

General Wires



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Single Core PVC 1kV Cable

General Purpose Wire (Housewire)



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.

Installation Information

For the wiring of :

Industrial Buildings Control Panels

Properties

Specification	: SANS 1507-3
Temperature Range	: -10°C to 70°C
Voltage Rating	: 600 / 1000V
Core Identification	: Blue, Black, Yellow/Green, White, Red
Packaging	: 100m shrink-wrapped coils up to 70mm ² : Over 70mm ² on 300m drums

Technical Data

Cable Size	Nominal Stranding No. x diameter	Approx. Overall Diameter	Current Rating *	Conductor Resistance @ 20°C Maximum	1 ϕ Volt Drop	Approx. Cable Mass per 100m Coil
(mm ²)		(mm)	(A)	(Ω /km)	(mV/A/m)	(kg)
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
240	61/2,28	25,0	408	0,08	0,21	235,0
300	61/2,50	27,5	463	0,06	0,18	298,0
400	61/2,80	31,0	531	0,05	0,16	379,0
500	61/3,15	34,5	610	0,04	0,14	483,1
630	91/2,93	38,0	696	0,03	0,13	622,5

- * 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

Single Core PVC 3,3kV Cable

General Purpose Wire (Housewire)



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.

Installation Information

For the wiring of :

Industrial Buildings Control Panels

Properties

Specification	: SANS 1507-3
Temperature Range	: -10°C to 70°C
Voltage Rating	: 1,9/3,3 kV
Core Identification	: Blue, Black, Yellow/Green, White, Red
Packaging	: 100m shrink-wrapped coils up to 70mm ² : Over 70mm ² on 300m drums

Technical Data

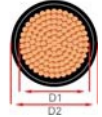
Cable Size	Nominal Stranding No. x diameter	Approx. Overall Diameter	Current Rating *	Conductor Resistance @ 20°C Maximum	1 ϕ Volt Drop	Approx. Cable Mass per 100m Coil
(mm ²)		(mm)	(A)	(Ω /km)	(mV/A/m)	(kg)
25	19/1,38**	10,4	104	0,73	1,7	25,6
35	19/1,62**	11,5	125	0,52	1,3	34,7
50	19/1,88**	12,9	149	0,39	0,93	47,2
70	19/2,28**	14,2	190	0,27	0,65	66,1
95	19/2,50	17,0	238	0,19	0,48	97,6
120	37/2,03	18,7	272	0,15	0,38	120,0
150	37/2,28	20,5	308	0,12	0,32	147,0
185	37/2,50	22,4	350	0,10	0,26	182,2
240	61/2,28	25,0	408	0,08	0,21	235,0
300	61/2,50	27,5	463	0,06	0,18	298,0
400	61/2,80	31,0	531	0,05	0,16	379,0
500	61/3,15	34,9	610	0,04	0,14	483,1
630	91/2,93	38,0	696	0,03	0,13	622,5

* Note: - Rating calculated for 3,3kV 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

Single Core PVC PVC Cable

General Purpose Wire



D1 = Diameter over conductor D2 = Diameter over the PVC sheath

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.

Installation Information

For the wiring of :

Industrial Buildings Control Panels

Properties

Specification : SANS 1507-3
 Temperature Range : -10°C to 70°C
 Voltage Rating : 600 / 1000V
 Core Identification : Black
 Packaging : 300/500m Drums

Electrical and physical properties of single core PVC Insulated cables with stranded copper conductors, unarmoured, PVC sheathed 600/1000V manufactured to SANS 1507-3.

Technical Data

Rated Area (mm ²)	Nominal Diameters D1 D2		Nominal Mass (kg/km)	Impe- dance (Ω/km)	Cables A.C. or D.C.			Cables in Trefoil Formation			
					Current Rating *		Voltage Drop per Amp per metre (mV)	Current Rating			Voltage Drop per Amp per metre (mV)
					Ground	Air		Ground	Duct	Air	
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	0,30
185	16,10	24,80	2145	0,1499	424	482	0,3	381	305	433	0,20
240	18,71	27,81	2725	0,1268	498	578	0,2	442	357	525	0,20
300	21,45	30,75	3375	0,1131	566	660	0,2	499	404	604	0,20
400	24,30	34,10	4395	0,1028	651	704	0,2	565	442	639	0,20
500	26,51	37,13	5299	0,0963	740	821	0,2	634	506	752	0,20
630	33,15	43,62	6965	0,0890	836	960	0,2	718	580	886	0,10

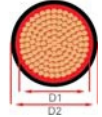
PVC Current Ratings are Based on the following Environmental Parameters

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.

