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Telecommunications
Engineers***

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AMERICAN NATIONAL STANDARD

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Specification for “F” Port, Female, Indoor

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1.0 SCOPE

The purpose of this document is to specify requirements for female indoor “F” ports that are used in the 75 ohm RF broadband communications industry. This specification applies to SCTE drop cable specifications ANSI/SCTE 74 2003, ANSI/SCTE 71 2003, ANSI/SCTE 100 2004, IPS SP 005 and IPS SP 006.

2.0 DEFINITIONS AND ACRONYMS

- 2.1 Dielectric: The material that is used to insulate the center conductor from contacting the outer housing.
- 2.2 Thread Relief: A reduced diameter section of the threaded surface to allow the tool to run out.
- 2.3 Center Conductor: The inner conductor of a coaxial cable or pin of mating male connector.
- 2.4 Mating Male Center Conductor Clearance: The distance from the reference plane of the female “F” port to which the center conductor of the mating male connector may penetrate without damaging the port or encountering a blockage.
- 2.5 Positive Contact Point: The distance from the reference plane of the female “F” port to the first point of contact in the female center contact when the installed mating center conductor is centered.
- 2.6 Reference Plane: The reference plane on the female indoor “F” port is the mating surface that seats against the male “F” port. It is also the plane from where all horizontal dimensions are taken.
- 2.7 Parting Line (relevant to casting process only): A raised mark left on the surface of a part as a result of the gap between two halves of a die.

3.0 NORMATIVE REFERENCES

The following documents contain provisions, which, through reference in this text, constitute provisions of this standard. At the time of publication, 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.

3.1 SCTE References

ANSI/SCTE 74 2003 (formerly IPS SP 001), Specification for Braided 75 Ohm Flexible RF Coaxial Drop Cable

ANSI/SCTE 71 2003 (formerly IPS SP 004), Specification for Braided, 75 Ohm, Coaxial Multi-Purpose Cable

ANSI/SCTE 99 2004 (formerly IPS TP 401), Test Method for Axial Pull Connector/Drop Cable

ANSI/SCTE 100 2004 (formerly IPS SP 007), Specification for 75 Ohm Smooth Aluminum Access Cables

ANSI/SCTE 103 2004 (formerly IPS TP 405), Test Method for DC Contact Resistance

IPS SP 005, Specification for Corrugated Copper 75 Ohm RF Coaxial Subscriber Access Cable

IPS SP 006, Specification for Corrugated Aluminum 75 Ohm RF Coaxial Subscriber Access Cable

IPS SP 401, Specification for “F” Connector Male Feed-Through

IPS SP 408, Specification for “F” Connector Male Pin Type

IPS TP 253, Test Method for Withstand Tightening Torque - 'F' Female

3.2 Standards from other Organizations—Not applicable.

4.0 INFORMATIVE REFERENCES

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

- 4.1 SCTE References—Not applicable.
- 4.2 Standards from other Organizations—Not applicable.
- 4.3 Published Materials—Not applicable.

5.0 ELECTRICAL REQUIREMENTS

- 5.1 Return Loss, Insertion Loss, Surge Withstand, and Shielding Effectiveness: Refer to the individual equipment specifications for these requirements.
- 5.2 The center conductor junction of the indoor female “F” port to male F center conductor, shall have DC contact resistance less than 25 milliohms after 25 insertion/extractions per ANSI/SCTE 103 2004.
- 5.3 The outer conductor junction of the indoor female “F” port to male F connector shall have a DC contact resistance less than 10 milliohms when tightened to 35 in.-lbs. and tested to ANSI/SCTE 103 2004.
- 5.4 The center conductor junction of the indoor female “F” port to male F center conductor shall be capable of carrying a minimum of 1 Amp DC continuous current at an ambient temperature of 40°C without degradation.

6.0 MECHANICAL REQUIREMENTS

6.1 Physical dimensions

The recommended physical dimensions for female indoor “F” ports shall be as specified in Figure 1, Table 1, and per the notes below.

