Irish Standard
I.S. EN 50700:2014

Information technology - Premises distribution access network (PDAN) cabling to support deployment of optical broadband networks

I.S. EN 50700:2014

Incorporating amendments/corrigenda/National Annexes issued since publication:

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I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

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This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

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Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN 50700

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English version

Information technology - Premises distribution access network (PDAN) cabling to support deployment of optical broadband networks

Technologie de l'information - Câblage du réseau de distribution dans les locaux (PDAN) pour prendre en charge le déploiement de réseaux optiques à large bande

Informationstechnik - Standortverkabelung als Teil des optischen Zugangsnetzes von optischen Breitbandnetzen

This European Standard was approved by CENELEC on 2013-11-25. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

This document (EN 50700:2014) has been prepared by CLC/TC 215 "Electrotechnical aspects of telecommunication equipment".

The following dates are fixed:

• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2014-11-25
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2016-11-25

This document has been developed to enable the application of system-independent pre-cabling of multi-subscriber premises to enable the delivery of broadband telecommunication services.

Introduction

Fibre to the home (FTTH) is the subject of standardisation in the form of:

- Technical Reports such as CLC/TR 50510 which cover general concepts and system planning;
- component standards that support its implementation;
- installation standards such as the EN 50174 series.

FTTH is a general term applied to the provision of broadband optical networks to residential premises. Some premises accommodate multiple subscribers and these may be residential or commercial enterprises such as offices, data centres, industrial, retail or a mix of these subscriber types. These multi-subscriber premises may consist of one or more buildings.

The cabling specified in this standard:

- constitutes the part of the broadband access network within multi-subscriber premises termed the premises distribution access network (PDAN); the access network serving single subscriber premises is not normatively addressed in this standard;
- is intended to be pre-installed, in readiness for subsequent connection of the multi-subscriber premises, to an access provider's infrastructure to an access demarcation point (ADP) - enabling broadband content to be delivered by the service provider(s).

Within premises, the importance of the information technology cabling infrastructure is similar to that of other fundamental building utilities such as heating, lighting and mains power. As with other utilities, interruptions to service can have a serious impact. Poor quality of service due to lack of design foresight, use of inappropriate components, incorrect installation, poor administration or inadequate support can disrupt service delivery.

This standard:

- allows access providers to be aware of the minimum implementation delivered to them when they reach such multi-subscriber premises;
- maximises the opportunity for network evolution by either the access provider or the service providers using that access infrastructure.

This standard specifies the cabling between the access demarcation point (ADP) and the subscriber interface (SI).The transmission performance of the premises cabling between the last operator connection point (LOC) and the ADP is not addressed although the requirements for its accommodation are provided by external reference to the EN 50174 series. The location of the LOC may be either outside the premises boundary (see the schematic in Figure 1) or inside the premises, internal or external to a building (see the schematic in Figure 2).

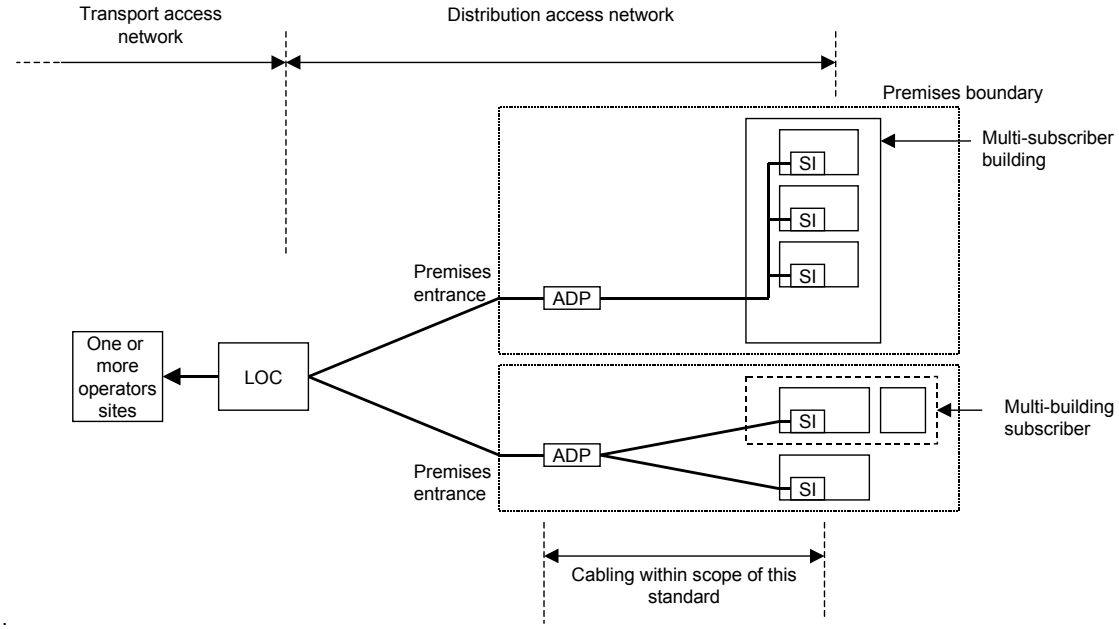

Figure 1 — Multi-subscriber PDAN cabling (LOC external to the premises)

