





“One of the most important components of modern, business critical networks is often treated as an afterthought – cabling.”



THE DEMANDS OF TODAY'S BUSINESS ENVIRONMENT MEAN WE INCREASINGLY RELY UPON THE INSTANT SUPPLY AND AVAILABILITY OF INFORMATION FROM BOTH COLLEAGUES AND THE OUTSIDE WORLD.

This information can present itself in a variety of ways, as standard data in word processing documents, as voice messages, video clips, Internet downloads, even x-ray images and quite often as a combination of these. As a result we constantly expect more from our computer networks and IT systems, not only in terms of performance but also, and just as importantly, in terms of availability – ‘up time’ – and reliability. Investment in powerful computers, e-commerce and faster communications networks has never been higher, and is no longer limited to the blue chip corporate or city financial institutions. From sectors such as retail, education and health, to transport and leisure, its hard to name a business type that is not reliant, to some extent, on an efficient and effective IT strategy.

A challenge facing the modern IT manager is that these typical demands have to be met against a backdrop of ever-changing standards, new applications, and budget restraints. User needs change as new applications become either available, mainstream or cost effective. Increasing use of voice over IP telephony (VoIP), CCTV, wireless and general mobile computing, Internet, Intranets, Email and video conferencing all add to the growing demands placed on a company's local area network. Add to this the fact that 10 Gigabit Ethernet over copper and fibre is now a reality and the benefits of a business getting its network specification decisions right are endless.

Consider this and then consider the fact that one of the most important components of these modern, business critical networks is often treated as an afterthought – cabling.

Cabling

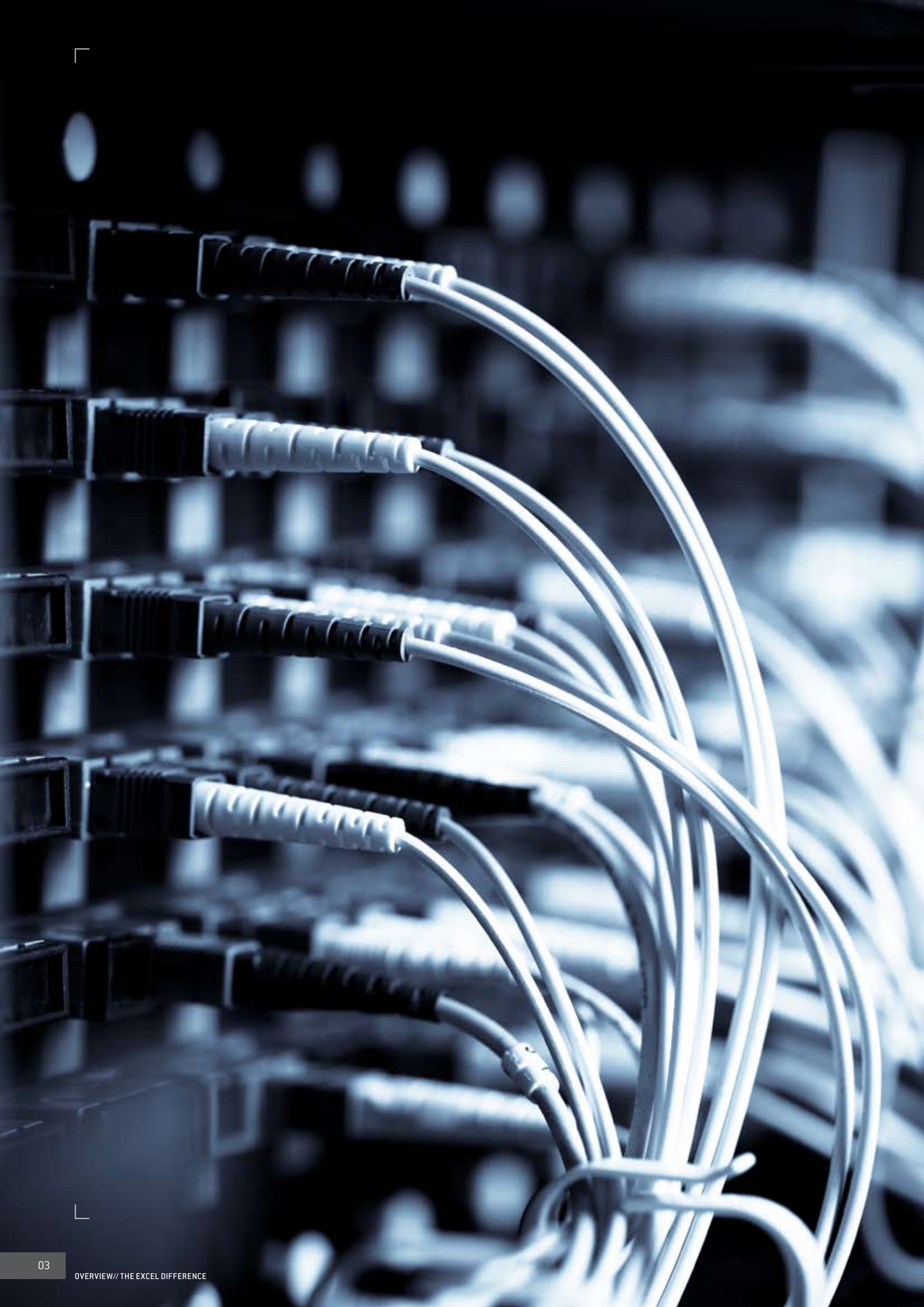
A network is only as good as its weakest link. In the highly complicated world of network and IT infrastructure, this may be an over simplification of matters, but it is nevertheless true.

