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BS 6701: 2004
Telecommunications equipment and telecommunications cabling
-
Specification for installation, operation and maintenance

Why is BS 6701:2004 so important?

The original BS 6701:1994 was a Code of Practice covering the rather vague subject of the "installation of apparatus intended for connection to certain telecommunications systems".

The new BS 6701 is radically different and represents a vital part of quality assurance for the installation, operation and maintenance of telecommunications equipment
and
all types of telecommunications cabling

What is meant by telecommunications?

The term "telecommunications" means all forms of communication including processing, displaying or transferring information as numerical data, text, audio, still or moving images together with any combination of these.

BS 6701:2004 requirements are independent of the standard used in the design of the cabling - the standard is equally applicable to building control systems, basic telephone wiring, cabling in support of ISDN and ADSL services and "structured cabling" in accordance with standards such as ISO/IEC 11801, BS EN 50173-1 and ANSI/TIA-568-B etc.

What forced the changes?

Both BS 6701:1994 and BS 7718 were used as input to the development and publication of EN 50174-1 and EN 50174- 2 in 2001 and EN 50174-3 in 2004. However, in order to comply with European agreements which require the removal of existing or conflicting standards text within member countries, the UK publication of the BS EN 50174 series of standards has resulted in the revision of BS 6701 and withdrawal of BS 7718.

In order to match the BS EN 50174 documents, which are true standards rather than Codes of Practice, it was obvious that the status of the revised BS 6701 would have to be elevated from a Code of Practice. The transition to a BS Specification brought with it another key change - any requirements must be verifiable and the responsibility for meeting the requirements must be clearly allocated.

In order to lock-in the demands of the BS EN installation standards, to which it gave birth, conformance to BS 6701:2004 demands automatic conformance to BS EN 50174-1, BS EN 50174-2 and BS EN 50174-3. BS 6701 continues to draw attention to national regulations and contains normative references to other British Standards including BS 7671.

For this reason BS 6701:2004 can truly be said to be
"The One-Stop Shop Installation Standard"
for telecommunications cabling. As a result, BS 6701:2004 is good news for consultants (who can now stop listing lots of different standards in their tender documentation) and good news for installers as it sets down minimum requirements.

What has changed?

Firstly, the title. BS 6701:2004 now clearly covers the installation, operation and maintenance of telecommunications equipment and cabling.

Secondly, BS 6701:2004 is no longer a Code of Practice, containing only recommendations, but a British Standard Specification which contains requirements both for installers and the owners of premises within which the installation is undertaken.

The third aspect of change is probably the most important one but also the most complicated one. Put simply, conformance to certain aspects of BS 6701 is mandatory even if it is not explicitly referenced in documentation covering the supply of the installation service.

For what cabling is BS 6701:2004 implicitly mandatory?

BS 7671, the IEE Wiring Regulations, requires conformance with BS 6701 in relation to segregation of telecommunications circuits. This is one of the reasons why BS 6701:2004 is now a British Standard Specification (with specific and verifiable conformance requirements) rather than a Code of Practice.

So, within premises containing electrical wiring that is procured and installed according to the IEE Wiring Regulations, certain aspects of BS 6701 are required to be complied with even when BS 6701 is not explicitly referenced in documentation covering the procurement of the telecommunications installation. In such premises, the requirements of BS 6701:2004 and, by normative reference from BS 6701:2004, the requirements of BS EN 50174 series of standards apply to the installation of all telecommunications equipment and telecommunications cabling.

Who is responsible for compliance?

The wording in BS 6701:2004 is very particular; requirements are denoted by the use of the word "shall" and the requirements have been written such that they can be verified. Conformance with BS 6701:2004 is assessed against compliance with all such requirements. The responsibilities for the installation, operation and maintenance of telecommunications cabling and equipment are divided between the "owner of the premises" and the "installer".

The "owner of the premises" is either the owner of the premises containing the telecommunications cabling and equipment or the authorised persons to which specific responsibilities have been delegated e.g. tenant, design consultant, systems integrator etc.

The "installer" is the competent person contracted to undertake the installation task. The installer does not, under the separation of responsibilities within BS6701:2004, undertake other tasks such as infrastructure design, product selection etc. Where installation organisations undertake both design and installation services, the design aspect is considered as being undertaken on behalf of the "owner of the premises".

