

Ecoflex® 10 Heatex®

Ecoflex® 15 Heatex®



Ecoflex® Heatex® flame retardant, halogenfree coaxial cable designed for use in public buildings and hazardous environments

Ecoflex-Heatex cables were developed due to the increased demand for low-loss coaxial cables that comply with all relevant emission and flame retardancy standards. These cables were designed specifically for their low flammability and flame propagation properties. The Heatex halogen-free Jacketing produces very little smoke when ignited and contains no reactive elements like Fluorine, Chlorine, or Bromine.

PVC cables conforming to appropriate standards and when installed and used according to existing safety codes are safe and will never be the start of a fire. However, an already existing fire could spread through the entire length of an individual cable or cable bundle within a matter of minutes with potentially devastating results. Ecoflex-Heatex cables offer the solution to all of these issues: low fire propagation, low smoke and no corrosive gases make Ecoflex-Heatex the clear choice!

The Ecoflex-Heatex cables feature UV-Stabilization and are suitable for both indoor and outdoor use.

Ecoflex® 10 Heatex® characteristics

Diameter	10,2 mm
Impedance	50 Ω
Attenuation @ 1 GHz/100m	14,2 dB
fmax	6 GHz

Ecoflex® 15 Heatex® characteristics

Diameter	14,6 mm
Impedance	50 Ω
Attenuation @ 1 GHz/100m	9,8 dB
fmax	6 GHz

14

Test Procedures and Respective Regulations

Fire Behavior of Individual Cables

EN 50265-2-1 IEC 60332-1

A piece of cable is mounted in a metal chamber with an open front. A propane gas burner is then set up in a manner that its flame cone hits the cable sample at a 45° angle. Test duration depends on the cable diameter. Samples will pass the test if they do not catch fire, generated flames must extinguish by themselves.

Smoke Density

IEC 61034 -1+2EN 50268 -1+2

The test chamber is a 27 m³ cube. The measurement system consists of a light source (100 Watt halogen lamp) and a silicium photo-electric-cell as the receiver. A tray filled with 1 liter of alcohol serves as the ignition source. A fan is used to ensure even smoke distribution with a metal screen protecting the tray from any flame turbulence. The alcohol is ignited and the light intensity of the photocell will be recorded. Samples will pass the test if light intensity does not drop below 60 percent.

Corrosiveness of Combustible Gases

HD 602-1 EN 50267-2-3 IEC 60754-2

This test allows the determination about the corrosiveness of different insulation, sheathing and jacketing compounds. Already small amounts of halogens and thus corrosive components can be detected by measuring the pH-value and electrical conductivity. A sample of the test material is burned at a temperature of 935°C. An air current directs any released gases into a gas-washing bottle filled with distilled water, where two electrodes measure both pH value and conductivity. Samples will pass the test if the measured pH value does not undercut 4.3 and conductivity does not exceed 10 µS/mm.



Property	PVC	Heatex®
Flammability		
Halogen-free	no	yes
Flame propagation (single cable)	high	low
Flame propagation (cable bundle)	high	low
Release of corrosive gases	yes	no
Smoke density	high	low
Dioxin in fire residue	yes	very low
Mechanical properties		
Durability	good	good
Low temperature resistance	good	good
Flexibility	very good	good
Regulations		
Cable fire behavior		
Complies EN 50265-2-1	no	yes
IEC 60332-1	no	yes
Smoke density		
Complies IEC 61034-1+2	no	yes
EN 50268-1+2	no	yes
Corrosiveness of combustible gases		
Complies HD 602 – S1	no	yes
EN 50267-2-3	no	yes
IEC 607542-2	no	yes

Comparison of flammability properties of PVC and Ecoflex®Heatex®-cables

	Flame retardancy	Formation of smoke	Corrosive gases
Heatex® cable	Ecoflex-Heatex cables are flame-retardant and only slightly flame propagating.	Ecoflex-Heatex cables are low-smoke propagating. Escape routes remain visible.	Ecoflex-Heatex cables produce no corrosive gases at all.
PVC-cable	PVC cables are normally self-extinguishing. Gases released by PVC will ignite at certain temperatures and can thus spread the fire.	PVC contains various Polymers that will create dense smoke reducing visibility almost down to zero. A single kilogram of PVC is enough to fill a room of up to 500 m ³ completely with black smoke.	PVC cables generate large amounts of corrosive and toxic gases (HCl) when ignited. A single kilogram of PVC can release more than 300 l of hydrogen chloride, which mixed with water will produce hydrochloric acid.

