Society of Cable Telecommunications Engineers

ENGINEERING COMMITTEE
Interface Practices Subcommittee

AMERICAN NATIONAL STANDARD

ANSI/SCTE 15 2016

Specification for Trunk, Feeder and Distribution Coaxial Cable

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1. Introduction

1.1. Executive Summary

This specification applies to general purpose trunk, feeder and distribution coaxial cables. Currently there are two distinctive designs of dielectric available; gas injected foam dielectric and disc and air dielectric. This document will cover both designs. Specialty cables will not be included in this document.

References to the National Electrical Code, National Electrical Safety Code, ASTM and other regulations or specifications should adhere to the latest document and should keep current with each document.

This specification in no way should limit or restrict any manufacture's innovations and improvement. Innovation and improvements are encouraged and this specification may be adjusted when beneficial.

1.2. Scope

This specification applies to material, electrical and mechanical properties of seventy-five ohm coaxial cables as defined herein.

Seventy-five ohm coaxial cables are used to distribute radio frequency (R.F.), digital signals and power as applicable.

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 03 2008 – Test Method for Coaxial Cable Structural Return Loss
- ANSI/SCTE 11 2012 – Test Method for Aerial Cable Corrosion Protection Flow
- ANSI/SCTE 12 2011 – Test Method for Center Conductor Bond to Dielectric for Trunk Feeder and Distribution Coaxial Cables
- ANSI/SCTE 13 2011 – Dielectric Air Leak Test Method For Trunk, Feeder and Distribution Coaxial Cable
- ANSI/SCTE 39 2013 – Test Method for Static Minimum Bending Radius for Coaxial Trunk, Feeder and Distribution Cables
- ANSI/SCTE 44 2010 – Test Method for DC Loop Resistance
- ANSI/SCTE 47 2007 – Test Method for Coaxial Cable Attenuation
- ANSI/SCTE 66 2008 – Test Method for Coaxial Cable Impedance
- ANSI/SCTE 69 2007 – Test Method for Moisture Inhibitor Corrosion Resistance
- ANSI/SCTE 88 2012 – Test Methods for Polyethylene Jacket Longitudinal Shrinkage

2.2. Standards from Other Organizations

- ASTM A 641-92 Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
- ANSI H35.1 American Aluminum Association Alloy and temper Designation Systems or Aluminum 1XXX

- ASTM B 566-93 Specification for Copper-Clad Aluminum Wire
- ASTM B 694-86 Specification for Copper, Copper Alloy, and Copper Clad Stainless Steel Sheet and Strip for Electrical Cable Shielding
- ASTM D 573-88 Test Method for Rubber-Deterioration in an Air Oven
- ASTM D 638-91 Test Method for Tensile Properties of Plastics
- ASTM D 746-79 Test Method for Brittleness Temperature of Plastics and Elastomers by Impact
- ASTM D 1248-84 Specification for Polyethylene Plastics Molding and Extrusion Materials
- ASTM D 1505-90 Test Method for Density of Plastics by the Density-Gradient Technique
- ASTM D 1603-76 Test Method for Carbon Black in Olefin Plastics
- ASTM D 3349-93 Test Method for Absorption coefficient of Ethylene Polymer Material Pigmented with Carbon Black
- ASTM D 4565-90a Test Method of Physical Environmental Performance Properties of Insulation's and Jackets for Telecommunications Wire and Cable
- SAE/AISI - 1010

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

- ANSI/ASQC Q9000-1 and Q9004-1
- ASTM B 211-93 Specification for Aluminum and Aluminum-Alloy Bar, Rod and Wire
- ASTM B 221-93 Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes and Tubes
- ASTM B 233-92 Specification for Aluminum 1350 Drawing Stock for Electrical Purposes
- ASTM B 557-94 Test Methods of Tension Testing Wrought and Cast Aluminum– and Magnesium-Alloy Products
- ASTM E 8-94a Test Methods for Tension Testing of Metallic Materials
- NEC-2011 National Electrical Code
- NFPA 70 National Fire Protection Association

3.3. Published Materials

- No informative references are applicable.

