

White Paper

Blown Fibre - A Tube of Benefit



Blown fibre sounds like a tricky alternative to the conventional method of installing fibre optic cable and something that would require a lot of expertise. It is a rarely understood technique and so is often avoided. But if someone had all the facts to hand, would they still choose the conventional method? With the many benefits to using blown fibre, it's definitely something that should be explored.

Blown Fibre: A Tube of Benefit

At its simplest, blown fibre uses a series of fitted tubes to install fibre between locations. It is a far easier method if installation than the conventional process, which requires the integrator to literally pull the cable along its route, but despite the many advantages, it is still rarely utilised.

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, in fact, comes second to the cost effectiveness of it. That's not to say that the actual start up costs are a lot cheaper; they're not. In fact 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.

The foundation of blown fibre is the installation of tube cable (available in various tube counts) 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 a number of years that 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. As and when new grades of fibre are developed this can be quickly and easily deployed.

With blown fibre providing a return on investment as quickly as this, it not only strengthens the argument for using it over the conventional method, but it also helps IT and Network Managers justify the costs of the whole infrastructure in the first place. If the project budget can be spread out on a user basis, then it's much easier for it to be approved.

The fact that the cable can be installed as required indicates that the maintenance of the fibre should also be easy to

manage. And this certainly is the case. Whether it's replacing a cable at fault or upgrading the infrastructure, it couldn't be easier. The existing fibre is simply blown out and binned and the new fibre is blown into its place. That's it.

In an industry where Moves, Adds and Changes (MACs) are inevitable, contingency planning is vital. Installing infrastructure that is virtually impossible to modify should always be avoided, and integrators and designers are, instead, looking to install products that can be easily adjusted, thereby expanding their lifecycle, increasing the longevity and cost effectiveness of them.

The need for maintenance is greatly reduced in itself by using blown fibre, adding a further benefit to the list. Blown fibre is a smooth process, and the cable travels effortlessly down a tube, with no interference. In comparison, the use of the more traditional pulling method can cause damage to the cable just through the actual installation process, and whether it's just light stress or more severe strain, the life of the cable will be shortened. The stress it faces means that the need for maintenance becomes far more likely and, worse still, the 25 year warranty that it may carry will become vulnerable.

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, have to sustain will lessen the life of it and therefore the 25 year life span cannot be guaranteed.

Diversity, a key requirement for cabling infrastructure, is also much easier with blown fibre. A competent network should have more than one path for cable, ensuring that if one path goes down a second can pick up the feed. This can be achieved with any installation method, but blown fibre provides far

greater advantages. With blown fibre only one tube is needed and this one tube can install cable in up to four multiple points by using 'ring topology'. Ring topology is a process whereby devices are attached along the same signal path to other devices, forming a path in the shape of a ring. The diversity that blown fibre creates offers greater flexibility and at a much lower expense, whilst at the same time still ensuring a resilient network. If something goes wrong in this instance, only the part that needs fixing has to be touched, leaving the rest of the infrastructure unscathed.

Using conventional cabling methods, this is achieved with much greater difficulty and much greater expense. In this case, two separate cables must be used and, if something goes wrong and the cable needs to be replaced or repaired, the whole network must go offline. The cable then has to be ripped out and replaced in a far lengthier, more expensive process. Blown fibre is not only faster and cheaper to maintain, but with a shorter and more accurate repair and replace process, the impact to the network users is minimised and less of the network is affected at any one time.

Blown fibre truly is a more cost effective, easier and more flexible approach. Fundamentally, the fact that only the tubes are fixed, meaning the cable can be manipulated as needed, offers numerous advantages. Using conventional methods the cable is fixed in place so the flexibility is non-existent and, should a MAC be required, the time and cost implications could be huge.

The difference blown fibre can make is vast and lasts throughout the lifetime of the infrastructure, which can be up to a quarter of a century. This, combined with the fact that the costs can be spread, provides an easy solution for installers and a very attractive offering to Network and IT Managers.

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