Ecoflex[®] 10 Heatex[®]

Technical data

Centre conductor ... stran. copper, oxygen free, 7 x 1,0 mm	
Centre conductor Ø	2,85 mm
Dielectric	PE, low-loss Compound
Dielectric Ø	7,25 mm
Outer conductor 1	copperfoil, PE-coated
Shielding factor	100 %
Outer conductor 2	copper braid
Shielding factor	72 %
Sheath	black Heatex, UV-resistant
Outer diameter Ø	10,2 mm
Weight	131 g/m
Min. bending radius .. one single bending	40 mm
15 repeated bendings	80 mm
Temperature range ... storage	-70 to +85°C
installation	-25 to +60°C
operation	-40 to +85°C
Pulling strength	5 daN

Typ. attenuation (dB/100 m @ 20°C)

5 MHz	0,8	1000 MHz	14,2
10 MHz	1,2	1296 MHz	16,5
50 MHz	2,8	1500 MHz	17,9
100 MHz	4,0	1800 MHz	19,9
144 MHz	4,9	2000 MHz	21,2
200 MHz	5,8	2400 MHz	23,6
300 MHz	7,3	3000 MHz	27,0
432 MHz	8,9	4000 MHz	32,2
500 MHz	9,6	5000 MHz	37,0
800 MHz	12,5	6000 MHz	41,5

Max. power handling (W @ 40°C)

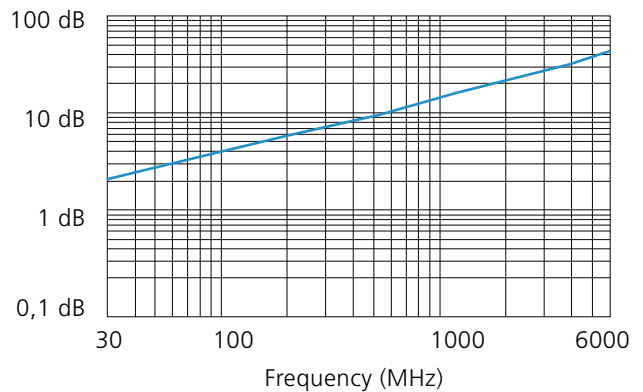
10 MHz	3960	3000 MHz	180
100 MHz	1210	4000 MHz	150
500 MHz	510	5000 MHz	130
1000 MHz	350	6000 MHz	120
2000 MHz	230		

16

Electrical specifications

Impedance	50 Ω
Capacity	78 pF/m
Velocity factor	0,85
fmax	6 GHz
Screening efficiency @ 1 GHz	> 90 dB
DC-resistance: Centre conductor	3,3 Ω/km
Outer conductor	8,4 Ω/km
RF peak voltage	1kV

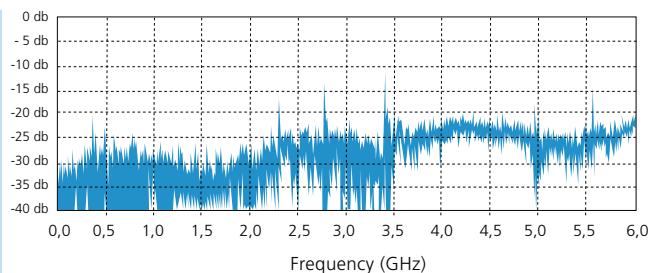
Typ. Attenuation (dB/100 m) @ 20°C



Ecoflex 10 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/100 m)			
10 MHz	1,2	2,0	5,0
100 MHz	4,0	7,0	17,0
500 MHz	9,6	17,0	39,0
1000 MHz	14,2	22,5	54,6
3000 MHz	27,0	58,5	118

Typ. Return loss



Due to production tolerances the RTL may have different characteristics.

