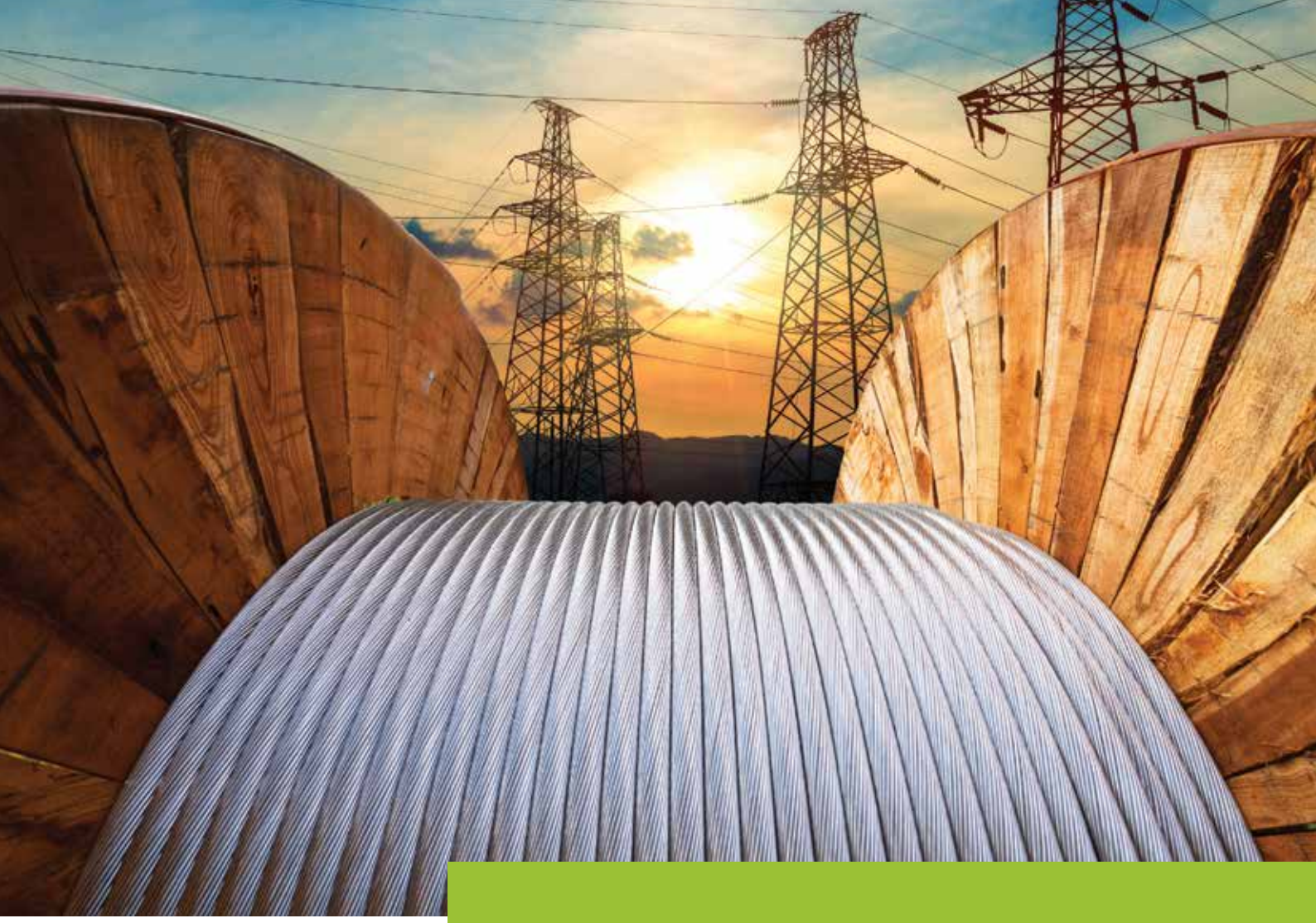

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LOW VOLTAGE PVC CABLE DATA

ELECTRICAL AND PHYSICAL PROPERTIES OF 3 AND 4 CORE PVC INSULATED PVC BEDDED SWA PVC SHEATHED 600/1000V CABLES MANUFACTURED TO SABS 1507:1990

D1 = Diameter over bedding sheath
d = Diameter of armour wire
D2 = Diameter over outer sheath

COPPER CONDUCTORS

Cable Size	ELECTRICAL PROPERTIES						PHYSICAL PROPERTIES							
	Current Ratings			Impedance	Volt Drop	1 Sec Short Circuit Rating	Nominal Diameters						Approximate Mass	
							D1		d		D2			
	Ground	Ducts	Air				3c	4c	3c	4c	3c	4c	3c	4c
(mm²)	(A)	(A)	(A)	(Ω/km)	(mV/A/m)	(kA)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)	(kg/km)
1.5	23	18	18	14.48	25.080	0.17	8.51	9.33	1.25	1.25	14.13	14.95	448	501
2.5	30	24	24	8.87	15.363	0.28	9.61	10.56	1.25	1.25	15.23	16.18	522	597
4	38	31	32	5.52	9.561	0.46	11.40	12.57	1.25	1.25	17.02	18.39	667	762
6	48	39	40	3.69	6.391	0.69	12.58	13.90	1.25	1.25	18.4	19.72	790	910
10	64	52	54	2.19	3.793	1.15	14.59	16.14	1.25	1.25	20.41	21.96	996	1169
16	82	67	72	1.38	2.390	1.84	16.55	19.18	1.25	1.25	22.37	25.92	1295	1768
25	126	101	113	0.8749	1.515	2.87	19.46	21.34	1.60	1.60	26.46	28.34	1838	2196
35	147	120	136	0.6335	1.097	4.02	20.89	23.97	1.60	1.60	27.89	31.17	2215	2732
50	176	144	167	0.4718	0.817	5.75	24.26	28.14	1.60	1.60	31.46	36.54	2871	3893
70	215	175	207	0.3325	0.576	8.05	27.07	31.29	2.00	2.00	35.47	40.09	3617	4837
95	257	210	253	0.2460	0.427	10.92	31.19	35.82	2.00	2.00	39.99	44.62	4901	6115
120	292	239	293	0.2012	0.348	13.80	33.38	38.10	2.00	2.00	42.18	47.40	5720	7269
150	328	269	336	0.1698	0.294	17.25	36.68	42.05	2.00	2.00	45.98	52.65	6908	9250
185	369	303	384	0.1445	0.250	21.27	40.82	46.75	2.50	2.50	51.12	57.45	8690	11 039
240	422	348	447	0.1220	0.211	27.60	46.43	53.06	2.50	2.50	57.13	64.16	10 767	13 726
300	472	397	509	0.1090	0.189	34.50	51.10	58.53	2.50	2.50	62.20	70.13	12 950	16 544

ALUMINIUM CONDUCTORS

Cable Size	ELECTRICAL PROPERTIES						PHYSICAL PROPERTIES							
	Current Ratings			Impedance	Volt Drop	1 Sec Short Circuit Rating	Nominal Diameters						Approximate Mass	
							D1		d		D2			
	Ground	Ducts	Air				3c	4c	3c	4c	3c	4c	3c	4c
(mm²)	(A)	(A)	(A)	(Ω/km)	(mV/A/m)	(kA)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)	(kg/km)
25	98	79	88	1.4448	2.502	1.80	17.76	20.65	1.60	1.60	24.76	27.65	1301	1554
35	119	95	108	1.0465	1.813	2.52	19.33	21.93	1.60	1.60	26.33	29.13	1477	1757
50	142	113	132	0.7749	1.342	3.61	21.87	25.05	1.60	1.60	29.07	32.25	1782	2150
70	171	138	164	0.5388	0.9333	5.05	24.76	29.27	1.60	1.60	31.96	37.67	2132	2930
95	204	165	201	0.3934	0.681	6.86	28.68	33.73	2.00	2.00	37.08	42.53	2908	3647
120	235	186	234	0.3148	0.545	8.66	31.09	35.44	2.00	2.00	39.89	44.24	3328	4023
150	263	213	270	0.2607	0.452	10.83	33.99	39.39	2.00	2.50	42.79	49.69	3837	5276
185	295	240	308	0.2133	0.369	13.35	37.80	44.51	2.00	2.50	47.10	54.81	4557	6231
240	340	278	362	0.1708	0.296	17.32	42.60	50.04	2.50	2.50	52.9	61.14	5977	7550

UNDER SHORT CIRCUIT CONDITIONS A MAXIMUM CONDUCTOR TEMPERATURE OF 160°C IS ALLOWED FOR A MAXIMUM OF 1 SECOND
PVC CURRENT RATING ARE BASED ON THE FOLLOWING ENVIRONMENTAL PARAMETERS.

Maximum Sustained Conductor Temperature	Ground Temperature	Ambient Air Temperature (Free air Shared)	Ground Thermal Resistivity	Depth of Laying to Top of Cable or Dust
70°C	25°C	30°C	1.2Km/W	500mm

ELECTRICAL AND PHYSICAL PROPERTIES OF SINGLE PVC INSULATED CABLES WITH STRANDED COPPER CONDUCTORS, UNARMOURED, PVC SHEATHED 600/1000V MANUFACTURED TO SABS 1507:1990

(1) D1 is a diameter over the conductor
(2) D2 is the diameter over the PVC sheath

Rated Area	Nominal Diameter		Nominal Mass	Impedance	Cables AC or DC			Cables in Trefoil Formation			
	D1	D2			Current Rating		Voltage Drop	Current Rating			Voltage Drop
(mm²)	D1	D2	(kg/km)	(Ω/km)	Ground	Air	(mV/A/m)	Ground	Duct	Air	(mV/A/m)
25	5.95	11.55	366	0.8767	129	139	1.75	127	121	109	1.52
35	7.00	12.60	469	0.6356	171	169	1.27	153	132	133	1.10
50	8.15	14.55	632	0.4745	204	207	0.95	180	155	164	0.82
70	9.79	16.19	880	0.3356	254	262	0.67	221	190	207	0.58
95	11.54	18.34	1160	0.2500	308	325	0.50	265	226	256	0.43
120	12.96	19.76	1413	0.2054	353	379	0.41	301	256	298	0.36
150	14.39	22.29	1734	0.1734	402	435	0.35	338	287	341	0.30
185	16.10	24.10	2145	0.1499	461	504	0.30	381	323	396	0.26
240	18.71	27.11	2725	0.1268	545	602	0.25	442	372	473	0.22
300	21.45	30.25	3375	0.1131	627	697	0.23	499	419	550	0.20
400	24.30	33.50	4395	0.1028	735	815	0.21	565	472	640	0.18
500	26.51	36.51	5299	0.0963	856	948	0.19	634	532	732	0.17
630	33.15	43.15	6965	0.0890	996	1108	0.16	718	603	867	0.15

SUSTAINED CURRENT RATING FACTORS FOR NON-STANDARD CONDITIONS

Maximum Conductor Temperature (°C)	Ground Temperature (°C)			
	25	30	35	40
70	1,00	0,95	0,90	0,85

Maximum Conductor Temperature (°C)	Ground Temperature (°C)			
	30	35	40	45
70	1,00	0,94	0,87	0,79

Depth of Laying (mm)	Direct in Ground
500	1,00
800	0,97
1000	0,95
1250	0,94
1500	0,93
2000	0,92

MECHANICAL PROPERTIES

Nominal Area (mm²)	3 CORE		4 CORE	
	Maximum Pulling Force During Installation		Maximum Pulling Force During Installation	
	Sock (kN)	Conductors (kN)	Sock (kN)	Conductors (kN)
1,5	0,04	0,22	0,05	0,29
2,5	0,05	0,37	0,06	0,49
4	0,08	0,59	0,11	0,78
6	0,11	0,88	0,14	1,18
10	0,16	1,47	0,22	1,96
16	0,24	2,35	0,42	3,14
25	0,46	3,68	0,61	4,90
35	0,57	5,15	0,89	6,86
50	0,92	7,35	1,68	9,80
70	1,49	10,29	2,43	13,72
95	2,40	13,97	3,73	18,62
120	2,96	17,64	4,75	23,52
150	4,20	22,05	7,22	29,40
185	6,42	27,20	10,24	36,26
240	10,01	35,28	15,93	47,04
300	14,07	44,10	22,74	58,80

Number of Cables in Group	Direct in Ground				
	Axial Spacing (mm)				
	Touching	150	300	450	600
2	0.81	0.87	0.91	0.93	0.94
3	0.70	0.78	0.84	0.87	0.90
4	0.63	0.74	0.81	0.86	0.89
5	0.59	0.70	0.78	0.83	0.87
6	0.56	0.67	0.76	0.82	0.86

CURRENT RATING FOR GROUPING OF MULTICORE CABLES INSTALLED HORIZONTALLY IN AIR

Number of Cables	1	2	3	6	9
Condition	Derating Factor				
Cables Touching	1	0,9	0,84	0,8	0,75
Clearance D* between Cables	1	0,95	0,9	0,88	0,85

*D is overall diameter of one cable

GLAND AND CABLE RATING CHART

CABLE CONSTRUCTION: PLAIN ANNEALED STRANDED COPPER CONDUCTORS, PVC INSULATED, PVC BEDDED, GALVANISED STEEL WIRE ARMOURED, PVC SHEATHED (600/1000V). SABS 1507/1000

Approximate Dimensions and Nett Mass per 100m				Sustained Current Ratings			Volt Drop	Gland to Suit	Clamp to Suit
Rated Area	Number of Cores	Max Overall Diameter	Nett Mass	In Air	Laid Direct	In Ducts	Per m/A	Size	Size
(mm²)	-	(mm)	(kg)	(A)	(A)	(A)	(mV)	-	-
1.5	2	14.0	39	23	29	28	29	0	E26
	3	14.5	44	20	24	20	25	0	E27
	4	15.5	49	20	24	20	25	0	E27
2.5	2	15	45	31	37	31	18	0	E27
	3	15.5	50	26	32	26	15	0	E28
	4	16.5	58	26	32	26	15	0-1	E28
4	2	17	59	41	50	41	11	0-1	E28
	3	17.5	66	36	42	34	9.5	1	E28
	4	18.5	77	36	42	34	9.5	1	E28
6	2	17.5	67	53	62	51	7.3	1	E28
	3	18.5	78	45	53	43	6.4	1	E28
	4	20.0	91	45	53	43	6.4	2	E30
10	2	21	89	72	83	68	4.4	2	E30
	3	22	102	62	70	58	3.8	2	E30
	4	23.5	120	62	70	58	3.8	2	E30
16	2	18.5	93	96	107	88	2.8	2	E30
	3	20.5	114	82	91	75	2.4	2	E30
	4	23	140	82	91	75	2.4	3	E32
25	2	21.5	120	128	142	116	1.75	2-3	E30
	3	24.5	160	109	119	96	1.50	3	E32
	4	27.5	200	109	119	96	1.50	3	E32
35	2	23	142	156	171	139	1.25	3	E30
	3	27.5	200	133	143	116	1.10	3	E32
	4	29.5	247	133	143	116	1.10	3-4	E34
50	3	29.5	250	162	169	138	0.81	4	E34
	4	34	338	162	169	138	0.81	4	E34
70	3	33	344	205	210	171	5.57	4	E34
	4	39.5	470	205	210	171	0.57	4-5	E35
95	3	38.5	482	252	251	205	0.43	4-5	E36
	4	45	612	252	251	205	0.43	5	E36
120	3	42.5	590	291	285	234	0.35	5	E36
	4	47	752	291	285	234	0.34	5	E38
150	3	45	705	334	320	263	0.29	5-6	E38
	4	53	960	334	320	263	0.29	6	E40
185	3	52	910	383	361	298	0.25	6	E40
	4	58	1150	383	361	298	0.25	6	E42

USEFUL FACTS

- 1 HP = 746 Watts
- 1 kW = 1.341 HP
- 1 metre = 39.37"
- 1" = 25.4mm
- 1kg = 2.2lb
- 1 lb = 0.4545kg

EARTH WIRE TABLE

Earth Wire	Kg per 1000m	Earth Wire	Kg per 1000m
1.5mm²	14.0	35.0mm²	319.5
2.5mm²	23.6	50.0mm²	454.5
4.0mm²	37.0	70.0mm²	632.9
6.0mm²	54.9	95.0mm²	840.3
10.0mm²	94.7	120.0mm²	1 099.0
16.0mm²	144.7	150.0mm²	1 370.0
25.0mm²	230.8	185.0mm²	1 613.0

