

Ecoflex[®] 10 FRNC

extremely flexible, low-loss
and halogen-free



Ecoflex 10 FRNC is a flexible and very low-loss 50 ohm coaxial cable designed for the frequency range up to 6 GHz. State-of-the-art production methods and the use of a low attenuation PE-LLC dielectric with a gas content of over 70% enable low attenuation values that set standards for flexible coaxial cables of this size.

The high flexibility of Ecoflex 10 FRNC is ensured by a 7-strand stranded inner conductor made of low-oxygen copper. The inner conductor is compressed, calibrated, and then provided with a pre-coating in a special process to achieve good attenuation and matching values. Another advantage is the double shielding: an overlapping copper foil and an overlying copper braid ensure a high shielding effectiveness of > 90 dB at 1 GHz.

The jacket of the cable is made of a special thermoplastic copolymer, the halogen-free, flame-retardant material FRNC (Flame Retardant Non Corrosive). Therefore, Ecoflex 10 FRNC has low fire load, low fire propagation, and minimal smoke production. Due to the fire protection class Cca, Ecoflex 10 FRNC is suitable for installation in public buildings.

Key features

Diameter	10.2 ± 0.2 mm
Impedance	50 ± 2 Ω
Attenuation at 1 GHz/100 m	13.49 dB
f max	6 GHz
Euroclass according to EN 50575	Cca

Characteristics

- Certified according to EN 50575:2014 + A1:2016 for applications in buildings with requirements for fire behavior
- Flame retardancy tested according to DIN EN 60332-1-2:2005-06 + DIN EN 60332-1-1:2017-09
- Heat release tested according to DIN EN 50399:2017-02
- Vertical flame spread tested according to DIN EN 50399:2017-02
- Smoke production tested according to DIN EN 50399:2017-02
- Burning droplets tested according to DIN EN 50399:2017-02
- Acidity of combustion gases tested according to DIN EN 60754-2:2015-08 (pH value > 4.3)
- Conductivity of combustion gases tested according to DIN EN 60754-2:2015-08 (< 2.5 µS/mm)
- Smoke density according to IEC 61034
- 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
- Manufactured according to DIN EN 45545-2 Table 5 R15 HL2

Technical Data

Inner conductor	stranded (Cu) copper wire
Inner conductor Ø	2.85 mm (7 × 1.0 mm, 10 AWG)
Dielectric	foamed cellular polyethylene (PE) with skin
Dielectric Ø	7.2 mm
Outer conductor 1	overlapping copper (Cu) foil
Shielding factor	100 %
Outer conductor 2	Copper (Cu) shield braiding of bare copper wires
Shielding factor	75 %
Outer conductor Ø	7.9 mm
Jacket	highly flexible thermoplastic copolymer (FRNC) black
Weight	136 kg/km
Min. Bending radius	4 × Ø single, 8 × Ø repeated
Temperature range	-55 to +85 °C transport & fixed installation -40 to +85 °C mobile application
Pulling strength	600 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	≤ 3.5 Ω/km
DC-resistance outer conductor	6.6 Ω/km
Insulation resistance	≥ 10 GΩ*km
Test Voltage DC (wire/screen)	7 kV
Max. voltage	5 kV

Ecoflex 10 FRNC 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	1.14	2.00	5.00
100 MHz	3.80	7.00	17.00
500 MHz	9.12	17.00	39.00
1000 MHz	13.49	22.50	54.60
3000 MHz	25.37	58.50	118.00

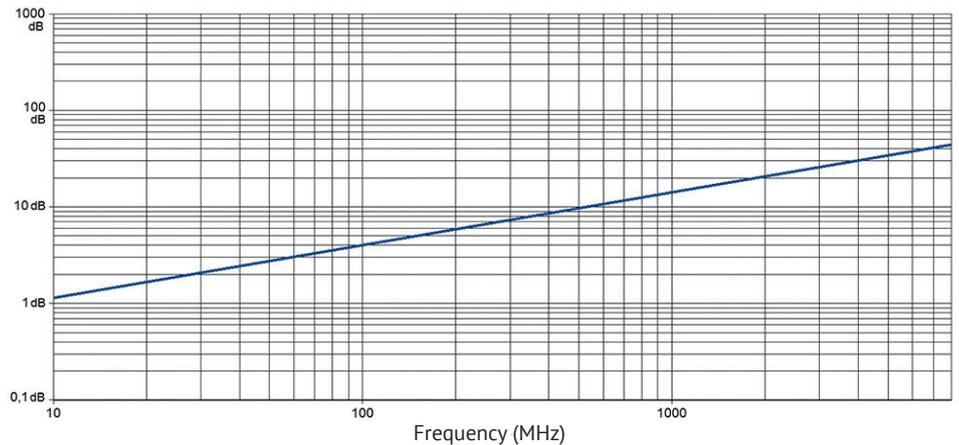
Typ. Attenuation (dB/100 m at 20 °C)

5 MHz	0.76	1000 MHz	13.49
10 MHz	1.14	1296 MHz	15.68
50 MHz	2.66	1500 MHz	17.01
100 MHz	3.80	1800 MHz	18.91
144 MHz	4.66	2000 MHz	20.14
200 MHz	5.51	2400 MHz	22.42
300 MHz	6.94	3000 MHz	25.37
432 MHz	8.46	4000 MHz	29.55
500 MHz	9.12	5000 MHz	33.44
800 MHz	11.88	6000 MHz	37.05

Max. Power Handling (W at 40 °C)

10 MHz	3.960	2400 MHz	210
100 MHz	1.210	3000 MHz	180
500 MHz	510	4000 MHz	150
1000 MHz	350	5000 MHz	130
2000 MHz	230	6000 MHz	120

Typ. Attenuation (dB/100 m at 20 °C)



Typ. Return Loss

