

## **Cat 6A cabling - Is it worth the investment?"**

Now that the Augmented Category 6 (Cat 6A) cabling standard has now been fully ratified, you can make some well-informed decisions when choosing a cabling system. I'm going to tell you what you need to consider, what benefits you can expect and how the costs compare.

The approved standard's full name is ANSI/TIA/EIA 568-B.2-10 so you should specify this to your cabling company when asking for a price. It's a copper cabling system for 10Gigabit Ethernet (10GbE) links up to 100 metres. It can be shielded or unshielded. Elsewhere in the 568-B family you'll find specifications for multimode fibre links up to 300 metres.

The 568-B family is American but so are Cat5e and Cat 6 so don't let that worry you. International standards will follow next year and will be a little more stringent.

The role of Cat 6A in our lives is to support 10GbE. That is its only advantage over Cat 5e and Cat 6, but a ten-fold improvement in bandwidth is pretty impressive. The other side of the scales has a couple of disadvantages; you need to decide which way the scales tip for any particular application. The simplest thing to consider is the price as a Cat 6A installation will typically cost you about 33% more than Cat5e. However, the main issue is that the size of the pathways and containment you'll require. That includes risers, voids, cable trays, cable baskets, floor ducting and perimeter trunking. Straight runs of Cat 6A need roughly twice the capacity of Cat5e but the minimum bend radius of installed Cat 6A is upwards of 30mm depending on the manufacturer. One manufacturer I know is saying that 67mm deep trunking is required to accommodate the bend radius of its Cat 6A cabling system.

If it's for a new building or you're premises are undergoing a major refit, it is simple enough to specify larger pathways and containment for your cabling systems. On the other hand, if you're hoping to use existing containment and pathways, you may have to think again because the cost and disruption may make Cat 6A unjustifiable.

You need to ask yourself whether, for the life of the cabling, you will ever need it to support 10GbE. If it's a backbone link or it's in data centre or it's likely to be in use for over ten years, the answer is more likely to be yes. Desktop applications for Bear in mind that the 10GbE active hardware is currently very expensive and it will be a few years before it's affordable for the desktop.

Make sure the cabling system you are buying complies with the full standard not the draft standard, particularly the permanent links (the installed cable runs). You can save money by using Cat5e cords if you're not yet implementing 10GbE but some manufacturers give a "channel link" warranty that, by definition, includes the cords.

Most Cat 6A cabling systems are shielded and it is imperative that the buildings earth system is of a very high standard and that the cabling system is earth bonded by competent electricians. Good earthing ensures that high frequency noise is removed from the system via the shielding and helps prevent alien crosstalk between adjacent cables. If you earth system is not of a very high standard you may need to invest in some improvements.

Where does the arrival of Cat 6A leave Cat 6? In my opinion, it makes it redundant because, although Cat 6 has two and a half times the frequency range of Cat 5e, no network standards have been adopted that run on Cat 6 but won't run on Cat 5e. Cat 7 is a superb cabling system but is very expensive, is no longer needed for 10GbE and, in my opinion, is over the top. So your choice is simply between Cat 6A and Cat 5e.

There are hundreds of BICSI Registered Communication Distribution Designers (RCDD) in the UK who are well qualified to advise you on the design of cabling infrastructure to support organisations of all sizes so further help is at hand.