Ecoflex® 15 Plus

extremely flexible, low-loss, and suitable for operation up to 8 GHz

Ecoflex 15 Plus features remarkable electrical and mechanical improvements. The design and use of materials are optimized for minimal loss, an increased maximum frequency by 2 GHz, excellent installation properties, high long-term stability, and, not least, low weight. These optimal physical properties are achieved by using a precision hybrid inner conductor with a micro-welded copper jacket and aluminium core.

Ecoflex 15 Plus is an extremely flexible and very low attenuation 50-ohm coaxial cable for use up to 8 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 very favorable attenuation values. The innovative design of Ecoflex 15 Plus combines the extremely low attenuation properties of 1/2" cables with rigid inner conductors with the mechanical properties of flexible but lossy standard coaxial cables with stranded inner conductors, making it an ideal combination.

The good flexibility of Ecoflex 15 Plus is ensured by a 7-strand hybrid inner conductor with an aluminium core and welded copper jacket. The inner conductor is stranded, compressed, calibrated, and then coated with a pre-coating in highly precise production steps to achieve very 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 black PVC outer jacket of Ecoflex 15 Plus is UV-stabilized.

To simplify installation, solder-free connectors of the N, UHF, and 7-16 DIN standards have been developed, providing optimal contact and can be easily and quickly assembled without special tools.

Ecoflex 15 Plus is a modern coaxial cable for many applications in high-frequency technology: low attenuation, long-term stable, flexible, radiation-resistant, and usable up to the microwave range.

Key features

Diameter	14.6 ± 0.3 mm
Impedance	50 ± 2 Ω
Attenuation at 1 GHz/100 m	9.80 dB
f max	**8 GHz**
Euroclass according to EN 50575	**Eca**

Characteristics

· 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	Hybrid CCA – copper-clad aluminium stranded 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	PVC black, UV-stabilized
Weight	167 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

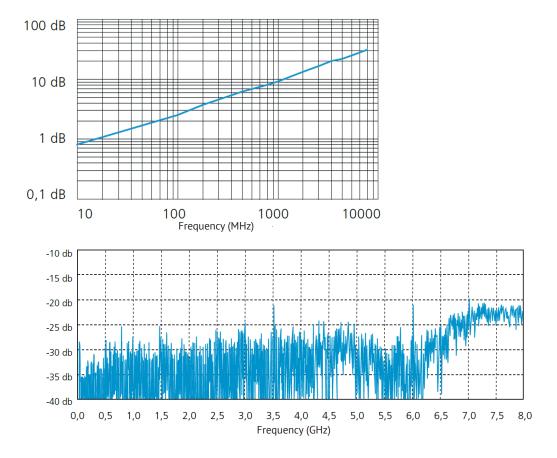|	
Capacitance (1 kHz)	78 nF/km
Velocity factor	0.85
Shielding attenuation 1 GHz	≥ 90 dB
DC-resistance inner conductor	≤ 2.5 Ω/km
DC-resistance outer conductor	5.0 Ω/km
Insulation resistance	≥ 10 GΩ*km
Test Voltage DC (wire/screen)	7 kV
Max. voltage	5 kV

	Ecoflex 15 Plus	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
		8000 MHz	32.70

Max. Power Handling (W at 40 °C)

10 MHz	5.021	2400 MHz	270
100 MHz	1.542	3000 MHz	236
500 MHz	655	4000 MHz	198
1000 MHz	446	5000 MHz	173
2000 MHz	300	6000 MHz	154
		8000 MHz	129

Typ. Attenuation (dB/100 m at 20°C)

Typ. Return Loss