Single Core XLPE PVC Cable

General Purpose Wire (600/1000V)



D1 = Diameter over conductor D2 = Diameter over the PVC sheath

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.

Installation Information

For the wiring of :

Industrial Buildings Control Panels

Properties

Specification : SANS 1507-4
 Temperature Range : -10°C to 90°C
 Voltage Rating : 600/1000V
 Core Identification : Black
 Packaging : 300/500m Drums

Technical Data

Rated Area (mm ²)	Nominal Diameters D1 D2		Nominal Mass (kg/km)	Impe- dance (Ω/km)	Cables A.C. or D.C.			Cables in Trefoil Formation			
					Current Rating *		Voltage Drop per Amp per metre (mV)	Current Rating			Voltage Drop per Amp per metre (mV)
					Ground	Air		Ground	Duct	Air	
25	5,95	11,81	328	0,8767	169	162	2,0	151	103	143	1,7
35	7,00	12,86	426	0,6356	205	202	1,4	181	125	179	1,2
50	8,15	14,38	567	0,4745	245	255	1,0	213	154	229	0,9
70	9,79	16,22	824	0,3356	302	313	0,7	260	192	284	0,6
95	11,54	17,97	1071	0,2500	366	380	0,5	312	233	346	0,5
120	12,96	19,82	1304	0,2054	422	441	0,4	355	268	402	0,4
150	14,39	21,42	1628	0,1734	480	508	0,4	397	305	465	0,3
185	16,10	23,63	1995	0,1499	554	585	0,3	449	345	537	0,3
240	18,71	26,69	2461	0,1268	656	704	0,2	522	406	648	0,2
300	21,45	30,05	3182	0,1131	766	804	0,2	589	459	741	0,2
400	24,30	33,30	4117	0,1028	902	874	0,2	668	511	805	0,2
500	26,51	36,33	5032	0,0963	1040	1013	0,2	750	583	935	0,2
630	33,15	42,79	6641	0,0890	1229	1205	0,2	848	680	1115	0,2

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 for two touching cables installed in air.
 - Assumed ambient air temperature is 30°C.
 - Assumed maximum conductor temperature is 90°C.



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

Specification	: SANS 1507-2
Temperature Range	: -10°C to 70°C
Voltage Rating	: 300/500V
Sheath Identification	: White & Black
Core Identification	: 2 Core - Red & Black, 3 Core - Red, Yellow, Blue, 4 Core - Red, Yellow, Blue, Black
Packaging	: 100m shrink-wrapped coils
	: Available on 500 & 1000 metre wooden drums on request (depending on size)

Technical Data

Cable Size *		Electrical Properties				Physical Properties		
		Conductor Resistance (dc @ 20°C)		Current Rating **	Volt Drop ***	1 Sec Short Circuit Rating	Approx. Overall Diameter	Approx. Cable Mass
Phase	Earth	Phase	Earth					
(mm ²)		(Ω/km)		(A)	(mV/A/m)	(kA)	(mm)	(kg/100m)
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	1,5	4,61	12,2	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	1,5	4,61	12,2	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	1,5	4,61	12,2	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

Note:

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

Flat Twin and Earth Cable



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-plaster wiring Roof access wiring Wiring in hollow walls

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

Properties

Specification : SANS 1507-2
 Temperature Range : -10°C to 70°C
 Voltage Rating : 300/500V
 Sheath Identification : White & Black
 Core Identification : 2 Core - Red & Black, 3 Core - Red, Yellow, Blue
 Packaging : 100m shrink-wrapped coils

Technical Data

Cable Size *		Electrical Properties				Physical Properties		
		Conductor Resistance (dc @ 20°C)		Current Rating **	Volt Drop ***	1 Sec Short Circuit Rating	Approx. Overall Diameter	Approx. Cable Mass
Phase	Earth	Phase	Earth					
(mm ²)		(Ω/km)		(A)	(mV/A/m)	(kA)	(mm)	(kg/100m)
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	1	12,1	18,2	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

Note:

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



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:

PowerTools Electric Lawnmowers Kitchen Appliances
Extension Leads Multi Plug Extensions Small Industrial Machinery

Properties

Specification : SANS 1574
Temperature Range : -10°C to 70°C
Voltage Rating : Light Duty (LD) 300 / 300V and Normal Duty (ND) 300 / 500V
Core Identification : **2 Core** - Blue & Brown, **3 Core** - Blue, Brown & Yellow/Green, **4 Core** - Blue, Brown, Black & Yellow/Green, **5 Core** - Blue, Black, Brown, Yellow/Green, Violet, **7 Core** - Blue, Brown, Black, Yellow/Green, Violet, Pink, Orange

Sheath Colours : White, Black, Grey
Packaging : 100m shrink-wrapped coils / 500m & 1000m lengths available on request

Technical Data

Cable Size (mm ²)	Number of Cores	Nominal Stranding No. x diameter	Approx. Overall Diameter (mm)	Conductor Resistance @ 20°C Maximum (Ω/km)	Current Rating *		Volt Drop		Approx. Cable Mass per 100m Coil (kg)
					1φ (A)	3φ (A)	1φ (mV/A/m)	3φ (mV/A/m)	
Light Duty 300 / 300V									
0,5	2	15/0,2	5,2	39	3	3	93	80	3,9
	3		5,5		3	3	93	80	4,7
	4		6,0		3	3	93	80	5,5
0,75	5	23/0,2	6,6	26	3	3	93	80	6,7
	3		6,1		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	6	62	54	6,7
	4		7,2		6	6	62	54	7,8
	5		8,2		6	6	62	54	9,9
	7		8,7		6	6	62	54	12,6
1	2	30/0,2	6,6	19,5	10	10	46	40	6,3
	3		7,0		10	10	46	40	7,6
	4		8,0		10	10	46	40	9,8
	5		8,6		10	10	46	40	11,6
1,5	7	44/0,2	9,3	13,3	10	10	46	40	14,8
	2		7,8		16	16	32	27	8,4
	3		8,3		16	16	32	27	10,8
	4		9,3		16	16	32	27	13,5
	5		10,0		16	16	32	27	16,2
2,5	7	72/0,2	10,9	7,98	16	16	32	27	20,7
	2		9,6		25	20	19	16	13,5
	3		10,3		25	20	19	16	16,8
	4		11,9		25	20	19	16	21,8
	5		12,2		25	20	19	16	24,2
4	7	112/0,2	13,2	4,96	25	20	19	16	31,3
	2		11,0		32	25	12	10	19,0
	3		11,4		32	25	12	10	25,0
	4		13,5		32	25	12	10	32,0
	5	14,1			32	25	12	10	33,9

* **Note:** Current Rating based on - Ambient temperature is 30°C Maximum Conductor temperature is 70°C

Audio Cord Cable (Ripcord)

Flexible Wiring



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

Properties

- Specification : ABERDARE Specification
- Temperature Range : -10°C to 70°C
- Core Identification : Standard Colours - White, Brown, Grey, Black, Transparent and Red with Black Stripe
- : Other Colours available on request
- Packaging : 100m shrink-wrapped coils / 500m lengths available on request

Technical Data

Cable Size	Nominal Stranding No. x diameter	Approx. Overall Diameter	Current Rating *	Conductor Resistance @ 20°C Maximum	1 ϕ Volt Drop	Approx. Cable Mass per 100m Coil
(mm ²)		(mm)	(A)	(Ω /km)	(mV/A/m)	(kg)
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.

Submersible Pump Cable

3 and 4 Core



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
- Farms
- Cleaning and Sewerage extraction plants
- De-watering
- Boreholes

Properties

- Specification : 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, Blue, 4 Core - Red, Yellow, Blue, Black
- Packaging : Available on 500 metre wooden drums