4. Compliance Notation

shall	This word or the adjective "***required***" means that the item is an absolute requirement of this document.
shall not	This phrase means that the item is an absolute prohibition of this document.
forbidden	This word means the value specified shall never be used.
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.
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5. CENTER CONDUCTOR

5.1. Material

The center conductor shall be copper clad aluminum (CCA). The outer layer of copper shall be metallurgically bonded and continually cover the aluminum core prior to processing, the composite conductor shall meet the requirements of ASTM B 566- Class 10A or 10H.

Solid copper center conductor may also be available, if required by the user. Low DC resistance is the only advantage to using solid copper; therefore, this document will only cover the copper clad aluminum.

5.2. Joints

Factory joints in the finished product shall be allowed. The ultimate tensile strength in the joint area when tested per ASTM E-8 shall be 90% of the original unspliced wire.

5.3. Dimensions

- Center conductor dimensions shall meet the requirements of Table 1.
- All center conductor tolerances shall be 0.001 in. (0.03mm).

Table 1 – Center Conductor Dimensions [Inch (mm)]

Product Type	Diameter of Center Conductor
412-F	0.088 (2.24)
500-F	0.109 (2.77)
500-D	0.123 (3.12)
540-F	0.124 (3.15)
565-F	0.129 (3.28)
625-F	0.136 (3.45)
650-D	0.156 (3.96)
700-F	0.163 (4.14)
715-F	0.166 (4.22)
750-F	0.166 (4.22)
750-D	0.185 (4.20)
840-F	0.194 (4.93)
860-F	0.203 (5.16)
875-F	0.194 (4.93)

F=FOAM, D=DISC and AIR

5.4. DC Resistance

DC resistance of the center conductor shall be measured per ANSI/SCTE 44 2010 and meet the requirements of Table 7.

6. FOAM DIELECTRIC

6.1. Foam Dielectric Material

Dielectric material extruded over the center conductor shall be an insulating grade virgin polyethylene and shall not contain reground, reprocessed or recycled materials. The insulation shall consist of gas injected foamed polyethylene with a closed cell structure. It shall be applied concentrically and bonded to the center conductor. The dielectric shall also contain a stabilization package to meet the requirements of section 13.5Thermal Oxidative Stability (TOS) when measured per IPS TP-119.

Unless otherwise specified, polyethylene materials for the dielectric shall meet all applicable requirements of ASTM D 1248 and requirements of this document. The test utilizes insulation removed from the completed cable and tested at 180 °C ± 0.3 °C. Care should be taken not to include any adhesive or precoat on the dielectric specimen. Requirements for OIT – Initial: 20 minutes minimum, after aging: 70 percent of initial value.

6.2. Patching

Discontinuities in the conductor insulation due to process malfunction or damage shall not be patched.

7. DISC AND AIR DIELECTRIC

7.1. Disc and Air Dielectric Material

The dielectric core consists of polyethylene disc molded onto the center conductor. A polyethylene sleeve is then extruded over the disc to hermetically seal the compartments. The base resins for the disc and sleeve dielectric shall be virgin polyethylene and shall not contain reground, reprocessed or recycled

materials. The disc and sleeve shall contain a stabilization package to meet the requirements of section 13.5 Thermal Oxidative Stability (TOS).

Unless otherwise specified, polyethylene materials for the dielectric shall meet all applicable requirements of ASTM D 1248 and requirements of this document.

7.2. Patching

Discontinuities in the conductor insulation due to process malfunction or damage shall not be patched.

8. OUTER CONDUCTOR (SHIELD)

8.1. Material

The outer conductor will consist of a continuous extruded or welded tube of aluminum. It shall be made from an aluminum alloy of the 1XXX series as described in ANSI H35.1. The alloy used by the manufacturer must produce a finished product that meets all the electrical and mechanical properties specified elsewhere in this document.

