Ecoflex® 15 FRNC

flexible, very low-loss, stray radiation resistant, and halogen-free

Ecoflex 15 FRNC is a flexible and very low attenuation 50 ohm coaxial cable 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.

The special design of Ecoflex 15 FRNC combines the excellent attenuation values of rigid 1/2" cables with a solid inner conductor with the easy installation of flexible coaxial cables with stranded inner conductors. The good flexibility of Ecoflex 15 FRNC is ensured by a 7-strand stranded inner conductor made of low-oxygen copper. The inner conductor is compressed, calibrated, and then coated 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 outer jacket of the cable is made of a special thermoplastic copolymer, the halogen-free, flame-retardant material FRNC (Flame Retardant Non Corrosive). This makes Ecoflex 15 FRNC have a low fire load, low flame spread, and minimal smoke development. Due to the fire protection class Cca, Ecoflex 15 FRNC is suitable for installation in public buildings.

Key features

Diameter	14.6 ± 0.3 mm
Impedance	50 ± 2 Ω
Attenuation at 1 GHz/100 m	9.80 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	4.5 mm (7 × 1.5 mm)
Dielectric	foamed cellular polyethylene (PE) with skin
Dielectric Ø	11.3 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	12.1 mm
Jacket	highly flexible thermoplastic copolymer (FRNC) black
Weight	184 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	1300 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	≤ 2.5 Ω/km
DC-resistance outer conductor	5.0 Ω/km
Insulation resistance	≥ 10 GΩ*km
Test Voltage DC (wire/screen)	7 kV
Max. voltage	5 kV

	Ecoflex 15 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	0.86	2.00	5.00
100 MHz	2.81	7.00	17.00
500 MHz	6.70	17.00	39.00
1000 MHz	9.80	22.50	54.60
3000 MHz	18.30	58.50	118.00

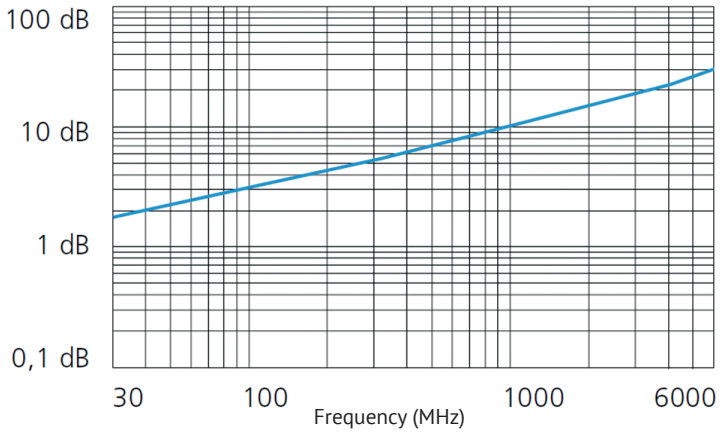
Typ. Attenuation (dB/100 m at 20 °C)

5 MHz	0.60	1000 MHz	9.80
10 MHz	0.86	1296 MHz	11.40
50 MHz	1.96	1500 MHz	12.40
100 MHz	2.81	1800 MHz	13.80
144 MHz	3.40	2000 MHz	14.60
200 MHz	4.05	2400 MHz	16.20
300 MHz	5.00	3000 MHz	18.30
432 MHz	6.10	4000 MHz	21.60
500 MHz	6.70	5000 MHz	24.60
800 MHz	8.60	6000 MHz	27.50

Max. Power Handling (W at 40 °C)

10 MHz	6.327	2400 MHz	326
100 MHz	1.928	3000 MHz	284
500 MHz	810	4000 MHz	237
1000 MHz	547	5000 MHz	206
2000 MHz	364	6000 MHz	183

Typ. Attenuation (dB/100 m at 20°C)



Typ. Return Loss