

STANDARDS
PARAMETERS

and

Tab.
Standards

STANDARDS	DESCRIPTION
CEI 20-11	Technical characteristics and requirements of the test for insulation and sheath materials for energy cables
CEI 20-20	Cables insulated with thermoplastic insulation with working voltage 450/750 V
CEI 20-22	Common methods of tests for cables in fire condition
CEI 20-29	Conductors for insulated cables
CEI 20-34	Methods of test for insulating materials and sheath of electrical cables
CEI 20-35	Common methods of test for cable in fire conditions; test of not vertical propagation of the flame on a single conductor or isolated cable.
CEI 20-36	Test of resistance to the fire for electrical cables in fire conditions
CEI 20-37	Common methods of test for cables in fire condition. Test on gases emitted during the combustion of material taken from the cables.
CEI 20-38	Cable insulated with rubber don't spread fire; alogen free and emit a reduced quantity of corrosive gas.
CEI 20-45	Cable insulated with elastometric material, resistant to the fire, don't spread fire, without alogen and with a Working Voltage of 0,6/1 KV
CEI 20-52	Methods of test for the determination of the amount of lead in the insulation, covering and sheath.
CEI 46-5	Cables, cords and wire for telecommunications with low frequency, PVC insulated.
CEI EN 50117-1	Coaxial cables. Generic specific.
CEI EN 50117-2-1	Coaxial cables: Specific sector for cables used in wired distribution nets. For the internal use only for operating system to 5-1000Mhz
CEI EN 50117-3	Coaxial cables for distribution nets. Specific sector for cables of connection for external use only.
CEI EN 50117-3-1	Coaxial cables. Specific sector for telecommunication applications. Cables miniaturized for digital communication systems
CEI EN 50117-4	Coaxial cables for wired nets of distribution. Specific sector for transport and distribution cables.
CEI EN 50117-5	Coaxial cables for wired nets of distribution. Specific sector for connection cables for internal use only and for operating nets with a frequency between 5Mhz and 2150Mhz
CEI EN 50117-6	Coaxial cables for wired nets of distribution. Specific sector for connection cables for external use and for operating nets with a frequency between 5Mhz and 2150Mhz
CEI EN-50289-1-6	Cables for communications. Standards for electric test methods.
ISOMEC 11801	Wiring National standards
MILC-17	RG Coaxial cables for radio frequency.
VDE 0815	Cables for internal communication systems
CT 1035	Telecom standard: materials for telephone cables
CT 1220	Telecom standard: Round cable with single bare copper conductors TE 1x2x0,6/R
CT 1221	Telecom standard: Round cable with single bronze conductors TE 1x2x1/R
CT 1279	Telecom standard: Telephone cables twisted in pairs, in terns in groups of 4 and 5 conductors. Sheath in PVC with reduced propagation of fire and corrosivity, Cables for commutation systems.
CT 1285	Telecom standard: bare copper cables with plastic insulation for lay on air. TE GH/R cables.

Conductor
resistance tab.

SECTION	RESISTANCE	SECTION	RESISTANCE
0,14	134	10,00	1.91
0,22	96	16,00	1.21
0,25	76	25,00	0.780
0,34	53	35,00	0.554
0,50	39	50,00	0.386
0,75	26	70,00	0.272
1,00	19.5	95,00	0.206
1,50	13.3	120,00	0.161
2,50	7.98	150,00	0.129
4,00	4.95	185,00	0.106
6,00	3.30	240,00	0.0801

LINE TRANSMISSION PARAMETERS

RESISTANCE (R): It's the parameter that expresses how much a conductor is opposed to the passage of electrons when we apply a voltage. More the value of resistance is elevated, more the signal will come "hindrerred" to arrive to destination. The unit of measure of resistance is "Ohm"; for a conductor is estimated in "Ohm/Km". The value of the "resistance/lenght unit" is gained from the relationship between resistivity of the conductor and its secton.

CAPACITA' (C):It's the characteristic that has a material (dielectric), placed between two conductors that have a sure potential difference, to maintain an electrical charge. Capacitance is measured in "Farad"; for a cable is estimated in "Farad/Unit of lenght"

INDUTTANCE (L):When 2 conductors are crossed by equal and cuntrary currents, a magnetic field it is genered between them. The relationship between magnetic flow that cross the space between the two conductors and the current that produce it, is called induttance. Induttance is measured in "Henry".

CHARACTERISTIC IMPEDANCE (Z):The characteristic of a line is the resultant of all passive elements that oppose itself to the electrons blow. In a transmission system is important that cable impedance correspond to the receiving system.If there's difference of impedance a reflection will distort the signal.The unit of measure of impedance is "Ohm" and change in function of frequency.

VELOCITY RATIO:It's the time request from a signal to pass through a transmission line. it's the relationship between signal speed in the trasmissive line and the speed in air.

It's a per cent value that depends from the dielectric constant of the insulation material.

ATTENUATION:It's the relationship between input voltage and output voltage of a transmission line and it's measured in dB/m .Attenuation is one of the parameters that define the line quality.

REFLECTON:The irregularity of a transmission line provoke a variation of the characteristic impedance that leads to have some internal reflection in the transmissive channel. Losses increase and the power transmission decreaseaumentano. Reflection is expressed from the SRL coefficient (Structural return loss).

LAN CABLE PARAMETERS

NEXT(near end xtalk):It's the diaphony that is the disturbance induced from the signal on the pair near thea one of uses, measured from the part of the emitter. PSNEXT is the sum of all distrubs on all pairs near the pair with the signal. It's measured in dB and the valor must be the highest possible. It gets worse with the increasing of the frequency and it's become stabilized after fifteen or so meters.

FEXT(far end xtalk):It's the para-diaphony; it's similar to the NEXT but it's measured from the receiver. PSFEXT is the sum of all disturbs on all pairs near the pair with the signal.

ELFEXT(equal level FEXT):Measure the diaphony to the far extremity to equivalent levels. It's the ACR with the FEXT instead of NEXT.

ACR(attenuation to Crosstalk Ratio):It's calculated subtracting the attenuation from the diaphony.It's usefull for indicate with a single value, 2 important parameters.

RETURN LOSS (RL):Measure the difference between the amplitude of input signal and amplitude of the signals reflected from the cable.