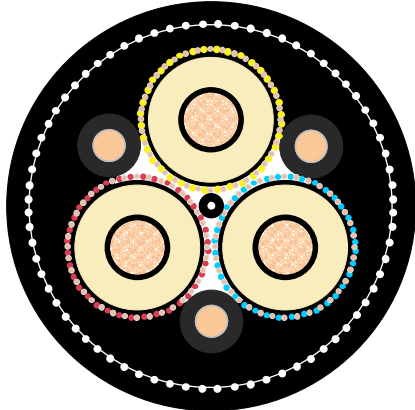


TYPE 611 6,35/11kV

SANS 1520-2



Flexible copper screened mining cables



CONSTRUCTION	
Cable type	Type 611 6.35/11 kV to SANS 1520-2
Conductors	Flexible class 5 comply to SANS 1411 - 1 from tinned annealed copper wires , left hand with semi-conducting rubber screen .
Insulation	Ethylene propylene thermosetting compound type RD 3 comply to SANS 1411-3 and a strippable semi-conducting core screen (triple extruded)
Insulation screen	The braid of tinned copper wires .
Cable assembly	Three tinned copper/nylon braid screened power cores and three unscreened pilot cores one in each interstice laid up in the right hand lay around semi-conductive filler centre . (Alternatively ,one pilot can be replaced with a tinned ECC).
Internal sheath	Poly-chloroprene thermosetting compound type RS 6 comply to SANS 1411-3 .
Reinforcing braid	An open nylon braid . Minimum 16 of nylon strings .
Outer sheath	Poly-chloroprene thermosetting compound type RS 6 comply to SANS 1411-3 . Inner and outer sheath are bonded to provide proper torsional protection , black .
Physical Properties	As per Table 1.
Electrical Properties	As per Table 2.
Tests	SANS 1520-2 .
Marking	Legible and indelible embossing as per order. Standard marking : TF KABLE 3 Type 611 (size) (Voltage) CR SANS 1520-2 (Year) + metre marking

FEATURES
<ul style="list-style-type: none"> ▪ Excellent flexibility . ▪ Abrasion , tear resistant and flame retardant . ▪ Temperature range : min. ambient temp . -25 °C , max. conductor temp. 90°C. ▪ UV ,sunlight , ozone ,oil, resistant .

APPLICATIONS
<ul style="list-style-type: none"> ▪ Electrically driven machines , movable electric apparatus in hazardous areas, portable electric apparatus . Section feeders . Open cast mining , medium sized draglines , shovels and drills. Suitable for reeling purposes. ▪ Other industrial applications .

TYPE 611 6,35/11kV

SANS 1520-2



Standard length cable packing 500 m on drums. Other forms of packing and delivery are available on request

Table 1

Physical Properties

Physical Properties										
Power cores										
Conductor sizes	(mm ²)	25	35	50	70	95	120	150	185	240
Maximum wire diameter	(mm)	0.41	0.41	0.41	0.51	0.51	0.51	0.51	0.51	0.51
Approx. conductor diameter	(mm)	6.8	8.5	10.3	11.9	13.5	15.5	17.3	20.2	22.9
Maximum screen wire diameter	(mm)	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Braided screen filling factor	(%)	60	60	60	60	60	60	60	60	60
Approx. summarized screen cross-section for power cores (weighing method)	(mm ²)	29	31	34	37	41	43	46	49	52
Pilot cores										
Conductor sizes	(mm ²)	10	10	10	16	16	16	25	25	25
Maximum wire diameter	(mm)	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
Approx. conductor diameter	(mm)	4.2	4.2	4.2	5.3	5.3	5.3	6.8	6.8	6.8
Lay Ratio (maximum)	(x PCD)	20	20	20	20	20	20	20	20	20
Approximate cable diameter *	(mm)	50.7	52.2	59.4	60.4	67.6	71.3	75.0	85.1	85.6
Cable mass (approximate)										
Type 611	(kg/m)	4.1	4.5	5.3	6.5	8.0	9.8	10.7	13.4	14.7
Minimum bending radius	(mm)	470	500	530	570	600	640	700	730	780
Maximum recommended tension	(kN)	1.1	1.6	2.3	3.2	4.3	5.4	6.8	8.3	10.8

* Tolerance - ±5% of approx. value

TYPE 611 6,35/11kV

SANS 1520-2



Table 2

Electrical Properties										
Power cores										
Maximum cond. DC resistance @ 20°C (Ω/km)	0.795	0.565	0.393	0.277	0.210	0.164	0.132	0.108	0.0817	
Maximum cond. DC resistance @ 90°C (Ω/km)	1.05	0.749	0.521	0.368	0.279	0.218	0.176	0.145	0.110	
Reactance (Ω/km)	0.134	0.124	0.117	0.113	0.108	0.103	0.098	0.096	0.092	
Impedance (Z) @ 90°C (Ω/km)	1.06	0.759	0.534	0.385	0.299	0.241	0.201	0.174	0.143	
Minimum combined screen resistance @ 23 °C (Ω/km)	1.6	1.2	0.8	0.7	0.6	0.6	0.6	0.6	0.6	
Minimum combined screen & ECC resistance (Ω/km)	0.7	0.5	0.5	0.4	0.3	0.23	0.18	0.18	0.15	
Sustained current rating @ 30°C ambient										
Laid out straight (A)	105	130	160	195	230	260	300	340	400	
Short circuit rating :										
Symmetrical fault current (kA for 1 sec)	3.1	4.3	6.1	8.5	11.6	14.6	18.3	22.57	29.30	
Earth fault current (screens) (kA for 1 sec)	1.6	2.1	3.1	3.5	4.1	4.1	4.1	4.1	4.1	
Earth fault current ECC + screens) (kA for 1 sec)	3.6	5.0	5.0	7.5	9.0	11.5	14.0	14.0	17.0	

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