

Andrew Broadband HFC Coaxial Cables for CATV

Leveraging over sixty years of global experience supporting the telecommunications industry, Andrew introduces HFC coaxial cables. Manufactured locally on the same advanced-technology equipment as

world-renown HELIAX® coaxial cables, these 75-Ohm, foam coaxial cables are smooth-wall, solid outer conductor cables featuring exceptional quality and reliability and superior electrical performance.

75 Ohm High Performance Foam Coaxial Cables with Smooth-wall Solid Outer Conductor Cable for digital 2-way signal distribution through Hybrid Fiber Coax (HFC) Networks

Applications: digital 2-way CATV, broadband, Internet, video, or audio signal distribution through Hybrid Fiber Coax (HFC) networks.



- *Local manufacture simplifies planning and logistics*
- *Buy-as-you-need ordering optimizes cash flow*
- *Globally proven Andrew reliability*
- *Superior electrical performance*

Andrew HFC cables are constructed with the highest quality copper, aluminum, and polyethylene materials used in HELIAX products. The lowest loss and highest-grade foam polyethylene is applied over the center conductor. A smooth-wall solid aluminum outer conductor is applied over the foam along with a high-grade polyethylene jacket. These are combined through the highest technology processes, resulting in a coaxial cable with superior electrical, mechanical, and environmental resistance performance.

Andrew HFC cables are compatible with industry standard CATV connectors, tools and all other needed accessories. Using Andrew products for all your wireless and wired HFC applications helps to ensure overall system performance reliability.

Andrew has been designing, constructing, and delivering the highest level of coaxial cables and waveguide for communications system needed around the world. HELIAX cables are the worldwide standard for reliability, quality, innovation, and performance. This is due to extreme attention to detail in design, material selection, and manufacturing. Andrew equals performance and reliability!

Cable Construction

Center Conductor

The center conductor is solid copper-clad aluminum for maximum signal transfer at RF frequencies and excellent DC resistance characteristics for network powering.

The copper is metallurgically bonded for anti-corrosion performance per the requirements of ASTM B 566, Class 10 A.

Solid copper center conductor constructions are available for specialized low DC resistance requirements.

Center Conductor Adhesive

A proprietary specially-designed adhesive is applied as a coating to the outer surface of the center conductor to keep moisture from the interior of the cable, and to sustain overall cable mechanical integrity.

Foam Dielectric

Polyethylene, with the highest level of purity, is foamed to micro-cell structures to achieve the highest level of signal transfer through the cable while at the same time maintaining structural and environmental integrity in the cable.

Outer Conductor

The outer conductor is formed around the foam dielectric with a solid, high electrical conductive aluminum alloy. This solid construction allows for maximum RF energy transfer, no RF signal leakage, excellent DC resistance properties, superior mechanical durability while completely sealing the interior of the cable.

Outer Protective Jacket

The cable is protected with either a black weather-resistant polyethylene jacket for all outdoor applications or a fire-retardant riser (CATVR) rated jacket for in-building applications

Bonding Agents

Specially formulated polyethylene blends are used in specific designs to achieve superior mechanical performance characteristics.

Flooding Compounds

Flooding compounds are used between the aluminum outer conductor and jacket for direct buried or conduit applications.

Industry Standards

The cables are designed, constructed and tested to meet both the:

- SCTE IPS-SP-100 specifications for trunk, feeder and distribution coaxial cable
- Bellcore GR-1399-CORE generic requirements for coaxial distribution cable

Product Applications and Part Numbers

Outdoor Aerial Installations

For standard outdoor aerial plant installations the standard polyethylene jacketed cable should be used. This cable is designed to be pulled and lashed to a steel strand. It is easily routed around corners and formed into necessary expansion loops for plant thermal expansion/contraction.

The polyethylene jacket is designed to protect the cable, both from the rigors of installation and the environment.

Buried/Underground Installations

Cables designed to be direct buried or placed in conduit are constructed with a specially self-healing flooding compound designed to protect the cable from incidental nicks and cuts during placements.

Connectors and Tools

These cables are manufactured to be used with industry standard connectors, coring tools, center-conductor stripping tools, expansion-loop forming tools and all other cable construction-aiding devices.

Part Numbering System

HFC	XXX				Cable outer diameter of outer conductor (in thousandths of an inch)
		C			Copper-clad aluminum center conductor
		S			Solid copper center conductor
			A		Aerial cable
			B		Buried cable (with self-healing flooding compound under jacket)
				P	Polyethylene jacket
				R	Riser rated jacket
					YYY Messenger size (in thousandths of an inch)

Examples

- HFC 500 CAP 109 - 0.500" cable diameter with copper-clad aluminum center conductor and a 0.109" diameter integrated messenger.
- HFC 860 CBP - 0.860" cable diameter with copper-clad aluminum center conductor and a flooded jacket for burial applications.