3-PHASE FORMULAE

(1) Voltage Drop = 1.73 x I x R
Where I = Line current per phase
R = Resistance of one core only

(2) kW = kVA x Power Factor

$$kW = \frac{\text{LINE AMPS x LINE VOLTS x 1.73 x POWER FACTOR}}{1000}$$

$$kW = \frac{\text{HORSE POWER x 746}}{\text{1000 x EFFICENCY}}$$

(3) $$kVA = \frac{kW}{\text{POWER FACTOR}}$$

$$kVA = \frac{\text{LINE AMPS x LINE VOLTS x 1.73}}{1000}$$

$$kVA = \frac{\text{HORSE POWER x 746}}{\text{1000 x EFFICENCY x POWER FACTOR}}$$

(4) $$\text{LINE AMPS} = \frac{kW \times 1000}{\text{LINE VOLTS x 1.73 x POWER FACTOR}}$$

$$\text{LINE AMPS} = \frac{kW \times 1000}{\text{LINE VOLTS x 1.73}}$$

$$\text{LINE AMPS} = \frac{kW \times 1000}{\text{LINE VOLTS x 1.73 x POWER FACTOR x EFFICIENCY}}$$

kW = KiloWatt kVA = KiloVolt Amps Power Factor = Cos Φ

CABLE SPLICING GUIDE

Cable Size (mm²) 2-4 Core	Dura-cast Reference	Mould Dimensions (mm)			
		Length	Diameter	Minimum Cable Diameter	Maximum Cable Diameter
1.5	P0	185	32	6	20
2.5	P0	185	32	6	20
4	P0	185	32	6	20
6	P1	240	38	9	30
10	P1	240	38	9	30
16	P2	270	44	17	34
25	P2	270	44	17	34
35	P2.5	310	60	22	42
50	P2.5	310	60	22	42
70	P3	400	68	28	52
95	P3.5	432	86	32	56
120	P3.5	432	86	32	56
150	P4	550	100	36	65
185	P4	550	100	36	65
240	P5	660	140	48	80

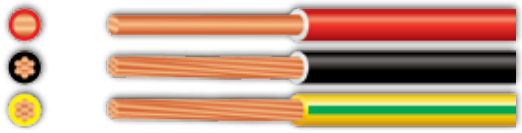
INDEX

PVC GENERAL PURPOSE WIRE 1kV

HOUSE WIRE
600/1000V

Cable Description

High conductivity annealed stranded copper conductors to SANS 1411 Part 1. Insulated with PVC and skin coloured in plain colours to SANS 1411 Part 2. Cable is manufactured to SANS 1507 Part 2.



Installation Information

For the wiring of industrial buildings, housing, control panels and light fittings.

Properties

Specifications : SANS 1507-2

Temperature Range : -10°C to 70°C

Voltage Rating : 600/1000V

Core Identification : Complete range of colours

Packaging : 100mt shrink-wrapped perforated coils/500mt reels

Technical Data

Cable Size (mm²)	Nominal Stranding Number x Diameter	Approximate Cable Diameter (mm)	Current Rating* (A)	Conductor Resistance @ 20°C Maximum (Ω/km)	1Φ Voltage Drop (mV/A/mt)	Approximate Cable Mass (kg/100mt)
600/1000 V						
1	7/0,42	3,0	17	18,1	43	1,7
1,5	7/0,53	3,3	21	12,1	29	2,2
2,5	7/0,66**	3,6	27	7,41	18	3,2
4	7/0,86**	4,5	36	4,61	11	5,2
6	7/1,04**	5,0	45	3,08	7,4	7,0
10	7/1,35**	6,0	61	1,83	4,4	11,1
16	7/1,67**	6,9	78	1,15	2,8	16,7
25	19/1,38**	8,4	104	0,73	1,7	25,6
35	19/1,62**	9,5	125	0,52	1,3	34,7
50	19/1,88**	11,3	149	0,39	0,93	47,2
70	19/2,28**	12,6	190	0,27	0,65	66,1
95	19/2,50	15,8	238	0,19	0,48	97,6
120	37/2,03	17,5	272	0,15	0,38	120,0
150	37/2,28	19,7	308	0,12	0,32	147,0
185	37/2,50	22,0	350	0,10	0,26	182,2

Product Code

Cable Size (mm²)	Black	Blue	Brown	Green/ Yellow	Grey	Orange	Pink	Violet	Red	White	Yellow
1	F0000232	F0000233	F0000234	F0000235	F0000236	F0000237	F0000238	F0000239	F0000240	F0000241	F0000242
1,5	F0000245	F0000246	F0000247	F0000249	F0000250	F0000252	F0000253	F0000254	F0000256	F0000258	F0000259
2,5	F0000262	F0000263	F0000264	F0000266	F0000267	F0000268	F0000269	F0000270	F0000272	F0000274	F0000275
4	F0000278	F0000279	F0000280	F0000282	F0001305	F0000283	F0000284	F0000285	F0000287	F0000289	F0000290
6	F0000293	F0000294	-	F0000296	-	-	-	-	F0000298	F0000300	-
10	F0000303	F0000304	-	F0000306	-	-	-	-	F0000308	F0000310	-
16	F0000313	F0000314	-	F0000316	-	-	-	-	F0000318	F0000320	F0000321
25	F0000323	F0000324	-	F0000326	-	-	-	-	F0000327	F0000328	-
35	F0000330	F0000331	-	F0000333	-	-	-	-	F0000335	F0000337	-
50	F0000340	F0000341	-	F0000343	-	-	-	-	F0000344	F0000346	-
70	F0000349	F0002343	-	F0000352	-	-	-	-	F0000354	F0000355	-
95	F0000356	F0001315	-	F0000358	-	-	-	-	F0002346	F0001316	-
120	F0000360	-	-	F0000361	-	-	-	-	F0001317	-	-
150	F0001320	-	-	F0002351	-	-	-	-	F0000363	-	-
185	F0000364	-	-	F0000365	-	-	-	-	-	-	-

***Note** - Rating calculated for 1kV cable.
- Rating based on two touching cables installed in a duct.
- Assumed ambient air temperature is 30°C.
- Assumed maximum conductor temperature is 70°C.

****Note** - Compacted Conductors.

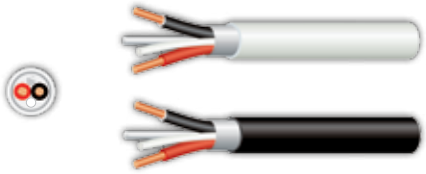
Note - Items above with (-) in the Product Code column are available on special request.

SURFIX® CABLE

300/500V

Cable Description

Copper conductors to SANS 1411 Part 1, PVC insulated to SANS 1411 Part 2, laid up with a bare tinned copper earth wire in contact with a longitudinal aluminium/polyethylene laminate, UV stable PVC sheathed to SANS 1411 Part 2.



Installation Information

Complies with SANS 10142 "Code of Practice for Wiring of Premises" Section 6:

- Surface wiring
- Under-plastering wiring
- Wiring in hollow walls
- Wiring in roof spaces

Note: The cable shall not be buried direct in concrete or in screed. Joints in the wiring shall be in boxes only.

Properties

UV Stable

Specifications : SANS 1507-2

Temperature Range : -10°C to 70°C

Voltage Rating : 300/500V

Sheath Identification : White or black

Core Identification : **2 Core** - Red and black, **3 Core** - Red, yellow, blue, **4 Core** - Red, yellow, blue, black

Packaging : 100mt shrink-wrapped coils
: Available on 500 and 1000mt wooden drums on request (depending on size)

Technical Data

Cable Size*		Electrical Properties					Physical Properties	
		Conductor Resistance (DC @ 20°C)		Current Rating**	Voltage Drop***	1 Second Short Circuit Rating	Approximate Overall Diameter	Approximate Cable Mass
Phase	Earth	Phase	Earth					
(mm²)		(Ω/km)		(A)	(mV/A/mt)	(kA)	(mm)	(kg/100mt)
2 Core								
1,5	1	12,1	18,2	17	29	0,14	7,8	10,6
2,5	1,5	7,41	12,2	23	18	0,24	8,8	14,4
4		4,61		30	11	0,38	10,1	20,8
6	2,5	3,08	7,56	38	7,3	0,58	11,3	25,7
3 Core								
1,5	1	12,1	18,2	15	25	0,14	8,0	10,9
2,5	1,5	7,41	12,2	20	15	0,24	9,3	15,7
4		4,61		27	9,5	0,38	10,8	21,0
6	2,5	3,08	7,56	34	6,4	0,58	12,0	28,7
4 Core								
1,5	1	12,1	18,2	15	25	0,14	8,7	13,3
2,5	1,5	7,41	12,2	20	15	0,24	10,2	19,3
4		4,61		27	9,5	0,38	11,8	26,5
6	2,5	3,08	7,56	34	6,4	0,58	12,8	33,5

Product Code

Cable Size	Black			White		
(mm²)	2 Core	3 Core	4 Core	2 Core	3 Core	4 Core
1,5	F0000598	F0000603	F0000608	F0000600	F0000605	F0000609
2,5	F0000614	F0000619	F0000623	F0000616	F0000620	F0000624
4	F0000627	F0000631	F0000635	F0000628	F0000632	F0000636
6	F0000639	F0000641	F0000643	F0000640	F0000642	F0000644
10	F0000610			F0000611		

***Note** - Conductors larger than 2,5mm² are usually stranded.
****Note** - Maximum conductor temperature 70°C, and installed as per installation Method 3 of SANS 10142-1.
*****Note** - 2 Core - Voltage drop is phase to Neutral (i.e. Single-phase).
- 3 and 4 Core - Voltage drop is phase-to-phase. (i.e. Three phase AC).

FLAT TWIN AND EARTH CABLE

300/500V

Cable Description

Copper conductors to SANS 1411 Part 1, PVC insulated to SANS 1411 Part 2, laid up with a bare copper earth-continuity-conductor between them, UV stable PVC sheathed to SANS 1411 Part 2.

Installation Information

Complies with SANS 10142/2001 "Code of Practice for the Wiring of Premises" Section 6, Clause 6.3.6:

- Surface wiring
- Under-plastering wiring
- Roof access wiring
- Wiring in hollow walls

Note: The cable should not be buried direct in concrete or in screed. Joints in the wiring should be in boxes only.

Properties

Specifications	: SANS 1507-2	Sheath Identification	: White or black
Temperature Range	: -10°C to 70°C	Core Identification	: **2 Core** - Red and black, **3 Core** - Red, yellow, blue
Voltage Rating	: 300/500V	Packaging	: 100mt shrink-wrapped coils

Technical Data

Cable Size*		Electrical Properties					Physical Properties	
		Conductor Resistance (DC @ 20°C)		Current Rating**	Voltage Drop***	1 Second Short Circuit Rating	Approximate Overall Diameter	Approximate Cable Mass
Phase	Earth	Phase	Earth					
(mm^2)		(Ω/km)		(A)	(mV/A/mt)	(kA)	(mm)	(kg/100mt)
2 Core								
1,5	1	12,1	18,1	17	29	0,14	8,7 x 4,7	8,7
2,5	1,5	7,4	12,1	23	18	0,24	10,3 x 5,5	12,8
4	1,5	4,61	12,1	30	11	0,38	11,9 x 6,4	17,5
6	2,5	3,08	7,41	38	7,3	0,58	13,4 x 7,0	23,3
10	4	1,83	4,61	52	4,4	0,96	16,5 x 8,3	36,1
3 Core (Trip)								
1	1	18,2	18,2	12	38	0,11	4,4 x 10,4	8,9
1,5		12,1		15	25	0,14	4,8 x 10,5	9,9
2,5	1,5	7,4	12,2	20	15	0,24	5,5 x 12,3	14,1

Product Code

Cable Size	Black		White	
(mm^2)	2 Core	3 Core	2 Core	3 Core
1	F0000663	-	F0000665	F0000659
1,5	F0000667	-	F0000669	F0000660
2,5	F0000671	-	F0000672	F0000661
4	F0000674		F0000675	
6	-		F0000676	
10	F0000678		F0000679	
16	-		F0000681	

***Note** - Conductors larger than 2,5mm^2 are usually stranded.
****Note** - Maximum conductor temperature 70°C and installed as per installation method 3 of SANS 10142-1.
*****Note** - 2 core - voltage drop is phase to neutral (i.e. single-phase).
- 3 and 4 core - voltage drop is phase-to-phase. (i.e. three phase AC).

Note - Items above with (-) in the Product Code column are available on special request.

CABTYRE CABLE

FLEXIBLE WIRING
300/300V AND 300/500V

Cable Description

High conductivity bunched plain flexible copper conductors to SANS 1411 Part 1.
Insulated and colour coded with general purpose flexible grade PVC to SANS 1411 Part 2.
Cores are twisted together and sheathed with a flexible grade PVC.

Installation Information

For supplying power to all types of electrical, domestic and industrial appliances and equipment such as:

- Power tools
- Electric lawnmowers
- Kitchen appliances
- Extension leads
- Multi plug extensions
- Small industrial machinery

Properties

Specifications : SANS 1574

Temperature Range : -10°C to 70°C

Voltage Rating : Light Duty (LD) 300/300V and Normal Duty (ND) 300/500V

Sheath Identification : White, black or grey

Core Identification : **2 Core** - Blue and brown, **3 Core** - Blue, brown and yellow/green, **4 Core** - Blue, brown, black and yellow/green, **5 Core** - Blue, black, brown, yellow/green and violet, **7 Core** - Blue, brown, black, yellow/green, violet, pink and orange

Packaging : 100mt shrink-wrapped coils/500mt and 1000mt lengths available on request

Technical Data

Cable Size	Number of Cores	Nominal Stranding Number x Diameter	Approximate Overall Diameter	Conductor Resistance @ 20°C Maximum	Current Rating*		Voltage Drop		Approximate Cable Mass
					1Φ	3Φ	1Φ	3Φ	
(mm²)			(mm)	(Ω/km)	(A)		(mV/A/mt)		(kg/100mt)
Light Duty 300/300V									
0,5	2	15/0,2	5,2	39	3	3	93	80	3,9
	3		5,5						4,7
	4		6,0						5,5
	5		6,6						6,7
0,75	3	23/0,2	6,1	26	6	6	62	54	5,5
Normal Duty 300/500V									
0,75	2	23/0,2	6,2	26	6	6	62	54	5,2
	3		7,0						6,7
	4		7,2						7,8
	5		8,2						9,9
	7		8,7						12,6
1	2	30/0,2	6,6	19,5	10	10	46	40	6,3
	3		7,0						7,6
	4		8,0						9,8
	5		8,6						11,6
	7		9,3						14,8
1,5	2	44/0,2	7,8	13,3	16	16	32	27	8,4
	3		8,3						10,8
	4		9,3						13,5
	5		10,0						16,2
	7		10,9						20,7
2,5	2	72/0,2	9,6	7,98	25	20	19	16	13,5
	3		10,3						16,8
	4		11,9						21,8
	5		12,2						24,2
	7		13,2						31,3
4	2	112/0,2	11,0	4,96	32	25	12	10	19,0
	3		11,4						25,0
	4		13,5						32,0
	5		14,1						33,9

***Note**
- Assumed ambient air temperature is 30°C.
- Assumed maximum conductor temperature is 70°C.

CABTYRE CABLE

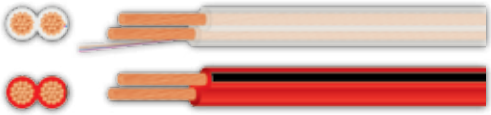
Product Code

Cable Size	Black					Grey					White				
(mm²)	2 Core	3 Core	4 Core	5 Core	7 Core	2 Core	3 Core	4 Core	5 Core	7 Core	2 Core	3 Core	4 Core	5 Core	7 Core
0,5	F0000083	F0000087	F0000091	F0000093		-	F0000088	-	-		F0000084	F0000089	F0000092	F0001519	
0,75	F0000095	F0000100	F0000106	F0000108	F0000110	F0003266	F0000101	-	-	-	F0000096	F0000099	F0000107	F0000109	-
1	F0000113	F0000119	F0000123	F0000126	F0000128	F0000114	F0000120	F0001521	-	-	F0000115	F0000121	F0000124	F0001522	F0001523
1,5	F0000131	F0000137	F0000143	F0000148	F0000153	-	F0000138	F0001525	F0000149	-	F0000132	F0000139	F0000144	F0000150	F0000154
2,5	F0000155	F0000161	F0000166	F0000171	F0000173	-	F0000162	F0000167	-	-	F0000156	F0000163	F0000168	F0000172	F0000174
4	F0000175	F0000176	F0000178	F0000181	F0000182	-	F0001530	F0000179	-	-	F0001529	F0000177	F0000180	-	-

Note - Items above with (-) in the Product Code column are available on special request.