If your cabling infrastructure is not designed, installed and in the first instance built from components that can cope with the demands of now and the foreseeable future, your investment in hardware – from servers, through routers and switches, to client devices – is wasted and your business suffers. Many surveys over recent years have confirmed that more than 50% of network failures are due to problems with the installed cabling.

The life expectancy of your cabling infrastructure is far greater than that of any of the hardware that will connect to it. You must therefore plan well, think ahead and consider your choices carefully when deciding upon, not just the type and standard of structured cabling for your business, but also the brand you choose.

A well designed, correctly installed, standards-compliant structured cabling system, backed by a comprehensive warranty programme is the best way of protecting your investment and allowing for future needs.

This shortform brochure is intended to demonstrate clearly and factually the benefits enjoyed by existing users of Excel. We hope you will consider comparing our offering to that of others in the market – particularly when you next plan a network cabling upgrade, data centre installation, or ‘simple’ building refit.





“Thousands of organizations across a myriad of sectors now rely on Excel to meet, if not exceed, their network performance expectations.”

EXCEL IS A COMPLETE, END-TO-END NETWORKING SOLUTION, OFFERING EXCEPTIONAL VALUE FOR MONEY, PERFORMANCE AND SUPPORT, MANUFACTURED TO INTERNATIONAL QUALITY STANDARDS AND COVERED BY A COMPREHENSIVE NO-NONSENSE SINGLE WARRANTY PROGRAMME SUPPORTED BY MAYFLEX, A UK-BASED COMPANY WITH GLOBAL REVENUE IN EXCESS OF £60M.

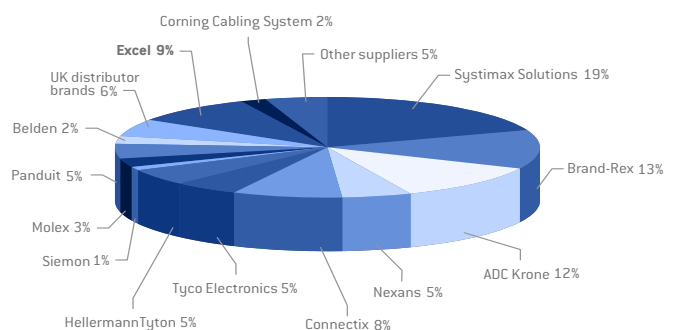
With an emphasis on compatibility and standards compliance ‘from cable to cabinet’, reliability and product availability, Excel is the complete trusted system. When installed by an accredited Excel Cabling Partner (ECP), the Excel structured cabling system is supported by a comprehensive 25-year warranty programme covering not just copper twisted pair cabling, but also optical fibre links and voice multipair backbones.

Since its launch in 1997, Excel has enjoyed formidable growth and market acceptance and has been subject to continuous development. Thousands of organizations across a myriad of sectors now rely on Excel to meet, if not exceed, their networks’ performance expectations.

