

## WHITE PAPER

### **BS EN 50174-1 AND BS EN 50174-2:2008**

The 2008 revision of EN 50174-1 and EN 50174-2 has approved by the European national standards bodies and will be published in all EEA countries in early 2009. In the UK they will be designated BS EN 50174-1:2008 and BS EN 50174-2:2008 and will replace the existing versions of the documents, published in 2000. These standards have major significance for the telecommunications cabling industry, covering “installation specification and quality assurance” and installation planning and practices inside buildings” respectively.

Telecommunications cabling infrastructures have been subject an increasing level of contractual disputes resulting from a lack of relevant information being provided to the installers in combination with poor installation practices. In a court of law, judgement is often based on what a reasonable person would be expected to do - and this is normally based on the available standards. The UK national standard for the “installation, operation and maintenance of telecommunications equipment and telecommunications cabling” is BS 6701:2004 - which mandates compliance with the BS EN 50174 standards.

The work undertaken by the British and European standards committees over the last five years has been targeted to simplify the use of standards in installation contract - removing the need for customer and their consultants to include multiple, sometimes conflicting, often obsolete, standards where only one or two are really needed.

A simple reference to BS 6701 is all that is needed to define the installation requirements - independent of the design of the Infrastructure

However, many customers, consultants and installers alike do not realise that the presence of other standards in a contract already mandates compliance with these “installation” standards. For example, any client wishing the cabling to be designed in accordance with any of the structured cabling standards in the BS EN 50173 series, has automatically stated that the installations shall conform to both BS 6701 and the BS EN 50174 series. That being said, it should be remembered that BS 6701 and BS EN 50174 series of standards apply to all telecommunications and information technology cabling - not just structured cabling. Moreover, they can be applied to cabling systems that are designed with non-UK standards including the latest US standards in the ANSI/TIA-568-C series.

The 2008 versions of BS EN 50174-1 and BS EN 50174-2 are based on the format of BS 6701:2004 and not only introduce substantive changes to the existing requirements and recommendations but also present them in a more structured way. This makes it much easier to define the separate responsibilities for installers and their clients - independent of whether those clients are the end-users or their consultants.

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BS EN 50174-1:2008 effectively creates a “tick-list” of issues to be addressed in an Installation Specification - allowing clients to monitor what their consultants have produced on their behalf while letting the installers identify weaknesses or lack of clarity in what they are being asked to do. To balance the contractual see-saw, the standard details the requirements for the Quality Plan, produced by the installer, which explains how the specification is to be met. The very words “Quality Plan” send some installers into an apoplectic fit but there really is no need for such a reaction. A Quality Plan in the eyes of BS EN 50174-1 is just a list of Method Statements - and if installers do not already have basic Method Statements then maybe they are not suitable candidates for the project anyway. One of the more subtle changes in BS EN 50174-1 is the development of a concept of infrastructure complexity as a means of defining the scale or coverage of specific activities for smaller installations such as domestic premises.

EN 50174-2 has received a massive makeover. Often criticised, even by the standards-makers themselves, for a lack of clear requirements and apparent technical inconsistencies, the structure and content of EN 50174-2:2000 has been totally re-worked and re-engineered. BS EN 50174-2:2008 now contains three principle clauses against which conformance is assessed. The first is entitled “Requirements for planning installations...”, the second: “Requirements for installation...” and the third: “Segregation of metallic information technology cabling and mains power cabling”. These three sections represent the general requirements for all installations but are additional clauses for “offices”, “industrial premises”, “homes” and “data centres” which contain any modified requirements that are applicable to the particular premises types. The 2008 edition of BS EN 50174-2 contains the “offices” and “industrial premises” clauses and a future amendment later in 2009 will contain the clauses for “homes” and “data centres”.

The new requirements for the segregation of metallic information technology cabling and mains power cabling, in relation to electrical interference, are now recognised to be much more logical and are being reflected in future changes to the UK Wiring Regulations.

This White Paper opened by referring to a growth of contractual disputes surrounding installations of telecommunications cabling. Many large enterprise installations remain problem free since customers tend to define their own needs for the IT infrastructure and only use the services of specialist consultants to identify potential installers. Installers are generally free to discuss the small, but critical, details of the installation requirements directly with the customer - identifying incompatibilities and information shortfalls.

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The real concerns exist in the domain of smaller installations (such as universities and hospitals) where the infrastructure specifications are handled by non-specialist consultants and are exacerbated by the fact that telecommunications cabling installation lies at the bottom of a multi-disciplinary sub-contract chain. In many cases, requirements that have been clearly defined and documented by customers are not included, or are incorrectly translated or modified, in the tender document and the use of extended sub-contracting chains frequently fails to provide the correct tender documentation to those undertaking the work. This is a “double-whammy” which often results in cabling systems that meet the required transmission requirements but are rendered non-functional, non-maintainable or irreparable due to non-agreed installation decisions.

However, both problems are symptoms of a more fundamental disease - a lack of direct communication between the enduser and the installer. So how can the new standards help to reduce installation disputes? BS 6701 and the BS EN 50174 series of standards offer customers the opportunity to stem the growth of poor installations - by defining the minimum contents of installation specifications and mandating installers to produce quality plans which explain how those specifications are to be met - encouraging dialogue by insisting that both the installation specifications and the quality plans have to be agreed between the customer (or their representatives) and the installer - before the installation commences.

While no customer likes to be hounded by competing potential suppliers, the situation following contract award should be completely different. Consultants should enable direct communication between those paying for the installation and those performing it. Two fundamental questions must be answered by all customers - firstly, do the specifications produced on their behalf meet the requirements of the applicable standards and, secondly, do they wish to have technical oversight of installers appointment and proposals within the sub-contracting chain. The use of the available UK standards enable to the answers to the both questions to be a resounding “yes”.