Aircell® 7 Heatex®

highly flexible, halogen-free, flame-retardant, suitable for installation in buildings and for railway applications

Aircell 7 Heatex is an ultraflexible coaxial cable designed for frequencies up to 6 GHz. Due to its low loss in relation to the outer diameter and the small bending radius the cable can be used for numerous RF applications.

The low attenuation of Aircell 7 Heatex is achieved by using advanced manufacturing techniques and low loss PE-LLC dielectric with a foaming rate of more than 70%. This unique dielectric also offers water resistance and long term stability. The inner conductor containing 19 stranded bare copper wires of low oxygen copper (OFC) provide the cable its remarkable flexibility. Further advantages of this cable include the use of double shielding which is constructed of overlapping 100 % tight copper foil and an additional shield braiding of bare copper wires with 85 % coverage. The copper foil has an applied PE coating which prevents foil cracking due to short radius bends. The jacket of the cable is made of a halogen-free and flame retardant copolymer. Due to this Heatex jacket, the cable has a low fire load, low flame propagation, limited smoke emission and reduced production of toxic and corrosive gases. With the fire protection rating Cca Aircell 7 Heatex is approved for installation in public buildings.

Aircell 7 Heatex is certified for railway applications for interior and exterior use according requirement sets R15 and R16 of the EN45545-2 standard.

Key features

Diameter	7.3 ± 0.2 mm
Impedance	50 ± 2 Ω
Attenuation at 1 GHz/100 m	20.44 dB
f max	**6 GHz**
Euroclass according to EN 50575	**Cca**

Characteristics

- Certified according to EN 45545-2:2013+A1:2015 and EN 45545-2:2020 Requirement Sets R15 + R16 for railway applications
- Flame resistance tested according to EN 60332-1-2:2004 + A1:2015 + A11:2016 and EN 60332-1-3:2004 + A1:2015
- Smoke density tested according to DIN EN 61034-2:2005
- Smoke gas toxicity tested according to EN 50305:2002 Sec. 9.2
- Vertical flame spread tested according to EN 50305:2002 Sec. 9.1.1. (for cables with a diameter 6 mm < Ø < 12 mm)
- Halogen-free tested according to DIN EN 50306-1:2003
- Halogen acid gas content tested according to DIN EN 60754-1:2015 (HCl < 0.5 %)
- Acidity of the combustion gases tested according to DIN EN 60754-2:2015 (pH value > 4.3)
- Conductivity of the combustion gases tested according to DIN EN 60754-2:2015 (< 10.0 µS/mm)
- Fluorine content tested according to EN 60684-2:2011 Sec. 45.2 Procedure A (< 0.1 %).
- Jacket material according to DIN EN 50290-2-27 (HD 624.7)
- RoHS compliant (Directive 2011/65/EC & 2015/863/EU RoHS 3)
- Fire-resistant, low smoke, halogen-free (LSZH)
- UV-resistant

Technical Data

Inner conductor	stranded (Cu) copper wire
Inner conductor Ø	1.9 mm (19 × 0.38 mm, 14 AWG)
Dielectric	foamed cellular polyethylene (PE) with skin
Dielectric Ø	5.0 mm
Outer conductor 1	overlapping copper (Cu) foil
Shielding factor	100 %
Outer conductor 2	Copper (Cu) shield braiding of bare copper wires
Shielding factor	85 %
Outer conductor Ø	5.7 mm
Jacket	thermoplastic copolymer (FRNC) black
Weight	73 kg/km
Min. Bending radius	4 × Ø single, 8 × Ø repeated
Temperature range	-40 to +80 °C Storage, Installation, Operation
Pulling strength	300 N

Electrical Data at 20 °C

Capacitance (1 kHz)	78 nF/km
Velocity factor	0.85
Shielding attenuation 1 GHz	≥ 90 dB
DC-resistance inner conductor	≤ 9.0 Ω/km
DC-resistance outer conductor	8.7 Ω/km
Insulation resistance	≥ 10 GΩ*km
Test Voltage DC (wire/screen)	10 kV
Max. voltage	8 kV

	Aircell 7 Heatex	RG 213/U	RG 58/U
Capacitance	78 pF/m	101 pF/m	102 pF/m
Velocity factor	0.85	0.66	0.66
Attenuation(dB/100m)			
10 MHz	2.09	2.00	5.00
100 MHz	5.97	7.00	17.00
500 MHz	13.98	17.00	39.00
1000 MHz	20.44	22.50	54.60
3000 MHz	38.84	58.50	118.00

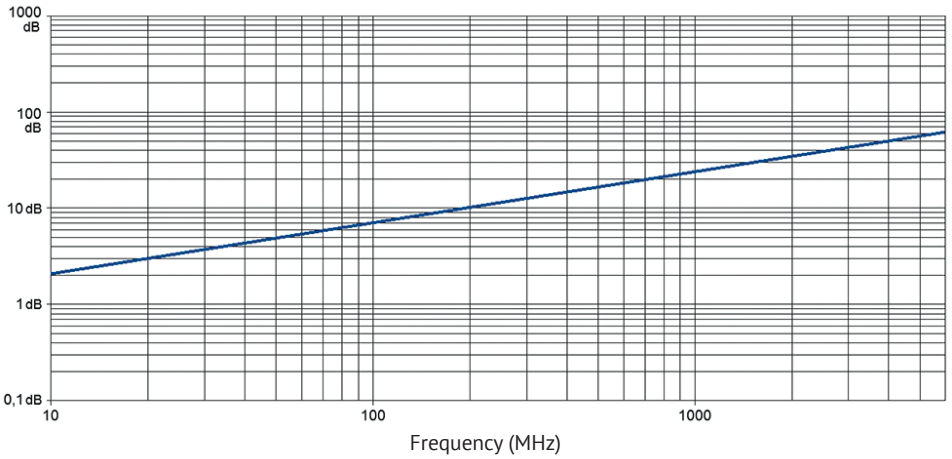
Typ. Attenuation (dB/100 m at 20 °C)

5 MHz	1.52	1000 MHz	20.44
10 MHz	2.09	1296 MHz	23.60
50 MHz	4.29	1500 MHz	25.73
100 MHz	5.97	1800 MHz	28.50
144 MHz	7.22	2000 MHz	30.29
200 MHz	8.59	2400 MHz	33.82
300 MHz	10.64	3000 MHz	38.84
432 MHz	12.92	4000 MHz	46.66
500 MHz	13.98	5000 MHz	54.19
800 MHz	18.05	6000 MHz	61.66

Max. Power Handling (W at 40 °C)

10 MHz	2.040	2400 MHz	118
100 MHz	620	3000 MHz	104
500 MHz	260	4000 MHz	89
1000 MHz	191	5000 MHz	78
2000 MHz	131	6000 MHz	70

Typ. Attenuation (dB/100 m at 20°C)



Typ. Return Loss