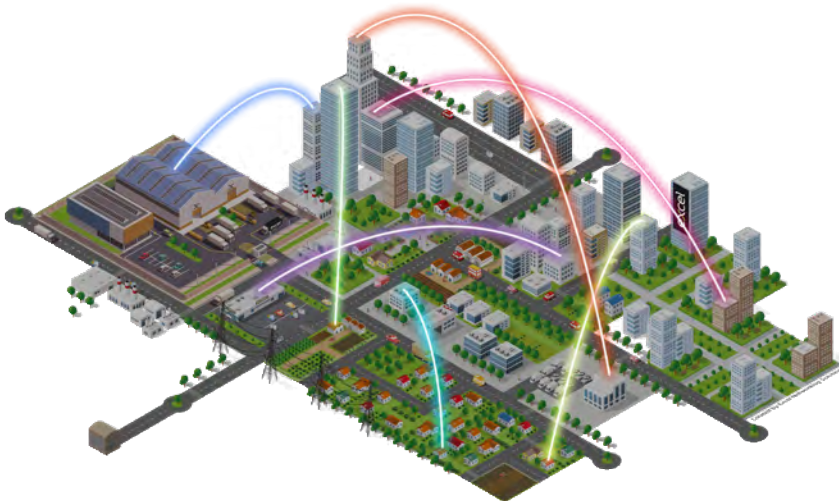
Blown Fibre, Applications and Benefits



Blown fibre has been with us since the mid to late 1980s and was originally designed in conjunction with British Telecom who wanted a way of rapidly deploying fibre as part of a planned upgrade to their network.

We now see a large number of Fibre-to-the-Home (FTTH) providers utilising it to provide high speed connectivity to residential developments. It has also become far more common in the campus and enterprise space. Certain landlords of commercial campuses and buildings are now also becoming the service provider, adding an additional revenue stream.

Whilst it is not ideal for all environments it does have a number of benefits that should be explored. The key is the design of the tube/duct infrastructure at the outset, ensuring the correct amount of capacity for future expansion. However, once those tubes have been installed it becomes a very quick and flexible solution that is easy to maintain and operate with measurable benefits.



Discover Excel's Enbeam FTTx solution online
<https://excel-networking.com/fttx-solution>

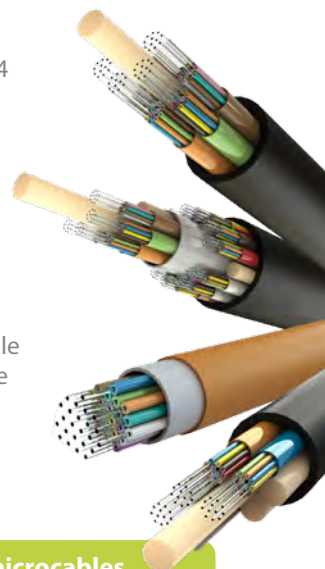
Method

A Blown Fibre system comprises of two main elements:

1. The duct/tube infrastructure, which can be from a single tube, right up to 24 tubes in one unit of both internal and external construction
2. The EPFU (Enhanced Performance Fibre Unit), which can be made up of either 4, 8 or 12 cores and OM3, OM4 or OS2

There is an option for the Wide Area Network (WAN) and Municipal Area Network (MAN) used in the larger campus and Service Provider markets for Micro Blown Cables and larger diameter tubes which can be up to 432 cores in one fibre cable. By the nature of the market and application, these are only OS2.

The equipment used to install the EPFUs or Micro Blown Cables only differ in scale and comprise of a compressor and a blowing head, but the principles remain the same. The compressed air acts like a lubricant, supporting and effectively flying the fibre down the tube as it pushed by a set of drive wheels in the blowing head.