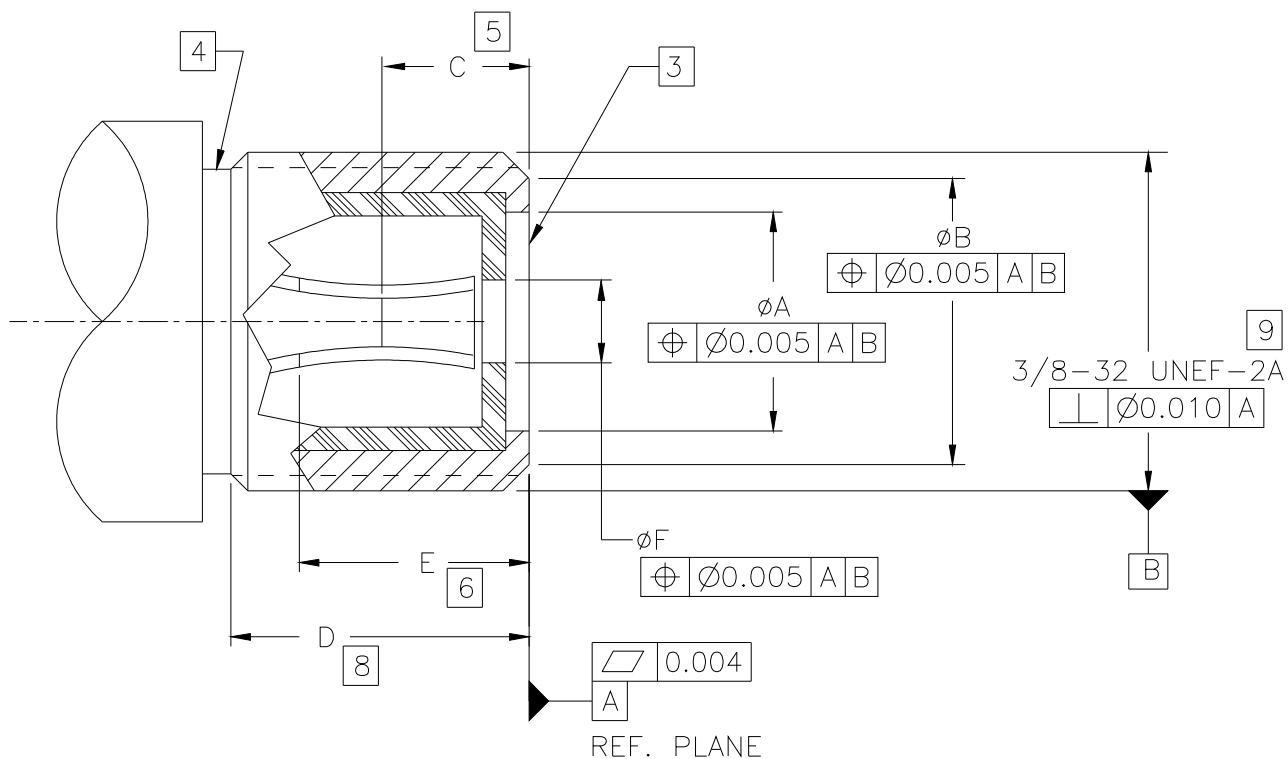


Figure 1 – Recommended Indoor Female “F” Port

DESCRIPTION	DIM	mm		inches		NOTES
		MIN	MAX	MIN	MAX	
REF PLANE OPENING DIAMETER	A	4.32	6.10	0.170	0.240	
REF PLANE OUTER DIAMETER	B	7.11	8.00	0.280	0.315	
POSITIVE CONTACT POINT DEPTH	C	-	5.08	-	0.200	5
FULL THREAD DEPTH	D	8.26	-	0.325	-	8
MATING MALE CENTER CONDUCTOR CLEARANCE	E	9.65	-	0.380	-	6
CENTER CONDUCTOR GUIDE INNER DIAMETER	F	-	1.73	-	0.068	

Table 1 – Recommended Indoor Female “F” Port Dimensions

NOTES:

- 1 DRAWING NOT TO SCALE.
- 2 INTERPRET DRAWING IN ACCORDANCE WITH ASME Y14.5M-1994.
- 3 NO MATERIAL SHALL PROTRUDE BEYOND REF. PLANE AFTER INSTALLATION WITH MATING MALE F CONNECTOR PER IPS SP 401 AND IPS SP 408.
- 4 THREAD RELIEF OPTIONAL.
- 5 DIMENSION TO POINT OF POSITIVE CONTACT OF MALE CENTER CONDUCTOR.
- 6 MINIMUM CLEARANCE REQUIRED FOR MAXIMUM LENGTH MALE CENTER CONDUCTOR.
- 7 RECOMMENDED MATING MALE CENTER CONDUCTOR DIAMETER RANGE IS 0.025 in. (0.64 mm) MIN. to 0.042 in. (1.07 mm) MAX.
- 8 WHEN THE INDOOR FEMALE F CONNECTOR IS USED IN A PANEL OR BULKHEAD MOUNTED APPLICATION, DIMENSION D IS THE LENGTH OF THREAD EXTENDING BEYOND THE MOUNTING HARDWARE.
- 9 SINGLE “D” FLAT OR DOUBLE “D” FLATS ARE OPTIONAL GEOMETRIES OF THE THREADED PORTION OF THE INDOOR FEMALE F CONNECTOR.

6.2 Mechanical Strength

6.2.1 Withstand Tightening Torque

The indoor female “F” port shall be able to withstand a minimum tightening torque of 35 in-lbs. without damage when measured per IPS TP 253.

6.2.2 Other

Refer to the equipment specs for mechanical requirements that affect any material beyond the indoor female “F” port.

6.3 Environmental Requirements

Indoor female “F” ports shall meet the environmental requirements of the equipment to which they are attached.