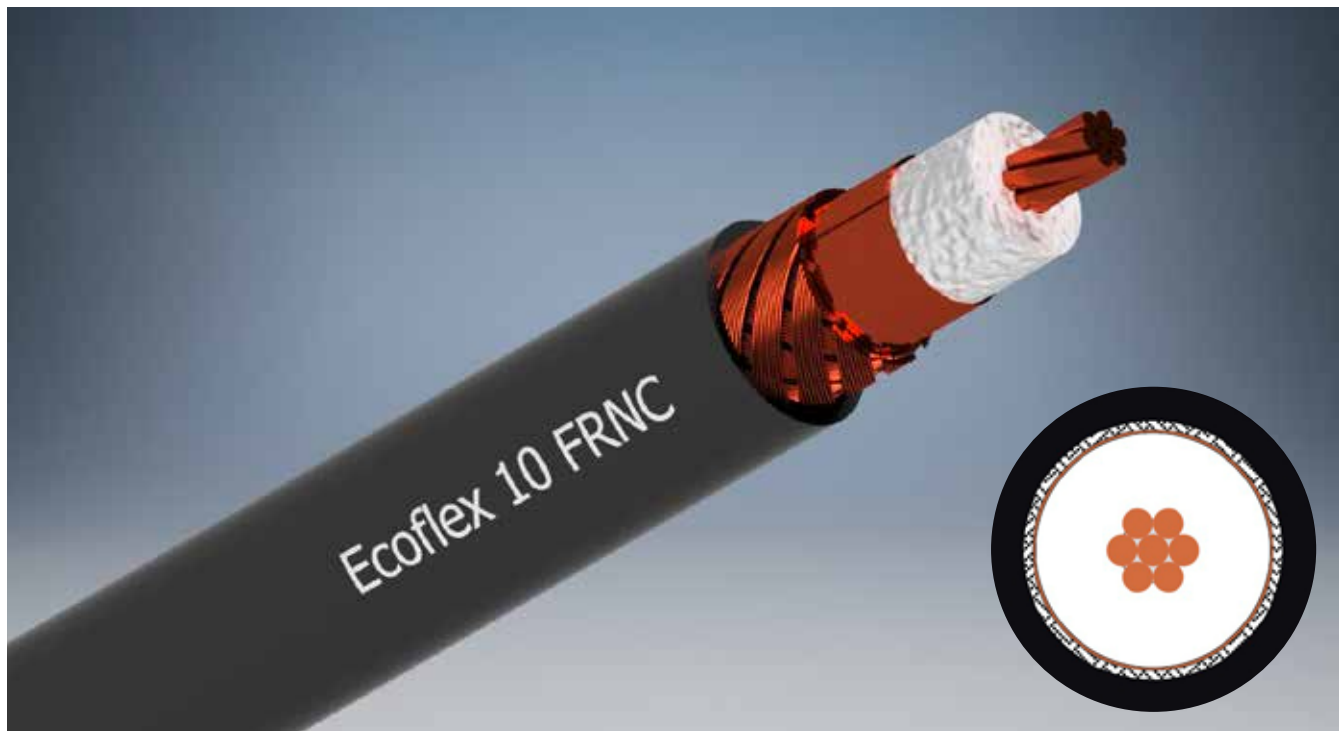


# Ecoflex® 10 FRNC

ultraflexible, low loss and free of halogen



Ecoflex 10 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, which set standards among flexible coaxial cables of this dimension.

The high flexibility of Ecoflex 10 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 compressed, calibrated and then pre-coated to achieve good attenuation and return loss values. Another advantage of Ecoflex 10 FRNC is 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 10 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 10 FRNC is approved 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      |
| <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   | 2,85 mm (7 x 1,0 mm, 10 AWG)                                             |
| Dielectric          | foamed Polyethylene (PE) with skin                                       |
| Dielectric Ø        | 7,2 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   | 7,9 mm                                                                   |
| Jacket              | highly flexible thermoplastic copolymer (FRNC) black                     |
| Weight              | 136 kg/km                                                                |
| Min. Bending radius | 4XØ single, 8XØ repeated                                                 |
| Temperature range   | -55 to +85°C Transport & fixed installation<br>-40 to +85°C Flexible use |
| Pulling strength    | 600 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 | ≤ 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<br>10 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                | 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   |

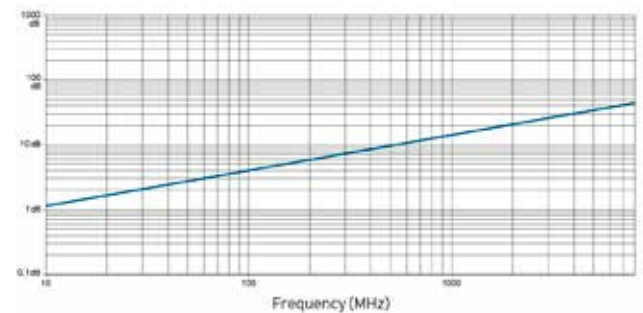
## Typ. Attenuation (db/100 m at 20°C)

|         |       |          |       |
|---------|-------|----------|-------|
| 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