8.2. Outer Conductor Dimensions

The inside diameter, outside diameter and thickness of the outer conductor shall meet the requirements of Table 2

Table 2 – Outer Conductor Dimensions [Inch (mm)]

Product Type	* Diameter Over Outer Conductor	Nominal Inside Diameter of Outer Conductor	Nominal Thickness of Outer Conductor
412-F	0.412 (10.46)	0.362 (9.19)	0.025 (0.64)
500-F	0.500 (12.70)	0.452 (11.48)	0.024 (0.61)
500-D	0.510 (12.95)	0.471 (11.96)	0.0195 (0.49)
540-F	0.540 (13.72)	0.513 (13.03)	0.0135 (0.34)
565-F	0.565 (14.35)	0.519 (13.18)	0.023 (0.58)
625-F	0.625 (15.88)	0.563 (14.30)	0.030 (0.76)
650-D	0.642 (16.31)	0.603 (15.32)	0.195 (0.49)
700-F	0.703 (17.86)	0.653 (16.59)	0.025 (0.64)
715-F	0.715 (18.16)	0.686 (17.42)	0.0145 (0.37)
750-F	0.750 (19.05)	0.678 (17.22)	0.034 (0.86)
750-D	0.762 (19.35)	0.714 (18.14)	0.024 (0.61)
840-F	0.840 (21.34)	0.780 (19.81)	0.030 (0.76)
860-F	0.860 (21.84)	0.828 (21.03)	0.016 (0.41)
875-F	0.875 (22.23)	0.797 (20.24)	0.035 (0.89)

F=FOAM, D=DISC and AIR

Note: * = Tolerance on (F) type diameter over outer conductor is ± 0.002 in. (± 0.05 mm).
* = Tolerance on (D) type diameter over outer conductor is ± 0.008 in. (± 0.10 mm).

8.3. Dielectric Adhesion to Outer Conductor

A polymer adhesive coating may be used to bond the dielectric to the outer conductor. The adhesive coating shall be compatible with all cable components in contact and shall not degrade either electrical or mechanical properties of the product.

9. OUTER CONDUCTOR FLOODING COMPOUND

9.1. Material

Cables intended for below grade use shall have a flooding compound applied over the outer conductor to block moisture ingress and help prevent corrosion. The finished product shall meet requirements of ANSI/SCTE 69 2007 for corrosion resistance.

If a flooding compound is used for aerial cable, it shall meet the requirements of ANSI/SCTE 11 2012 for a non-flowing compound.

10. CABLE JACKET

10.1. Material

The outer jacket shall be polyethylene (PE). The jacket shall be free of pinholes, cracks and blisters. The PE jacket shall contain carbon black to ensure ultraviolet light stability (UV). The cable jacket shall meet the requirements of Table 3.

Table 3 – Jacket Material Requirements

Property	Requirement
Yield Strength (PSI), minimum ASTM D 638	1,200
Elongation (%), minimum ASTM D 638	400
Retention of Elongation (%), minimum after 48 hours at 100°C (212°F) ASTM D 573	75
Low Temperature Brittleness, °C (°F) ASTM D 746 Procedure A	-76 (-105)
Carbon Black Content (%), minimum ASTM D 1603	2.35
Density (g/cc) ASTM D 1505	0.900 – 0.955
UV Stability @ 375 nm/ASTM D 3349 PE minimum absorption coefficient	400

10.2. Diameter Over Jacket (DOJ)

The DOJ of the various types of cables shall meet the requirements of Table 4.

Table 4 – Nominal Diameter over Jacket [Inch (mm)]

Product Type	Non Flooded	Flooded	Armored Corrugated	Armored Helical
412-F	0.472 (11.99)	0.482 (12.24)	0.640 (17.02)	0.600 (15.24)
500-F	0.560 (14.22)	0.570 (14.48	0.715 (18.16)	0.690 (17.53)
500-D	0.582 (14.78)	0.595 (15.11)	0.751 (19.07)	N/A
540-F	0.610 (15.49)	0.610 (15.49)	0.765 (19.43)	N/A
565-F	0.625 (15.88)	0.635 (16.13)	N/A	0.755 (19.18)
625-F	0.685 (17.40)	0.695 (17.65)	0.835 (21.21)	0.815 (20.70)

