

Ecoflex® 7 FRNC

extraordinary low loss, highly flexible and free of halogen



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

The excellent attenuation values of Ecoflex 7 FRNC are 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 of Ecoflex 7 FRNC contains 19 stranded bare copper wires with diameter of 0,38 mm each, manufactured from low oxygen copper (OFC). Such inner conductor structure 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 Ecoflex 7 FRNC is made of a special thermoplastic copolymer (FRNC: Flame Retardant Non Corrosive). Due to this flame retardant and halogen-free material the cable has a low fire load, low flame propagation and limited smoke emission. The amount of toxic and corrosive gases is considerably reduced during combustion.

Ecoflex 7 FRNC is an innovative coaxial cable, which is the right choice, when an extraordinary low loss,

highly flexible, halogen-free and microwave rated cable is required. It can be used for numerous RF applications.

Key features

Diameter	7,3 ± 0,2 mm
Impedance	50 ± 2 Ω
Attenuation at 1 GHz/100 m	18,43 dB
f max	6 GHz
Euroclass acc. to EN 50575	Fca

Characteristics

Conductor/screen material according to DIN EN 13602 Cu-ETP-A
Jacket material according to DIN EN 50290-2-27 (HD 624.7)
Flame retardant according to IEC 60332-1-2
RoHS compliant (Directive 2011/65/EC & 2015/863/EU RoHS 3)
Low Smoke, Fire retardant, Zero Halogen (LSZH)
Corrosivity of fumes according to IEC 60754-2
Smoke density according to IEC 61034
UV-resistant

Technical data

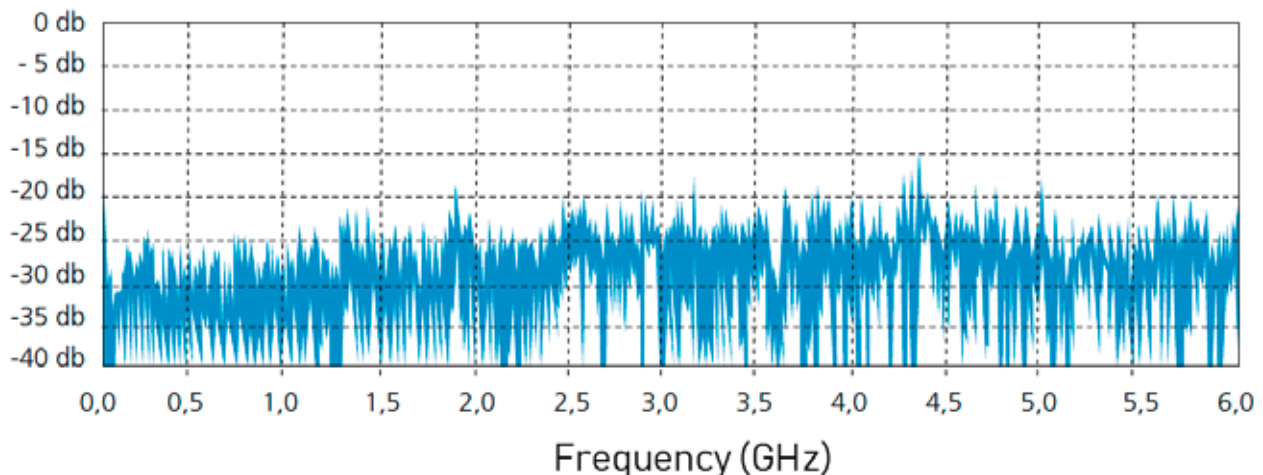
Inner conductor	stranded bare copper wire
Inner conductor Ø	1,9 mm (19 x 0,38 mm, 14 AWG)
Dielectric	foamed Polyethylene (PE) with skin
Dielectric Ø	5,0 mm
Outer conductor 1	copper foil overlapped
Shielding factor	100%
Outer conductor 2	shield braiding of bare copper wires
Shielding factor	85%
Outer conductor Ø	5,7 mm
Jacket	thermoplastic copolymer (FRNC) black
Weight	70 kg/km
Min. Bending radius	4XØ single, 8XØ repeated
Temperature range	-55 to +85°C Transport & fixed installation -40 to +85°C Flexible use
Pulling strength	300 N

Electrical data at 20°C

Capacitance (1 kHz)	78 nF/km
Velocity factor	0,85
Screening 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

	Ecoflex 7 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	1,88	2,00	5,00
100 MHz	5,37	7,00	17,00
500 MHz	12,59	17,00	39,00
1000 MHz	18,43	22,50	54,60
3000 MHz	34,96	58,50	118,00

Typ. Return loss



Typ. Attenuation (db/100 m at 20°C)

5 MHz	1,33	1000 MHz	18,43
10 MHz	1,88	1296 MHz	20,71
50 MHz	3,33	1500 MHz	22,99
100 MHz	5,37	1800 MHz	25,46
144 MHz	6,08	2000 MHz	27,27
200 MHz	7,13	2400 MHz	30,40
300 MHz	8,93	3000 MHz	34,96
432 MHz	11,40	4000 MHz	41,99
500 MHz	12,59	5000 MHz	48,83
800 MHz	15,96	6000 MHz	55,48

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)