AUDIO CORD CABLE (RIPCORD)

FLEXIBLE WIRING
300/300V



Cable Description

High conductivity bunched plain flexible copper conductors to SANS 1411 Part 1.
2 Core insulated with general purpose flexible grade PVC to SANS 1411 Part 2.

Installation Information

For the wiring of all types of:

- Intercoms
- Alarm systems
- Solar industry
- Audio and visual equipment

Technical Data

Cable Size	Nominal Stranding Number x Diameter	Approximate Cable Diameter	Current Rating*	Conductor Resistance @ 20°C Maximum	1Φ Voltage Drop	Approximate Cable Mass
(mm²)		(mm)	(A)	(Ω/km)	(mV/A/mt)	(kg/100mt)
0,2	7/0,2	1,6 x 3,2	1	92	248	0,95
0,4	11/0,2	2,1 x 4,2	2	48,8	98	1,6
0,5	15/0,2	2,5 x 5,0	3	39	93	2,2
0,75	23/0,2	2,7 x 5,4	6	26	62	2,8
1,00	30/0,2	2,9 x 5,8	10	19,5	46	3,6
1,5	44/0,2	3,2 x 6,4	16	13,3	32	4,3
2,5	72/0,2	3,9 x 7,9	25	7,98	19	6,9
4	112/0,2	4,7 x 9,4	32	4,96	12	10,9

***Note**
- Assumed ambient air temperature is 30°C.
- Assumed maximum conductor temperature is 70°C.

Product Code

Cable Size (mm²)-	Black	Brown	Clear	Grey	Red/Black	White
0,2	-	F0001322	F0001321	-	-	F0000520
0,5	F0000524	F0000525	F0000526	F0001326	F0000528	F0000527
0,75	F0000530	F0001327	F0000531	F0001328	-	F0000532
1	F0000533	F0000534	F0000535	-	-	F0000536
1,5	F0000537	-	-	-	F0000538	F0000539
2,5	-	-	-	-	F0000540	F0001330
4	-	-	-	-	F0000541	-

Note - Items above with (-) in the Product Code column are available on special request.

PANEL FLEX CABLE

SINGLE CORE FLEXIBLE WIRING
300/500V AND 600/1000V

Cable Description

High conductivity bunched plain flexible copper conductors to SANS 1411 Part 1. Insulated with general purpose flexible grade PVC in all colours to SANS 1411 Part 2.

Installation Information

For the wiring of all types of:

- Control panels
- Communication panels
- Light fittings
- Appliances

Properties

Specifications : SANS 1574-3

Temperature Range : -10°C to 70°C

Voltage Rating : 300/500V and 600/1000V

Core Identification : Blue, black, brown, yellow/green, orange, pink, violet, grey, white and red

Packaging : 100mt shrink-wrapped coils
: 500mt lengths available on request
: 2500mt, 4000mt and 7000mt lengths down coiled into cardboard barrels available on request (depending on size)

Technical Data

Cable Size	Nominal Stranding Number x Diameter	Approximate Cable Diameter	Current Rating*	Conductor Resistance @ 20°C Maximum	1Φ Voltage Drop	Approximate Cable Mass
(mm²)		(mm)	(A)	(Ω/km)	(mV/A/mt)	(kg/100mt)
600/1000V						
0,5	15/0,2	2,6	11	39	93,3	1,1
0,75	23/0,2	2,8	14	26	62,2	1,3
1	30/0,2	3,0	16	19,5	46,7	1,6
1,5	44/0,2	3,3	20	13,3	31,8	2,2
2,5	72/0,2	3,7	26	7,98	19,1	3,1
4	112/0,2	4,8	35	4,95	11,8	4,9
6	175/0,2	5,3	43	3,30	7,9	7,3
10	294/0,2	9,1	58	1,91	4,6	11,1
16	462/0,2	10,0	75	1,21	2,9	16,7
25	721/0,21	12,7	100	0,780	1,9	27,1
35	1026/0,21	14,5	122	0,55	1,3	35,8

***Note** - Assumed ambient air temperature is 30°C.
- Assumed maximum conductor temperature is 70°C.
- Rating for 2 wires only.

Product Code

Cable Size (mm²)	Black	Blue	Brown	Green/ Yellow	Grey	Orange	Pink	Violet	Red	White	Yellow
0,5	F0000433	F0000434	F0000435	F0000436	F0000437	F0000440	F0000439	F0000442	F0000441	F0000443	F0000444
0,75	F0000445	F0000446	F0000447	F0000448	F0000449	F0000451	F0000450	F0000453	F0000452	F0000454	F0000455
1	F0000456	F0000457	F0000458	F0000459	F0000461	F0000463	F0000462	F0000465	F0000464	F0000466	F0000467
1,5	F0000468	F0000469	F0000470	F0000471	F0000472	F0000474	F0000473	F0000476	F0000475	F0000477	F0000478
2,5	F0000489	F0000490	F0000491	F0000492	F0000493	F0001346	F0001343	F0001345	F0000494	F0000495	F0000496
4	F0000497	F0000498	F0000499	F0000500	F0000501	F0001348	-	F0001347	F0000502	F0000503	F0003426
6	F0000504	F0000505	F0000506	F0000507	F0000508	-	-	-	F0000509	-	F0000510
10	F0000479	F0000480	-	F0000481	-	-	-	-	F0000482	F0000483	-
16	F0000484	F0000485	-	F0000486	-	-	-	-	F0000487	F0000488	-
25	F0001350	F0001351	-	F1000353	-	-	-	-	F0001349	F0001352	-

Note - Items above with (-) in the Product Code column are available on special request.

PANEL SOLID

SINGLE CORE SOLID PANEL WIRE

Cable Description

High conductivity solid plain annealed copper conductor, insulated with general purpose grade PVC in plain colours. Insulation is water, oil and abrasion resistant.

Installation Information

For the wiring of all types of control panels, light fittings, appliances, communication panels, signalling relay racks and many other applications. Manufactured to SABS 1507, it is used by public transport services, municipalities, lighting manufacturers, electrical and electronic appliance manufacturers.

Properties

Specifications	: SABS 1507-2
Temperature Range	: -10°C to 80°C
Voltage Rating	: 300/500V
Test Voltage	: 2250V
Current Capacity	: 8A
Flexibility Class	: 1
Conductor Type	: High conductivity annealed copper
Insulation	: General purpose grade PVC
Core Identification	: Blue, black, brown, white, red, violet, green, grey, orange, pink and yellow
Packaging	: Available in 100mt shrink-wrapped coils

Technical Data

Cable Size	Nominal Diameter	Nominal Amps	Approximate Cable Mass
(mm^2)	(mm)	(A)	(kg/100mt)
1	2,1	8	1,1

Product Code

Cable Size (mm^2)	Black	Blue	Brown	Green	Grey	Orange	Red	White	Yellow
1	F0000511	F0000512	F0002391	F0002386	F0001341	F0001342	F0000516	F0000517	F0000518

ILLUMINATION CABLE

2 CORE FLAT CABLE

Cable Description

High conductivity stranded plain annealed copper conductors, insulated with flexible grade PVC, then sheathed with a flexible grade PVC in a flat parallel configuration.

Installation Information

For festoon lighting at festivals, parties, shows, braais and any application where quick fit lamp holders are used. The correct size profile and soft sheath allows for a watertight seal between the standard lamp holder and the cable.

Properties

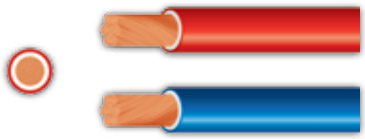
Specifications	: SABS 1507-2 (as a guide)	Conductor Type	: High conductivity annealed copper
Temperature Range	: -10°C to 80°C	Insulation	: Flexible grade PVC
Voltage Rating	: 300/500V	Sheath Identification	: Flexible grade PVC
Test Voltage	: 2250V	Sheath Colour	: Black
Current Capacity	: 27A	Core Identification	: Black and red
Flexibility Class	: 2	Packaging	: Available in 100mt shrink-wrapped coils

Technical Data

Cable Size	Number of Cores	Nominal Breadth Height	Nominal Amps	Approximate Cable Mass	Product Code
(mm^2)	(mm)	(mm)	(A)	(kg/100mt)	
2,5	2	10,2 x 5,6	27	11,55	F0002520

POWER PANEL FLEX CABLE

300/500V AND 600/1000V



Cable Description

Single core flexible copper conductors to SANS 1411 Part 1, insulated with general purpose flexible grade PVC and sheathed with a flexible grade waterproof PVC/Nitrile.

Installation Information

A flexible power cable where flexibility is needed in equipment such as:

- LV transformer connections
- Motor control centres
- General wiring applications
- Distribution boards

Properties

Specifications : SANS 1574-3

Temperature Range : -10°C to 70°C

Voltage Rating : 300/500V and 600/1000V

Core Identification : Blue, black, brown, grey, green, yellow, white and red

Packaging : 100mt shrink-wrapped coils
: 500mt lengths available on request
: 2500mt, 4000mt and 7000mt lengths down coiled into cardboard barrels available on request (depending on size)

Technical Data

Cable Size	Approximate Conductor Diameter	Approximate Cable Diameter	Impedance @ 70°C	Approximate Voltage Drop (mV/A/mt)		Continuous Current Rating* (A)		Approximate Cable Mass
(mm²)	(mm)		(Ω/km)	1ϕ	3ϕ	1ϕ	3ϕ	(kg/100mt)
16	5,2	10,8	1 460	2,8	2,4	76	64	23,00
25	7,1	13,5	0,933	1,7	1,5	104	88	31,50
35	8,5	15,3	0,663	1,3	1,1	125	106	42,50
50	10,4	18,4	0,462	0,9	0,8	148	126	57,50
70	11,6	21,2	0,326	0,7	0,6	187	159	76,00
95	14,1	24,1	0,247	0,5	0,4	232	198	101,00
120	15,6	25,6	0,193	0,4		265	226	129,00
150	17,30	27,7	0,16	0,3	0,3	299	255	159,00
185	20,00	30,8	0,14			343	292	189,00

***Note**
- Current ratings are based on cable installed in a cubicle and may vary depending on other applications.
- Assumed ambient air temperature is 30°C.
- Maximum conductor temperature is 70°C.
- Derating of maximum current for other ambient temperatures - use rating factor X as given below:

Ambient temperature °C	: 25	30	35	40	45
Rating factor X	: 1,04	1,00	0,95	0,91	0,85
Fault rating	: 115A/mm² (1 Second)				

Product Code

Cable Size (mm²)	Green	Blue	Grey	Red	Brown	Yellow	Black
16	F0002815	-	-	-	-	-	-
25	-	F0002816	-	-	-	-	-
35	-	-	F0002817		-	-	-
50	-	-	–	F0002818	-	-	-
70	-	-	-	-	F0002819	-	-
95	-	-	-	-	-	F0002820	-
120	–	-	-	-	-	-	F0002821
150		-	-	-	-	-	F0002822

Note - Items above with (-) in the Product Code column are available on special request.

SILICONE CABTYRE CABLE

FLEXIBLE WIRING
300/500V

Cable Description

High conductivity tinned stranded, flexible copper conductors to SANS 1411 Part 1. Insulated with Silicone Rubber Type RD7 and sheathed with Silicone Rubber Type RS8 to SANS 1574 Part 4 Type R7, H05SS-F.

Installation Information

For the wiring of all types of:

- Stoves
- Fluorescent lights
- Electrical motors and pumps
- All other types of high temperature appliances

Properties

Specifications : SANS 1574-4 Pt4

Temperature Range : -50°C to 150°C
(Capable of current rating at 180°C if there are no limits imposed by environmental conditions)

Voltage Rating : 300/500V

Core Identification : **3 Core** - Blue, brown and yellow/green,
4 Core - Blue, brown, black and yellow/green
: Insulation and sheath is halogen free and has a low smoke emission
: Limiting Oxygen Index is 24%

Packaging : 100mt shrink-wrapped coils

Technical Data

Cable Size	Number of Cores	Nominal Stranding Number x Diameter	Approximate Cable Diameter	Conductor AC Resistance at 150°C	Current Rating*	Approximate Cable Mass
(mm²)		(kg/km)	(mm)	(Ω/km)	(A)	(kg/km)
0,75	3	24/0,2	7,6	40,3	17	72
1		32/0,2	9,9	30,2	21	127
1,5		30/0,25	10,8	20,7	26	135
	4		10,6			160
2,5	3	50/0,25	11,6	12,4	36	192
	4		11,8			237
4	3	56/0,3	13,5	7,7	56	283
	4		14,8			345

***Note**
- Assumed ambient temperature is 80°C.
- Maximum conductor temperature is 150°C.
- Derating of current rating for other ambient temperatures:

Ambient temperature °C	: 40	60	80	100	120	140	160
Rating factor X	: 1,22	1,12	1	0,87	0,73	0,57	0,37

Product Code

Cable Size	Red	
(mm²)	3 Core	4 Core
0,75	F0002261	F0001270
1,00	F0003342	F0009416
1,50	F0000185	F0002265
2,50	F0000188	F0002266
4,00	F0001485	-

Note - Items above with (-) in the Product Code column are available on special request.

SILICONE SINGLE CORE CABLE

FLEXIBLE WIRING
300/500V AND 600/1000V

Cable Description

High conductivity tinned stranded, flexible copper conductors to SANS 1411 Part 1.
Insulated with Silicone Rubber Type RD7 to SABS 1574 Part 4, H05SS-F & HIS-F in various colours.

Installation Information

For the wiring of all types of:

- Control panels
- Appliances
- Light fittings
- All high temperature applications

Properties

Specifications : SANS 1574 Pt4

Temperature Range : -50°C to 150°C (Capable of current rating at 180°C if there are no limits imposed by environmental conditions)

Voltage Rating : 300/500V (0,05mm² - 16mm²)
: 600/1000V (0,5mm² - 95mm²)

Core Identification : Red, black, blue, brown, green/yellow and white (other colours available on request)
: Insulation is halogen free and has a low smoke emission. Limiting Oxygen Index is 24%

Packaging : Shrink-wrapped

Technical Data

Cable Size	Nominal Stranding Number x Diameter	Approximate Cable Diameter		Conductor AC Resistance	Current Rating*		Approximate Cable Mass	
					Single Cable	Cable in Trefoil		
		300/500V	600/1000V	180°C	180°C		300/500V	600/1000V
(mm²)		(mm)		(Ω/km)	(A)		(kg/km)	
0,5	16/0,2	2,2	2,6	65,3	21	13	8,8	10,7
0,75	24/0,2	2,4	2,8	43,5	26	17	11,7	13,4
1	32/0,2	2,5	3,0	32,6	30	19	14,3	18,1
1,5	30/0,25	3,2	3,3	22,3	37	24	22,4	23,9
2,5	50/0,25	3,9	3,7	13,4	49	31	34,7	37,4
4	56/0,3	4,7	4,8	8,29	65	42	52,4	54,4
6	81/0,3	5,2	5,3	5,52	81	52	71,2	75,2
10	77/0,4	6,6	6,3	3,18	112	72	117,8	118,5
16	125/0,4	7,6	7,2	2,02	143	92	180,7	180,7
25	184/0,4	N/A	9,5	1,29	190	124	N/A	280
35	267/0,4		10,9	0,92	230	151		391
50	378/0,4		13,2	0,64	282	186		551
70	341/0,5		14,4	0,45	352	234		750
95	456/0,5		17,3	0,34	423	285		1010

***Note**

- Capable of continuous current rating at 180°C and 250°C if there are no limits imposed by environmental conditions.
- Ambient temperature is 80°C.
- Maximum conductor temperature is 150°C.
- Derating of current rating for other ambient temperatures:

Ambient temperature °C	: 40	60	80	100	120	140	160
Rating factor X	: 1,22	1,12	1	0,87	0,73	0,57	0,37

SILICONE SINGLE CORE CABLE

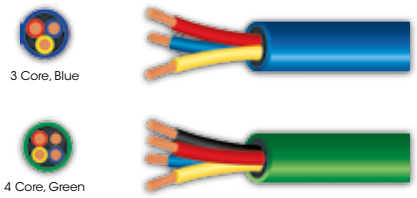
Product Code

Cable Size (mm²)	Black	Blue	Brown	Green	Grey	Orange	Red	Violet	White
0,5	F0001256	F0001257	-	F0001258	-	-	F0001259	-	F0001260
0,75	F0001261	F0001262	F0001263	F0001264	F0001265	-	F0001266	-	-
1	F0002468	F0002469	F0001460	-	-	-	F0002467	-	F0001463
1,5	F0000549	F0000551	F0000552	-	-	-	F0000557	-	F0000558
2,5	F0000559	F0000561	F0000562	-	F0000565	F0001467	F0000566	-	F0002474
4	F0000569	F0000570	-	-	-	-	F0000572	F0001483	F0000573
6	F0000574	F0000575	-	F0001491	-	-	F0000576	F0001493	F0000577
10	-	F0001276	-	F0001277	-	-	F0000579	F0001279	F0001449
16	F0001454	F0001455	-	-	-	-	-	-	-
25	F0001474	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	F0001479	-	-
50	F0001487	-	-	-	-	-	F0001488	-	-
70	F0001535	-	-	-	-	-	-	-	-
95	F0001556	-	-	-	-	-	-	-	-

Note - Items above with (-) in the Product Code column are available on special request.