HFC 500 Series Broadband Cable

Cable Dimensions

	inches	mm
Center Conductor Diameter	0.109	(2.77)
Dielectric Diameter	0.450	(11.43)
Outer Conductor Thickness	0.025	(0.64)
Outer Conductor Diameter	0.500	(12.70)
Jacket Diameter	0.560	(14.22)
Jacket Thickness	0.030	(0.76)
Jacket Diameter for Buried Cable	0.570	(14.48)
Messenger Diameter	0.109	(2.77)

Mechanical Specifications

	inches	cm
Minimum Bend Radius		
Unjacketed Cable	6.5	(16.5)
Jacketed Cable	6.0	(15.2)
Maximum Pulling Tension	300lb	(136kg)
Messenger Breaking Strength	1800lb	(816kg)

Electrical Specifications

Impedance, ohms	75 ± 2
Velocity of Propagation, %	87
Capacitance, pF/ft (pF/m)	15.3 (50.2)
dc Resistance, ohms/1000ft (km) at 68°F (20°C)	

Copper-clad Inner Conductor, ohms/1000ft (ohms/1000 km)	
Inner Conductor	1.35 (4.40)
Outer Conductor	0.37 (1.24)
Loop	1.72 (5.64)

Solid Copper Inner Conductor, ohms/1000ft (ohms/1000 km)	
Inner Conductor	0.83 (2.72)
Outer Conductor	0.37 (1.24)
Loop	1.20 (3.96)

Maximum Attenuation at 68°F (20°C)

Frequency, MHz	dB/100ft dB/100m	
5	0.16	0.52
55	0.54	1.77
211	1.09	3.58
250	1.20	3.94
270	1.24	4.07
300	1.31	4.30
330	1.38	4.53
350	1.43	4.69
400	1.53	5.02
450	1.63	5.35
500	1.73	5.68
550	1.82	5.97
600	1.91	6.27
750	2.16	7.09
870	2.35	7.71
1000	2.52	8.27

Cable Type Number	Application	Construction
HFC500-CA	Aerial	Unjacketed
HFC500-CAP	Aerial	PE jacket
HFC500-CAP-109	Aerial	PE jacket with messenger
HFC500-CBP	Underground	PE jacket with flood compound
HFC500-CAR	Riser Rated	Fire retardant jacket

HFC 540 Series Broadband Cable

Cable Dimensions

	inches	mm
Center Conductor Diameter	0.124	(3.15)
Dielectric Diameter	0.513	(13.03)
Outer Conductor Thickness	0.0135	(0.343)
Outer Conductor Diameter	0.540	(13.72)
Jacket Diameter	0.610	(15.49)
Jacket Thickness	0.035	(0.89)
Jacket Diameter for Buried Cable	0.620	(15.74)
Messenger Diameter	0.109	(2.77)

Mechanical Specifications

	inches	cm
Minimum Bend Radius		
Unjacketed Cable	NA	NA
Jacketed Cable	4	(10.2)
Maximum Pulling Tension	220lb	(100kg)
Messenger Breaking Strength	1800lb	(816kg)

Electrical Specifications

Impedance, ohms	75 ± 2
Velocity of Propagation, %	88
Capacitance, pF/ft (pF/m)	15.3 (50.2)
dc Resistance, ohms/1000ft (km) at 68°F (20°C)	

Copper-clad Inner Conductor, ohms/1000ft (ohms/1000 km)	
Inner Conductor	1.02 (3.35)
Outer Conductor	0.59 (1.94)
Loop	1.61 (5.28)

Solid Copper Inner Conductor, ohms/1000ft (ohms/1000 km)	
Inner Conductor	0.67 (2.20)
Outer Conductor	0.59 (1.94)
Loop	1.26 (4.13)

Maximum Attenuation at 68°F (20°C)

Frequency, MHz	dB/100ft dB/100m	
5	0.14	0.46
55	0.47	1.54
211	0.95	3.12
250	1.03	3.38
270	1.07	3.51
300	1.13	3.71
330	1.19	3.91
350	1.23	4.04
400	1.32	4.33
450	1.40	4.59
500	1.49	4.89
550	1.56	5.12
600	1.64	5.38
750	1.85	6.07
870	2.00	6.56
1000	2.17	7.12