Futureproof



Staged Financial Investment

100%

100% up-time



Quick to deploy

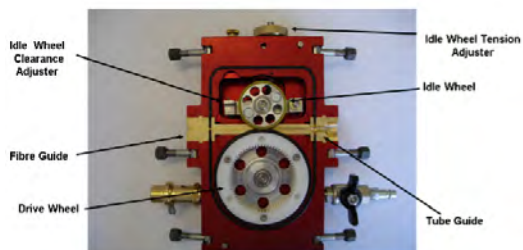


Flexible options



Easy to upgrade and maintain

<http://www.excel-networking.com/catalogue/c/fttx/cable/microcables>



The stress and strain are inflicted to the cable through the transportation of it in the pulling method. By manually pulling it, it becomes impossible to not, somehow, put pressure on the cable and, unavoidably, the installer will have inadvertently damaged the cable to some degree. This problem is eliminated when the blown technique is used. Air, by its very nature, is frictionless and it is the air alone that transports the cable through its tube in this technique. This means that with blown fibre an installer can confidently guarantee its life for the full warranty, which is a huge advantage for both the installer and end user alike. The stress and strain that pulled cable will, unavoidably, sustain will reduce its life and therefore the long-term lifespan may be impacted.

Using air, fibre can be blown through a tube at approximately 30 metres a minute, and this offers a huge time saving. The time saving alone is a great reason to use blown fibre, but this comes second to the cost effectiveness of it. Both blowing fibre and pulling it costs pretty much the same at the initial stage of installation. To look at the true cost savings the whole lifecycle needs to be taken into consideration with the key benefits coming from the ease of reconfiguration and expansion.

Installation & Operating Costs

The foundation of blown fibre is the installation of tube between required locations. The aim is to 'over install' the relatively low-cost tubing meaning that the actual fibre that is installed is then only done so in the core count and grade required for the immediate to short term. This is where the real saving of blown fibre can be seen, as the costs can be deferred. Only what is needed is installed initially. Then, when a network requires expanding, the new fibre units are blown in quickly and without physical disruption to the fabric of the building or campus. Money is not tied up in having the fibre cores installed for years when they are not being used and redundant fibre units can be very quickly removed using the same blowing equipment, making the tubes available for the future.

The fact that the cable can be installed as required means the maintenance of the fibre is also easy to manage. When replacing a cable with a fault or upgrading the infrastructure, it could not be easier. The existing fibre is simply blown out and either stored to be re-purposed elsewhere in the future or disposed of and the new fibre is blown into its place.

Applications

Blown Fibre is ideal for use on campus environment and major new-build projects, including both commercial and residential.

Also, applications where expansion and network upgrades are expected in the foreseeable future, such as University and Hospital campuses that are planning a redevelopment.

CPR

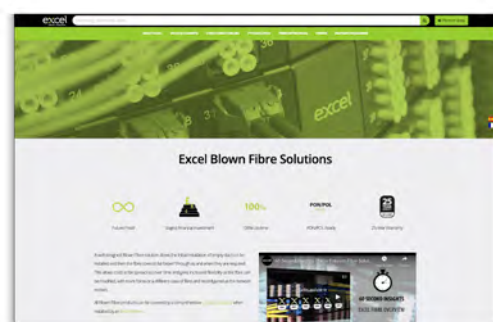
One question that is always asked about Blown Fibre is how does the Construction Products Regulation have an impact? At this moment in time, blown fibre is considered to be 'outside the requirements of the regulation'. The tubes are considered to be 'containment' which is currently outside the regulation and the EPFUs are not cables as they have no strength members and are therefore seen as non-self-supporting outside of the tube.

As for the Micro Blown Cables, they are purely for external use.

Conclusion.

The benefits of blown fibre are clear; flexibility, speed of deployment and upgrade/maintenance all provide the ability to maximise the investment and re-use of the tube infrastructure.

There are campus installations that include multiple buildings, such as re-development schemes that include demolition and new rebuilds which are taking advantage of these today. Having said that it is not ideal for all installations. If it is an existing duct network where the tubes are being installed, where there are a lot of bends and joints it can limit the distance the fibre units can be blown. However, if the routes are carefully planned and the tubes sympathetically installed, Blown Fibre can (and is!) support the backbone network of Europe's tallest building.



Read more about Excel's Blown Fibre solutions online

<https://excel-networking.com/fibre/blown-fibre>

European Headquarters

Excel House
Junction Six Industrial Park
Electric Avenue
Birmingham B6 7JJ
England

T: +44 (0) 121 326 7557

E: sales@excel-networking.com

Mayflex MEA DMCC

Office 22A/B
AU (Gold) Tower
Cluster I
Jumeirah Lake Towers (JLT)
Dubai
United Arab Emirates
PO Box 293695

T: +971 4 421 4352

E: mesales@mayflex.com

www.excel-networking.com

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