SUBMERSIBLE PUMP CABLE

3 AND 4 CORE
600/1000V



Cable Description

High conductivity bunch plain flexible copper conductors to SANS 1411 Part 1. Cores insulated and bedded with Flexible PVC Grade. Final protection is given by a flexible PVC outer sheath.

Installation Information

Power supply of mobile and portable submersible pumps as used in:

- Quarries
- Cleaning and sewerage extraction plants
- Boreholes
- Farms
- De-watering

Properties

- Specifications : SANS 1574
- Temperature Range : -10°C to 70°C
- Insulation & Sheath : Flexible grade waterproof PVC
- Voltage Rating : 600/1000V
- Sheath Identification : **3 Core** - Blue, **4 Core** - Green
- Core Identification : **3 Core** - Red, yellow and blue
  4 Core - Red, yellow, blue and black
- Packaging : Available on 500mt wooden drums

Technical Data

Cable Size	Minimum Bending Radius	Approximate Cable Diameter	Current Rating*	Conductor Resistance @ 20°C Maximum	Voltage Drop		Approximate Cable Mass
					1Φ	3Φ	
(mm²)	(mm)	(kg/mt)	(A)	(Ω/km)	(mV/A/mt)		(kg/100mt)
3 Core (Blue)							
1,5 x 3	82	10,2	15	13,3	29	25	0,15
2,5 x 3	94	11,7	20	7,98	17	15	0,2
4 x 3	108	13,5	30	4,96	12	9,5	0,3
6 x 3	121	15,1	35	3,30	7,3	6,4	0,5
10 x 3	141	17,6	50	1,91	4,3	3,8	0,6
16 x 3	161	20,1	65	1,21	2,8	2,4	0,8
4 Core (Green)							
1,5 x 4	89	11,2	15	13,3	29	25	0,2
2,5 x 4	102	12,8	20	7,98	17	15	0,25
4 x 4	116	14,6	30	4,96	12	9,5	0,35
6 x 4	132	16,5	35	3,30	7,3	6,4	0,5
10 x 4	153	19,2	50	1,91	4,3	3,8	0,7
16 x 4	176	22,0	65	1,21	2,8	2,4	1

***Note**
- Assumed ambient air temperature is 30°C.
- Assumed maximum conductor temperature is 70°C.

Product Code

Cable Size	Blue	Green
(mm²)		
1,5 x 3	F0001510	
1,5 x 4		F0001512
2,5 x 3	F0000584	
2,5 x 4		F0001509
4 x 3	F0000588	
4 x 4		F0002487
6 x 3	F0001514	
6 x 4		F0001515
10 x 3	F0001516	
10 x 4		F0000582
16 x 4		F0000583

NITRILE TRAILING CABLE

FLEXIBLE PVC - 4 CORE
600/1000V

Cable Description

High conductivity bunch plain flexible copper conductors to SANS 1411 Part 1.
Cores insulated and bedded with Flexible PVC. Flexible Grade PVC/Nitrile outer sheath.

Installation Information

For the wiring of all types of:

- Power supply for mobile and stationary industrial machinery
- Applications that require medium duty abrasion and where oil and water resistance is required

Properties

Specifications : SANS 1574
Temperature Range : -10°C to 70°C
Voltage Rating : 600/1000V
Sheath Identification : PVC/Nitrile - Orange
Core Identification : Red, yellow, blue and black
Packaging : Available on 500mt wooden drums

Technical Data

Cable Size	Approximate Overall Diameter	Current Rating*	Conductor Resistance @ 20°C Maximum	1Φ Voltage Drop	Approximate Cable Mass
(mm^2)	(mm)	(A)	(Ω/km)	(mV/A/mt)	(kg/mt)
1,5 x 4	11	15	13,3	25	0,2
2,5 x 4	13	20	7,98	15	0,3
4 x 4	15	30	4,96	9,5	0,4
6 x 4	17	35	3,30	6,4	0,5
10 x 4	20	50	1,91	3,8	0,7
16 x 4	23	65	1,21	2,4	1
25 x 4	26,2	95	0,78	0,87	1,4
35 x 4	31,7	99	-	1,25	2,1

***Note** - Assumed ambient air temperature is 30°C.
- Assumed maximum conductor temperature is 70°C.

Product Code

Cable Size (mm^2)	Product Code
1,5 x 4	F0003267
2,5 x 4	F0000653
4 x 4	F0000654
6 x 4	F0000655
10 x 4	F0000656
16 x 4	F0000657
25 x 4	F0000658
35 x 4	F0001438

GENERAL WELDING CABLE

EPM/CM OR EPM/CR
100V

Cable Description

Single core flexible copper conductors to SANS 1411 Part 1, EPM (Ethylene-propylene monomer) insulated, CM (Chloronated Polyethylene) or CR (Polychloropene) sheathed, heavy duty welding cables.

Installation Information

Heavy duty welding for:

- Indoor and outdoor electric welding equipment

Properties

Specifications : SANS 1576

Voltage Rating : 100V AC or DC to earth for welding applications

Core Identification : EPM/CM - Outer CM sheath is coloured
: EPM/CP - EPM insulation is coloured and CR sheath is black

Packaging : 100mt shrink-wrapped coils

Technical Data

Colour	Conductor				Dimensions		Approximate Cable Mass
	Cable Size	Maximum Diameter of Wires	Approximate Diameter	Maximum Resistance of Untinned Conductor at 20°C	Nominal Thickness of Insulation	Approximate Overall Diameter	
	(mm²)	(mm)		(Ω/km)	(mm)		(kg/mt)
Green	16	0,31	5,2	1,210	2,0	9,2	0,25
Blue	25		7,1	0,780		11,1	0,35
Grey	35		8,5	0,554		12,5	0,45
Red	50		10,4	0,386	2,2	14,8	0,60
Brown	70		11,6	0,272	2,4	16,4	0,75
Yellow	95		14,1	0,206	2,6	19,3	1,10
Black	120	0,51	15,6	0,161	2,8	21,2	1,40

Electrical Properties

Cable Size	Class of Welding					DC Voltage Drop
	Automatic		Manual		Very Intermittent	
	Semi-automatic					
	Maximum Current Rating (A) for Duty Cycles of:					
(mm²)	100%	85%	60%	30%	20%	mV/A/mt
16	131	134	142	172	199	1,6
25	177	182	197	246	289	1,0
35	220	229	252	322	380	0,8
50	280	293	327	426	507	0,6
70	346	364	411	546	654	0,5
95	422	446	508	681	819	0,4
120	493	523	599	809	976	0,3

Note

- Assumed ambient air temperature is 30°C.
- Assumed maximum conductor temperature is 85°C.
- Assumed duty cycle period 5 minutes.
- Derating of maximum current for other ambient temperatures - use rating factor X as given below:

Ambient temperature °C	: 25	30	35	40	45
Rating factor X	: 1,04	1,00	0,95	0,91	0,85

GENERAL WELDING CABLE

Product Code

Cable Size (mm²)	Green	Blue	Grey	Red	Brown	Yellow	Black
16	F0000692						
25		F0000693					
35			F0000694				
50				F0000696			
70					F0000697		
95						F0000698	
120							F0002464

HO7RN-F FLEXIBLE GENERAL PURPOSE TRAILING CABLE

300/500V AND 450/750V

Cable Description

Flexible copper conductors (Class 5 Annealed Copper Conductors), EPR based rubber insulated, cores laid up and Neoprene Rubber sheathed.

Application

This cable is suitable for use in dry, humid or wet environments and in open air. This cable is suitable for medium mechanical stress in workshops and general industry. It is mostly used on industrial machinery however is also suitable for use on home tools, electric motors and portable generators.

HO7RN-F cable is highly suitable as a general purpose cable for temporary power supply but also for use when installing cable in limited space or for use with small bending radii.

Neoprene (CR) provides many of the attributes of natural rubber in jacketing but it does offer significantly better heat, ozone-corona, weather, chemical, oil and flame resistance. The mechanical characteristics of Neoprene makes it highly suited to a diverse range of applications including jacketing for all types of heavy duty and extra heavy-duty mining cables.

Single Core HO7RN-F

Cable Size	Approximate Voltage Drop (mV/A/mt)		Nominal Outer Diameter	Cable Weight	Resistance (Untinned)	Current Carrying Capacity (Air @ 30°C)	Product Code
(mm^2)	1Φ	3Φ	(mm)	(kg/km)	(Ω/km)	(A)	
1,5	23,30	20,18	5,90	50	13,3000	23	-
2,5	14,00	12,12	6,50	65	7,9800	32	-
4	8,70	7,53	7,40	89	4,9500	43	-
6	5,90	5,11	8,10	115	3,3000	56	-
10	3,40	2,94	10,40	190	1,9100	77	-
16	2,20	1,91	11,62	259	1,2100	102	F0001448
25	1,40	1,21	13,74	375	0,7800	136	F0001499
35	1,04	0,90	15,35	492	0,5440	168	F0001500
50	0,75	0,65	17,68	662	0,3860	203	-
70	0,56	0,48	20,00	908	0,2720	254	F0001503
95	0,50	0,40	22,12	1171	0,2060	315	F0001504
120	0,36	0,31	24,54	1445	0,1610	363	F0001505
150	0,31	0,27	26,87	1783	0,1290	416	F0001506
185	0,28	0,24	28,89	2125	0,1060	475	F0001507
240	0,23	0,20	32,62	2733	0,0801	559	F0001508
300	0,20	0,17	36,46	3348	0,0641	637	F0001511
400	0,18	0,16	42,10	4410	0,0495	752	-
500	0,16	0,14	45,80	5600	0,0391	833	-

Note - Items above with (-) in the Product Code column are available on special request.

Multicore HO7RN-F

Cable Size	Number of Cores	Nominal Outer Diameter	Approximate Cable Mass	Maximum Resistance @ 20°C	Approximate Voltage Drop (mV/A/mt)		Current Carrying Capacity (Air @ 30°C)	Product Code
(mm^2)		(mm)	(kg/km)	Ω/km	1ϕ	3ϕ	(A)	
1,5	2	9,10	109	13,3000	23,30	20,18	23	F0001388
	3	9,78	134					-
	4	10,76	166				21	-
	5	11,80	206					F0001389
	7	14,75	315				16	F0001390
2,5	2	10,80	158	7,9800	14,00	12,12	32	F0001396
	3	11,58	196					-
	4	12,73	241				29	-
	5	13,96	297					-
	7	17,11	445				20	F0001397
4	2	12,40	217	4,9500	8,70	7,53	43	-
	3	13,30	271					-
	4	14,63	336				38	-
	5	16,25	422					F0001402
	7	19,64	618				25	F0001403
6	2	14,20	297	3,3000	5,90	5,11	56	-
	3	14,78	355					F0001405
	4	16,44	449				50	-
	5	18,07	567					F0001406
	7	21,00	810				38	F0001407
10	2	20,40	573	1,9100	3,40	2,94	77	-
	3	20,73	674					F0001408
	4	22,57	833				68	F0001409
	5	24,75	1010					F0001410
16	2	23,00	774	1,2100	2,20	1,91	102	-
	3	23,26	913					F0001411
	4	25,36	1138				92	F0001412
	5	28,01	1400					F0001413
25	2	27,40	1110	0,7800	1,40	1,21	136	-
	3	27,69	1324					-
	4	30,75	1714				122	F0001415
	5	33,91	2096					F0001416
35	3	30,95	1754	0,5540	1,04	0,90	168	F0001417
	4	34,23	2204				150	F0001418
50	3	35,80	2409	0,3860	0,75	0,65	203	F0001420
	4	39,56	3029				182	F0001421
70	3	40,45	3211	0,2720	0,56	0,48	262	-
	4	44,89	4121				232	F0001422
95	3	44,90	4170	0,2060	0,50	0,43	320	-
	4	50,36	5361				281	F0001423
120	3	49,15	5080	0,1610	0,36	0,31	373	-
	4	55,33	6546				325	F0001424
150	3	53,70	6220	0,1290	0,31	0,27	432	-
	4	60,87	8095				373	F0001425
185	3	58,90	7730	0,1060	0,28	0,24	495	-
	4	65,70	9652				425	-
240	3	66,80	9780	0,0801	0,23	0,20	587	-
	4	75,50	12 614				500	-
300	3	74,10	12 620	0,0641	0,20	0,17	680	-
	4	82,20	14 800				585	-

Maximum continuous operating conductor temperature in normal use:

+60°C (in every case of mobile installation)
+85°C (fixed protected installation)
+200°C (in short circuit)

Permissible current rating is measured for an ambient temperature of 30°C and a maximum operating and conductor temperature of 85°C.

Note - Items above with (-) in the Product Code column are available on special request.

BARE COPPER

EARTH WIRING CABLE

Cable Description

High conductivity plain soft stranded copper conductors to SANS 1411.

Installation Information

For the wiring of earthing circuits where general house wiring is used:

- 1,5 mm² - Amp's @ 30°C = 20
- 2,5mm² - Amp's @ 30°C = 27
- 4,00mm² - Amp's @ 30°C = 37
- 6,00mm² - Amp's @ 30°C = 70

Properties

Specifications : SANS 1411-1

Temperature Range : -10°C to 70°C

Sheath Identification : Copper

Packaging : 1,5mm² - 6mm², 5kg and 25kg coils
: 10mm² - 16mm², 25kg and 500kg wooden drums
: 25mm² - 240mm², 500kg wooden drums

Technical Data

for Typical Guideline Values

Cable Size (mm²)	Nominal Stranding (Number x Diameter)	Approximate Meters (mt/kg)
1,5	7/0,53	72,22
2,5	7/0,66	46,62
4	7/0,85	27,46
6	7/1,04	18,75
10	7/1,35	11,13
16	7/1,67	7,27
25	19/1,38*	4,54
35	19/1,62*	3,34
50	19/1,88*	2,46
70	19/2,28*	1,56
95	19/2,50	1,13
120	37/2,03	0,91
150	37/2,28	0,739
185	37/2,50	0,599
240	37/2,98	0,450

***Note** - Compacted conductors.
Example: Customer requires : 180mt of 70mm² Copper Earth Wire. 1kg of 70mm² Copper is therefore = 1,56m.
So 180mt divided by 1,56 = 115,38kg say 115kg.

