



***Society of Cable
Telecommunications
Engineers***

**ENGINEERING COMMITTEE
Interface Practices Subcommittee**

AMERICAN NATIONAL STANDARD

ANSI/SCTE 12 2001R2006

**Test Method
for Center Conductor Bond to Dielectric
for Trunk, Feeder and Distribution Coaxial Cables**

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1.0 SCOPE

- 1.1. This test is to determine the bond strength between the center conductor and dielectric for specified semi-flexible coaxial cables.

2.0 INFORMATIVE REFERENCES

The following documents may provide valuable information to the reader but are not required when complying with this standard.

- 2.1 ANSI/SCTE 15 200, Specification for Trunk, Feeder and Distribution Coaxial Cable

3.0 EQUIPMENT

- 3.1 Utility knife or equivalent.
- 3.2 Diagonal side cutters or equivalent for cutting center conductor.
- 3.3 Calibrated 12-inch measuring device.
- 3.4 Band Saw.
- 3.5 Tubing Cutter (Optional).
- 3.6 Tensile testing apparatus.
 - 3.6.1 Shall be capable of indicating peak load attained.
 - 3.6.2 Load scale shall be calibrated.
 - 3.6.3 Must be capable of maintaining a rate of travel of 2 inches per minute.
- 3.7 Test fixture for securing cable samples to the tensile tester. See attached sketch.
 - 3.7.1 The fixture shall be constructed so as not to flex significantly under the applied loads.
 - 3.7.2 The fixture shall apply force evenly to the outer conductor and dielectric.
 - 3.7.3 The fixture shall have a hole for center conductor insertion that is a minimum 1 percent larger than the center conductor size being tested.

4.0 TEST SAMPLES

- 4.1 Finished cable sample must be long enough to allow an undisturbed 2-inch test section and enough bare center conductor to fit through the test fixture and into tensile tester jaws. A 1-inch tail shall remain on the pull through end of the sample. Suggested sample length is 12 inches. See figure 1.

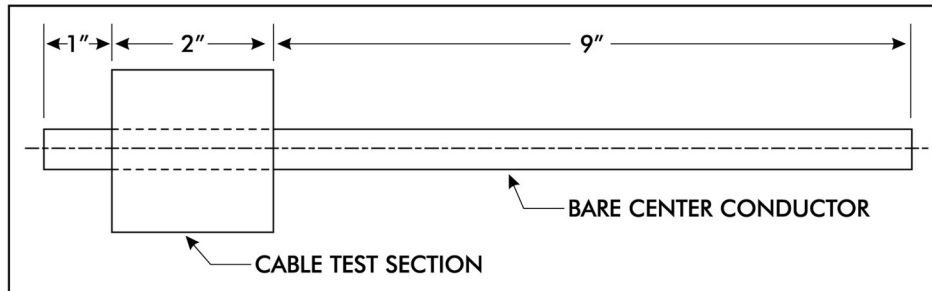


Figure 1

- 4.2 At 1 inch and 3 inches from one end of the sample, make circumferential cuts through the outer conductor. Do not cut the center conductor. The spacing between these cuts will be the 2 inch test section length. These cuts can be made with any device that gives smooth even cuts such as a band saw, hacksaw or tubing cutter.
- 4.3 Using a band saw, make two cuts longitudinally through the outer conductor for both ends of the sample. This will allow the outer conductor and dielectric to be removed without disturbing the test section. DO NOT cut the test section longitudinally.
- 4.4 After removing the outer conductor, remove the dielectric from the center conductor on both ends of the sample. No dielectric material shall extend past the outer conductor on the prepared sample. Care should be taken when removing the outer conductor so as not to twist the center conductor. This can weaken the bond between the dielectric and the center conductor.
- 4.5 The remaining 2 inches shall be completely intact (outer conductor, dielectric and center conductor).

NOTE: Other methods of outer conductor removal may be used providing the 2 inch test section is completely intact. In the case of disc and air dielectric, care shall be taken so that the 2 inch test section contains 2 discs.

5.0 TEST METHODS

- 5.1 With the test fixture (see figure 2) attached to the tensile test apparatus, insert the stripped end of the center conductor through the appropriate hole in the test plate.

