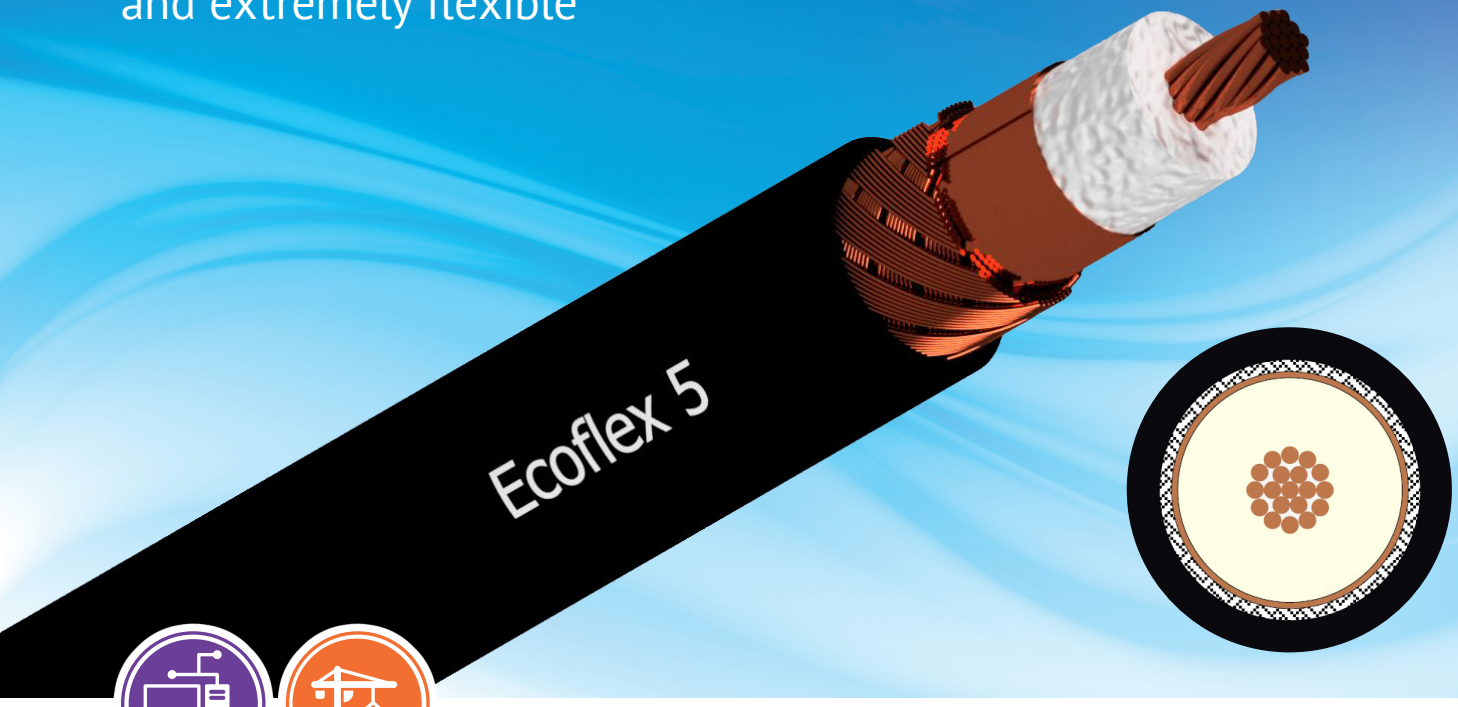
Ecoflex® 5

thin, very low-loss,
and extremely flexible



Ecoflex 5 is a thin and extremely flexible coaxial cable designed for frequencies up to 6 GHz. Due to its low loss in relation to the outer diameter of 5,5 mm and the very small bending radius the cable can be used for numerous RF applications.

The low attenuation values of Ecoflex 5 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 5 contains 19 stranded bare copper wires with diameter of 0,287 mm each, manufatured 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 80 % coverage. The copper foil has an applied PE coating which prevents foil cracking due to short radius bends. The black PVC jacket of Ecoflex 5 is UV-stabilized.

Ecoflex 5 is an innovative coaxial cable, which is the right choice, when an extremely flexible, very low loss, and microwave rated cable is required. It can be used for numerous RF applications.

Key features

Diameter	5.5 ± 0.2 mm
Impedance	50 ± 2 Ω
Attenuation at 1 GHz/100 m	26.13 dB
f max	**6 GHz**
Euroclass according to EN 50575	**Fca**

Characteristics

- Insulation material according to DIN EN 50290-2-23 (VDE 0819), Tab. 2/A (HD 624.3)
- Jacket material according to DIN EN 50290-2-22 (VDE 0819), compound type TM 52 (HD 624.2)
- Flame-retardant according to IEC 60332-1-2
- RoHS compliant (Directive 2011/65/EC & 2015/863/EU RoHS 3)
- UV-resistant

Technical Data

Inner conductor	stranded (Cu) copper wire
Inner conductor Ø	1.44 mm (19 × 0.287 mm, 17 AWG)
Dielectric	foamed cellular polyethylene (PE) with skin
Dielectric Ø	3.7 mm
Outer conductor 1	overlapping copper (Cu) foil
Shielding factor	100 %
Outer conductor 2	Copper (Cu) shield braiding of bare copper wires
Shielding factor	80 %
Outer conductor Ø	4.2 mm
Jacket	PVC black
Weight	42 kg/km
Min. Bending radius	5 × Ø single, 10 × Ø repeated
Temperature range	-55 to +85 °C transport & fixed installation -40 to +85 °C mobile application
Pulling strength	150 N

Electrical Data at 20 °C

Capacitance (1 kHz)	≈ 82 nF/km
Velocity factor	0.80
Shielding attenuation 1 GHz	≥ 85 dB
DC-resistance inner conductor	≤ 15 Ω/km
DC-resistance outer conductor	17 Ω/km
Insulation resistance	≥ 5 GΩ*km
Test Voltage DC (wire/screen)	4 kV
Max. voltage	2.5 kV

	Ecoflex 5	RG 58/U	RG 213/U
Capacitance	82 pF/m	102 pF/m	101 pF/m
Velocity factor	0.80	0.66	0.66
Attenuation (dB/100m)			
10 MHz	2.66	5.00	2.00
100 MHz	7.60	17.00	7.00
500 MHz	18.05	39.00	17.00
1000 MHz	26.13	54.60	22.50
3000 MHz	49.40	118.00	58.50

Typ. Attenuation (dB/100 m at 20 °C)

10 MHz	2.66	1000 MHz	26.13
20 MHz	3.80	1296 MHz	29.93
50 MHz	5.32	1500 MHz	32.59
100 MHz	7.60	1800 MHz	36.39
144 MHz	8.74	2000 MHz	38.95
200 MHz	10.21	2400 MHz	43.23
300 MHz	12.83	3000 MHz	49.40
432 MHz	16.29	4000 MHz	57.95
500 MHz	18.05	5000 MHz	66.03
800 MHz	22.90	6000 MHz	74.10

Max. Power Handling (W at 40 °C)

10 MHz	1.200	1000 MHz	123
20 MHz	914	2000 MHz	84
50 MHz	575	3000 MHz	67
100 MHz	405	4000 MHz	58
500 MHz	177	6000 MHz	45

Typ. Attenuation (dB/100 m at 20°C)