

MV CABLE TYPE C 33-226

Standards :

CENELEC HD 620

C 33-226

Rated voltage

Rated voltage : 12/20 (24) kV

Design

- 1 – Stranded aluminium, class 2 conductor
- 2 – Extruded conducting screen on conductor
- 3 – XLPE insulation
- 4 – Grooved, strippable, extruded conducting screen on insulation
- 5 – Swellable powder for longitudinal watertightness under the metallic screen
- 6 – Aluminium foil longitudinally applied with an overlap and stuck to the outer sheath
- 7 – PE sheath (*)
- 8 – The three phase conductors may be bundled with a long lay length

(*) Red sheath for underground connections. Grey sheath for overhead connections and laying in tunnels

Application

Specially designed for power distribution networks; designed to be buried directly in the ground.

	S	⚡	🌡️	🌡️	⚙️	🧪	🌊	🔥
Excellent			•		•			
Good		•		•		•	•	
Medium	•							• (**)

(**) only the cable with a grey sheath in flame retardant (C2 of NFC 32-070 or IEC 60332-1)

Using

- minimum bending radius during laying (single core or bundle) :
26 x diameter of a phase conductor
- minimum bending radius after laying (single core or bundle) :
13 x diameter of a phase conductor

Maximum allowable temperature

- During continuous service: 90 °C
- During short-circuit: 250 °C



Identification and outer marking

SILEC Day Year C 33 226 Cross-section Al 12/20 (24) kV

SIPRELEC 23 POPY (1) G2 SC 0,7 AT T -10/50 (2) PHASE 1 (or 2 or 3)

(1) *Reference for the cable fittings*

(2) *T 0/35 for grey-sheathed cable*

Length marking on one conductor.

Dimension

CABLE	Approximate outer diameter mm	Approximate weight kg/km	Maximum allowable pulling force, daN
1x50 mm ²	29,0	700	150
1x95 mm ²	32,0	950	285
1x150 mm ²	32,0	1000	450
1x240 mm ²	36,5	1400	720
3x50 mm ²	62,5	2100	450
3x95 mm ²	69,0	2800	855
3x150 mm ²	69,0	3050	1350
3x240 mm ²	78,5	4150	2160

Electrical characteristics

Item	Cross-section, mm ²			
	50	95	150	240
DC maximum resistance of the conductor at 20°C, Ω / km	0,641	0,320	0,206	0,125
AC apparent resistance of the conductor at 90°C, Ω / km (1)	0,820	0,410	0,265	0,160
Self-induction coefficient, mH / km (1)	0,440	0,400	0,350	0,330
Capacitance, μF / km	0,180	0,220	0,300	0,360

(1) These values are applicable to a three-phase system made of three conductors bundled or in joined trefoil formation.

For other cross-sections, please contact us.

Maximum allowable ampacity

Cross section, mm ²	Buried	
	Winter	Summer
50	205	170
95	300	245
150	385	310
240	505	410

Ampacity in Ampere is calculated for a three phase system, with the below thermal hypothesis, without any electric parallel nor thermal proximity.:

SUMMER:

- soil temperature : 20 °C
- soil thermal resistivity : 1,2 K m / W

WINTER:

- soil temperature : 10 °C
- soil thermal resistivity : 0,85 K m / W

For other cross-sections, please contact us.

Allowable ampacity during short-circuit in the screen

Cross-section, mm ²	Icc, A during 1 sec
50	2500
95	2700
150	2700
240	3200

For other cross-sections, please contact us.

ALL GROUND CABLE™

type UTE C 33-223 or NF C 33-223

Standards :

UTE C 33-223 of December 1999
NFC 33-223

CENELEC HD 620
IEC 60 502-2

Rated voltage

This design can be manufactured for all rated voltage of IEC 60502 - 2

Design

- Stranded conductor, class 2
- Extruded conducting screen on conductor
- XLPE insulation
- Grooved, strippable, extruded conducting screen on insulation
- Swellable powder for longitudinal watertightness under the metallic screen
- Aluminium foil longitudinally applied with an overlap and stuck to the outer sheath,
- PVC sheath,
- **Strippable, grooved, TPR sheath**
- The three phase conductors may be bundled with a long lay length

Using

Cable for MV distribution networks.

It can be buried directly in all grounds, and is specially adapted for « hard » ground. Mainly, its design prevents from adding sand in the trench bottom, and the trench can be filled back with original soil.

	S	⚒	🌡	🌡	⚙	🧪	🌊	🔥
Very good		•	•		•			
Good				•		•	•	
Medium	•							•

Setting up

- the minimum bending radius during installation is the same that NF C 33-223 or UTE C 33-223 (see dimension)
- the minimum bending radius after installation is the same that NF C 33-223 or UTE C 33-223 (see dimension)

Fitting of a termination or a joint :

- Once the grooved outer sheath has been removed with the usual tool, the fitting of a termination or a joint is the same as for NF C 33-223 or UTE C 33-223



All Ground Cable™ type UTE C 33-223 or NF C 33-223 (continued)

Maximum allowable temperatures

- Continuous service: 90 °C
- Short-circuit in the conductor: 250 °C
- Short-circuit in the metallic screen : 200 °C

Identification and outer marking

SILEC « Batch number » « Standard » cross section AL 12/20 (24) kV

SIPRELEC 23 Ec=0.2 mm PHASE 1 (or 2 or 3) ALL GROUND CABLE

Length marking can be indicated on one phase conductor.

