

SCTE | **STANDARDS**

Interface Practices Subcommittee

SCTE STANDARD

SCTE 51 2018 (R2024)

Method for Determining Drop Cable Braid Coverage

NOTICE

The Society of Cable Telecommunications Engineers (SCTE) Standards and Operational Practices (hereafter called “documents”) are intended to serve the public interest by providing specifications, test methods and procedures that promote uniformity of product, interoperability, interchangeability, best practices, and the long term reliability of broadband communications facilities. These documents shall not in any way preclude any member or non-member of SCTE from manufacturing or selling products not conforming to such documents, nor shall the existence of such standards preclude their voluntary use by those other than SCTE members.

SCTE assumes no obligations or liability whatsoever to any party who may adopt the documents. Such adopting party assumes all risks associated with adoption of these documents and accepts full responsibility for any damage and/or claims arising from the adoption of such documents.

NOTE: The user’s attention is called to the possibility that compliance with this document may require the use of an invention covered by patent rights. By publication of this document, no position is taken with respect to the validity of any such claim(s) or of any patent rights in connection therewith. If a patent holder has filed a statement of willingness to grant a license under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license, then details may be obtained from the standards developer. SCTE shall not be responsible for identifying patents for which a license may be required or for conducting inquiries into the legal validity or scope of those patents that are brought to its attention.

Patent holders who believe that they hold patents which are essential to the implementation of this document have been requested to provide information about those patents and any related licensing terms and conditions. Any such declarations made before or after publication of this document are available on the SCTE web site at <https://scte.org>.

All Rights Reserved
© 2024 Society of Cable Telecommunications Engineers, Inc.
140 Philips Road
Exton, PA 19341

Document Tags

<input type="checkbox"/> Specification	<input type="checkbox"/> Checklist	<input type="checkbox"/> Facility
<input checked="" type="checkbox"/> Test or Measurement	<input type="checkbox"/> Metric	<input checked="" type="checkbox"/> Access Network
<input type="checkbox"/> Architecture or Framework	<input type="checkbox"/> Cloud	<input type="checkbox"/> Customer Premises
<input type="checkbox"/> Procedure, Process or Method		

Document Release History

Release	Date
SCTE 51 2002	<i>2002</i>
SCTE 51 2007	<i>2007</i>
SCTE 51 2012	<i>2012</i>
SCTE 51 2018	<i>2018</i>
SCTE 51 2018 (R2024)	<i>4/1/2024</i>

Note: Standards that are released multiple times in the same year use: a, b, c, etc. to indicate normative balloted updates and/or r1, r2, r3, etc. to indicate editorial changes to a released document after the year.

Note: This document is a reaffirmation of SCTE 51 2018. No substantive changes have been made to this document. Information components may have been updated such as the title page, NOTICE text, headers, and footers.

Table of Contents

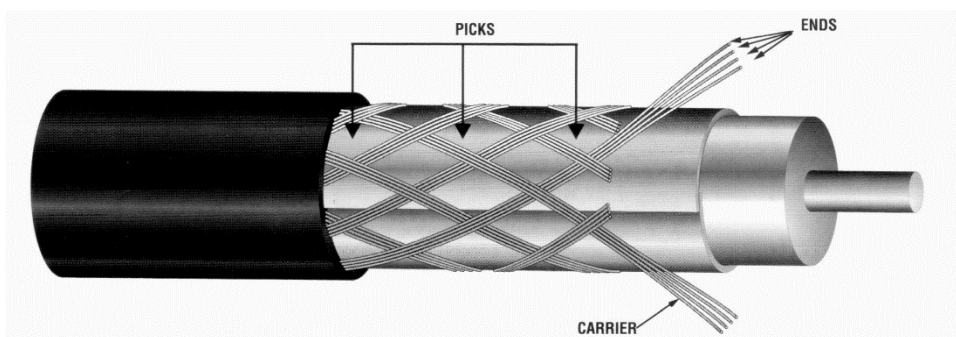
Title	Page Number
NOTICE.....	2
Document Tags.....	3
Document Release History	3
Table of Contents	4
1. Scope	5
2. Definitions.....	5
3. Braid Coverage Formula	5
4. Braid Coverage Example	6

1. Scope

Note: This document is a reaffirmation of SCTE 51 2018. No substantive changes have been made to this document. Information components may have been updated such as the title page, NOTICE text, headers, and footers.

The purpose of this document is to provide instruction on the calculation of braid coverage for braided coaxial drop cables. Braid coverage is expressed as a percentage of optical coverage of the underlying core by the braid wires. It is a function of the diameter of the cable core, the diameter of the wire braid, the number of carriers (groups of wire ends), the number of individual wires in each carrier and the picks per inch (distance between each carrier crossing.)

2. Definitions



α = Braid angle (radians) - the angle formed by the carriers with the longitudinal axis of the cable (refer to the illustration)

D = Diameter under the braid (inches)

C = Number of carriers - the number of groups of individual braid wires (ends), usually 16 for most cable telecommunications braided cables (refer to the illustration)

d = Braid strand diameter (inches)

P = Picks per inch – the number of carrier crossing points per longitudinal inch (refer to the illustration)

N = Number of individual wires (ends) in each carrier

3. Braid Coverage Formula

$$\text{Percent Braid Coverage} = (2 \cdot F - F^2) \times 100$$

where:

$$F = N \cdot P \cdot d / \sin \alpha$$

$$\alpha = \tan^{-1} [2 \cdot \pi \cdot (D + 2 \cdot d) \cdot (P / C)]$$

4. Braid Coverage Example

Cable construction: 59 Series, tape and braid construction

Given:

$D = 0.150$ inches (from measurement or ANSI/SCTE 74 2011)

$C = 16$ (from measurement)

$d = 0.0063$ (from measurement or ANSI/SCTE 74 2011)

$P = 6.0$ (from measurement)

$N = 4$ (from measurement)

$$\alpha = \tan^{-1} [2 \cdot \pi \cdot (0.150 + 2 \cdot 0.0063) \cdot (6.0/16)] = \tan^{-1} (0.383) = 0.366$$

$$F = 4 \cdot 6.0 \cdot 0.0063 / \sin (0.366) = 0.151 / 0.357 = 0.423$$

$$\text{Percent Braid Coverage} = (2 \cdot 0.423 - 0.423^2) \cdot 100 = 66.7\%$$