Cable Type Number	Application	Construction
HFC540-CAP	Aerial	PE jacket
HFC540-CAP-109	Aerial	PE jacket with messenger
HFC540-CBP	Underground	PE jacket with flood compound
HFC540-CAR	Riser Rated	Fire retardant jacket

HFC 625 Series Broadband Cable

Cable Dimensions

	inches	mm
Center Conductor Diameter	0.137	(3.48)
Dielectric Diameter	0.563	(14.30)
Outer Conductor Thickness	0.031	(0.79)
Outer Conductor Diameter	0.625	(15.88)
Jacket Diameter	0.685	(17.40)
Jacket Thickness	0.030	(0.76)
Jacket Diameter for Buried Cable	0.695	(17.65)
Messenger Diameter	0.109	(2.77)

Mechanical Specifications

	inches	cm
Minimum Bend Radius		
Unjacketed Cable	7.5	(19.1)
Jacketed Cable	7.0	(17.8)
Maximum Pulling Tension	475lb	(215kg)
Messenger Breaking Strength	1800lb	(816kg)

Electrical Specifications

Impedance, ohms	75 ± 2
Velocity of Propagation, %	88
Capacitance, pF/ft (pF/m)	15.3 (50.2)
dc Resistance, ohms/1000ft (km) at 68°F (20°C)	

Copper-clad Inner Conductor, ohms/1000ft (ohms/1000 km)	
Inner Conductor	0.84 (2.76)
Outer Conductor	0.26 (0.75)
Total Loop	1.10 (3.51)

Solid Copper Inner Conductor, ohms/1000ft (ohms/1000 km)	
Inner Conductor	0.56 (1.84)
Outer Conductor	0.23 (0.45)
Loop	0.79 (2.59)

Maximum Attenuation at 68°F (20°C)

Frequency, MHz	dB/100ft	dB/100m
5	0.13	0.43
55	0.46	1.51
211	0.92	3.02
250	1.00	3.28
270	1.02	3.35
300	1.08	3.54
330	1.14	3.74
350	1.18	3.87
400	1.27	4.17
450	1.35	4.43
500	1.43	4.69
550	1.50	4.92
600	1.58	5.18
750	1.78	5.84
870	1.95	6.40
1000	2.07	6.79

Cable Type Number	Application	Construction
HFC625-CA	Aerial	Unjacketed
HFC625-CAP	Aerial	PE Jacket
HFC625-CAP-109	Aerial	PE Jacket with messenger
HFC625-CBP	Underground	PE Jacket with flood compound

HFC 715 Series Broadband Cable

Cable Dimensions

	inches	mm
Center Conductor Diameter	0.166	(4.22)
Dielectric Diameter	0.686	(17.42)
Outer Conductor Thickness	.0145	(0.38)
Outer Conductor Diameter	0.715	(18.16)
Jacket Diameter	0.785	(19.94)
Jacket Thickness	0.035	(0.89)
Jacket Diameter for Buried Cable	0.795	(20.19)
Messenger Diameter	0.188	(4.78)

Mechanical Specifications

	inches	cm
Minimum Bend Radius		
Unjacketed Cable	NA	NA
Jacketed Cable	5	(12.7)
Maximum Pulling Tension	340lb	(154kg)
Messenger Breaking Strength	3900lb	(1768kg)

Electrical Specifications

Impedance, ohms	75 ± 2
Velocity of Propagation %	88
Capacitance, pF/ft (pF/m)	15.3 (50.2)
dc Resistance, ohms/1000ft (km) at 68°F (20°C)	

Copper-clad Inner Conductor, ohms/1000ft (ohms/1000 km)	
Inner Conductor	0.58 (1.90)
Outer Conductor	0.42 (1.38)
Loop	1.00 (3.28)

Solid Copper Inner Conductor, ohms/1000ft (ohms/1000 km)	
Inner Conductor	0.38 (1.25)
Outer Conductor	0.42 (1.37)
Loop	0.80 (2.62)

Maximum Attenuation at 68°F (20°C)

Frequency, MHz	dB/100ft	dB/100m
5	0.11	0.36
55	0.36	1.18
211	0.74	2.43
250	0.81	2.66
270	0.84	2.76
300	0.89	2.92
330	0.94	3.12
350	0.97	3.18
400	1.05	3.45
450	1.12	3.67
500	1.19	3.90
550	1.25	4.10
600	1.31	4.30
750	1.49	4.89
870	1.64	5.38
1000	1.75	5.74

