Telecommunications Industry Association

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Technical Information Notice

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BS EN 50174-2 INFORMATION TECHNOLOGY - CABLING INSTALLATION PLANNING AND PRACTICES INSIDE BUILDINGS

ADVICE TO USERS ON SEGREGATION OF POWER & DATA CIRCUITS

Introduction

The purpose of this TIN is to give a brief overview of Section 6.5 of this Standard regarding the segregation of circuits. The Telecommunications Industry Association (TIA) may produce further TINs as a guide to other sections of the Standard.

Paragraph 6.5.1. states "Information Technology (Data) cables and power supply cables, which share the same cable management systems, and building voids shall be laid in accordance with the requirements laid down in this Section of the Standard". The design guidelines for minimum separation list (9) nine factors to be considered including: type of cable; type of cable management and the distance the cables run parallel. The Guidelines also assume that EMC compliance to EN 50081 & EN 50082 are complied with. Detailed below is an extract of the main chart on cable separation and highlights some of the points assumed in producing these separation distances.

All these figures are derived from the Standard statement "that the installation of information technology cabling with buildings operating a mains electricity distribution system at voltages AC 1000 V rms"

It should be noted, however, that safety considerations of BS 7671 take precedence over the distances specified in the table, and will in most cases require 50 mm separation or a barrier between telecommunications and power cables.

Cable Type	Distance		
	Without Divider or Non-metallic Divider	Aluminium Divider	Steel Divider
Unscreened Power & UTP	200mm	100mm	50mm
Unscreened Power & FTP	50mm	20mm	5mm
Screened Power & UTP	30mm	10mm	2mm
Screened Power & FTP	0mm	0mm	0mm

Some additional highlights:

a) The distance shown is the minimum separation distance between a power and data cable installed in the same containment.
b) In the case of screened cabling, if the horizontal cabling length is less than 35m no separation is required. Should the length exceed 35m, and then the separation distances apply to the full length excluding the last 15 metres rule.
c) Separation does not apply to the last 15 metres closest to the TO.
d) For backbone cables the separation distances in the above chart apply end to end
e) Fibre optic cables with metallic content could be covered by these separation guidelines.

Obviously, the introduction of this separation distance will lead to a number of installation considerations to be taken into account including:

- The installation of Containment (Three Compartment DADO Trunking) with a divider for UTP installation.
- Where Containment is already installed and/or separation cannot be guaranteed, the use of additional barriers, screened cable or optical fibre cabling should be considered.
- If screened cable is used then the installation must meet the requirements of BS EN 50174 regarding screening, earthing and bonding.

It is also noted that several cable system vendors have issued more comprehensive power separation guidelines that provide additional guidance and/or allow for reduced separation distances. Companies wishing to implement these vendor guidelines should obtain customer approval prior to installation.

As in TIA TIN: 011, all companies involved in Information Technology Cabling Installation should have copies of BS EN 50174 Parts 1&2. These are now available to purchase from TIA. The consideration of Section 6.5 (the separation of circuits) should be made by companies to ensure that their working practices comply with the new clauses. Companies will have to read the Standard and make any necessary amendments to their company's working practices to ensure compliance.

Lastly, TIA would like to highlight the following extracts from the foreword from BS EN 50174-1. " The standards are intended to be referenced in contracts between cabling installers and their customers. However, the range of options featured in many of the clauses make a single conformance statement impossible. For this reason the standard should be read carefully to ensure that the requirements of the standard are adhered to where conformance is required under the terms of any contract". Obviously this applies to interpretation and compliance for power and data separation.