See over for key highlights from BS 6701:2004 and it's accompanying guide BIP0007

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BS 6701: 2004 - A QUICK REFERENCE

Requirements and responsibilities of the "owner of the premises"

DOCUMENTATION

An installation specification shall be provided in accordance with BS EN 50174-1 for all telecommunications equipment and cabling.

The installation specification shall define the approach to segregation of circuits with regard to electromagnetic interference in accordance with the BS EN 50174 series of standards.

Information relating to telecommunications equipment and cabling shall be complete and accurate.

The classification of areas containing optical fibre telecommunications equipment and cabling shall be undertaken in accordance with BS EN 60825-2.

QUALITY ASSURANCE

BS EN 50174-1 requires that an Installation Specification is agreed with the owner prior to the installation commencing.

BS EN 50174-1 requires that modifications, changes and deviations to the Installation Specification are agreed between with the Installer.

BS EN 50174-1 requires that a Quality Plan is agreed with the owner prior to the installation commencing.

OPERATION

Telecommunications equipment and cabling shall be operated in accordance with the instructions provided by the installer.

The selection and operation of optical fibre telecommunications equipment, test equipment and telecommunications cabling shall be in accordance with BS EN 60825-2.

All relevant personnel shall be made aware of all policies required to maintain proper operation of the telecommunications system.

MAINTENANCE

The telecommunications equipment and telecommunications cabling shall be maintained in accordance with the instructions provided by the installer.

There shall be a documented policy in the event of faults and breakdowns.

Requirements and responsibilities of the "installer"

DOCUMENTATION

A quality plan shall be provided in accordance with BS EN 50174-1.in BS EN 50174-1 for all telecommunications equipment and cabling.

Installation, operating and maintenance instructions for all telecommunications equipment and telecommunications cabling shall be obtained.

All relevant documentation shall be provided to enable the user to implement operating procedures for the telecommunications system(s).

Final acceptance, as defined in the quality plan shall only proceed following marking, labelling and fitting of all components associated with the telecommunications cabling.

PROCESSES

The installation of optical fibre cabling and equipment (and the operation of test equipment) shall be in accordance with BS EN 60825-2.

Measures shall be taken to prevent any flammable materials that are present within "external" cables (e.g. petroleum gel) leaking in pathways, closures or at any point of termination.

"External" cables containing flammable materials (e.g. polyethylene sheaths) shall be either be terminated upon entry to buildings or installed within trunking or conduit that has a fire resistance agreed with local fire authorities.

The installer shall ensure that details of the locations of pathways into which cabling is installed and their contents are recorded.

Any structures, fixtures and fittings used to support the cabling within the pathways shall be (a) in accordance with the installation requirements of the cabling manufacturer and (b) installed in accordance with instructions provided by the manufacturer(s) and/or supplier(s) of the fixtures and fittings.

The segregation of circuits with regard to electromagnetic interference shall be in accordance with the installation specification.

Cabling and electricity supply cabling sharing a compartment of a cable management system shall be installed to BS 6701.

The cable shall be installed in accordance with the instructions provided by the cable manufacturer and/or supplier. The bend radii of cables and cable elements shall be in accordance with the instructions provided by the cable manufacturer and/or supplier.

BIP0007: Telecommunications cabling and equipment installations - A guide to requirements and responsibilities

BS 6701:2004 demands conformance with the BS EN 50174 series of standards. Unfortunately, none of the current BS EN 50174 standards contain a simple conformance clause.

Certainly, in the BS EN standards the word "shall" always defines a requirement. However, other terms or phrases are also used in the BS EN 50174 series to define requirements - including "it is essential that", "under no circumstances". The word "should" represents a recommendation or a statement of best practice. However, there are also other unfortunate phrases such as "it is vital that" which could either be requirements or recommendations depending on their context. Also, the boundaries of responsibility in the BS EN 50174 standards are blurred.

In order to clarify the situation, the BSI experts responsible for BS 6701:2004 have produced a Business Information Publication which maps the requirements of each of the BS EN 50174 standards on to the sub-clause headings of BS 6701:2004 and defines the party responsible for each particular requirement. In addition, BIP0007 provides information that is considered to be "best practice" where the BS EN 50174 series of standards are less than clear or not explicit.

BIP0007, to be published in parallel with BS 6701:2004, is jointly sponsored by the Electrical Contractors Association, the Fibreoptic Industry Association and the Telecommunications Industry Association. It will be available as a free download to FIA members from the members-only area of the FIA web-site from the date on which BS 6701:2004 is published.