Product Code

Cable Size (mm²)	kg	mt
1,5	F0000216	F0004202
2,5	F0000217	F0004204
4	F0000218	F0000786
6	F0000219	F0000787
10	F0000220	F0000788
16	F0000221	F0000789
25	F0000222	F0000790
35	F0000223	F0000791
50	F0000224	F0000792
70	F0000011	F0000793
95	F0000226	F0000794
120	F0000227	F0000795
150	F0000228	F0002908
185	F0000229	F0002116

BELLS AND MAINS LOW VOLTAGE PVC CABLE

PVC PVC SWA PVC (FR)
600/1000V

Electrical and physical properties of 3 and 4 core PVC insulated PVC bedded *SWA PVC sheathed 600/1000V cables with aluminium or copper conductors and manufactured to SANS 1507-3.

*Where the armouring of cable is used as the earth continuity path, it may be necessary to replace some of the steel wires with tinned copper wires (ECC) or to use a supplementary earth continuity conductor.

D1 = Diameter over bedding sheath d = Diameter of armour wire D2 = Diameter over outer sheath

Technical Data

Copper Conductors

Cable Size	Electrical Properties						Physical Properties							
	Current Rating			Impedance	Voltage Drop	1 Second Short Circuit Rating	Nominal Diameters						Approximate Cable Mass	
							D1		d		D2			
	Ground	Ducts	Air				3 Core	4 Core	3 Core	4 Core	3 Core	4 Core	3 Core	4 Core
(mm²)	(A)			(Ω/km)	(mV/A/mt)	(kA)	(mm)						(kg/km)	
1,5	24	20	19	14,48	25,080	0,17	8,51	9,33	1,25	1,25	14,13	14,95	448	501
2,5	32	26	26	8,87	15,363	0,28	9,61	10,56			15,23	16,18	522	597
4	42	34	35	5,52	9,561	0,46	11,40	12,57			17,02	18,39	667	762
6	53	43	45	3,69	6,391	0,69	12,58	13,90			18,40	19,72	790	910
10	70	58	62	2,19	3,793	1,15	14,59	16,14			20,41	21,96	996	1169
16	91	75	83	1,38	2,390	1,84	16,55	19,18			22,37	25,92	1295	1768
25	119	96	110	0,8749	1,515	2,87	19,46	21,34	1,60	1,60	26,46	28,34	1838	2196
35	143	116	135	0,6335	1,097	4,02	20,89	23,97			27,89	31,17	2215	2732
50	169	138	163	0,4718	0,817	5,75	24,26	28,14			31,46	36,54	2871	3893
70	210	171	207	0,3325	0,576	8,05	27,07	31,29	2,00	2,00	35,47	40,09	3617	4837
95	251	205	251	0,2460	0,427	10,92	31,19	35,82			39,99	44,62	4901	6115
120	285	234	290	0,2012	0,348	13,80	33,38	38,10			42,18	47,40	5720	7269
150	320	263	332	0,1698	0,294	17,25	36,68	42,05			45,98	52,65	6908	9250
185	361	298	378	0,1445	0,250	21,27	40,82	46,75	2,50	2,50	51,12	57,45	8690	11039
240	416	344	445	0,1220	0,211	27,60	46,43	53,06			57,13	64,16	10767	13726
300	465	385	510	0,1090	0,189	34,50	51,10	58,53			62,20	70,13	12950	16544

Product Code

Copper Conductors

Cable Size	PVC PVC SWA PVC							
(mm²)	2 Core	3 Core	4 Core	7 Core	12 Core	19 Core	27 Core	37 Core
1,5	F0000042	F0000044	F0000046	F0000048	F0000424	F0000425	F0000427	F0000428
2,5	F0000049	F0000051	F0000053	F0000055	F0000429	F0000430	F0000431	F0000861
4	F0000056	F0000058	F0000060	F0000062	F0000860	F0001563	-	-
6	F0000063	F0000065	F0000067	F0000069	-	-	-	-
10	F0000070	F0000072	F0000074	-	-	-	-	-
16	F0000076	F0000078	F0000080	-	-	-	-	-
25	F0000373	F0000375	F0000379	-	-	-	-	-
35	-	F0000382	F0000386	-	-	-	-	-
50	-	F0000388	F0000392	-	-	-	-	-
70	-	F0000394	F0000398	-	-	-	-	-
95	-	F0000400	F0000404	-	-	-	-	-
120	-	F0000406	F0000409	-	-	-	-	-
150	-	F0000411	F0000414	-	-	-	-	-
185	-	F0001545	F0000418	-	-	-	-	-
240	-	F0000856	F0000421	-	-	-	-	-
300	-	-	F0001548	-	-	-	-	-

Note - Items above with (-) in the product code column are available on special request.

Technical Data

Aluminium Conductors

Cable Size	Electrical Properties						Physical Properties							
	Current Rating			Impedance	Voltage Drop	1 Second Short Circuit Rating	Nominal Diameters						Approximate Cable Mass	
							D1		d		D2			
	Ground	Ducts	Air				3 Core	4 Core	3 Core	4 Core	3 Core	4 Core	3 Core	4 Core
(mm²)	(A)			(Ω/km)	(mV/A/mt)	(kA)	(mm)						(kg/km)	
25	90	73	80	1,4446	2,502	1,80	17,76	20,65	1,60	1,60	24,76	27,65	1301	1554
35	108	87	99	1,0465	1,813	2,52	19,33	21,93			26,33	29,13	1477	1757
50	129	104	119	0,7749	1,342	3,61	21,87	25,05			29,07	32,25	1782	2150
70	158	130	151	0,5388	0,9333	5,05	24,76	29,27			31,96	37,67	2132	2930
95	192	157	186	0,3934	0,681	6,86	28,68	33,73	2,00	2,00	37,08	42,53	2908	3647
120	219	179	216	0,3148	0,545	8,66	31,09	35,44			39,89	44,24	3328	4023
150	245	201	250	0,2607	0,452	10,83	33,99	39,39		2,50	42,79	49,69	3837	5276
185	278	229	287	0,2133	0,369	13,35	37,80	44,51			47,10	54,81	4557	6231
240	324	268	342	0,1708	0,296	17,32	42,60	50,04	2,50		52,90	61,14	5977	7550

Note - Under short circuit conditions a maximum conductor temperature of 160°C is allowed for a maximum of 1 second.

Product Code

Aluminium Conductors

Cable Size (mm²)	3 Core	4 Core
25	-	F0001573
35	-	F0001577
50	-	F0000034
70	-	F0000035
95	-	F0000036
120	-	F0000037
150	-	F0000038
185	-	F0000039
240	-	F0001571

Note - Items above with (-) in the Product Code column are available on special request.

PVC PVC SWA PVC LH

Properties

Specifications : SANS 1507

Voltage Rating : 600/1000V

D1 = Diameter over bedding sheath d = Diameter of armour wire D2 = Diameter over outer sheath

Cable Size	Number of Cores	Electrical Properties										
		Current Rating			Impedance	Capacitance	Voltage Drop	Short Circuit Ratings		Resistance		Reactance
(mm²)		Ground	Duct	Air			Three Phase	Symmetrical	Earth Fault	DC @ 20°C	AC @ 70°C	
		(A)			(Ω/km)		(mV/A/m)	Ka (1 Second)		(Ω/km Maximum)		(Ω/km)
1,5	4	23	20	20	14,478	0,334	25,080	0,2	1,4	12,10	14,480	0,107
2,5		31	26	26	8,867	0,398	15,360	0,3	1,4*	7,410	8,870	0,103
4		40	34	36	5,517	0,860	9,560	0,5	1,9	4,610	5,520	
6		51	43	45	3,687	0,450	6,380	0,6	2,0	3,080	3,690	0,097
10		68	58	62	2,192	0,542	3,790	1,3	2,4	1,830	2,190	0,091
16		88	75	82	1,379	0,649	2,390	2,0	2,8	1,150	1,380	0,087
25	3	115	98	110	0,873	1,111	1,512	2,6	4,1	0,727	0,870	0,075
	4		95		0,874	1,231	1,510	3,2	4,2			0,080
35	3	140	119	135	0,632	1,273	1,095	3,6	4,4	0,524	0,627	0,072
	4		115			1,414	1,090	4,5	4,6			0,077
50		165	140	160	0,470	1,411	0,810	6,0	5,2	0,387	0,464	
70	3	200	170	205	0,329	1,492	0,570	7,1	5,6	0,268	0,329	0,066
	4				0,330	1,662		8,7	7,4		0,322	0,072
95		245	205	250	0,430	1,709	0,420	12,1	8,6	0,193	0,232	0,071
120		280	235	290	0,198	1,892	0,340	15,2	11,8	0,153	0,185	0,069
150		310	265	335	0,166	1,872	0,290	18,8	13,1	0,124	0,151	0,070
185		350	300	385	0,140	1,892	0,240	23,5	14,4	0,099	0,121	0,069

Cable Size	Electrical Properties		Physical Properties										
	Zero Sequence		Conductor Diameter	Conductor Depth	Insulation Diameter	Insulation Depth	Bedding Diameter	Armour Diameter	Cable Diameter	Cable Mass	Gross Mass		Bending Radius
(mm²)	Resistance	Reactance									(500m)	(300m)	
	(Ω/km)		(mm)		(mm)		(mm)	(mm)	(mm)	(kg/m)	(kg)		(mm)
1,5	29,530	0,16	1,7		3,5		9,5	12,0	15,0	0,50	365		150
2,5	22,900	0,15	2,2		4,0		10,5	13,0	16,0	0,60	390		160
4,0	17,680	0,14	2,5		5,0		12,5	15,0	18,0	0,70	455		180
6,0	15,380	0,13	3,0		5,5		14,0	16,5	19,5	0,90	565		195
10,0	12,560	0,12	4,0		6,0		16,0	18,5	21,5	1,10	715		215
16,0	10,240		5,0		7,0		19,0	21,5	25,0	1,50	915		250
25,0	8,702	0,066			7,5		18,5	22,0	28,5	1,53		516	285
	7,049	0,064		6,0		8,5	21,5	25,0		2,10		850	
35,0	7,709	0,065	6,0		8,5		20,5	24,0	30,5	1,90		626	305
	6,284	0,063		7,0		9,5	24,0	27,0	31,0	2,60		1000	310
50,0	5,469			8,0		11	27,5	30,5	35,0	3,30		1200	350
70,0	7,056	0,065	8,5		11,5		26,5	30,0	36,5	3,53		1116	365
	3,798	0,061		9,5		12,5	31,5	35,5	40,0	4,60		1675	400
95,0	3,265	0,062		11,0		14,5	36,0	40,0	45,0	5,90		2090	450
120,0	2,365	0,059		12,5		16,0	40,0	45,0	50,0	7,50		2675	500
150,0	2,127	0,060		14,0		17,5	44,0	49,0	54,0	8,80		3050	540
185,0	1,930	0,061		15,5		20,0	49,0	54,0	59,5	10,10		3850	595

Note - Earth fault rating limited by symmetrical fault rating.

Product Code

Cable Size	LHPVC SWA LHPVC					
(mm²)	2 Core	3 Core	4 Core	7 Core	12 Core	19 Core
1,5	F00001793	F00001794	F00001795	F0002248	F0003807	F0003808
2,5	-	F00001798	F00001799	F0001801	F0001832	F0001833
4	-	F00001783	F00001784	F0001786	-	F0001845
6	-	F00001789	F00001790	-		
10		F00001805	F00001806			
16	F00001820	F00001821	F00001822			
25	-	F00001830	F00001831			
35	-	F00001841	F00001843			
50	-	-	F00001851			
70		F00001852	F00001853			
95		-	F00001856			
120		-	F00001808			
150		-	F00001813			
185		-	F00001824			
240		-	F00001829			

Note - Items above with (-) in the product code column are available on special request.

PVC PVC SWA ECC PVC

Properties

Specifications : SANS 1507

Voltage Rating : 600/1000V

Cable Size	Electrical Properties														
	Number of Cores	Current Rating			Impedance	Capacitance	Voltage Drop		Short Circuit Ratings		Resistance		Reactance	Zero Sequence	
		Ground	Duct	Air			Single Phase	Three Phase	Symmetrical	Earth Fault	DC @ 20°C	AC @ 70°C		Resistance	Reactance
(mm²)		(A)			(Ω/km)		(mV/A/m)		kA (1 Second)		(Ω/km Maximum)		(Ω/km)	(Ω/km)	
1,5	3	23	20	20	14,478	0,315		25,077	0,190	1,460*	12,100	13,480	0,107	20,578	0,166
	4							25,080		1,570		14,480		20,143	0,155
2,5	2	31		26	8,867	0,319	17,73		0,310	1,855	7,410	8,870	0,100	15,665	0,160
	3		26			0,375		15,358	0,320	1,570*				15,453	0,153
	4							15,360		1,74			0,103	15,061	0,143
4,0	2	40		36	5,517	0,386	11,03		0,507	2,249	4,610	5,520	0,101	11,012	0,152
	3		34			0,376		9,556	0,510	1,960*				10,884	0,145
	4							9,560		2,130			0,103	10,529	0,135
5,0	2	51		45	3,687	0,450	7,37		0,757	2,509	3,080	3,690	0,096	8,488	0,141
6,0	3		43			0,440		6,386	0,760	2,240*				8,308	0,135
	4							6,390		2,410			0,097	8,059	0,127
10,0	2	68		62	2,192	0,542	4,38		1,274	2,903	1,830	2,190	0,091	6,376	0,129
	3		58			0,532		3,797	1,270	2,570*				6,248	0,124
	4							3,800		2,740				6,012	0,117
16,0	2	88		82	1,379	0,649	2,76		2,027	3,745	1,150	1,380	0,087	4,225	0,119
	3		75			0,639		2,388	2,030	3,280*				4,166	0,114
	4							2,390		3,620				3,573	0,119
25,0	3	115	98	110	0,873	1,111		1,512	2,600	6,000	0,870	0,727	0,075	8,702	0,066
	4				0,874	1,231		1,514		6,600	0,730	0,870	0,080	9,688	0,064
35,0	3	140	119	135	0,632	1,273		1,095	3,600	6,400	0,627	0,524	0,072	7,709	0,065
	4					1,414				7,100	0,520	0,630	0,077	8,519	0,063
50,0	3	165	140	160	0,469	1,267		0,812	4,900	7,800	0,464	0,387	0,072	7,254	0,065
	4				0,470	1,411		0,814		8,600	0,390	0,460	0,077	7,897	
70,0	3	200	170	205	0,329	1,492		0,570	7,100	9,500	0,321	0,268	0,066	7,056	
	4				0,330	1,662		0,572		12,400	0,270	0,320	0,072	5,616	0,061
95,0	3	245	208	250	0,241	1,527		0,417	9,800	13,600	0,232	0,193	0,065	4,796	0,064
	4				0,243	1,709		0,421		15,000	0,190	0,230	0,071	5,075	0,062
120,0	3	280	238	290	0,196	1,691		0,339	12,400	16,700	0,185	0,153	0,063	5,192	0,063
	4				0,198	1,892		0,343	12,300	21,300	0,150	0,180	0,069	3,840	0,059
150,0	3	310	264	335	0,164	1,672		0,284	15,200	17,500	0,151	0,124	0,063	4,400	0,065
	4				0,166	1,872		0,288		22,600	0,120	0,150	0,070	3,331	0,060
185,0		350	298	385	0,140	1,892		0,242	19,100	26,700	0,100	0,120	0,069	3,276	0,061
240,0		410	349	450	0,117	1,962		0,203	25,00	31,300	0,080	0,090		3,063	0,062