Ecoflex® 15 Heatex®

Technical data

Centre conductor ... stran. copper, oxygen free, 7 x 1,55 mm
 Centre conductor Ø 4,5 mm
 Dielectric PE, low-loss Compound
 Dielectric Ø 11,3 mm

Outer conductor 1 copperfoil, PE-coated
 Shielding factor 100 %
 Outer conductor 2 copper braid
 Shielding factor 72 %
 Sheath black Heatex, UV-resistant
 Outer diameter Ø 14,6 mm

Weight 258 g/m
 Min. bending radius .. one single bending 70 mm
 15 repeated bendings 140 mm
 Temperature range ... storage -70 to +85°C
 installation -25 to +60°C
 operation -40 to +85°C
 Pulling strength 12 daN

Typ. attenuation (dB/100 m @ 20°C)

5 MHz 0,6	1000 MHz 9,8
10 MHz 0,86	1296 MHz 11,4
50 MHz 1,96	1500 MHz 12,4
100 MHz 2,81	1800 MHz 13,8
144 MHz 3,4	2000 MHz 14,7
200 MHz 4,05	2400 MHz 16,3
300 MHz 5,0	3000 MHz 18,7
432 MHz 6,1	4000 MHz 22,3
500 MHz 6,7	5000 MHz 25,7
800 MHz 8,6	6000 MHz 28,8

Max. power handling (W @ 40°C)

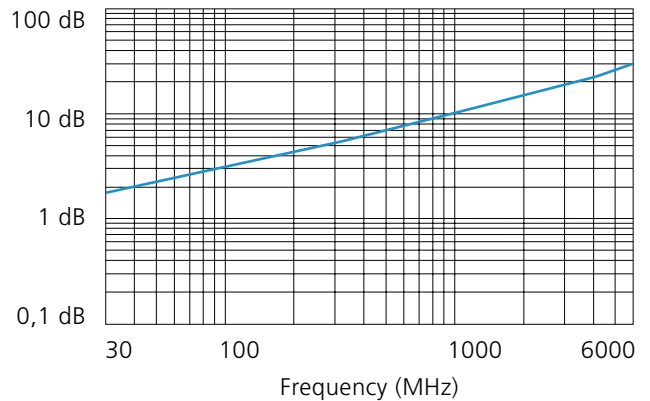
10 MHz 6450	2000 MHz 380
100 MHz 1970	3000 MHz 300
500 MHz 830	4000 MHz 250
1000 MHz 560	6000 MHz 190

Electrical specifications

Impedance 50 Ω
 Capacity 77 pF/m
 Velocity factor 0,86
 fmax 6 GHz
 Screening efficiency @ 1 GHz > 90 dB

DC-resistance: Centre conductor 1,56 Ω/km
 Outer conductor 5,15 Ω/km
 RF peak voltage 1,55 kV

Typ. Attenuation (dB/100 m) @ 20°C



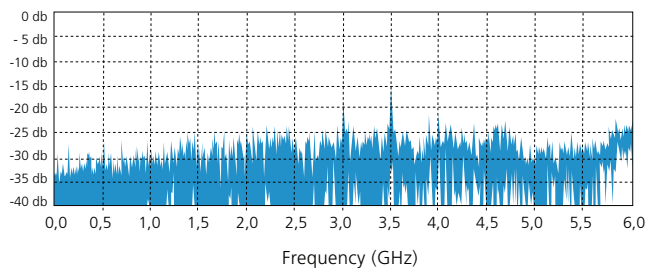
Ecoflex 15 RG 213/U RG 58/U

Capacity 77 pF/m 101 pF/m ... 102 pF/m
 Velocity factor 0,86 0,66 0,66

Attenuation (dB/100 m)

10 MHz 0,86	..... 2,0	..... 5,0
100 MHz 2,81	..... 7,0	..... 17,0
500 MHz 6,7	..... 17,0	..... 39,0
1000 MHz 9,8	..... 22,5	..... 54,6
3000 MHz 18,7	..... 58,5	..... 118

Typ. Return loss



Due to production tolerances the RTL may have different characteristics.