650-D	0.712 (18.09)	0.725 (18.42)	0.901 (22.89)	N/A
700-F	0.765 (19.43)	0.775 (19.69)	N/A	0.885 (22.50)
715-F	0.785 (19.94)	0.785 (19.94)	0.935 (23.75)	N/A
750-F	0.820 (20.83)	0.830 (21.08)	1.000 (25.40)	0.950 (24.13)
750-D	0.832 (21.13)	0.845 (21.46)	0.941 (23.90)	N/A
840-F	0.910 (23.11)	0.920 (23.37)	N/A	1.040 (26.42)
860-F	0.960 (24.38)	0.960 (24.38)	1.110 (28.19)	N/A
875-F	0.945 (24.00)	0.955 (24.26)	1.097 (27.86)	1.075 (27.31)

F=FOAM, D=DISC and AIR

10.3. Jacket Thickness

The minimum thickness at any point of the overall jacket shall meet the requirements of Table 5.

Table 5 – Minimum Jacket Thickness [Inch (mm)]

Product Type	Aerial	Underground
412-F	0.020 (0.51)	0.020 (0.51)
500-F	0.021 (0.53)	0.021 (0.53)
500-D	0.021 (0.53)	0.025 (0.63)
540-F	0.021 (0.53)	0.021 (0.53)
565-F	0.021 (0.53)	0.021 (0.53)
625-F	0.021 (0.53)	0.021 (0.53)
650-D	0.021 (0.53)	0.021 (0.53)
700-F	0.021 (0.53)	0.021 (0.53)
715-F	0.025 (0.64)	0.025 (0.64)
750-F	0.025 (0.64)	0.025 (0.64)
750-D	0.025 (0.63)	0.025 (0.63)
840-F	0.025 (0.64)	0.030 (0.76)
860-F	0.035 (0.89)	0.035 (0.89)
875-F	0.025 (0.64)	0.025 (0.64)

F=FOAM, D=DISC and AIR

The minimum thickness at any point shall be determined by exploratory measurement.

10.4. Jacket Eccentricity

The eccentricity of the jacket shall not exceed 43 percent and shall be calculated as follows:

- Maximum thickness – minimum thickness X 100
- Average thickness

The average thickness at any cross section shall be determined from four readings, including the minimum spot taken approximately 90° apart.

The maximum thickness at any cross section shall not be greater than 155 percent of the minimum spot thickness.

11. INTEGRAL MESSENGER

11.1. Material

An integral messenger (support) joined to the coaxial cable by an overall extruded PE jacket shall be galvanized steel. The steel wire shall meet requirements of ASTM A 641, Class 1, Hard Temper. The diameter of the wire is dependent upon the application and shall be agreed upon by the user.

11.2. Joints

Factory joints in the messenger shall not be allowed in a shipping length of cable.

12. ARMOR

12.1. Material

The armor shall be any of the following materials:

1. A steel tape 0.010 in. (0.25 mm) thick, conforming to SAE/AISI 1010.
2. A steel tape 0.006 in. (0.15 mm) thick.
3. A copper clad stainless steel tape 0.006 in. (0.15 mm) thick per ASTM B 694.
4. A steel tape with an adhesive coating on one side and corrosion protection plating on the other side, the tape thickness without platings or adhesives shall be 0.008 in. (0.20 mm).

The armor is applied to protect the finished product from mechanical and rodent damage.

12.2. Armor Construction

The armor tape can be applied either as a smooth helical tape with no overlap or corrugated and longitudinally applied. If an adhesive coated tape is used the armor must bond at the overlap.

12.3. Outer Jacket

An outer PE jacket shall be extruded over the armor and meet requirements of section 10.1, Table 5, Table 4 and Section Jacket Eccentricity10.4 Jacket Eccentricity.

13. FINISHED PRODUCT MECHANICAL TESTS

13.1. PE Jacket Longitudinal Shrinkage

There shall be no more than 0.375 in. (9.53 mm) shrinkage along a six-inch length of finished product. The test shall comply with ANSI/SCTE 88 2012.