With distribution and installation partners in over 15 countries, the market’s broadest set of traditional and pre-terminated copper and optical solutions, and with high performance and reliability as standard, the Excel structured cabling solution has established itself as a major force in the market.

The independent market research organization BSRIA, reported on over 15 brands of structured cabling in its market survey of March 2008. Of these, four companies accounted for over 53% of the total market when measured by value. Excel is proud to have recorded fourth position for the second year running, in what is widely regarded as the authoritative survey of the UK market.

SALES OF COPPER PRODUCTS BY SUPPLIERS (OEM SALES NOT INCLUDED), VALUE %, 2007



Source: BSRIA (www.bsria.co.uk)

MAXIMUM PERFORMANCE //



SPRING 2008 SAW THE RATIFICATION OF CABLING STANDARDS BY BOTH THE EIA/TIA AND ISO BODIES, WHICH WILL TAKE THE PERFORMANCE CAPABILITIES OF COPPER INFRASTRUCTURE TO LEVELS THAT ONLY 5 YEARS AGO WOULD HAVE SEEMED IMPOSSIBLE.

In a development similar to that which saw Ethernet speeds leap from 100 to 1000 megabits per second, this universal protocol has now been enhanced to offer network designers the capability of speeds of up to 10,000 megabits per second!

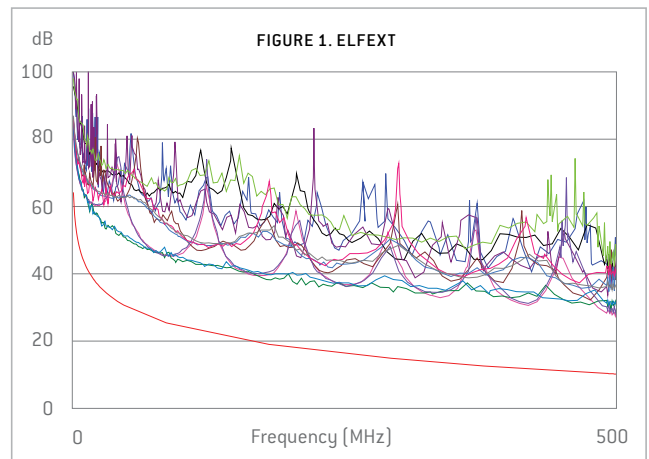
This follows the release in 2006 of an update to the Ethernet IEEE 802.3an, which defined specifications to provide 10 Gigabit per second connections over conventional unshielded or shielded twisted pair cables, over distances of up to 100 metres. This provided cabling system developers with the challenge of designing products that were not only fit for purpose, but offered reliable, repeatable field performance coupled with products that were quick and easy to install, use and maintain. The result is Augmented Category 6, or as it is more commonly known Category 6a.

The Excel Category 6a range of products is the ideal solution for data centres, server farms and storage facilities, as well as providing the ultimate in future-proof copper cabling for the corporate LAN.

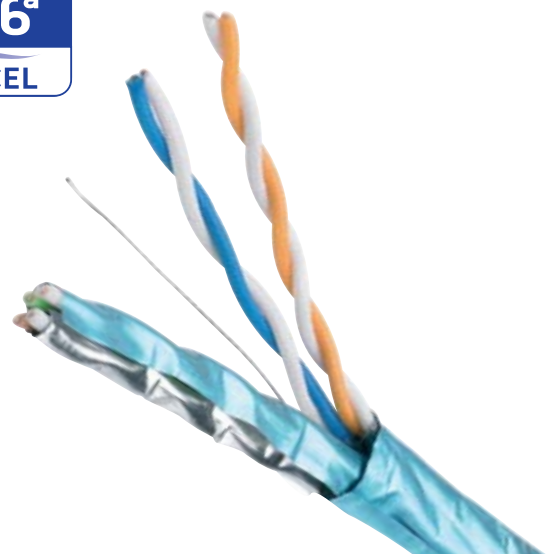
At the heart of the Excel 6a solution is a balanced 4-pair cable with dual foil screening. The Excel design team has created a cable that combines ease of install with consistent, repeatable, high performance. Each cable has a foil tape which provides a 100% screen to each pair, these units are then wrapped in a further foil tape to provide an overall protective screen. An Ice Blue low smoke, zero halogen outer sheath is then applied. The design ensures a significantly reduced risk of alien cross talk – a measure of noise received on cable adjoining a cable carrying data – as well as protecting against emissions often found when copper cables transmit at high frequencies, such as those found within the Category 6a specification.

