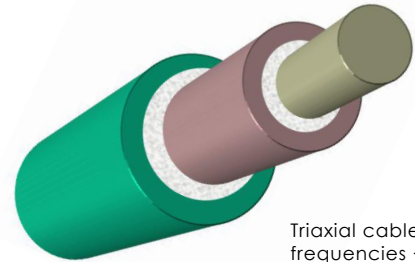


Mineral insulated signal transmission cables: Cables for transmission of HF signals

These cables are intended for transmission of high frequency signals. Two types have been developed :

- coaxial cable with composite shielding : an iron layer in the shielding reduces the transfer impedance of the cable,
- triaxial cable : this is a coaxial cable with a supplementary sheath by which the cable is insulated from ground.



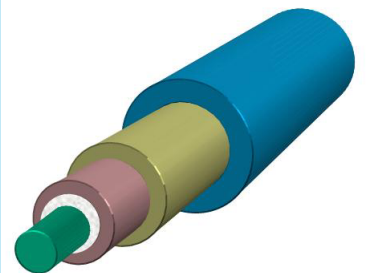
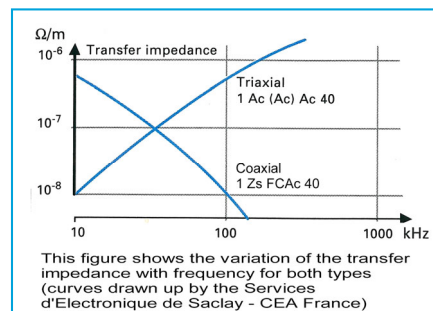
Triaxial cable for frequencies < 30 kHz

Material	Type	Coaxial		
		1 Ac (Ac) Ac 20	1 Zs FCAC 60	1 Zs ACAC 40
Sheath		Stainless Steel 304L	Iron - Copper-Stainless Steel 304L	Stainless steel 304L-Copper-Stainless steel 304L
Conductor		Stainless Steel 304L	Zirconium copper coated stainless steel 304L	Zirconium copper coated stainless steel 304L
Insulant		Magnesia >94%	Magnesia >94%	Magnesia >94%
Electrical characteristics				
Insulation resistance (500VDC)		>= 10 ¹³ ohms.m at room temperature >= 10 ¹⁰ ohms.m at 300°C		
Line capacitance		≈ 350 pF/m	≈ 200 pF/m	≈ 250 pF/m
Line resistance		16 ohms/m	0.35 ohm/m	0.13 ohm/m
Breakdown voltage		>500V AC	>1 500 V AC	> 2 000 V AC
Dimensions				
Outer Diameter (mm)		2 ± 0.03	6 ± 0.05	4 ± 0.05
Outer sheath thickness (mm)		0.32 ± 0.04	2.9 ± 0.15	2.25 ± 0.15
Inner sheath diameter (mm)		0.9 ± 0.1	-	-
Inner sheath thickness (mm)		0.12 ± 0.04	-	-
Conductor diameter (mm)		0.25 ± 0.05	0.40 ± 0.1	0.60 ± 0.2
Manufacturing length (mm)		From 100 to 200 m	From 9 to 12 m	From 20 to 30 m

The transfer impedance

The level of protection is given by the transfer impedance of the cable i.e. by the ratio between the signal voltage picked up by the central wire and the current flowing on the outer shield.

The lower the impedance is, the better the protection from interference.



Coaxial cable for frequencies > 30 kHz