Dimension

ARTICLE	Approximate outer diameter	Approximate weight	Minimum bending radius after laying	Minimum bending radius during laying	Maximum pulling force
	mm	kg/km	mm	mm	daN
1 x 50 mm ²	39,5	1400	400	800	150
1 x 95 mm ²	42,5	1700	450	900	285
1 x 150 mm ²	43,5	1850	450	900	450
1 x 240 mm ²	48,0	2350	500	1000	720
3 x 50 mm ²	84,5	4200	400	800	450
3 x 95 mm ²	92,0	5100	450	900	855
3 x 150 mm ²	93,5	5500	450	900	1350
3 x 240 mm ²	103,5	7000	500	1000	2160

Electrical characteristics

Item	Cross Section, mm ²			
	50	95	150	240
Maximum DC resistance at 20 °C, Ω / km	0,641	0,320	0,206	0,125
AC apparent resistance of the conductor at 90 °C, Ω / km	0,820	0,410	0,260	0,160
Self-induction coefficient mH / km (1)	0,500	0,450	0,420	0,380
Capacitance, μF / km	0,180	0,210	0,290	0,360

(1) Calculated for three bundled cables or three cables in a joined trefoil formation.

For other sections, call us .

Maximum allowable ampacity

Cross section, mm ²	Buried cables	
	Winter	Summer
50	195	160
95	285	235
150	360	300
240	480	395

Ampacity is indicated in amps for a three-phase system without any thermal or electrical proximity under following thermal conditions:

SUMMER:

- soil temperature : 20 °C
- soil thermal resistivity : 1,2 K m / W

WINTER:

- soil temperature : 10 °C
- soil thermal resistivity : 0,85 K m / W

For other sections, call us .

ALL GROUND CABLE™

type C 33-226

Standards :

UTE C 33 226,
HD 620,

Rated voltage

Rated voltage: 12/20 (24) kV

Design

- Stranded conductor, class 2
- Extruded conducting screen on conductor
- XLPE insulation
- Grooved, strippable, extruded conducting screen on insulation
- Swellable powder for longitudinal watertightness under the metallic screen
- Aluminium foil longitudinally applied with an overlap and stuck to the outer sheath,
- PE sheath,
- **Strippable, grooved, TPR sheath**
- The three phase conductors may be bundled with a long lay length

Using

Cable for MV distribution networks.

It can be buried directly in all grounds, and is specially adapted for « hard » ground.

Mainly, its design prevents from adding sand in the trench bottom, and the trench can be filled with original soil.

	S	⚒	🌡	🌡	⚙	🧪	🌊	🔥
Very good		•	•		•			
Good				•		•	•	
Medium	•							•

Setting up

- the minimum bending radius during installation is the same that C 33-226 (see dimension)
- the minimum bending radius after installation is the same C 33-226 (see dimension)
- Fitting of a termination or a joint :
 - Once the grooved outer sheath has been removed with the usual tool, the fitting a termination or a joint is the same as for standard MV cables



All Ground Cable™ type C 33-226 (continued)

Maximum allowable temperatures

- Continuous service: 90 °C
- Short-circuit in the conductor: 250 °C

Identification and outer marking

SILEC Day Year C 33 226 Cross-section Al 12/20 (24) kV

SIPRELEC 23 POPY (1) G2 SC 0,7 AT T -10/50 (2) PHASE 1 (or 2 or 3) ALL GROUND CABLE

- (3) *Reference for the cable fittings*
 (4) *T 0/35 for grey-sheathed cable*

Metric marking can be indicated on one phase conductor.

Dimension

ARTICLE	Approximate outer diameter	Approximate weight	Minimum bending radius after laying	Minimum bending radius during laying mm	Maximum pulling force
	mm	kg/km	mm		daN
1 x 50 mm ²	38,0	1200	400	800	150
1 x 95 mm ²	41,0	1450	450	900	285
1 x 150 mm ²	41,0	1550	450	900	450
1 x 240 mm ²	45,5	1950	500	1000	720
3 x 50 mm ²	81,0	3550	400	800	450
3 x 95 mm ²	88,0	4350	450	900	855
3 x 150 mm ²	88,0	4600	450	900	1350
3 x 240 mm ²	97,5	5900	500	1000	2160

All Ground Cable™ type C 33-226 (continued)

Electrical characteristics

Cross section, mm ²	50	95	150	240
Characteristics				
Maximum DC resistance at 20 °C, Ω / km	0,641	0,320	0,206	0,125
AC apparent resistance of the conductor at 90 °C, Ω / km	0,820	0,410	0,270	0,160
Self-induction coefficient, mH / km (1)	0,500	0,450	0,400	0,370
Capacitance, μF / km	0,180	0,220	0,300	0,360

(1) Calculated for three bundled cables or three cables in a joined trefoil formation.

For other sections, please contact us .

Maximum allowable ampacity under continuous load

Cross section, mm ²	Buried cables	
	Winter	Summer
50	195	165
95	290	240
150	370	305
240	490	400

Ampacity is indicated in amps for a three-phase system without any thermal or electrical proximity under following thermal conditions:

SUMMER:

- soil temperature : 20 °C
- soil thermal resistivity : 1,2 K m / W

WINTER:

- soil temperature : 10 °C
- soil thermal resistivity : 0,85 K m / W

For other sections, please contact us .

Maximum allowable ampacity in the screen under short-circuit

Cross Section, mm ²	I _{cc} , A during 1 second
50	1250
95	2200
150	2500
240	2500

For other sections, please contact us .