Cable Type Number	Application	Construction
HFC715-CAP	Aerial	PE jacket
HFC715-CAP-188	Aerial	PE jacket with messenger
HFC715-CBP	Underground	PE jacket with flood compound

HFC 750 Series Broadband Cable

Cable Dimensions

	inches	mm
Center Conductor Diameter	0.167	(4.24)
Dielectric Diameter	0.678	(17.22)
Outer Conductor Thickness	0.036	(0.91)
Outer Conductor Diameter	0.750	(19.05)
Jacket Diameter	0.820	(20.83)
Jacket Thickness	0.035	(0.89)
Jacket Diameter for Buried Cable	0.830	(21.08)
Messenger Diameter	0.188	(4.78)

Mechanical Specifications

	inches	cm
Minimum Bend Radius		
Unjacketed Cable	9	(22.9)
Jacketed Cable	8	(20.3)
Maximum Pulling Tension	675lb	(306kg)
Messenger Breaking Strength	3900lb	(1769kg)

Electrical Specifications

Impedance, ohms	75 ± 2
Velocity of Propagation, %	89
Capacitance, pF/ft (pF/m)	15.3 (50.2)
dc Resistance, ohms/1000ft (km) at 68°F (20°C)	

Copper-clad Inner Conductor, ohms/1000ft (ohms/1000 km)		
Inner Conductor	0.57	(1.87)
Outer Conductor	0.19	(0.68)
Loop	0.76	(2.49)

Solid Copper Inner Conductor, ohms/1000ft (ohms/1000 km)		
Inner Conductor	0.37	(1.21)
Outer Conductor	0.19	(0.62)
Loop	0.56	(1.84)

Maximum Attenuation at 68°F (20°C)

Frequency, MHz	dB/100ft	dB/100m
5	0.11	0.36
55	0.37	1.21
211	0.74	2.43
250	0.81	2.66
270	0.84	2.76
300	0.89	2.92
330	0.94	3.08
350	0.97	3.18
400	1.05	3.45
450	1.12	3.67
500	1.18	3.87
550	1.24	4.07
600	1.31	4.30
750	1.48	4.86
870	1.61	5.28
1000	1.74	5.71

Cable Type Number	Application	Construction
HFC750-CA	Aerial	Unjacketed
HFC750-CAP	Aerial	PE jacket
HFC750-CAP-188	Aerial	PE jacket with messenger
HFC750-CBP	Underground	PE jacket with flood compound

HFC 860 Series Broadband Cable

Cable Dimensions

	inches	mm
Center Conductor Diameter	0.203	(5.16)
Dielectric Diameter	0.828	(21.03)
Outer Conductor Thickness	0.016	(0.41)
Outer Conductor Diameter	0.860	(21.84)
Jacket Diameter	0.960	(24.38)
Jacket Thickness	0.050	(1.27)
Jacket Diameter for Buried Cable	.970	(24.63)
Messenger Diameter	0.188	(4.78)

Mechanical Specifications

	inches	cm
Minimum Bend Radius		
Unjacketed Cable	NA	NA
Jacketed Cable	7	(17.8)
Maximum Pulling Tension	450 lb	(204kg)
Messenger Breaking Strength	3900 lb	(1768kg)

Electrical Specifications

Impedance, ohms	75 ± 2
Velocity of Propagation, %	88
Capacitance, pF/ft (pF/m)	15.3 (50.2)
dc Resistance, ohms/1000ft (km) at 68°F (20°C)	

Copper-clad Inner Conductor, ohms/1000ft (ohms/1000 km)		
Inner Conductor	0.406	(1.33)
Outer Conductor	0.318	(1.04)
Loop	0.724	(2.38)

Solid Copper Inner Conductor, ohms/1000ft (ohms/1000 km)		
Inner Conductor	0.250	(0.82)
Outer Conductor	0.318	(1.04)
Loop	0.568	(1.86)

Maximum Attenuation at 68°F (20°C)

Frequency, MHz	dB/100ft	dB/100m
5	0.09	0.30
55	0.32	1.05
211	0.64	2.10
250	0.70	2.30
270	0.72	2.36
300	0.76	2.49
330	0.80	2.63
350	0.83	2.72
400	0.88	2.89
450	0.95	3.12
500	1.00	3.28
550	1.06	3.48
600	1.10	3.61
750	1.24	4.07
870	1.41	4.62
1000	1.44	4.72

Cable Type Number	Application	Construction
HFC860-CAP	Aerial	PE jacket
HFC860-CAP-188	Aerial	PE jacket with messenger
HFC860-CBP	Underground	PE jacket with flood compound