13.2. Dielectric Shrinkback

Dielectric shrinkback on the conductor shall be no more than 0.250 inch (6.35 mm) from both ends. All change in length from the time the specimens are cut shall be included. Samples shall be placed in an air circulating oven for four hours at 239 ± 2°F (115 ± 1°C). Test shall be according to ASTM D 4565.

13.3. Dielectric Shear Adhesion

The force that is required to strip the dielectric from the center conductor in the finished product as specified in ANSI/SCTE 12 2011 should meet the requirements of Table 6.

Table 6 – Foam Dielectric and Disc Adhesion to Center Conductor

Product Type	Bond Strength, Minimum Pound Force, lbf (N)
412-F	31 (138)
500-F	60 (267)
500-D	NA
540-F	68 (302)
565-F	71 (316)
625-F	80 (356)
650-D	NA
700-F	85 (378)
715-F	90 (400)
750-F	90 (400)
750-D	NA
840-F	86 (382)
860-F	86 (382)
875-F	86 (382)

F=FOAM, D=DISC and AIR

13.4. Air Leakage Test

The foam dielectric shall prohibit the flow of 5 psi of air for a minimum of 15 seconds in a 12-inch (304.80 mm) sample. Solid PE discs shall prohibit the flow of 40 psi of air for 60 seconds in a 6-inch (152.40 mm) sample. The test shall be performed in accordance with ANSI/SCTE 13 2011.

13.5. Thermal Oxidative Stability

To ensure the desired life expectancy of the dielectric insulation, determine its Oxidative Induction Time (OIT) before and after aging by the following test method. Insulation shall be tested by measuring OIT according to SCTE IPS TP-119. The test utilizes insulation removed from the completed cable. The test utilizes insulation removed from the completed cable and tested at 180°C ± 0.3C°. Care should be taken not to include any adhesive or precoat on the dielectric specimen. Requirements for OIT – Initial: 20 minutes minimum, after aging: 70 percent of initial value.

13.6. Cable Static Minimum Bend

The minimum bend diameter shall be observed at all times as stated and specified by the manufacture. The test shall be performed in accordance with ANSI/SCTE 39 2013.

13.7. Cable Static Pull Force

The maximum pulling force for coaxial cable shall be determined by a calculation based on the measurement of tensile yield strength of the finished cable or outer conductor only. The maximum pull force (pounds) for a coaxial cable was determined by reducing the measured tensile strength (pounds) by a percentage as a safety factor. This safety factor (percentage reduction from yield) was determined by the

manufacturer. By implementing this safety factor, the cable and/or the outer conductor yield is at a point well below permanent deformation. Reference manufacturer catalog specifications for maximum pulling tension.

14. FINISHED PRODUCT ELECTRICAL TESTS

14.1. Spark Test

The overall cable jacket integrity shall be subject to a spark test with a minimum 5 kV rms to ensure the absence of faults in the jacket during manufacturing.

14.2. Characteristic Impedance

The Impedance shall be 75 ± 2 ohms. The measurement method shall be performed according to ANSI/SCTE 66 2008 or equivalent.

14.3. Conductor Resistance

The DC conductor resistance of the inner and outer conductor shall be measured per ANSI/SCTE 44 2010 and the loop resistance calculated from the inner and outer conductor. The maximum resistance values shall comply with Table 7.