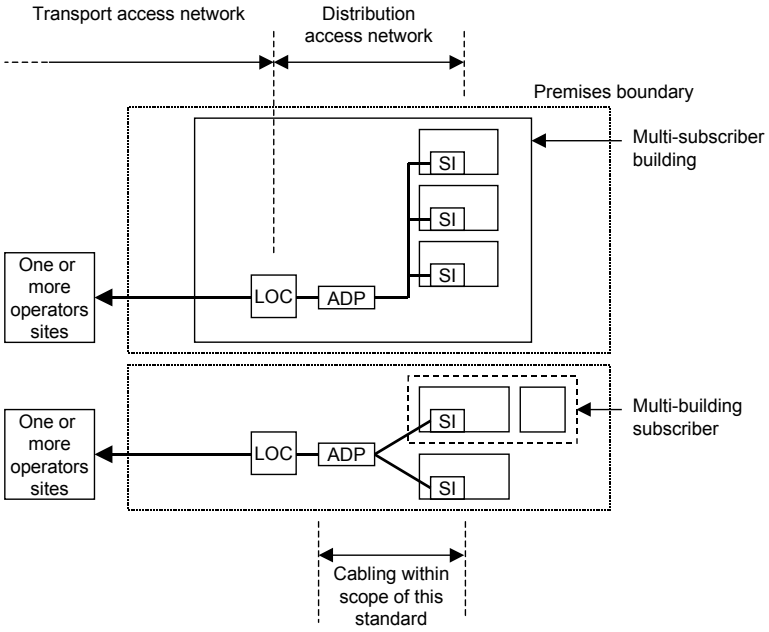

Figure 2 — Example of multi-subscriber PDAN cabling (LOC internal to the premises)

Where the subscribers' premises are homes, the design of generic cabling beyond the SI is specified in EN 50173-4. CLC/TR 50173-99-2 and CLC/TR 50173-99-3 provide additional information in relation to cabling design within homes. For other types of subscribers, the design of generic cabling beyond the SI is specified in other standards in the EN 50173 series.

This European Standard provides:

a) access providers with an application independent optical fibre cabling subsystem;

b) an open market for cabling components;

c) building professionals (for example, architects) with guidance for the accommodation of cabling and interfaces before specific requirements are known; i.e. in the initial planning either for construction or refurbishment.

This European Standard specifies multi-vendor cabling, and is related to:

- standards for cabling components developed by Technical Committees of CENELEC and/or IEC;

- standards for the quality assurance and installation of information technology cabling (EN 50174 series) and testing of installed cabling (EN 50346 and, by external reference, EN 61280-4-2 and ISO/IEC 14763-3);

- applications developed by ETSI and Study Groups of ITU-T.

Figure 3 and Table 1 show the schematic and contextual relationships between the standards produced by TC 215 for information technology cabling, namely:

1) the EN 50173 series where this standard interfaces to the subscriber;

2) installation (EN 50174 series);

3) testing of installed cabling (EN 50346).

