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S T A N D A R D S

Interface Practices Subcommittee

AMERICAN NATIONAL STANDARD

ANSI/SCTE 98 2020

**Test Method for Withstand
Tightening Torque – ‘F’ Male**

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1. Introduction

1.1. Executive Summary

This test procedure applies as a method for determining whether a Male F connector withstands a specified torque when mated to a known F Female test port fixture.

1.2. Scope

To measure the “F” Male interface torque and/or to determine the amount of torque that will cause one or more of the following conditions to occur; stripping of the internal threads, damage to the male interface; failure of the nut hex-flats.

1.3. Benefits

This test procedure provides a common method that can be used by both manufacturers and end users to determine whether the F Male connector can withstand the tightening torque specifications.

1.4. Intended Audience

This test procedure are for manufacturers, evaluation laboratories and end user technicians and engineers with the proper equipment to perform this testing.

1.5. Areas for Further Investigation or to be Added in Future Versions

At this time, there are no areas for further investigation for this test procedure.

2. Normative References

The following documents contain provisions, which, through reference in this text, constitute provisions of this document. At the time of Subcommittee approval, the editions indicated were valid. All documents are subject to revision; and while parties to any agreement based on this document are encouraged to investigate the possibility of applying the most recent editions of the documents listed below, they are reminded that newer editions of those documents might not be compatible with the referenced version.

2.1. SCTE References

- ANSI/SCTE 123 2011: Specification for “F” Connector, Male, Feed-Through
- ANSI/SCTE 124 2011: Specification for “F” Connector, Male, Pin Type

2.2. Standards from Other Organizations

- ANSI/ASMBE B18.22 (1987): Square and Hex Nuts

2.3. Published Materials

- No normative references are applicable.

3. Informative References

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

3.1. SCTE References

- No informative references are applicable.

3.2. Standards from Other Organizations

- No informative references are applicable.

3.3. Published Materials

- No informative references are applicable.

4. Compliance Notation

<i>shall</i>	This word or the adjective “ <i>required</i> ” means that the item is an absolute requirement of this document.
<i>shall not</i>	This phrase means that the item is an absolute prohibition of this document.
<i>forbidden</i>	This word means the value specified shall never be used.
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5. Abbreviations and Definitions

5.1. Abbreviations

ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
lb-in	pound-inch
mm	millimeter
Rc	Rockwell Hardness measured on the C scale

UNEF	Unified National Extra Fine
SCTE	Society of Cable Telecommunications Engineers

5.2. Definitions

torque	Rotational force
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6. Equipment

- 6.1. Torque test fixture as shown in Figure 1. Note: end shown in diagram is for securing by a bench vice. There are alternative methods for attaching the test fixture to various devices. The intent of the diagram is to provide a uniform dimensional “F” Female port.
- 6.2. If applicable, bench vise of adequate size and strength to hold the test fixture/adapters stationary.
- 6.3. Brass wire brush of sufficient size and strength to clean the threads of the torque test fixture without damage.
- 6.4. Torque Measuring Equipment: Dial Type Open End Torque wrench in dial increments of 5 pound-inches per division with peak load indicating capability in the range of interest. (CDI No. 3002LDIN or equivalent). Or other common torque measuring devices, capable of resolution and accuracy in increments of 5 pound-inches per division and with peak load capability in the range of interest.
- 6.5. Torque Wrench Adapter: Crow’s foot attachment of correct size (ANSI/ASME B18.2.2) for the nut of the connector under test.

NOTE: Crow’s foot attachment must be installed at a right angle to the centerline of the torque wrench so as to not increase the effective length of the torque wrench.

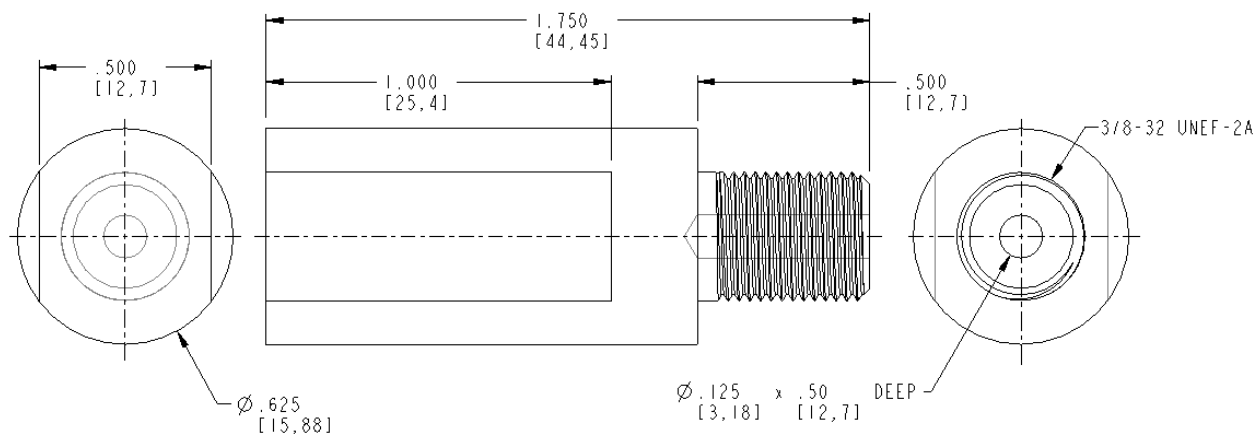


Figure 1 - Torque Test Fixture

NOTES:

1. Material: Drill Rod (01 tool steel) or equivalent
2. Heat Treat to Rc 50-40
3. 0.375-inch Minimum good threads

4. For bench vise, other options are used depending on method of holding fixture stationary

7. Test Samples

- 7.1. A minimum of 10 samples per test is required.
- 7.2. Cable is not terminated to the connector, unless required by the connector design.
- 7.3. Lubrication is not to be used.

8. Test Samples

- 8.1. Samples are prepared per section 7.0 and are tested at room temperature.
- 8.2. Secure the torque test fixture in the bench vice or secure to the torque-measuring device.
- 8.3. Clean the thread of the torque test fixture using the brass wire brush before testing each sample.
- 8.4. Finger-tighten the sample onto the torque fixture
- 8.5. Apply the torque measuring equipment to the sample under test. Ensure it is properly engaged.
- 8.6. Rotate the sample in a clockwise direction at approximately 1 revolution in 10 seconds using a smooth continuous motion.
- 8.7. Conclude the test when the torque value is obtained as specified in ANSI/SCTE 123 2011: Specification for “F” Connector, Male, Feed-Through or ANSI/SCTE 124 2011: Specification for “F” Connector, Male, Pin Type, If any of the conditions below occur prior to achieving the specified value; constitutes a failure.
 - Stripping of the internal threads,
 - Breakage of the male interface
 - Failure of the nut hex-flats,
- 8.8. Remove the unit under test from the test fixture and record the torque force obtained and if applicable, failure mode.

9. Report Form

Connector Type			
Test Date			
Sample Number	Test Results (lb-inch)	Comments Failure Mode	Comments Pass / Fail
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			