***Note** - Earth fault rating limited by symmetrical fault rating.

Cable Size	Physical Properties												
	Conductor Diameter	Insulation Diameter	Number of Wires	Wire Diameter	Bedding Diameter	Armour Diameter	Armour Wire Diameter	PVC Sheath Thickness	Cable Diameter	Cable Mass	Gross Mass		Bending Radius
(mm²)	(mm)			(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/m)	(kg)		(mm)
											(500m)	(300m)	
1,5	1,7	3,5			9,0	11,0			14,0	0,42	230		140
					9,5	12,0			15,0	0,50	365		150
2,5	2,2	4,0			9,0					0,45	293		
					10,0	12,5			15,5	0,48	259		
					10,5	13,0			16,0	0,60	390		160
4,0	2,5	5,0			11,0	13,5			16,5	0,57	375		
					11,5	14,0			17,0	0,59	337		170
					12,5	15,0			18,0	0,70	455		
5,0	3,0	5,5			12,0	14,5			17,5		433		180
6,0					13,0	15,0			18,5	0,71	389		
					14,0	16,5			19,5	0,90	565		195
10,0	4,0	6,0			13,5	16,0				0,83	557		190
					14,5	17,0			20,5	0,88	499		200
					16,0	18,5			21,5	1,10	715		215
16,0	5,0	7,0			15,5	18,0				1,03	698		210
					16,5	19,0			22,5	1,15	625		225
					19,0	21,5			25,0	1,50	915		250
25,0		7,5			18,5	22,0			28,5	1,72	919		285
	6,0	8,5	7	2,22	21,5	25,0	1,6	1,7		2,11		690	
35,0					20,5	24,0			30,5	2,08	1129		305
	7,0	9,0	7	2,60	24,0	27,0	1,6	1,7	31,0	2,59		834	310
50,0		10,0			23,5				33,0	2,61	1395		330
	8,0	11,0	14	2,22	27,0	30,5	1,6	1,8	34,5	3,29		1045	345
70,0	8,5	11,5			26,5	30,0			36,5	3,34	1783		365
	9,5	12,5	19	2,20	31,5	35,5	2,0	2,0	40,0	4,60		1437	400
95,0	10,0	13,0			21,0	35,0			41,5	4,65	2538		415
	11,0	14,5	27	2,22	36,0	40,0	2,0	2,2	45,0	5,97		1847	450
120,0					33,5	37,50			44,0	5,54	2936		440
	12,5	16,0	34	2,22	40,0	45,0	2,0	2,2	50,0	7,58		2330	500
150,0					37,0	41,0			47,5	6,61	3526		475
	14,0	17,5	30		44,0	49,0		2,4	54,0	8,96		2746	540
185,0	15,5	19,5	37	2,60	49,0	54,0	2,5		59,5	10,80		3298	595
240,0	18,0	22,5	50		55,0	60,0		2,6	66,0	13,60		4137	660

Product Code

Cable Size	PVC PVC SWA ECC PVC		
(mm²)	2 Core	3 Core	4 Core
1.5	F0000043	F0000045	F0000047
2.5	F0000050	F0000052	F0000054
4	F0000057	F0000059	F0000061
6	F0000064	F0000066	F0000068
10	F0000071	F0000073	F0000075
16	F0000077	F0000079	F0000081
25	F0000374	F0000376	F0000380
35	F0000381	F0000383	F0000387
50		F0000389	F0000393
70		F0000395	F0000399
95		F0000401	F0000405
120		F0000407	F0000410
150		F0000412	F0000415
185		-	F0000419
240		-	F0000422
300		-	F0000850

Note - Items above with (-) in the Product Code column are available on special request.

ZEROTOX HALOGEN FREE WHITE STRIPE

Properties

Specifications : SANS 1507

Voltage Rating : 600/1000V

Cable Size	Number of Cores	Electrical Properties											
		Current Rating			Impedance	Volt Drop		Short Circuit Ratings		Resistance			Reactance
(mm²)		In Ground	In Duct	In Air	(Ω/km)	Single Phase	Three Phase	Symmetrical	Earth Fault	DC @ 20°C	AC @ 90°C	AC @ 70°C	
		(A)				(mV/A/m)		Ka (1 Second)		(Ω/km Maximum)			(Ω/km)
1,5	2	36		30	14,478	30,86		0,2	1,2	12,1	15,43		0,106
	4	25	20	21	14,480		25,08		1,4*	12,10		14,480	0,101
2,5	2	46		40	8,867	18,90		0,3	1,3	7,410	9,45		0,099
	4	33	27	27	8,870		15,36		1,6*			8,870	0,097
4,0	2	61		53	5,517	11,76		0,5	1,4	4,610	5,88		0,093
	4	43	36	37	5,520		9,56		1,6*			5,520	0,090
6,0	2	76		68	3,687	7,86		0,8	1,5	3,080	3,93		0,089
	4	55	44	48	3,690		6,38		1,9*			3,690	0,086
10,0	2	100		92	2,912	4,67		1,4	1,7	1,830	2,33		0,084
	4	74	60	66	2,190		3,80		2,3*			2,190	0,081
16,0	2	130		120	1,279	2,94		2,2	2,0	1,150	1,47		
	4	94	76	88	1,380		2,39	2,3	2,6*			1,380	0,077
25,0		120	99	115	0,873		1,51	3,6	3,6	0,727		0,870	0,075
35,0		145	120	140	0,632		1,10	5,0	4,0	0,524		0,628	0,073
50,0		170	140	170	0,470		0,81	6,8	4,5	0,387		0,464	
70,0		210	175	215	0,329		0,57	9,9	6,7	0,268		0,322	0,069
95,0		260	210	260	0,242		0,42	13,8	7,4	0,193		0,233	
120,0		295	240	305	0,196		0,34	17,4	8,3	0,153		0,185	0,066
150,0		325	265	340	0,165		0,29	21,4	11,6	0,124		0,151	

Cable Size	Electrical Properties		Physical Properties								
	Zero Sequence		Conductor Diameter	Insulation Diameter	Bedding Diameter	Armour Diameter	Cable Diameter	Cable Mass	Gross Mass		Bending Radius
(mm²)	Resistance	Reactance	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/m)	(500m)	(300m)	(mm)
	(Ω/km)								(kg)		
1,5	22,06	0,18	1,6	3,0	8,0	10,5	13,5	0,43	226		135
					9,0	11,5	14,5	0,45	252		218
2,5	16,5	0,16	2,5	2,0				0,48	256		145
			2,0	3,5	10,0	12,5	15,5	0,53	292		233
4,0	12,36	0,15	4,0	2,5				0,56	302		155
			2,5	3,9	11,0	13,5	16,5	0,63	355		248
6,0	10,05	0,14	6,0	3,0				0,65	347		165
			3,1	4,5	12,5	15,0	18,0	0,75	415		270
10,0	8,17	0,13	10,0	4,0			18,5	0,82	441		185
			3,9	5,3	14,5	17,0	20,0	1,00	557		300
16,0	6,66	0,12	16,0	5,0				1,03	551		200
			4,8	6,2	16,5	19,0	22,5	1,30	710		338
25,0			6,0	7,5	20,0	23,5	27,5	2,00		683	413
35,0			7,0	8,5	22,5	25,5	30,0	2,50		846	450
50,0			8,0	10,0	25,5	28,5	33,0	3,10		1048	495
70,0			9,5	12,0	30,0	34,0	39,0	4,40		1484	585
95,0			11,5	13,5	34,0	38,0	43,0	5,60		1971	645
120,0			12,5	15,0	37,5	41,5	47,0	6,70		2101	705
150,0			14,0	17,0	42,5	47,5	53,0	8,60		2890	795

***Note** - *Earth fault rating limited by symmetrical fault rating.

- No product codes included for these products as they are all non-stock items.

MULTICORE CABLE

LOW-VOLTAGE ARMOURED CABLE
600/1000V

D1 = Diameter over bedding sheath d = Diameter of armour wire D2 = Diameter over outer sheath

Electrical and physical properties of Multicore PVC Insulated PVC Bedded *SWA PVC sheathed 600/1000V cables with stranded copper conductors manufactured to SANS 1507-3.

*Where the armouring of cable is used as the earth continuity path, it may be necessary to replace some of the steel wires with tinned copper wires (ECC) or use a supplementary earth continuity conductor.

Definition of ECC Cable

ECC - Earth Continuity Conductor (SANS 1507-3)

When an improved conductivity in the earth continuity circuit of steel wire armoured (SWA) multicore cable is required, an appropriate number of steel armour wires may be replaced by tinned hard drawn copper wires of the same nominal diameter. The copper wires shall comply with the relevant requirements of SANS 1411-1.

Technical Data

1.5mm² Multicore Cables

Number of Cores	Electrical Properties					Physical Properties				Product Code
	Current Rating			Impedance	Capacitance	Nominal Diameters (mm)			Approximate Cable Mass	
	Ground	Ducts	Air							
	(A)			(Ω/km)	(nF/km)	D1	d	D2	(kg/km)	
2	29	23	22	14,4782	422	8,1	1,25	13,8	422	-
3	24	20	19			8,6		14,3	456	-
4						9,5		15,1	510	-
5	21	17	17			10,3		15,8	577	-
6	20	16	16			11,4		17,0	613	-
7	18	15	15						629	F0000048
8	17	14	14			12,6		18,2	710	-
10	16	13	13		413	14,8		20,7	837	-
12	15	12	12			15,3		21,2	901	F0000424
14	14	11				16,2	1,60	22,0	980	-
19	12	10	11		379	19,2		25,9	1404	F0000425
24	11	9	10			22,4		29,3	1687	-
27		8				22,9		29,8	1783	F0000427
30	10		9			23,7		30,7	1867	-
37	9	7				25,9		32,8	2153	F0000428

2.5mm² Multicore Cables

Number of Cores	Electrical Properties					Physical Properties				Product Code
	Current Rating			Impedance	Capacitance	Nominal Diameters (mm)			Approximate Cable Mass	
	Ground	Ducts	Air							
	(A)			(Ω/km)	(nF/km)	D1	d	D2	(kg/km)	
2	37	31	31	8,8668	487	9,0	1,25	14,7	475	-
3	32	26	26			9,6		15,2	524	-
4						10,6		16,2	606	-
5	27	22	22			11,5		17,0	690	-
6	25	20	21			12,7		18,5	737	-
7	24	19	20						756	F0000055
8	22	18	19			13,0		18,9	806	-
10	21	17	18		477	16,6	1,60	22,5	1000	-
12	19	15	17		434	18,1		24,8	1306	F0000429
14	18	14	16			19,0		25,7	1421	-
19	16	13	14			21,4		28,1	1695	F0000430
24	14	12	13			25,1		32,0	2053	-
27		11				25,7		32,6	2181	F0000431
30	13	10	12			26,6	2,00	34,8	2594	-
37	12		11		410	29,4		37,6	3011	F0000861

Note - Items above with (-) in the Product Code column are available on special request.

MULTICORE CABLE

PVC Current Ratings are based on the following Environmental Parameters:

Maximum Sustained Conductor Temperature	Ground Temperature	Ambient Air Temperature (Free Air Shaded)	Ground Thermal Resistivity	Depth of Laying to top of Cable or Duct
70°C	25°C	30°C	1,2 K.m/W	500mm

4mm² Multicore Cables

Number of Cores	Electrical Properties					Physical Properties				Product Code
	Current Rating			Impedance	Capacitance	Nominal Diameters (mm)			Approximate Cable Mass	
	Ground	Ducts	Air							
	(A)			(Ω/km)	(nF/km)	D1	d	D2	(kg/km)	
2	50	41	41	5,5171	487	10,2	1,25	16,3	597	-
3	42	34	35			10,9		17,0	669	-
4						12,3		18,4	764	-
5	35	28	29			13,6		19,7	884	-
6	33	27	28			14,9		21,0	961	-
7	31	25	26						986	F0000062
8	29	24	25			18,1		24,2	1079	-
10	27	22	24		477	20,2	1,60	27,0	1251	-
12	25	20	22		434	20,4		28,2	1211	F0000860
14	23	19	21			22,8		29,6	1885	-
19	21	16	19			24,9	2,00	32,5	2282	F0001563
24	19	15	18			31,0		38,6	3113	-
27	18	14	17			32,2		39,8	3354	-
30	17					35,8		43,4	3966	-
37	16	13	15		410	36,2		43.8	4124	-

6mm² Multicore Cables

Number of Cores	Electrical Properties					Physical Properties				Product Code
	Current Rating			Impedance	Capacitance	Nominal Diameters (mm)			Approximate Cable Mass	
	Ground	Ducts	Air							
	(A)			(Ω/km)	(nF/km)	D1	d	D2	(kg/km)	
2	62	51	53	3,6868	556	11,8	1,25	17,4	684	-
3	53	43	45			12,6		18,4	791	-
4	53					13,9		19,7	911	-
5	44	35	37			15,3		21	1054	-
6	40	33	36		521	17,7	1,60	24,4	1376	-
7	38	31	33						1412	F0000069

Sustained Current Rating Factors for Non-Standard Conditions for both PVDAC and Multicore LV PVC Cables

Maximum Conductor Temperature (°C)	Ground Temperature (°C)				Maximum Conductor Temperature (°C)	Air Temperature (°C)			
70	25	30	35	40	70	30	35	40	45
	1,00	0,94	0.88	0,82		1,00	0,94	0,87	0,79

Depth of Laying (mm)	0.92 Direct in Ground
500	1,00
800	0,96
1000	0,94
1250	0,92
1500	0,90

Note - Items above with (-) in the product code column are available on special request.

Current Rating Factors for Grouping of Multicore Cables Installed Horizontally in Air

Number of Cables in Group	Direct in Ground				
	Axial Spacing (mm)				
	Touching	150	300	450	600
2	0,81	0,87	0,91	0,93	0,94
3	0,70	0,78	0,84	0,87	0,90
4	0,63	0,74	0,81	0,86	0,89
5	0,59	0,70	0,78	0,83	0,87
6	0,55	0,67	0,76	0,82	0,86

Number of Cores	2	3	5	6	9
Condition	Derating Factor				
Cables touching	0,86	0,81	0,75	0,74	0,72
Clearance D* between cables	0,91	0,89	0,87	0,87	0,85

***Note** - D is overall diameter of one cable

SINGLE CORE PVC PVC CABLE

Cable Description

High conductivity annealed stranded or solid copper conductors to SANS 1411 Part 1. Insulated with general purpose grade PVC in plain colours to SANS 1411 Part 2.

D1 = Diameter over conductor D2 = Diameter over PVC sheath

Installation Information

For the wiring of all types of:

- Industrial buildings
- Control panels

Properties

Specifications	: SANS 1507-3	Sheath Identification	: Black
Temperature Range	: -10°C to 70°C	Packaging	: 300/500mt drums
Voltage Rating	: 600/1000V		

Technical Data

Rated Area	Nominal Diameters		Nominal Mass	Impedance	Cables AC or DC			Cables in Trefoil Formation				Product Code
	D1	D2			Current Rating*		Voltage Drop per Amp per Metre	Current Rating			Voltage Drop per Amp per Metre	
(mm^2)	(mm)		(kg/km)	(Ω/km)	Ground	Air	(mV)	Ground	Ducts	Air	(mV)	
25	5,95	11,91	366	0,8767	118	133	1,7	127	91	109	1,50	-
35	7,00	12,96	469	0,6356	156	165	1,3	153	109	136	1,10	-
50	8,15	15,15	632	0,4745	186	203	0,9	180	130	171	0,80	-
70	9,79	16,57	880	0,3356	232	251	0,7	221	166	214	0,60	-
95	11,54	19,04	1160	0,2500	281	313	0,5	265	208	271	0,40	-
120	12,96	20,24	1413	0,2054	324	362	0,4	301	237	316	0,30	-
150	14,39	22,07	1734	0,1734	370	414	0,3	338	267	366		F0001956
185	16,10	24,80	2145	0,1499	424	482		381	305	433		F0001957
240	18,71	27,81	2725	0,1268	498	578		442	357	525		F0001960
300	21,45	30,75	3375	0,1131	566	660		499	404	604	0,20	F0001963
400	24,30	34,10	4395	0,1028	651	704	0,2	565	442	639		F0001967
500	26,51	37,13	5299	0,0963	740	821		634	506	752		F0001969
630	33,15	43,62	6965	0,0890	836	960		718	580	886	0,10	F0001972

PVC Current Ratings are based on the following Environmental Parameters:

Maximum Sustained Conductor Temperature	Ground Temperature	Ambient Air Temperature	Ground Thermal Resistivity	Depth of Laying to top of Cable
70°C	25°C	30°C	1,2 K.m/W	500mm

***Note** - Rating based on two touching cables installed in a duct.
- Assumed ambient air temperature is 30°C.
- Assumed maximum conductor temperature is 70°C.

Note - Items above with (-) in the Product Code column are available on special request.

SINGLE CORE XLPE PVC CABLE

Cable Description

High conductivity annealed stranded or solid copper conductors to SANS 1411 Part 1. Insulated with XLPE plain colours to SANS 1411 Part 4.