The Excel 6a RJ45 keystone jack is common to both the patch panel and the work outlet, ensuring complete consistency of performance. As with all Excel products, no corners have been cut throughout the process of design and manufacture; we use only the highest grade of components to create a fully shielded toolless product, housed in a zinc die-cast surround, with a quick and easy to apply 'butterfly'-style termination lock. Connector performance has been tuned to the system cable, resulting in typical headroom in excess of the required standards when tested in the field, as shown in figure 1.

“Our aim in developing a Category 6a copper solution has been to keep it simple.”



Our aim in developing a Category 6a copper solution has been to keep it simple. In our opinion, the two key elements of any cabling system are standards compliance and reliability once installed. These core requirements drive all of our research and development and both can be found in this, our latest addition to the Excel product family.





“Category 6a is not the only way to support 10 Gigabit Ethernet within your organization.”

CATEGORY 6A OR 10 GIG –
IS THERE A DIFFERENCE?
IN A WORD THE ANSWER IS
A RESOUNDING YES.

Category 6a – as a standard – defines a set of performance criteria for individual and combined cabling components, which must be adhered to by system manufacturers, designers and integrators. Once correctly installed and tested, a Category 6a system provides a copper cabling infrastructure capable of transmitting data at speeds of 10 Gigabit, as well as other applications commonly found in the corporate LAN or data centre including all other Ethernet applications and voice, for example.

However, in the same way as a motorway is not the only way to travel from one destination to another, Category 6a is not the only way to support 10 Gigabit Ethernet within your organisation. Category 6 can support this application, as can optical fibre cable, each of which has its own pro's and con's (which we will be discussing in a forthcoming white paper) which include distance limitations. Such information should be carefully considered when assessing the suitability of legacy cabling or the choice of new cabling where 10 Gigabit applications are required.



THE EXCEL CATEGORY 6A SOLUTIONS OUTLINED IN THE PREVIOUS PAGES TAKE MANY OF THEIR VALUES FROM THE EXISTING EXCEL CATEGORY 6 AND 5E SOLUTIONS.

These established systems are used by thousands of organisations across a wide range of vertical markets on a daily basis.

Our existing users, alongside our multinational community of accredited installation partners, continue to specify Excel for projects which require standards-compliant, reliable performance from products that are manufactured to the highest possible quality, are supported by extensive, no-nonsense warranty programmes and are readily available.

Each of the key components within our Category 6 and 5e solutions is approved to relevant ISO or TIA/EIA standards by recognised independent test houses. Installed Excel systems do not just meet defined standards, they exceed them. The Excel Category 6 system provides bandwidths of 250MHz. A range of performance characteristics are tested up to 250MHz including return loss, attenuation and near and far end crosstalk (NEXT and FEXT) for which both worst case and power sum tests are completed. When tested both in isolation and in circuit, actual performance far exceeds the required standard, resulting in significant headroom for even the most demanding of applications.



FIGURE 2. SYSTEM CHOICE - COPPER

	Category 5e	Category 6	Category 6a
U/UTP	•	•	Autumn 08
F/UTP	•	•	–
F/FTP	–	–	•
LSOH Cable	•	•	•
Modular Patch Panels	•	•	•
Toolless Outlets	•	•	•
Colour Coded Product	•	•	•
25 Year Warranty	•	•	•

SYSTEM CHOICE, DESIGN FLEXIBILITY//

“There are a number of key benefits associated with Pre-terminated cabling. First and foremost is time.”



PRE-TERMINATED SOLUTIONS - A RECENT DEVELOPMENT IN THE CABLING INFRASTRUCTURE MARKET HAS BEEN THE INCREASING USE OF PRE-TERMINATED COPPER AND OPTICAL FIBRE CABLES WITH APPLICATIONS RANGING FROM DATA CENTRES THROUGH TO DISASTER RECOVERY OR TEMPORARY CABLING REQUIREMENTS.

The principle of pre-terminated cabling is quite simple, however the planning and design process of such installations needs to be approached with as much care and attention as any conventional project. In a nutshell pre-terminated solutions involve the preparation of cable – cutting to length, connector termination, labelling, testing and looming - in a factory environment prior to delivery to site.

