

# Ecoflex® 15 FRNC

flexible, low loss, stray radiation resistant and free of halogen



Ecoflex 15 FRNC is a flexible low loss 50 ohm coaxial cable for the frequency range up to 6 GHz. Advanced manufacturing techniques combined with the use of a low loss PE-LLC dielectric with a foaming rate of more than 70% result in very low attenuation values.

The unique construction of Ecoflex 15 FRNC combines the excellent attenuation properties of non-flexible solid inner conductor 1/2" cables with the high flexibility of cables manufactured with stranded inner conductors. The high flexibility of Ecoflex 15 FRNC is further enhanced through the use of an oxygen-free copper inner conductor containing 7 stranded bare copper wires. During a special manufacturing process the inner conductor is continuously compressed, calibrated and then pre-coated to achieve good attenuation, good return loss values and stable impedance matching. Another advantage of Ecoflex 15 FRNC its double shielding: an overlapping copper foil and an additional shield braiding of bare copper wires with 75 % coverage ensure a high screening attenuation of > 90 dB at 1 GHz.

The jacket of Ecoflex 15 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. With the fire protection rating Cca Ecoflex 15 FRNC is approved 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
<b>f max</b>	<b>6 GHz</b>
<b>Euroclass acc. to EN 50575</b>	<b>Cca</b>

## Characteristics

Certified according to EN 50575:2014 + A1:2016 for applications in buildings with requirements to fire  
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  
Flaming droplets tested according to DIN EN 50399:2017-02  
Acidity of gases tested according to DIN EN 60754-2:2015-08 (pH value > 4,3)  
Conductivity of gases tested according DIN EN 60754-2:2015-08 (< 2,5 μS/mm)  
Corrosivity of fumes according to IEC 60754-2  
Jacket material according to DIN EN 50290-2-27 (HD 624.7)  
RoHS compliant (Directive 2011/65/EC & 2015/863/EU RoHS 3)  
Low Smoke, Fire retardant, Zero Halogen (LSZH)  
UV-resistant  
Manufactured according to DIN EN 45545-2 Table 5 R15 HL2

## Technical data

Inner conductor	Stranded bare copper wire
Inner conductor Ø	4,5 mm (7 x 1,5 mm)
Dielectric	foamed Polyethylene (PE) with skin
Dielectric Ø	11,3 mm
Outer conductor 1	copper foil overlapped
Shielding factor	100%
Outer conductor 2	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	4XØ single, 8XØ repeated
Temperature range	-55 to +85°C Transport & fixed installation -40 to +85°C Flexible use
Pulling strength	1300 N

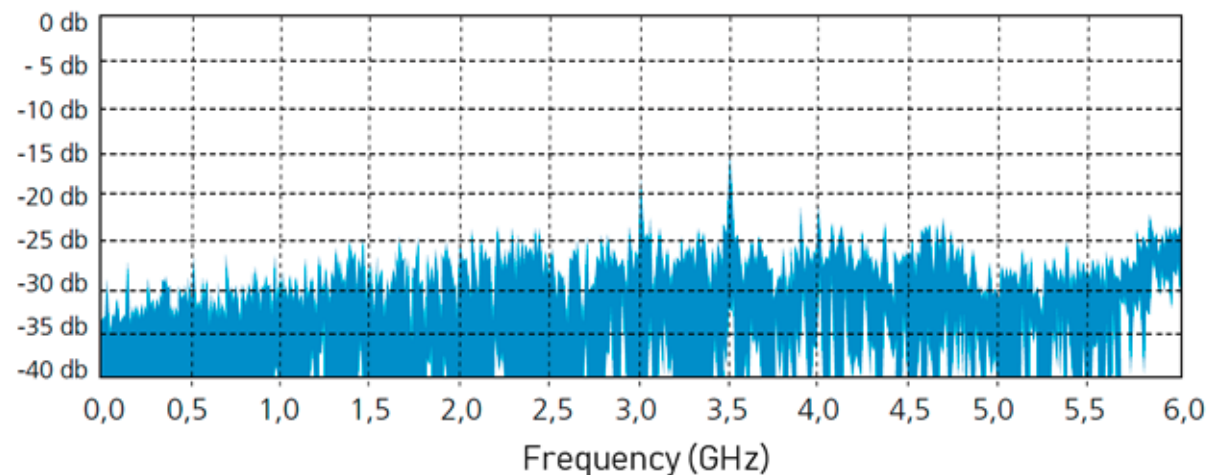
## Electrical data at 20°C

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

	Ecoflex 15 FRNC	RG 213/U	RG 58/U
Capacity	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. Return loss



## 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)