D1 = Diameter over conductor D2 = Diameter over PVC sheath

Installation Information

For the wiring of:

- Industrial buildings
- Control panels

Properties

Specifications	: SANS 1507-4	Sheath Identification	: Black
Temperature Range	: -10°C to 90°C	Packaging	: 300/500mt drums
Voltage Rating	: 1.9/3.3kV		

Technical Data

Rated Area	Nominal Diameters Ground		Nominal Mass	Impedance	Cables AC or DC			Cables in Trefoil Formation				Product Code
					Current Rating*		Voltage Drop per Amp per Metre	Current Rating			Voltage Drop per Amp per Metre	
(mm²)	D1	D2	(kg/km)	(Ω/km)	Ground	Air	(mV)	Ground	Ducts	Air	(mV)	
25	6.0	14.5	390	0.932	169	153	1.864	151	117	135	1.614	-
35	7.0	15.5	490	0.675	207	192	1.350	183	145	170	1.169	-
50	8.4	16.9	620	0.502	244	228	1.004	212	173	205	0.869	-
70	9.9	18.4	830	0.353	302	290	0.703	260	212	263	0.611	-
95	11.6	20.1	1090	0.261	366	354	0.522	312	256	322	0.452	-
120	13.2	21.7	1330	0.212	432	417	0.424	363	290	380	0.367	-
150	14.5	23.0	1600	0.177	479	473	0.354	396	329	433	0.307	-
185	16.1	25.1	1980	0.149	558	535	0.298	452	374	491	0.258	-
240	18.4	27.3	2540	0.124	652	649	0.248	519	430	597	0.215	F0001961
300	20.6	29.6	3120	0.108	755	749	0.216	580	485	690	0.187	F0001965
400	23.9	32.9	3940	0.096	889	864	0.192	659	547	796	0.166	F0001968
500	27.1	36.9	5040	0.088	1020	983	0.176	736	608	907	0.152	F0001971
630	30.3	40.6	6430	0.083	1197	1151	0.166	826	692	1065	0.144	F0001974

PVC Current Ratings are based on the following Environmental Parameters

Maximum Sustained Conductor Temperature	Ground Temperature	Ambient Air Temperature	Ground Thermal Resistivity	Depth of Laying to Top of Cable
90°C	25°C	30°C	1,2 K.m/W	500mm

***Note** - Rating based on two touching cables installed in air.
- Assumed ambient air temperature is 30°C.
- Assumed maximum conductor temperature is 90°C.

Note - Items above with (-) in the Product Code column are available on special request.

ARMADAC®

PVC PVC SWA PVC (FR) BLK/RED
1.9/3.3kV

Cable Description

Electrical and physical properties of 3 core PVC insulated PVC bedded SWA PVC sheathed 1,9/3,3kV cables with copper conductors and manufactured to SANS 1507-3.

D1 = Diameter over bedding sheath d = Diameter of armour wire
D2 = Diameter over outer sheath

Installation Information

The cost effectiveness of transferring power over long distances through intermediate step-up step-down systems is desirable for the electrification of industrial and residential installations.
Armadac® consists of 3 circular stranded plain soft copper conductors, PVC insulated, PVC bedded, Steel Wire Armoured, PVC sheathed, 1,9/3,3kV manufactured to SANS 1507-3. Applications where this cable can typically be used include, amongst others, game lodges agricultural industry applications and general long distance electricity transfer applications at intermediate voltage.

Advantages of using an intermediate voltage cable over the conventional 400V 3-phase system offered by the increased voltage of 3,3kV include the fact that voltage drop will be considerably lower and small conductor sizes (10mm², 16mm² or 25mm²) will suffice for most applications. The Armadac® cable is steel wire armoured and provides a robust mechanical protection to the cable, hence it is suitable to be installed underground. Furthermore, Armadac® offers additional protection against attack by rodents and other animals as provided by the steel wire armouring. The steel wire armouring can also be utilised as an earth continuity path, therefore eliminating the need for an external earth conductor. Armadac® makes use of circular cores which limits electrical stress in the insulation and also incorporates a flame retardant PVC Sheath, which limits the spread of fire.

Properties

- Specifications : SANS 1507-3
- Temperature Range : -10°C to 70°C
- Voltage Rating : 1900/3300V
- Core Identification : Red, yellow and blue
- Packaging : Available on 500mt wooden drums

Technical Data

Electrical & Physical Properties

Cable Size	Electrical Properties						Physical Properties			
	Current Rating*			Impedance (Z)	Voltage Drop	1 Second Short Circuit Rating	Nominal Diameters			Approximate Cable Mass
	Ground	Ducts	Air				D1	d	D2	
(mm²)	(A)			(Ω/km)	(mV/A/mt)	(kA)	(mm)			(kg/km)
10	68	58	60	2,19	3,793	1,4	20,7	1,6	27,3	1543
16	91	76	81	1,38	2,390	2,2	22,8	1,6	29,6	1859
25	113	95	103	0,8749	1,515	3,4	24,9	1,6	31,7	2221

Product Code

Cable Size (mm²)	Product Code
10	F0002809
16	F0002810
25	F0002811

***Note**
- Recommended depth of lay 500mm. Soil thermal resistivity 1,2 km/W.
- Soil temperature at 25°C.
- In ground at 500mm depth.

AIRDAC® SNE CABLE

HOUSE SERVICE CONNECTING CABLE WITH OR WITHOUT PILOT CORES

Cable Description

Circular stranded hard drawn copper phase conductor, XLPE insulated with concentrically arranged identified neutral and bare earth conductors. Polyethylene sheathed 600/1000V service connection cable. Nylon ripcord laid under sheath. Manufactured to SANS 1507-6.

- Small overall diameter - concentric construction (SNE - Seperate Neutral Earth)
- Lower mass - due to smaller diameter - no steel wire armour
- Increased safety - reliable earthing
- Improved reliability - UV stable sheath and core insulation and water blocked
- Tamper and vandal proof - unauthorised access to phase conductor inhibited by concentric layer
- Easy strip with nylon ripcord

Technical Data

Electrical Properties	Cable Size (mm²)	
	10	16
Phase Conductor Resistance (Ohm/km) DC @ 20°C	1,90	1,20
Earth Size (mm²)	7,5	10
Neutral Size (mm²)	10	16
Phase Core Impedance (Z) (Ohm/km)	2,34	1,47
Current Rating* (A)	50	70
Pilot Cores (No. x OD) Solid (mm)	2 x 1,13	2 x 1,13

Mechanical Properties	Cable Size (mm²)	
	10	16
Phase Conductor {No. x OD} (mm)	7 x 1,35	7 x 1,67
Nominal Insulation Thickness (mm)	1,0	1,0
Neutral Conductor {No. x OD} (mm)	7 x 1,33	7 x 1,76
Earth Conductor {No. x OD} (mm)	3 x 1,78	3 x 2,20
Nominal Sheath Thickness (mm)	1,6	1,6
Approximate Cable OD (mm)	12,8	14,5
Approximate Cable Mass (kg/km)	320	485

Product Code

Cable Size (mm²)	Product Code
10	F0000209
16	F0000213

***Note** - In air, with 30°C ambient with maximum conductor temperature 90°C.

AIRDAC® II CNE CABLE

HOUSE SERVICE CONNECT

Cable Description

Circular stranded hard-drawn copper phase conductor, XLPE insulated with concentrically arranged bare earth conductors. Polyethylene sheathed 600/1000V house service connection cable. Nylon ripcord laid under sheath. Manufactured to SANS 1507-6.

- Small overall diameter - concentric construction
- Lower mass - due to smaller diameter - no steel wire armour
- Increased safety - reliable earthing
- Improved reliability - UV stable sheath and core insulation
- Tamper and vandal proof - unauthorised access to phase conductor inhibited by concentric layer
- Easy strip with nylon ripcord

Technical Data

Electrical Properties	Cable Size (mm²)	
	4	10
Phase Conductor Resistance (Ohm/km) DC @ 20°C	4,80	1,90
Phase Core Impedance (Z) (Ohm/km)	5,88	2,34
Current Rating* (A)	30	50
Symmetrical Short Circuit Rating for 1s in kA	0,572	1,431

Mechanical Properties	Cable Size (mm²)	
	4	10
Phase Conductor {No. x OD} (mm)	7 x 0,92	7 x 1,45
Nominal Insulation Thickness (mm)	1,0	1,0
Earth Size (mm²)	4	10
Earth Conductor {No. x OD} (mm)	8 x 0,85	18 x 0,85
Nominal Sheath Thickness (mm)	1,4	1,4
Approximate Cable OD (mm)	9,0	11,0
Approximate Cable Mass (kg/km)	121	249

Product Code

Cable Size (mm²)	Product Code
4,00	F0000207
10,00	F0000208
16,00	F0000215

***Note** - In air, with 30°C ambient with maximum conductor temperature 90°C.

AERIAL BUNDLE CONDUCTOR (ABC) CABLE

Cable Description

Supporting core system consists of three phase cores of hard-drawn stranded compacted aluminium conductors insulated with carbon-loaded XLPE laid up around an aluminium-alloy supporting core insulated with carbon loaded XLPE to ensure UV protection. Additional sub-conductors optional in both self-supporting and supporting core systems.

Supporting Core

Properties

Specifications : SANS 1418 Part 1 and 2

Temperature Range : -10°C to 80°C

Voltage Rating : 600/1000V

Core Identification : Phase 1, 2 and 3 indented - Non strain-bearing neutral, 2 longitudinal ribs on opposite surfaces 0,5mm x 1,00mm
Phase 1, 2 and 3 indented - Strain-bearing (supporting) neutral, 1 longitudinal rib on one surface 0,5mm x 1,00mm

Packaging : Available on 500mt wooden drums

Technical Data

Electrical Properties

Cable Size	Current Rating*	Short Circuit Rating**	Conductor Resistance @ 20°C	Conductor Resistance (AC) @ 80°C	Supporting Core System		
					Supporting Core Size	Induction Reactance @ 50Hz	Impendance (z) @ 50Hz @ 80°C
(mm²)	(A)	(kA)	(Ω/km)	(Ω/km)	(mm²)	(Ω/km)	(Ω/km)
25	105	2,3	1,200	1,490	54,6	0,101	1,493
35	144	3,2	0,868	1,078		0,097	1,082
50	183	4,6	0,641	0,796		0,089	0,801
70	228	6,4	0,443	0,550		0,086	0,557
95	277	8,5	0,320	0,397		0,081	0,405
120	322	11,0	0,253	0,314	70	0,079	0,324
150	350	13,8	0,206	0,256	95	0,079	0,268

Temperature °C	25	30	35	40	45
Factor	1,11	1,05	1,00	0,94	0,88

Mechanical Properties

Cable Size	Conductor Diameter		Core Diameter		Supporting Core System			
Phase Cores	Minimum	Maximum	Minimum	Maximum	Supporting Core Size	Approximate Assembly Diameter	Approximate Assembly Mass	Maximum Design Load
(mm²)	(mm)				(mm²)	(mm)	(kg/km)	(kN)
25	5,6	6,5	8,4	9,6	54,6	26	507	6
35	6,6	7,5	9,8	11,1		28	612	
50	7,7	8,6	10,9	12,3		32	730	
70	9,3	10,2	12,9	14,3		34	944	
95	11,0	12,0	14,6	16,2		38	1183	
120	12,5	13,5	16,1	17,5	70,0	40	1600	8
150	13,9	15,0	17,5	19,2	95,0	44	1870	13
Above Plus 25mm² Auxiliary Core								
25	N/A	N/A	N/A	N/A	N/A	32	612	N/A
35						34	717	
50						36	835	
70						38	1049	
95						42	1288	
120						50	1705	
150						56	1975	

***Note** - Continuous current ratings are given for ambient temperature of 35°C and maximum conductor temperature of 80°C.
****Note** - Short circuit ratings of 1 second duration for a final conductor temperature of 130°C.

OVERHEAD ALUMINIUM CONDUCTORS

ACSR ALUMINIUM CONDUCTOR STEEL REINFORCED

Overview

Aluminium conductors have achieved wide acceptance all over the world for use in overhead transmission and distribution lines. Generally a steel core is used with the aluminium to give the conductor mechanical strength. This arrangement is termed Aluminium Conductor Steel Reinforced or ACSR. Conductors comprised entirely of aluminium are known as All Aluminium Conductors or AAC. These conductors are extensively used for busbars in outdoor substations where spans are short. All Aluminium Alloy Conductors or AAC consist of an alloying of aluminium to give a tensile strength in excess of that of AAC allowing longer spans. These conductors are recommended for coastal areas where severe corrosion is a problem.

Hard drawn aluminium in H9 temper is used in both ACSR and AAC. High strain steel wire is used in ACSR and this is sometimes protected from corrosion by an application of grease. Such measures are particularly adopted when the conductor is intended for use in aggressive environments as encountered in coastal regions.

Physical and Electrical Properties for Popular ACSR Sizes

Code Name	Equivalent Copper Area	Standing/ Wire Diameter	Overall Diameter	Aluminium Area	Approximate Cable Mass (kg/km)			Ultimate Tensile Strength	DC Resistance @ 20°C	Current Rating	Product Code
	(mm^2)	(mm)	(mm)	(mm^2)	Aluminium	Steel	Total	(N)	(Ohms/km)	(A)	
Squirrel	12,90	6/1/2,11	6,33	20,98	57,70	27,50	85,20	8020	1,3677	130	F0002042
Gopher	16,30	6/1/2,36	7,08	26,25	72,20	34,40	107	9610	1,0933	150	F0002043
Fox	22,58	6/1/2,79	8,37	36,68	101	48,10	149	13100	0,7822	190	F0002045
Ferret	25,81	6/1/3,00	9,00	42,41	117	55,60	173	15200	0,6766	210	-
Rabbit	32,26	6/1/3,35	10,05	52,88	145	69,40	214	18500	0,5426	240	F0002047
Mink	38,71	6/1/3,66	10,98	63,13	174	82,80	257	21900	0,4546	260	F0002048
Hare	64,52	6/1/4,72	14,16	104,98	289	138	427	36000	0,2733	360	F0002051
Dog		6/4,72	14,15			100	389	34700			-
Dog		7/1,57									F0002052
Wolf	96,77	30/7/2,59	18,13	158,06	438	292	730	69200	0,1828	470	F0002057
Panther	129,00	30/7/3,00	21,00	212,06	588	391	970	90800	0,1363	560	F0002995
Bear	161,30	30/7/3,35	23,45	264,42	733	488	1220	112000	0,1093	650	-
Goat	193,50	30/7/3,71	25,97	324,31	899	598	1500	136000	0,0891	730	F0002059

Note - Items above with (-) in the Product Code column are available on special request.

MV XLPE Cable

MEDIUM VOLTAGE ELECTRIC CABLE
6.6kV TO 33kV

Properties and Applications

Due to the fact that Vultex XLPE insulation is resistant to high temperatures, it is obvious that higher temperatures are permissible in the cable.

For XLPE, continuous conductor temperature up to 90°C are permissible, whilst for some hours a temperature of 130°C is permissible. In case of short-circuit, the conductor can withstand considerably higher temperature (up to 250°C).

This important specific characteristic, in contrast with those generally applicable to plastics, give XLPE insulated cables the following advantages:

- Suitable for a sustained conductor temperature of 90°C as a result of which a high current carrying capacity is obtained
- Suitable up to 125 hours/annum (no event being longer than 8 hours continuously), at a conductor temperature of 130°C so that emergency loads can be tolerated
- No drainage problems
- Clean handling
- Relatively low cost per installed kVA

In addition to the normal application as underground cables, the following specific possibilities can be indicated:

- Installation in buildings (vertical mounting)
- Installation in routes with great difference in height
- Installation in substations and power stations

Technical Data

Electrical and Physical Properties of 3 core XLPE insulated PVC bedded, steel wire armoured, PVC sheathed 6.35/11kV cables to SANS 1339 Type A (individually screened).