There are a number of key benefits now associated with this method of cabling. First and foremost is time. Various independent sources have reported savings of up to 85% in the time required ‘on site’ when comparing a conventional installation to a pre-terminated option. A second important benefit can be the consistency of system performance. Improvements in this area can result from both the simplified installation process and the fact that termination is managed within the factory-controlled manufacturing environment in which the pre-terminated cable or looms are produced.

We offer a pre-terminated solution across the entire range of Excel copper and fibre optic products. This gives us a degree of flexibility that we feel is key to our ability to meet a broad and constantly expanding range of design and application requirements. Excel-accredited technicians are project managed – as they would be on site - through set cable preparation and termination processes. Each and every cable is tested to the applicable performance standards – for example Class E in the case of Category 6 solutions.

Customer defined labelling schemes are applied and the cables loaded on to unique multi-shelf transportation trolleys, equipped with castors, which allow easy movement of the cables to and around the installation site.

This simple yet innovative method of delivering the goods means that no stress is applied to any of the terminations or cables as no handling is necessary from acceptance testing through to physical installation. Once installation is completed we collect the empty trolleys with no waste created or left on site, meeting growing concerns and policies focused on waste management.

OPTICAL FIBRE//

“Our 25 year warranty programme covers all optical cables and components.”

TRADITIONALLY CONSIDERED AS A BACKBONE OR CAMPUS MEDIA, RECENT DEVELOPMENTS IN BOTH THE COST EFFECTIVENESS AND EASE OF INSTALLATION OF FIBRE OPTIC SYSTEMS HAVE LED MANY USERS TO CONSIDER THE REAL POSSIBILITY OF FIBRE-TO-DESK AS THE ULTIMATE 'BANDWIDTH PROVIDER'.

There is no doubt that, whatever its application, the grade and type of fibre you install will have significant implications. The Excel fibre optic range ensures all options are available to you.

Choose from loose tube or tight buffered cable in either 62.5/125 or 50/125 – each suitable for internal and/or external use and with low smoke zero halogen outer sheaths as standard. Excel OM3 Multimode fibre provides transmission speeds of 10Gb for distances up to / of 300M as opposed to 50M running on standard 50/125 cable. Cable designs are available (either from stock or directly from our manufacturing partners) from 4 to 200-plus fibres, with a variety of jacketing and armouring options.

We only use class A glass in our optical cables, ensuring the most reliable and repeatable performance. Our 25-year warranty programme covers all optical cables and components and their performance to ISO 11801 defined criteria. System design flexibility is enhanced by our approach to supporting both direct termination, splicing and a range of connectivity solutions, even those from outside the Excel offering (for example through our concessions policy we will cover connectors such as 3M hotmelt or Tyco Lightcrimp within our system warranty).

The Excel cabling system supports ST, SC, MTRJ, LC, and FC connector types. Fibre trays are available in either fixed or sliding drawer style, each loaded with the relevant adaptors. To complete the picture patch cords and pigtailed are available in a range of lengths and with various cable and connector types.

Maximum transmission Distance - Metres	10Mbps Ethernet	100Mbps Fast Ethernet	1000Mbps Gigabit Ethernet	10,000Mbps 10 Gigabit Ethernet
300	OM1	OM1	OM2*	OM3
500	OM1	OM1	OM2*	OS1
2000	OM1	OM1	OS1	OS1

* OM1 can be used with a wave length of 1300nm



THE EXCEL WARRANTY//

OVER THE YEARS THE PROLIFERATION OF CABLING SYSTEM VENDORS AND DISTRIBUTORS HAS SEEN THE PROVISION OF A WARRANTY BECOME, IN SOME CASES, LITTLE MORE THAN A MARKETING TOOL, OFFERED WITHOUT MUCH THOUGHT GIVEN TO THOSE WHO MIGHT REQUEST IT. THIS IS NOT – AND NEVER HAS BEEN – THE APPROACH TAKEN BY EXCEL.

