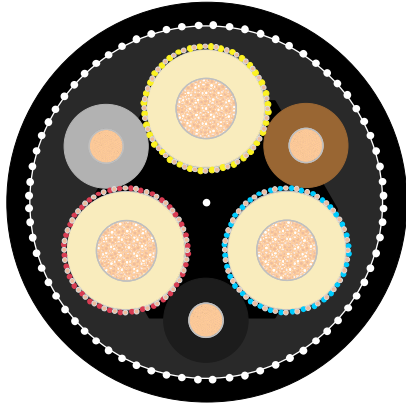


# TYPE 63 1,9/3,3 kV

SANS 1520-1

# POWERMITE

Flexible copper screened mining cables



CONSTRUCTION	
<b>Cable type</b>	Type 63 1,9/3,3 kV to SANS 1520-1
<b>Conductors</b>	Flexible class 5 comply to SANS 1411 - 1 from tinned annealed copper wires left lay.
<b>Insulation</b>	Ethylene propylene thermosetting compound type RD 3 comply to SANS 1411-3
<b>Insulation screen</b>	The braid of tinned copper wires .
<b>Cable assembly</b>	Three tinned copper braided screened power cores and three unscreened pilot cores one in each interstice laid up in the right hand lay around semi-conductive cradle centre .
<b>Internal sheath</b>	Poly-chloroprene thermosetting compound type RS 6 comply to SANS 1411-3 .
<b>Reinforcing braid</b>	An open nylon braid . Minimum 16 of nylon strings .
<b>Outer sheath</b>	Poly-chloroprene thermosetting compound type RS 6 comply to SANS 1411-3 . Inner and outer sheath are bonded to provide proper torsional protection , black .
<b>Physical Properties</b>	As per Table 1.
<b>Electrical Properties</b>	As per Table 2.
<b>Tests</b>	SANS 1520-1
<b>Marking</b>	Legible and indelible ink jet or embossing (for 25mm <sup>2</sup> and larger ) as per order. Standard marking : TF KABLE 3 Type 63 (size ) (Year)

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

APPLICATIONS
<ul style="list-style-type: none"> <li>▪ Electrically driven machines , movable electric apparatus in hazardous areas. Stackers , shearers , conveyor systems. Suitable for reeling purposes.</li> <li>▪ Other industrial applications .</li> </ul>

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

Table 1

Physical Properties										
Power cores										
Conductor sizes	(mm <sup>2</sup> )	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	(%)	80	80	80	80	80	80	80	80	80
Approx. summarized screen cross-section for power cores (weighing method)	(mm <sup>2</sup> )	31	33	38	42	47	50	55	60	64
Pilot cores										
Conductor sizes	( mm <sup>2</sup> )	10	10	16	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	5.3	5.3	5.3	5.3	6.8	6.8	6.8
Lay Ratio (maximum)	(x PCD)	8	8	8	8	8	8	8	8	8
Cable diameter										
Approx. *	(mm)	44	48	50,5	56	61	63	66	72	78
Cable mass (approx.)	(kg/m)	3.6	4.2	4.4	6.4	7.7	8.5	10.5	11.4	14.0
Minimum bending radius	(mm)	280	290	310	350	370	380	400	440	480
Maximum recommended tension	(kN)	1.1	1.6	2.3	3.2	4.3	5.4	6.8	8.3	10.8

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Table 2

Electrical Properties									
Power cores									
Maximum cond. DC resistance @ 20 <sup>0</sup> C (Ω/km)	0.859	0.610	0.424	0.299	0.227	0.177	0.143	0.117	0.0882
Maximum cond. DC resistance @ 90 <sup>0</sup> C (Ω/km)	1.10	0.778	0.542	0.382	0.290	0.227	0.183	0.150	0.115
Reactance (Ω/km)	0.122	0.113	0.107	0.103	0.090	0.088	0.085	0.084	0.083
Impedance (Z) @ 90 <sup>0</sup> C (Ω/km)	1.11	0.786	0.552	0.396	0.304	0.243	0.202	0.172	0.142
Sustained current rating @ 30 <sup>0</sup> C ambient									
Laid out straight (A)	130	160	200	245	295	345	390	440	520
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

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