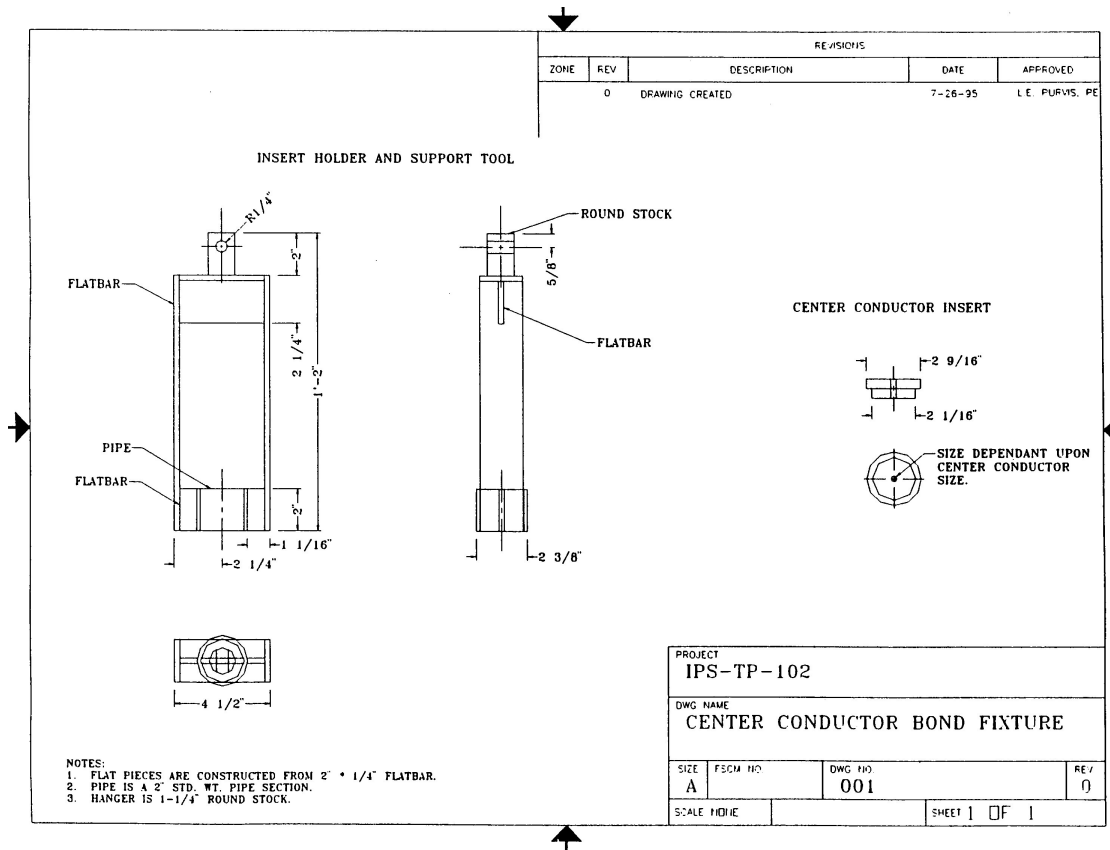


Figure 2

- 5.2 Secure the center conductor in the jaws of the tensile tester.
- 5.3 Set the load indicator to zero.
- 5.4 Start the tensile test apparatus traveling member at a rate of 2 inches per minute.
- 5.5 Allow it to continue until breaking the center conductor bond. (This is evidenced by no further increase in load.)

6.0 INSPECTION

- 6.1 Record test data to include the following: cable manufacturer, cable size, cable type, sample reel number, date of inspection, inspector number or signature, test method number and revision, date and maximum load obtained. See attached test result data sheet.

TEST RESULTS

Test Procedure: Center Conductor Bond to Dielectric SCTE IPS TP 102

Date of Issue: _____

Make of Tensile Test Device: _____ Model: _____

Test Device Calibration Date: _____

Tested By: Company: _____ Location: _____

Inspector: _____ Date: _____

Sample Number	Cable Manufacturer	Cable Size	Cable Type	Cable Reel Number	Maximum Load Obtained
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					