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**Optical fibre cables –
Part 1-215: Generic specification – Basic optical cable test procedures –
Environmental test methods – Cable external freezing test, Method F15**

**Câbles à fibres optiques –
Partie 1-215: Spécification générique – Procédures fondamentales d'essais des
câbles optiques – Méthodes d'essais d'environnement – Essai de résistance au
gel en extérieur des câbles, méthode F15**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

OPTICAL FIBRE CABLES –

**Part 1-215: Generic specification –
Basic optical cable test procedures –
Environmental test methods –
Cable external freezing test, Method F15**

FOREWORD

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International Standard IEC 60794-1-215 has been prepared by subcommittee 86A: Fibres and cables, of IEC technical committee 86: Fibre optics.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
86A/2008/FDIS	86A/2026/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60794 series, published under the general title *Optical fibre cables*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

This part of IEC 60794 defines a test method to determine the ability of a cable to withstand the effects of freezing water that can immediately surround the optical fibre cable sheath by observing any changes in the physical appearance of the sheath, or in the measured cable optical attenuation. The cable external freezing test in a rigid conduit (duct) is an item of F15 under consideration in IEC 60794-1-22:2017.

This document includes method F15 of IEC 60794-1-22:2017 as F15A: Cable external freezing test for a buried cable, as in wet earth or water. There is no technical change in F15A. F15B is a new introduced method. The numbering of these tests continues the F-series numbering sequence of IEC 60794-1-22:2017.

The number of IEC 60794-1-215 is in line with the new numbering system of test methods as planned in IEC 60794-1-2¹.

¹ Fifth edition under preparation. Stage at the time of publication: IEC/CC 60794-1-2:2020.

OPTICAL FIBRE CABLES –

Part 1-215: Generic specification – Basic optical cable test procedures – Environmental test methods – Cable external freezing test, Method F15

1 Scope

This part of IEC 60794-1 defines test procedures to be used in establishing uniform requirements for the environmental performance of

- optical fibre cables for use with telecommunication equipment and devices employing similar techniques, and
- cables having a combination of both optical fibres and electrical conductors.

Throughout this document, the wording "optical cable" can also include optical fibre units, microduct fibre units, etc.

This document defines a test standard to determine the ability of a cable to withstand the effects of freezing water that can immediately surround the optical fibre cable sheath by observing any changes in the physical appearance of the sheath, or in the measured cable optical attenuation.

Method F15A is a test standard to simulate freezing of the medium surrounding a buried cable, as in wet earth or water. Method F15A is moved from method F15 in IEC 60794-1-22:2017 without any technical changes.

Method F15B is a test standard to simulate freezing of the medium surrounding an outside cable in a rigid conduit (duct) which is made of rigid material, for example steel. Method F15B includes the solution to prevent the cable from being crushed when experiencing freezing conditions in a rigid conduit (duct) which are pressure absorber pads and any other suggested means of cable protection.

A reference guide to test methods of all types as well as general requirements can be found in IEC 60794-1-2.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60793-1-46, *Optical fibres – Part 1-46: Measurement methods and test procedures – Monitoring of changes in optical transmittance*

IEC 60794-1-1, *Optical fibre cables – Part 1-1: Generic specification – General*

IEC 60794-1-2, *Optical fibre cables – Part 1-2: Generic specification – Basic optical cable test procedures – General guidance*