ANSI/ICEA S-112-718-2013

STANDARD FOR

OPTICAL FIBER CABLE
FOR PLACEMENT IN SEWER ENVIRONMENTS

Publication S-112-718

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Insulated Cable Engineers Association, Inc. (ICEA)
P. O. Box 1568
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The American National Standards Institute

FOREWORD

This Standard provides information on specifying optical fiber cables for use in telecommunications applications in sewer environments.

The first edition of this Standard was approved by ICEA on June 12, 2007, and was approved by The American National Standards Institute (ANSI) on April 8, 2008. That edition was adopted by the Telecommunications Industry Association (TIA) as TIA-472G000, in April 2010. This second edition was approved by ICEA on June 4, 2013, and approved by ANSI on November 8, 2013.

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This issue replaces the previous issue, ANSI/ICEA S-112-718-2008/TIA-472G0000, *Standard for Optical Fiber Cable for Placement in Sewer Environments*. Major changes in this revision include the following:

- Addition of new fiber types and reformatting of the fiber out-references
- New, altered definitions of composite and hybrid cables
- Addition of definitions for ribbons
- Addition of a buffer tube kink test
- Addition of an Expanded Ambient Test Condition and designation of those tests which utilize it
- Addition of a Normative Annex on 1625 nm performance

NOTE – The format of the Tables of this issue of the document has been modified from the previous issue and generally follows that of IEC Directives Part 2.

This Standard contains four annexes. Annex C is normative and considered part of this Standard when required by the customer. Annexes A, B, and D are informative and are not considered part of this Standard.

ICEA Standards are adopted in the public interest and are designed to eliminate misunderstanding between the manufacturer and user and to assist the user in selecting and obtaining proper products for a particular need. The existence of an ICEA Standard does not in any respect preclude the manufacture or use of products not conforming to this Standard.

The user of this Standard is cautioned to observe any applicable health or safety regulations and rules relative to the manufacture and use of cable made in conformity with this Standard. This Standard hereafter assumes that only properly trained personnel

using suitable equipment will manufacture, test, install and/or perform maintenance on cables defined by this Standard.

The Secretary can only accept questions of interpretation of ICEA Standards in writing at Headquarters at the address below, and the reply shall be provided in writing. Suggestions for improvements in this Standard are welcome. Questions and suggestions shall be sent to:

Secretary
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Alternatively, ICEA can be contacted by utilizing the *Contact* link in the ICEA web site:

www.icea.net

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PART 1

INTRODUCTION

1.1 Scope

1.1.1 General Overview

This Standard covers optical fiber communications cables intended for installation in underground sewers, specifically storm and sanitary sewers. Materials, construction, and performance requirements are included in this Standard, together with applicable test procedures. Additional applications-based considerations are discussed as well.

Refer to other ICEA optical cable product Standards which may have relevance to cables of this Standard:

- ICEA S-87-640 for optical fiber communications cables intended for general outside plant use
- ICEA S-104-696 for optical fiber communications cables intended for indoor/outdoor use.
- ICEA S-110-717 for optical fiber cables intended for aerial, duct, and buried outdoor and indoor/outdoor drop applications
- ICEA S-115-730 for optical fiber cables intended for Multiple Dwelling Unit (MDU) applications
  Note that the MDU application space may overlap that of drop cables.

Refer to the following published ICEA optical cable product Standard for other applications

- ICEA S-83-596 for optical fiber cables intended for indoor applications.

1.1.2 Applications Space

Products covered by this Standard are intended for use in metropolitan, urban, and suburban communications networks via use of underground infrastructures, in the last portion of all-optical networks, such as storm and sanitary sewers. These products convey communications signals (voice, video, and data) in metropolitan network rings and serve as point-to-point connections to the subscriber's premises via sewer laterals, in the last portion of the optical network.

When a hybrid cable (a cable with both optical fibers and metallic conductors) is required, the applicable metallic conductor requirements shall be as established