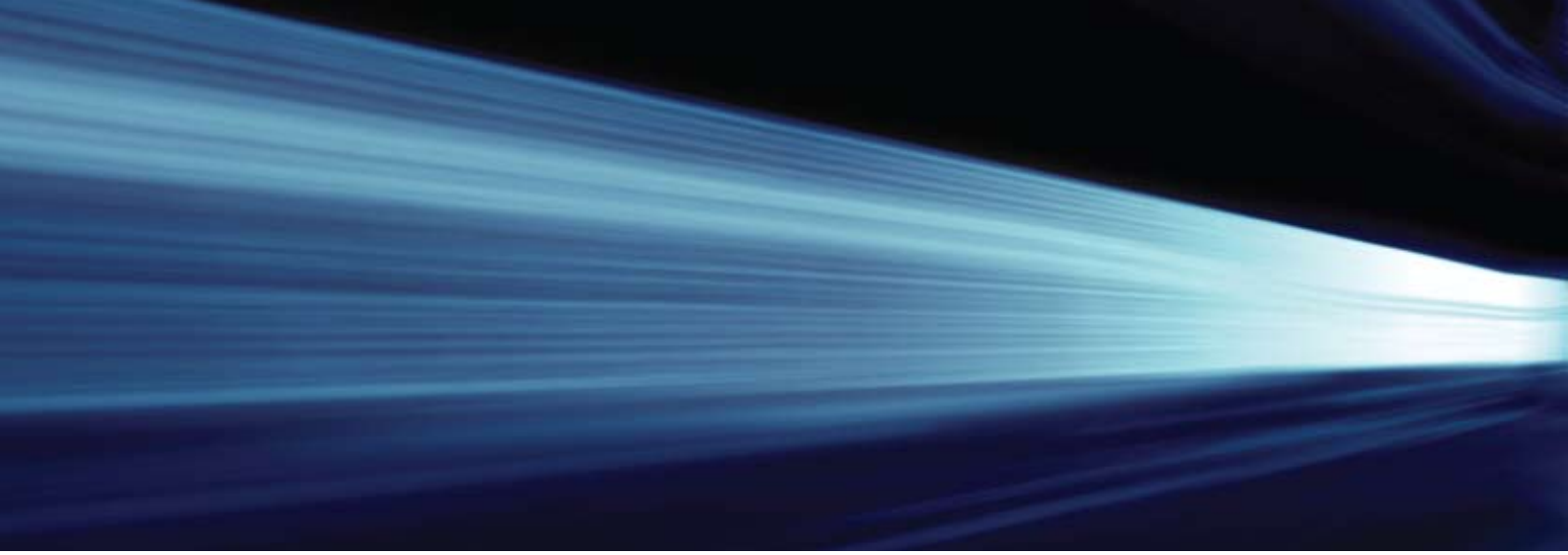
The Excel 25-year product and applications warranty can only be issued by an authorized Excel Cabling Partner who will have attended and passed a series of training programmes on a regular basis prior to being accredited. Each warranty application follows the same strict procedure, regardless of installation size, product or integrator involved. A detailed site registration form is completed by the integrator and provided to the Excel technical support team together with test data for each installed copper and, where applicable, optical link. Our engineers audit this information carefully, not only looking at the electrical performance characteristics but also checking for correct tester settings, cable lengths and other potential anomalies.

Only when we are completely satisfied with the information provided will a warranty certificate be issued. Where necessary, and at our discretion, we may visit the installation to verify a particular fact, or audit the physical installation practices. If the site in question has chosen to adopt a pre-terminated solution, we require a minimum of 50% of each installed quantity of links to be tested on site.

The warranty is issued directly by Excel to the end user on approval of all of the relevant test documentation. From the date of issue of this documentation your installation and the products it comprises of are covered by a 25-year workmanship and applications warranty. In effect the warranty received by Excel clients provides a bandwidth guarantee, regardless of the specific applications running over the network. Provided an application is designed to work within the bandwidth range of the installed grade of cable, it is covered. This means that you can rely on the support of Excel and your chosen integrator to resolve any issues or concerns relating to the installation at any time during the warranty period.



“In some cases the provision of a system warranty has become little more than a marketing tool.”



Excel House
Junction Six Industrial Park,
Electric Avenue,
Birmingham B6 7JJ
England
Telephone: +44 (0)121 326 7557
Facsimile: +44 (0)121 327 5886

WWW.EXCEL-NETWORKING.COM



Ecl-ips
Waterside House
Harris Business Park
Stoke Prior, Worcestershire
B60 4DJ, United Kingdom

Telephone: 01527 872000
Facsimile: 01527 574784
Email: sales@ecl-ips.com
Web: www.ecl-ips.com