Table 7 – Maximum DC Resistance at 68°F (20°C), Ohms/kft (Ohms/km)

Product Type	Inner Conductor	Outer Conductor	Loop
412-F	2.17 (7.12)	0.50 (1.77)	2.67 (8.89)
500-F	1.42 (4.66)	0.37 (1.21)	1.79 (5.87)
500-D	1.09 (4.10)	0.46 (1.31)	1.55 (5.41)
540-F	1.06 (3.48)	0.60 (1.97)	1.66 (5.45)
565-F	1.01 (3.31)	0.36 (1.18)	1.37 (4.49)
625-F	0.90 (2.95)	0.25 (0.82)	1.15 (3.77)
650-D	0.66 (2.56)	0.34 (0.92)	1.00 (3.48)
700-F	0.62 (2.03)	0.26 (0.85)	0.88 (2.89)
715-F	0.61 (2.00)	0.45 (1.48)	1.06 (3.48)
750-F	0.58 (1.90)	0.19 (0.62)	0.77 (2.52)
750-D	0.47 (1.84)	0.24 (0.69)	0.71 (2.53)
840-F	0.45 (1.48)	0.18 (0.59)	0.63 (2.07)
860-F	0.41 (1.34)	0.32 (1.05)	0.73 (2.39)
875-F	0.42 (1.38)	0.13 (0.43)	0.55 (1.81)

F=FOAM, D=DISC and AIR

14.4. Velocity of Propagation (VOP)

The VOP shall be nominal 87 percent for gas injected foam dielectric and 93 percent for air and disc dielectric as measured per ANSI/SCTE 49 2011 Test Method for Velocity of Propagation.

14.5. Structural Return Loss (SRL)

The SRL shall be 30 dB minimum in the frequency range 5–1002 MHz, as measured per ANSI/SCTE 03 2008 or equivalent.

14.6. Attenuation

The attenuation shall be measured per ANSI/SCTE 47 2007 or equivalent and the maximum values shall meet the requirements of the following tables.

Table 8 – Maximum Attenuation at 68°F (20°C), dB/100 ft. (dB/100m)

Frequency MHz.	412-F	500-F	500-D	540-F	565-F
5	0.20 (0.66)	0.16 (0.52)	0.15 (0.48)	0.14 (0.46)	0.14 (0.46)
55	0.68 (2.23)	0.55 (1.80)	0.49 (1.62)	0.47 (1.54)	0.47 (1.54)
211	1.35 (4.43)	1.09 (3.58)	0.98 (3.20)	0.95 (3.12)	0.95 (3.12)
250	1.49 (4.89)	1.20 (3.94)	1.06 (3.48)	1.03 (3.38)	1.03 (3.38)
270	1.55 (5.09)	1.24 (4.06)	1.11 (3.65)	1.08 (3.54)	1.07 (3.51)
300	1.64 (5.38)	1.31 (4.30)	1.18 (3.86)	1.14 (3.74)	1.13 (3.71)
330	1.73 (5.67)	1.38 (4.53)	1.22 4.00)	1.20 (3.93)	1.19 (3.91)
350	1.78 (5.84)	1.43 (4.69)	1.27 (4.17)	1.23 (4.04)	1.23 (4.03)
400	1.91 (6.27)	1.53 (5.02)	1.35 (4.44)	1.33 (4.36)	1.32 (4.33)
450	2.05 (6.72)	1.63 (5.35)	1.44 (4.72)	1.41 (4.63)	1.40 (4.59)
500	2.16 (7.08)	1.73 (5.67)	1.52 (5.00)	1.50 (4.92)	1.49 (4.89)
550	2.26 (7.41)	1.82 (5.97)	1. 60 (524)	1.58 (5.18)	1.56 (5.12)
600	2.37 (7.76)	1.92 (6.30)	1.68 (5.51)	1.66 (5.44)	1.64 (5.38)
750	2.68 (8.79)	2.17 (7.12)	1.88 (6.17)	1.86 (6.10)	1.85 (6.07)
870	2.91 (9.54)	2.35 (7.69)	2.00 (6.56)	2.00 (6.56)	2.01 (6.59
1002	3.13 (10.27)	2.54 (8.32)	2.19 (7.19)	2.17 (7.12)	2.17 (7.12)

F=FOAM, D=DISC and AIR

Table 9 – Maximum Attenuation at 68°F (20°C), dB/100 ft. (dB/100 m)

