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## S T A N D A R D S

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**Interface Practices Subcommittee**

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**AMERICAN NATIONAL STANDARD**

**ANSI/SCTE 149 2019**

**Test Method for Withstand  
Tightening Torque - "F" Female**

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**NO TABLE OF FIGURES ENTRIES FOUND.**

## 1. Introduction

### 1.1. Executive Summary

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

### 1.2. Scope

To measure the “F” Female 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 external threads.
- Damage to the female interface.

### 1.3. Benefits

This test procedure provides a common method that can be used by both manufacturers and end users to test whether device female F ports meet withstand tightening torque specifications. Without such a common test procedure, the testing used to measure withstand tightening torque can vary and lead to added uncertainty as to whether an F female port withstand tightening torque specifications are being met.

### 1.4. Intended Audience

The intended audience for this test procedure are manufacturers, evaluation laboratories, and end user technician 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

- No normative references are applicable.

### 2.2. Standards from Other Organizations

- No normative references are applicable.

### 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

- ANSI/SCTE 01 2015 – Specification for "F" Port, Female, Outdoor
- ANSI/SCTE 02 2015 – Specification for "F" Port, Female, Indoor

#### 3.2. Standards from Other Organizations

- ANSI/ASME B18.2.2

#### 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.
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### 5. Abbreviations and Definitions

#### 5.1. Abbreviations

ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
in	inch
ISBE	International Society of Broadband Experts
lbs	pounds
mm	millimeter

Rc	Rockwell Hardness measured on the C scale
SCTE	Society of Cable Telecommunications Engineers
UNEF	Unified National Extra Fine

## 5.2. Definitions

torque	rotational force
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## 6. Equipment

- 6.1. Torque test fixture as shown in Figure 1. The intent of the diagram is to provide a uniform dimensional “F” Male 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 inch-pounds 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 inch-pounds 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 should 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.

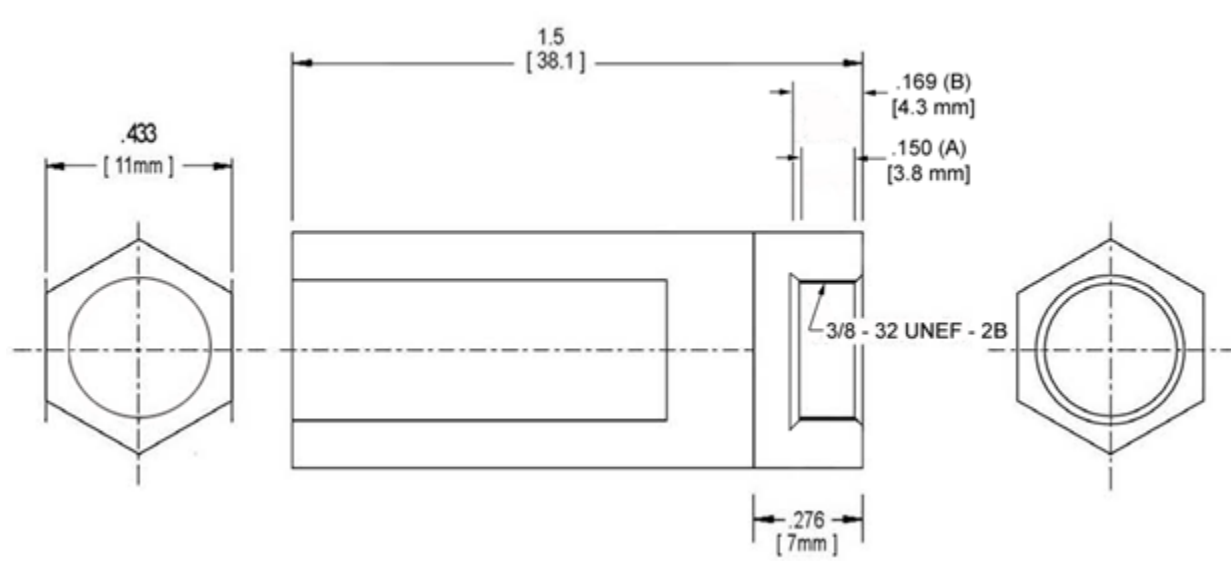


Figure 1 - Torque Test Fixture

NOTES:

1. Material: Drill Rod (01 tool steel) or equivalent.
2. Heat Treat to Rc 50-40.
3. Dimension A is  $0.150 \pm 0.025$  in. threaded length. Minimum 4 full threads.
4. Dimension B is 0.169 in. – 0.240 in. face depth to leading edge
5. 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. Lubrication is not to be used.

## 8. Test Method

- 8.1. Samples are to be prepared at room temperature.
- 8.2. Secure the torque test fixture in the bench vise 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 F female port sample into 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 as specified is obtained, or if any of the conditions below occur prior to achieving the specification.
  - Stripping of the external threads.
  - Breakage of the female interface.
  - Slippage from the bulkhead
- 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**

<b>Connector Type</b>			
<b>Test Date</b>			
<b>Sample Number</b>	<b>Test Results (Inch*lbs)</b>	<b>Comments Failure Mode</b>	<b>Comments Pass / Fail</b>
<b>1</b>			
<b>2</b>			
<b>3</b>			
<b>4</b>			
<b>5</b>			
<b>6</b>			
<b>7</b>			
<b>8</b>			
<b>9</b>			
<b>10</b>			