Society of Cable Telecommunications Engineers

ENGINEERING COMMITTEE
Interface Practices Subcommittee

AMERICAN NATIONAL STANDARD

ANSI/SCTE 33 2010

Test Method for Diameter of Drop Cable

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TABLE OF CONTENTS

LIST OF TABLES

1.0 SCOPE

1.1. To determine one or more of the following characteristics relating to flexible coaxial drop cables. This method is intended to make use of relatively inexpensive equipment. For more precise methods using laser micrometers and the like see ANSI/SCTE 31 2007.

Cable jacket outside diameter.

Average core diameter over foil.

Center conductor diameter.

Ovality

Braid Coverage

1.2. Measurement methods for determining any subtle differences in cables, which may affect fitting installation or performance, cable performance or to be used as a starting point for fitting design.

2.0 NORMATIVE REFERENCES

The following documents contain provisions, which, through reference in this text, constitute provisions of this standard. At the time of subcommittee approval, the editions indicated were valid. All standards are subject to revision, and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the documents listed below.

2.1 ANSI/SCTE 31 2007, *Test Method for Measuring Diameter Over Core*

2.2 ANSI/SCTE 51 2007, *Method for Determining Drop Cable Braid Coverage*

3.0 COMPLIANCE NOTATION

“SHALL”	This word or the adjective “REQUIRED” means that the item is an absolute requirement of this specification.
“SHALL NOT”	This phrase means that the item is an absolute prohibition of this specification.
“SHOULD”	This word or the adjective “RECOMMENDED” means that there may exist valid reasons in particular circumstances to ignore this item, but the full implications should be understood and the case carefully weighted before choosing a different course.
“SHOULD NOT”	This phrase means that there may exist valid reasons in particular circumstances when the listed behavior is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.
“MAY”	This word or the adjective “OPTIONAL” means that this item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because it enhances the product, for example; another vendor may omit the same item.

4.0 EQUIPMENT

4.1 Dial thickness gage Mitutoyo C125EB, Starrett 1015BZ, Spi 24-361-8 or equivalent having the dial calibrated to read in .0005 inch increments, with a 0-1.000 inch travel and a spring-loaded plunger.

4.2 Machinist's outside micrometer having flat surfaces, both on the anvil and the end of the spindle and calibrated to read directly to at least .001 inches with each division of a width that facilitates estimation of each measurement to .0001 inch.

5.0 TEST SAMPLES

5.1 Cut the cable samples approximately two inches long for measurements using the dial thickness gage. Note if a longer sample is used, the weight of the sample may result in erroneous measurements.

5.2 For measurements of the core diameter refer to ANSI/SCTE 31 2007.

5.3 Using a sharp utility knife cut approximately ½ inch of jacket, braid and dielectric from each end of the sample for measurement of the center conductor diameter.

6.0 MEASUREMENT METHOD

6.1 Due to the softness of the cable jacket and the uneven foil tape, these methods are somewhat subjective and care must be taken when making measurements of this kind.

6.2 Prepare samples per section 5.1.

6.3 Make sure the dial indicator on the dial thickness gage is at zero with the anvils completely closed. Perform the necessary adjustments to zero the gage. Hold the dial thickness gage in one hand and use the thumb lever to open the anvils. Place the center of the sample between the anvils and release the thumb lever. Without your hands being on the sample, find and record the minimum diameter reading. From the minimum reading, repeat the measurements five times around the circumference of the sample also recording the maximum. Average the six recorded readings to calculate the average diameter of the cable. Messenger cables may use only five total measurements.

6.4 The diameter over the dielectric and foil may be measured using the method described in 5.2.

> Note: By definition, D is the diameter of the dielectric core before the application of any foil. Calculations of braid coverage are based on D and not the diameter over the core and foil. However, for this test procedure core diameter includes the bonded foil. This is because there is extreme difficulty in removing the foil (which is heavily bonded to the dielectric core) which makes the normal measurement impractical.

6.5 Prepare the samples per 5.3; then using the outside micrometer, measure and record the diameter of the center conductor.

7.0 OVALITY

7.1 Ovality is defined, using the measurements of outside diameter (OD), as OD_{max} - OD_{min}

8.0 BRAID COVERAGE

Please refer to ANSI/SCTE 51 2007 for the Braid Coverage procedure.

Table 1

DATA SHEET			
Dimensional Evaluation of Flexible Coaxial Drop Cables			
Date: Cable Type:	Cable Manufacturer: Part Number:		
Sample Source:			
Jacket Material:	Dielectric Material:		
Jacket Outside Diameter:			
	Sample 1	Sample 2	Sample 3
Min.			
Max.			
Average			
Ovality (Max- Min)			
Dielectric Diameter Over Foil:			
	Sample 1	Sample 2	Sample 3
Min.			
Max.			
Average			
Ovality (Max- Min)			

Center Conductor Diameter:			
	Sample 1	Sample 2	Sample 3
Braid Coverage			
per ANSI/SCTE 51	Sample 1	Sample 2	Sample 3