Technical Data

Cable Size (mm ²)	Minimum Bending Radius	Approx. Overall Diameter (mm)	Current Rating * (A)	Conductor Resistance @ 20°C Maximum (Ω/km)	Volt Drop		Approx. Cable Mass per 100m Coil (kg)
					1φ 220V (mV/A/m)	3φ 380V (mV/A/m)	
3 Core (Blue)							
1,5 x 3	82	0,15	15	13,3	29	25	10,2
2,5 x 3	94	0,2	20	7,98	17	15	11,7
4 x 3	108	0,3	30	4,96	12	9,5	13,5
6 x 3	121	0,5	35	3,30	7,3	6,4	15,1
10 x 3	141	0,6	50	1,91	4,3	3,8	17,6
16 x 3	161	0,8	65	1,21	2,8	2,4	20,1
4 Core (Green)							
1,5 x 4	89	0,2	15	13,3	29	25	11,2
2,5 x 4	102	0,25	20	7,98	17	15	12,8
4 x 4	116	0,35	30	4,96	12	9,5	14,6
6 x 4	132	0,5	35	3,30	7,3	6,4	16,5
10 x 4	153	0,7	50	1,91	4,3	3,8	19,2
16 x 4	176	1	65	1,21	2,8	2,4	22,0

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

General Welding Cable

EPM/CM or EPM/CR



Cable Description

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

Installation Information

Heavy duty welding for:
Indoor and outdoor electric welding equipment.

Properties

Specification : SANS 1576
Voltage Rating : 100V ac or dc to earth for welding applications
Core Identification : EPM/CM - Outer CM sheath is coloured
: EPM/CR - EPM insulation is coloured and CR sheath is black
Packaging : 100m shrink-wrapped coils

Technical Data

Physical Properties

Colour Code	Conductor				Dimensions		Approx. Cable Mass (kg/m)
	Conductor Size (mm ²)	Maximum Diameter of Wires (mm)	Approx. Diameter (mm)	Maximum Resistance of Untinned Conductor at 20°C (Ω/km)	Nominal Thickness of Insulation (mm)	Approx. Overall Diameter (mm)	
Green	16	0,31	5,2	1,210	2,0	9,2	0,25
Blue	25	0,31	7,1	0,780	2,0	11,1	0,35
Grey	35	0,31	8,5	0,554	2,0	12,5	0,45
Red	50	0,31	10,4	0,386	2,2	14,8	0,60
Brown	70	0,31	11,6	0,272	2,4	16,4	0,75
Yellow	95	0,31	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

Conductor Size (mm ²)	Class of Welding					D.C. Voltage Drop (mV/A/m)
	Automatic		Manual		Very Intermittent	
	Semi-automatic					
	Maximum Current Rating (A) for Duty Cycles of:					
	100%	85%	60%	30%	20%	
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

PVC Nitrile Cable

Panelling/Welding



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

- Specification : SANS 1574 Part 3
- Temperature Range : -10°C to 70°C
- Voltage Rating : 600 / 1000V
- Core Identification : Red, Black, Blue, Yellow (Other colours on request)
- Packaging : Shrink-wrapped coils from 16mm² to 70mm² or 500m drums
- : The product is sequentially marked at one metre intervals

Technical Data

Conductor Size (mm ²)	Approx. Conductor Diameter (mm)	Approx. Cable Diameter (mm)	Impedance at 70°C (Ω/km)	Approximate Volt Drop		Continuous Current Rating *		Approx. Cable Mass (kg/100m)
				(mV/A/m)		(A)		
				1φ	3φ	1φ	3φ	
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	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	0,3	0,3	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/mm ² (1 Second)				

Nitrile Trailing Cable

Flexible PVC - 4 Core



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

Power supply of mobile and stationary industrial machinery

Applications that require medium duty abrasion and where oil and water resistance is required.

Properties

Good chemical resistance. Flame retardant, self extinguishing. Oil and water resistant.

Specification	: SANS 1574
Temperature Range	: -10°C to 70°C
Voltage Rating	: 600 / 1000V
Sheath Identification	: PVC / Nitrile - Orange
Core Identification	: Red, Yellow, Blue, Black
Packaging	: Available on 500 metre wooden drums

Technical Data

Cable Size	Approx. Overall Diameter	Current Rating *	Conductor Resistance @ 20°C Maximum	1 ϕ Volt Drop	Approx. Cable Mass
(mm ²)	(mm)	(A)	(Ω /km)	(mV/A/m)	(kg/m)
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

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

Nitrile Trailing Cable

Flexible PVC - 4 Core



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

Power supply of mobile and stationary industrial machinery

Applications that require medium duty abrasion and where oil and water resistance is required.

Properties

Good chemical resistance. Flame retardant, self extinguishing. Oil and water resistant.