Cable Size	Copper Conductors					Standard Aluminium Conductors				
	Electrical Properties			Physical Properties		Electrical Properties			Physical Properties	
	Current Rating (Ground)	Impedance	1 Second Short Circuit Rating	Diameter Overall	Approximate Cable Mass	Current Rating (Ground)	Impedance	1 Second Short Circuit Rating	Diameter Overall	Approximate Cable Mass
(mm^2)	(A)	(Ω/km)	(kA)	(mm)	(kg/km)	(A)	(Ω/km)	(kA)	(mm)	(kg/km)
25	140	0,9353	3,575	47,3	4655					
35	170	0,6783	5,005	49,7	5215					
50	200	0,5067	7,150	52,6	5895	155	8284	4,600	52,6	5015
70	240	0,3581	10,010	56,3	6995	190	5767	6,440	56,3	5635
95	290	0,2665	13,585	60,5	8170	225	4213	8,740	60,5	6340
120	325	0,2187	17,160	64,2	9370	255	3375	11,040	64,2	7045
150	360	0,1847	21,450	68,8	11 240	285	2795	13,800	68,8	8350
185	410	0,1571	26,455	72,8	12 775	320	2285	17,020	72,8	9245
240	470	0,1317	34,320	79,1	14 955	370	1821	22,080	79,1	10 580
300	520	0,1160	42,900	85,6	17 865	420	1535	27,600	85,6	12 070

Note - 22kVA and 33kVA are available on request.

PAPER INSULATED CABLES

Paper Belted (up to 11kV) Cable

Paper Armoured (SWA or DSTA) Cable

Paper Unarmoured Cable

Paper Screened (11kV and above) Cable

Overview

Paper insulated cables have been in use longer than any other type of cable insulation and due to the reputation built up over the years are still today a great favourite with engineers. When properly selected and correctly installed, this product can be relied upon to provide a satisfactory and trouble-free performance for many years.

Application

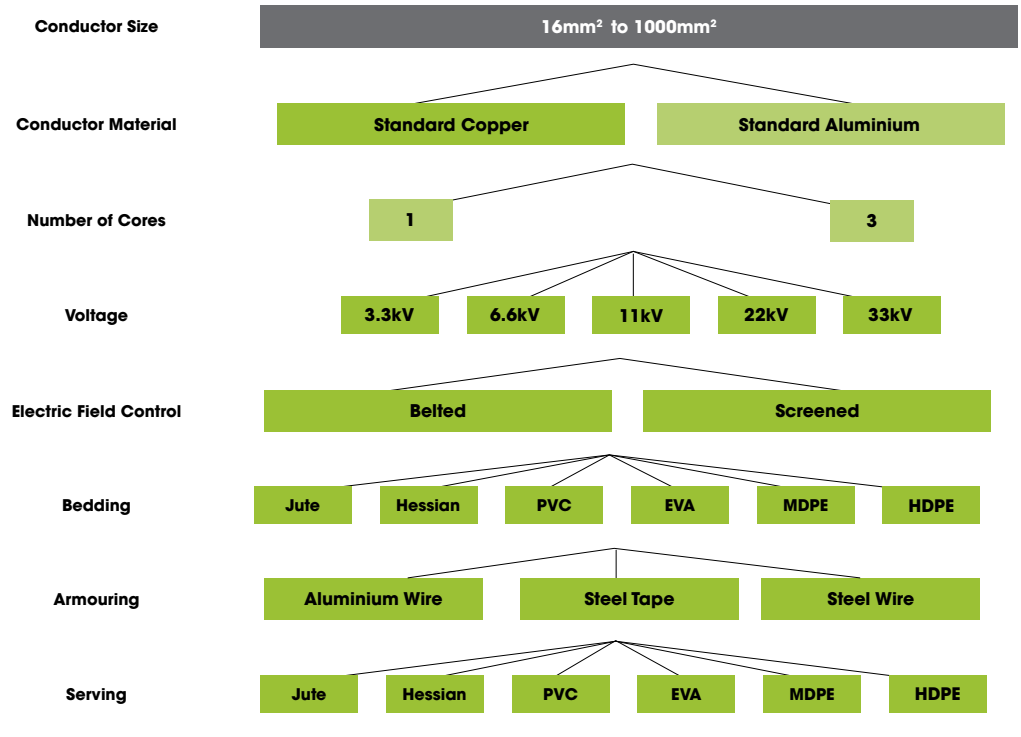
Paper insulated lead covered cables can be used in many electrical distribution and reticulation applications. Special constructions are also available for use in specialised applications including:

- Electrical distribution in the petrochemical industry
- Mining - a special construction for shaft installation is available with water blocking as well as flame retardancy
- Fire and explosion hazardous areas
- Submarine cables
- Made to SANS 97

Quality Assurance, Quality Control and Testing

As electric power cables are manufactured to provide many years of service, it is necessary that the raw materials used are of the highest quality and conform to the rigid specifications laid down by the South African Bureau of Standards. This also means that the production process has to be carefully controlled, particularly in areas where heating, drying or cooling cycles can be critical to the overall characteristics and electrical properties of the cable. Chemical, physical and electrical tests are carried out at various stages of manufacture. Final tests are all in accordance with SANS 97. Quality assurance systems are in compliance with SABS ISO 9000 series.

Manufacturing Range



GENERAL PURPOSE BELTED CABLES

FULLY IMPREGNATED ARMOURED AND SERVED TO SANS 97

TABLE 17: 6.35/11kV 3 CORE

Dimensional Data

Diameter	Conductor Size (mm²)			25	35	50	70	95	120	150	185	240	300
	Over Lead Sheath		mm	31,38	33,64	33,49	36,50	39,33	41,73	44,36	47,42	52,14	56,15
	Over Serving	Steel Tape Armoured Served	mm	44,09	47,15	47,00	50,01	52,84	55,24	57,87	60,93	65,65	69,66
		Single Wire Armoured Served	mm	44,89	48,15	48,00	51,01	53,84	56,24	60,17	63,23	67,95	74,52
Approximate Cable Mass	Copper Conductors	Steel Tape Armoured Served	kg/km	4890	5710	6020	7080	8260	9440	10 770	12 290	14 480	16 940
		Single Wire Armoured Served	kg/km	5110	6120	6440	7530	8760	9960	12 000	13 570	15 960	18 980
	Aluminium Conductors	Steel Tape Armoured Served	kg/km	4415	5055	5195	5790	6505	7225	7980	8870	10 050	11 415
		Single Wire Armoured Served	kg/km	4630	5465	5525	6240	7005	7745	9210	10 150	11 530	13 455

Electrical Data

Conductor Size (mm²)				25	35	50	70	95	120	150	185	240	300
AC Resistance		Copper Conductors	ohms/km	0,8700	0,6272	0,4633	0,3211	0,2316	0,1839	0,1494	0,1200	0,0921	0,0743
		Aluminium Conductors	ohms/km	1,4419	1,0430	0,7703	0,5325	0,3849	0,3045	0,2481	0,1979	0,1513	0,1216
Impedance		Copper Conductors	ohms/km	0,8779	0,6371	0,4751	0,3365	0,2499	0,2053	0,1739	0,1481	0,1245	0,1106
		Aluminium Conductors	ohms/km	1,4421	1,0492	0,7777	0,5423	0,3972	0,3183	0,2640	0,2166	0,1734	0,1472
Maximum Sustained Current Rating	Ground	Copper Conductors	A	105	130	160	195	235	265	295	335	380	425
		Aluminium Conductors	A	80	100	125	155	185	210	235	265	305	340

TABLE 18: 11/11KV 3 CORE

Dimensional Data

Diameter	Conductor Size (mm²)			25	35	50	70	95	120	150	185	240	300
	Over Lead Sheath		mm	35,14	37,60	37,67	40,68	43,51	45,71	48,32	51,40	56,54	60,53
	Over Serving	Steel Tape Armoured Served	mm	48,65	51,11	51,18	54,19	57,02	59,22	61,83	64,91	70,05	74,04
		Single Wire Armoured Served	mm	49,65	52,11	52,18	55,19	59,32	61,52	64,13	67,21	74,91	78,90
Approximate Cable Mass	Copper Conductors	Steel Tape Armoured Served	kg/km	5880	6520	6995	8125	9365	10 360	11 750	13 325	16 070	18 570
		Single Wire Armoured Served	kg/km	6205	6980	7495	8640	10 520	11 625	13 065	14 745	18 090	20 815
	Aluminium Conductors	Steel Tape Armoured Served	kg/km	5400	5865	6080	6835	7610	8145	8960	9905	11 640	13 045
		Single Wire Armoured Served	kg/km	5725	6325	6580	7350	8765	9410	10 270	11 325	13 660	15 290

Electrical Data

Conductor Size (mm²)				25	35	50	70	95	120	150	185	240	300
AC Resistance		Copper Conductors	ohms/km	0,8700	0,6272	0,4633	0,3211	0,2316	0,1839	0,1494	0,1200	0,0921	0,0743
		Aluminium Conductors	ohms/km	1,4419	1,0430	0,7703	0,5325	0,3849	0,3045	0,2481	0,1979	0,1513	0,1216
Impedance		Copper Conductors	ohms/km	0,8779	0,6371	0,4751	0,3365	0,2499	0,2053	0,1739	0,1481	0,1245	0,1106
		Aluminium Conductors	ohms/km	1,4468	1,0492	0,7777	0,5423	0,3965	0,3183	0,2640	0,2166	0,1734	0,1472
Maximum Sustained Current Rating	Ground	Copper Conductors	A	100	120	150	185	220	250	280	320	365	410
		Aluminium Conductors	A	80	95	120	145	175	200	225	255	295	335

GENERAL PURPOSE SCREENED CABLES

FULLY IMPREGNATED ARMOURED AND SERVED TO SANS 97

TABLE 19: 6.35/11kV 3 CORE GENERAL

Dimensional Data

	Conductor Size (mm²)			25	35	50	70	95	120	150	185	240	300
Diameter	Over Lead Sheath		mm	32,79	35,05	37,73	38,20	41,02	43,21	45,84	48,90	53,35	58,06
	Over Serving	Steel Tape Armoured Served	mm	45,50	48,56	51,24	51,71	54,53	56,72	59,35	62,41	66,86	71,57
		Single Wire Armoured Served	mm	46,30	49,56	52,24	52,71	55,53	57,72	61,65	64,71	69,16	76,43
Approximate Cable Mass	Copper Conductors	Steel Tape Armoured Served	kg/km	5070	6015	6665	7455	8670	9680	11 035	12 575	15 080	17 735
		Single Wire Armoured Served	kg/km	5315	6345	7165	7940	9175	10 235	12 300	13 945	16 580	19 880
	Aluminium Conductors	Steel Tape Armoured Served	kg/km	4595	5360	5770	6155	6920	7455	8245	9155	10 640	12 215
		Single Wire Armoured Served	kg/km	4840	5690	6270	6640	7425	8940	9510	10 525	12 140	14 360

Electrical Data

Conductor Size (mm²)				25	35	50	70	95	120	150	185	240	300
AC Resistance		Copper Conductors	ohms/km	0,8700	0,6272	0,4634	0,3211	0,2315	0,1839	0,1494	0,1199	0,092	0,0742
		Aluminium Conductors	ohms/km	1,4419	1,0430	0,7704	0,5325	0,3848	0,3045	0,2481	0,1978	0,1513	0,1215
Impedance		Copper Conductors	ohms/km	0,8788	0,6382	0,4769	0,3381	0,2517	0,2073	0,1760	0,1503	0,1267	0,1129
		Aluminium Conductors	ohms/km	1,4472	1,0497	0,7786	0,5429	0,3973	0,3191	0,2650	0,2176	0,1746	0,1484
Maximum Sustained Current Rating	Ground	Copper Conductors	A	115	140	160	200	240	270	305	340	390	440
		Aluminium Conductors	A	90	105	125	155	185	210	235	270	305	345

OTHER RANGES OF CABLE THAT WE SUPPLY

(AND HAVE NOT BEEN ILLUSTRATED IN THIS CATALOGUE) ARE:

1. **Complete range of MV Paper Cables**
2. **Complete range of MV XLPE Cables**
3. **Kwena Anti-Theft Conductor**
4. **Silicone Rubber Cables**
5. **Range of Trailing Cables for the Mining Industry**
6. **Complete Range of ACSR, AAC and AAAC Overhead Conductors**
7. **Control and Instrumentation Cables**

IMPORTANT NOTICE TO THE USER OF ELECTRIC CABLE PRODUCTS:

WARNING: Electrical equipment (including, but not limited to, cable), whether fixed, mobile or moveable, are by nature inherently dangerous. Only qualified technicians and/or electricians should install electrical equipment. All persons should be guided by relevant regulations and legislation concerning electrical products. Some regulations and legislation prescribe, inter alia, the following:

- Selection and installation of the product must be carried out as per the applicable compulsory specifications by appropriately qualified persons and certified by a competent person so authorised by law prior to being put into service. All fixed electrical low voltage installations must have a valid Certificate of Compliance (CoC)

- Low voltage electrical installations up to 600/1000V must conform to the compulsory specification SANS 10142-1 "The Wiring of Premises Part 1: Low Voltage Installations"

- SA legislation determines that the User or Lessor is responsible for the safety of the electrical installation

- All medium voltage installations above 1kV must conform to the specification SANS 10198 "The Selection, Handling and Installation of Electric Power Cables of Rating Not Exceeding 33kV", and where applicable SABS 10142-2 "The Wiring of Premises Part 2: Medium Voltage installations above 1kV AC and not exceeding 22kV AC and up to and including 3 000kW installed capacity"

- The following Compulsory Safety Standards are applicable to electric cables manufactured, imported and used in South Africa and no product may be used which does not comply to the applicable standard:
  - (VC 8075) SANS 1507: Electric Cables with solid dielectric insulation for fixed installations (300/500V to 1900/3300V)
  - (VC 8077) SANS 1339: Electric Cables Cross linked Polyethylene (XLPE) insulated cables for rated voltages 3,8/6,6kV to 19/33kV
  - (VC 8077) SANS 97: Electric Cables Impregnated paper insulated metal sheathed cables for rated voltages 3,3/3,3kV to 19/33kV
  - (VC8006) SANS 1574: Electric Flexible Cables with solid dielectric insulation

- All cables manufactured to a compulsory safety standard must be clearly marked with the applicable SANS standard number as well as the manufacturer's name

- Compulsory specifications (VC's) may be downloaded for free from the SABS website **www.sabs.co.za**

- The user of electric cable products has the right to take up any issue of concern with the **National Regulator of Compulsory Specifications at +27(0)12 428 5000**

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    10.2. Overloading;
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EASTERN CAPE

East London	043 743 3650
Mthatha	047 532 4706
Port Elizabeth	041 504 8200

FREE STATE

Bloemfontein	051 505 0700
Welkom	057 396 3191

GAUTENG

Alberton	011 907 3752
Atlas	011 864 5255
Bramley	011 887 1308
Centurion	012 653 3090
Denver	011 616 6269
East Rand	011 918 5220
Kempton Park	011 970 3290
Midrand	011 315 5800
Montana	012 524 9600
Pretoria	012 330 0211
Pretoria North	012 546 8111
Randburg	011 792 3380
Weltevreden	010 007 5181
West Rand	011 951 5780

KWAZULU-NATAL

Ballito	032 946 3966
Briardene	031 573 9200
Durban	031 310 7900
Newcastle	034 315 4150
Pietermaritzburg	033 345 4545
Pinetown	031 702 0831
Richards Bay	035 789 7970

LIMPOPO

Hoedspruit	015 793 3703
Lephalale	014 763 2215
Makhado	015 516 2075
Phalaborwa	015 781 6409
Polokwane	015 297 6177
Tzaneen	015 307 1213

MPUMALANGA

Lydenburg	013 235 4706
Nelspruit	013 753 3643
Witbank	013 692 8536

NAMIBIA

Windhoek	+264 61 418 100
Ongwediva	+264 65 238 597
Swakopmund	+264 64 425 000

NORTH WEST

Klerksdorp	018 462 9945
Rustenburg	014 597 1311

NORTHERN CAPE

Kathu	053 723 2222
Kimberley	053 832 1211
Kuruman	053 712 1164
Upington	054 332 6211

WESTERN CAPE

Blackheath	021 905 1877
Brackenfell	021 982 1404
Cape Town	021 531 2033
George	044 873 5020
Knysna	044 382 1242
Mossel Bay	044 695 0010
Overstrand	028 312 3366
Paarl	021 872 1554
Strand	021 853 8511
Table View	021 556 1852
Vredenburg	022 713 2371
Wetton	021 761 4599
Worcester	023 342 1795

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