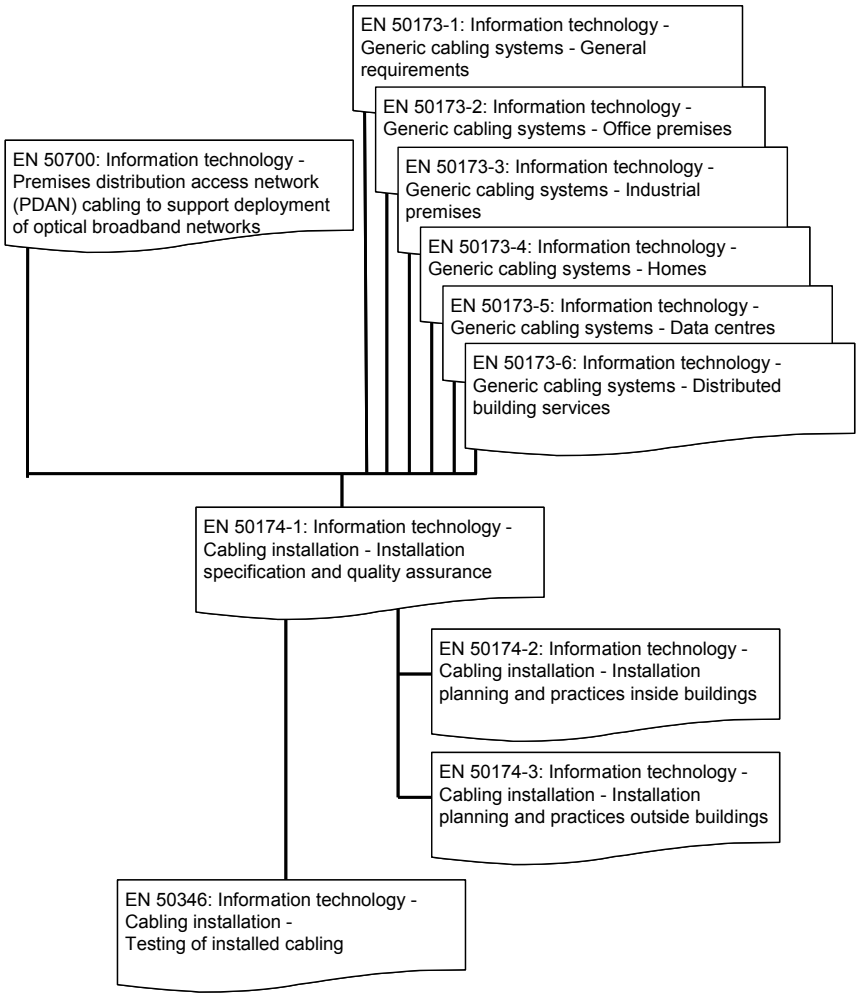

Figure 3 — Schematic relationship between EN 50700 and other relevant TC 215 standards

Table 1 — Contextual relationship between EN 50700 and other relevant TC 215 standards

PDAN cabling design phase	Specification phase	Installation phase	Operation phase
EN 50700 5: Structure of PDAN cabling within multi-subscriber premises 6: PDAN cabling performance 7: Implementation options 8: Cable requirements 9: Connecting hardware requirements	**EN 50174-1** 4 Requirements for specifying installations of information technology cabling 5: Requirements for installers of information technology cabling		**EN 50174-1** 4: Requirements for specifying installations of information technology cabling
	Planning phase		
	EN 50174-2 4: Requirements for planning installations of information technology cabling 6: Segregation of metallic information technology cabling and power supply cabling 7: Electricity distribution systems and lightning protection 8: Office (commercial) premises 9: Industrial premises 10: Homes 11: Data centres 12: Multi-tenant pathways and spaces **and** **EN 50174-3** 4. Requirements for planning installations of information technology cabling 5. Requirements for the installation of information technology cabling 6. Segregation 7. Additional installation practices for specific sites and services	**EN 50174-2** 5: Requirements for the installation of information technology cabling 6: Segregation of metallic information technology cabling and power supply cabling 8: Office (commercial) premises 9: Industrial premises 10: Homes 11: Data centres 12: Multi-tenant pathways and spaces **and** **EN 50174-3** 4. Requirements for planning installations of information technology cabling 5. Requirements for the installation of information technology cabling 6. Segregation 7. Additional installation practices for specific sites and services **and** **EN 50346** 4: General requirements 6: Test parameters for optical fibre cabling	

1 Scope

This European Standard specifies the optical fibre optical fibre access network cabling within multi-subscriber premises termed the premises distribution access network (PDAN). The premises may comprise single or multiple buildings.

The cabling specified is intended to be pre-installed, in readiness for subsequent connection of the multi-subscriber premises to an access providers infrastructure to support deployment of optical broadband networks.

This European Standard does not specify either the access network cabling external to the premises or the cabling within the subscriber space for onward distribution of services beyond the customer premises equipment.

This European Standard specifies:

a) the structure and configuration of the optical fibre cabling;

b) cabling performance requirements;

c) implementation options.

Safety practices in relation to optical power hazard are specified in EN 60825-2. Optical powers higher than the hazard levels specified in EN 60825-2 are not considered in this standard.

Safety (electrical safety, fire, etc.) and electromagnetic compatibility (EMC) requirements are outside the scope of this European Standard and are covered by other standards and regulations. However, information given in this European Standard may be of assistance in meeting these standards and regulations.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50173-1:2011, *Information technology — Generic cabling systems — Part 1: General requirements*

EN 50174-1, *Information technology — Cabling installation — Part 1: Installation specification and quality assurance*

EN 50174-2, *Information technology — Cabling installation — Part 2: Installation planning and practices inside buildings*

EN 50174-3, *Information technology — Cabling installation — Part 3: Installation planning and practices outside buildings*

EN 50411-3-2:2011, *Fibre organisers and closures to be used in optical fibre communication systems — Product specifications — Part 3-2: Singlemode mechanical fibre splice*

EN 50411-6-1, *Fibre organisers and closures to be used in optical fibre communication systems — Product specifications — Part 6-1: Unprotected microduct for category S and A*

EN 60793-2-50:2013, *Optical fibres — Part 2-50: Product specifications — Sectional specification for class B single-mode fibres (IEC 60793-2-50:2012)*