Frequency MHz.	625-F	650-D	700-F	715-F	750-F	750-D
5	0.13 (0.43)	0.12 (0.38)	0.11 (0.36)	0.11 (0.36)	0.11 (0.36)	0.11 (0.34)
55	0.46 (1.51)	0.39 (1.27)	0.37 (1.21)	0.36 (1.18)	0.37 (1.21)	0.36 (1.17)
211	0.92 (3.02)	0.78 (2.55)	0.75 (2.46)	0.74 (2.43)	0.74 (2.43)	0.68 (2.24)
250	1.00 (3.28)	0.85 (2.79)	0.82 (2.69)	0.81 (2.66)	0.81 (2.66)	0.75 (2.45)
270	1.04 (3.41)	0.88 (2.89)	0.85 (2.79)	0.84 (2.76)	0.85 (2.79)	0.77 (2.53)
300	1.08 (3.54)	0.93 (3.07)	0.90 (2.95)	0.89 (2.92)	0.90 (2.95)	0.81 (2.65)
330	1.16 (3.80)	0.98 (3.20)	0.95 (3.12)	0.95 (3.12)	0.95 (3.12)	0.87 (2.84)
350	1.19 (3.90)	1.02 (3.34)	0.98 (3.21)	0.97 (3.18)	0.97 (3.18)	0.88 (2.89)
400	1.28 (4.20)	1.09 (3.58)	1.05 (3.44)	1.05 (3.44)	1.05 (3.44)	0.94 (3.08)
450	1.35 (4.43)	1.17 (3.82)	1.12 (3.67)	1.12 (3.67)	1.12 (3.67)	1.00 (3.27)
500	1.43 (4.69)	1.23 (4.03)	1.19 (3.90)	1.19 (3.90)	1.19 (3.90)	1.06 (3.48)
550	1.51 (4.95)	1.29 (4.24)	1.25 (4.10)	1.25 (4.10)	1.25 (4.10)	1.11 (3.65)
600	1.58 (5.18)	1.38 (4.51)	1.32 (4.33)	1.31 (4.30)	1.33 (4.36)	1.16 (3.79)
750	1.79 (5.87)	1.54 (5.06)	1.49 (4.89)	1.49 (4.89)	1.52 (5.02)	1.29 (4.24)
870	1.95 (6.40)	1.67 (5.49)	1.62 (5.31)	1.64 (5.38)	1.65 (5.41)	1.39 (4.54)
1002	2.11 (6.92)	1.81 (5.95)	1.76 (5.77)	1.75 (5.76)	1.74 (5.72)	1.51 (4.95)

F=FOAM, D=DISC and AIR

Table 10 – Maximum Attenuation at 68°F (20°C), dB/100 ft. (dB/100 m)

Frequency MHz.	840-F	860-F	875-F
5	0.09 (0.30)	0.09 (0.30)	0.09 (0.30)
55	0.32 (1.04)	0.32 (1.05)	0.33 (1.08)
211	0.64 (2.10)	0.64 (2.10)	0.66 (2.17)
250	0.70 (2.30)	0.70 (2.30)	0.72 (2.36)
270	0.73 (2.40)	0.72 (2.36)	0.75 (2.46)
300	0.77 (2.53)	0.76 (2.49)	0.79 (2.59)
330	0.82 (2.69)	0.80 (2.62)	0.83 (2.72)
350	0.84 (2.76)	0.83 (2.72)	0.85 (2.79)
400	0.91 (2.99)	0.88 (2.89)	0.91 (2.99)
450	0.97 (3.18)	0.95 (3.12)	0.98 (3.22)
500	1.03 (3.38)	1.00 (3.28)	1.03 (3.38)
550	1.09 (3.58)	1.06 (3.48)	1.09 (3.58)
600	1.15 (3.77)	1.10 (3.61)	1.15 (3.77)
750	1.30 (4.27)	1.24 (4.07)	1.30 (4.26)
870	1.41 (4.62)	1.33 (4.36)	1.41 (4.63)
1000	1.53 (5.02)	1.44 (4.72)	1.53 (5.02)
1000	1.53 (5.02)	1.44 (4.72)	1.53 (5.02)
1002	1.54 (5.05)	1.45 (4.75)	1.53 (5.02)