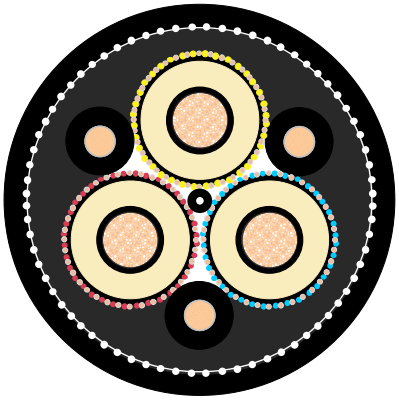
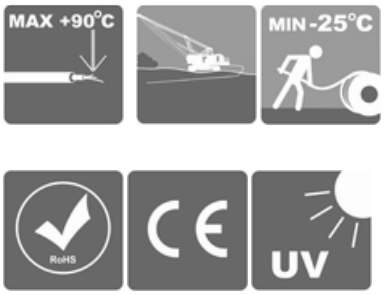
TYPE 66ECC 3,8/6,6 kV

POWERMITE

SANS 1520-2

Flexible copper screened mining cables





CONSTRUCTION	
Cable type	Type 66 ECC 3,8/6,6 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 two unscreened pilot cores and one tinned ECC core positioned in each interstice laid up in the right hand lay around semi-conductive filler centre .
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 Texoprene TR 66 ECC (size) (voltage) CR SANS 1520-2 (Year) + metre marking

FEATURES

- Excellent flexibility .
- Abrasion , tear resistant and flame retardant .
- Temperature range : min. ambient temp . -25 ^{0}C , max. conductor temp. 90^{0}C.
- UV ,sunlight , ozone ,oil, resistant .

APPLICATIONS

- 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 .

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Length cable packing	300 m on drums. Other forms of packing and delivery are available on request

Table 1

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)	28	29	32	35	39	41	44	47	50
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
ECC size	(mm^2)	16	25	25	35	50	70	95	95	120
ECC maximum wire diameter (mm)		0.41	0.41	0.41	0.41	0.41	0.51	0.51	0.51	0.51
Lay Ratio (maximum)	(x PCD)	20	20	20	20	20	20	20	20	20
Approximate cable diameter *	(mm)	50.1	51.7	55.3	59.8	64.6	68.8	73.1	77.8	82.5
Cable mass (approximate)										
Type 66 ECC	(kg/m)	3.9	4.4	5.5	6.4	7.6	8.9	10.5	11.9	14.5
Minimum bending radius	(mm)	430	450	480	520	550	590	650	670	740
Maximum recommended tension	(kN)	1.1	1.6	2.3	3.2	4.3	5.4	6.8	8.3	10.8

* Tolerance - ±3% of approx. value

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Table 2

Electrical Properties									
Power cores									
Maximum cond. DC resistance @ 20^{0}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^{0}C (Ω/km)	1.05	0.749	0.521	0.368	0.279	0.218	0.176	0.145	0.110
Reactance (Ω/km)	0.124	0.116	0.109	0.105	0.101	0.096	0.092	0.091	0.087
Impedance (Z) @ 90^{0}C (Ω/km)	1.06	0.758	0.532	0.383	0.297	0.238	0.199	0.171	0.140
Minimum combined screen resistance @ 23 ^{0}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^{0}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	23	29
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