Specification	: SANS 1574
Temperature Range	: -10°C to 70°C
Voltage Rating	: 600 / 1000V
Sheath Identification	: PVC / Nitrile - Orange
Core Identification	: Red, Yellow, Blue, Black
Packaging	: Available on 500 metre wooden drums

Technical Data

Cable Size	Approx. Overall Diameter	Current Rating *	Conductor Resistance @ 20°C Maximum	1 ϕ Volt Drop	Approx. Cable Mass
(mm ²)	(mm)	(A)	(Ω /km)	(mV/A/m)	(kg/m)
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

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



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:

Audio (Loud Speaker Leads) Equipment Solar Power Industry

Properties

Specification : ABERDARE Specification
 Temperature Range : -10°C to 70°C
 Core Identification : Transparent with Blue Stripe
 Packaging : 100m shrink-wrapped coils or 100m reels

Technical Data

Cable Size	Nominal Stranding No. x diameter	Approx. Overall Diameter	Current Rating *	Conductor Resistance @ 20°C Maximum	1 ϕ Volt Drop	Approx. Cable Mass per 100m Coil
(mm ²)		(mm)	(A)	(Ω /km)	(mV/A/m)	(kg)
1,00	30/0,2	2,9 x 5,8	10	19,5	46	3,6
1,6	51/0,2	4,1 x 8,2	16	11	33	6,3
3,0	90/0,2	5,5 x 11	29	6,5	16	10,2

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

Panel Flex Cable

Single Core Flexible Wiring



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 Light fittings Communication panels Appliances

Properties

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

Technical Data

Cable Size	Nominal Stranding No. x diameter	Approx. Overall Diameter	Current Rating *	Conductor Resistance @ 20°C Maximum	1f Volt Drop	Approx. Cable Mass per 100m Coil
(mm ²)		(mm)	(A)	(W/km)	(mV/A/m)	(kg)
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

Power Panel Flex Cable



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

- Specification : SANS 1574 Part 3
- Temperature Range : -10°C to 70°C
- Voltage Rating : 600 / 1000V
- Core Identification : Red, Black, Blue, Yellow (Other colours on request)
- Packaging : Shrink-wrapped coils from 16mm² to 70mm² or 500m drums
- : The product is sequentially marked at one metre intervals.

Technical Data

Conductor Size (mm ²)	Approx. Conductor Diameter (mm)	Approx. Cable Diameter (mm)	Impedance at 70°C (W/km)	Approx. Volt Drop (mV/A/m)		Continuous Current Rating * (A)		Approx. Cable Mass (kg/100m)
				1f	3f	1f	3f	
				16	5,2	10,8	1,460	
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	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	0,3	0,3	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/mm ² (1 Second)				

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.

- 1,5mm²-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

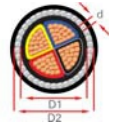
- Specification : SANS 1411-1
- Temperature Range : -10°C to 70°C
- Sheath Identification : Copper
- Packaging : 1,5mm²-6mm², 5kg & 25kg coils
- : 10mm²- 16mm², 25kg & 500kg wooden drums
- : 25mm²-240mm² & 500kg wooden drums

Technical Data

Conductor Size	Nominal Stranding	Approximate Meters
(mm ²)	(No. x Diameter)	(mm.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 : 180m of 70mm² Copper Earth, Wire. 1kg of 70mm² Copper is therefore = 1,58m.
So 180m divided by 1,58 = 113,92kg say 114kg



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

Electrical and physical properties of 3 and 4 core PVC insulated PVC bedded *SWA PVC sheathed 600/1000 V 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.

Technical Data

Copper Conductors

Cable Size (mm ²)	Electrical Properties						Physical Properties							
	Current Rating			Impedance (Ω/km)	Volt Drop (mV/A/m)	1 Sec Short Circuit Rating (kA)	Nominal Diameters				Approx. Mass (kg/km)			
	Ground (A)	Ducts (A)	Air (A)				D1		d				D2	
				3c (mm)	4c (mm)	3c (mm)	4c (mm)	3c (mm)	4c (mm)	3c (kg/km)	4c (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	1,25	1,25	15,23	16,18	522	597
4	42	34	35	5,52	9,561	0,46	11,40	12,57	1,25	1,25	17,02	18,39	667	762
6	53	43	45	3,69	6,391	0,69	12,58	13,90	1,25	1,25	18,4	19,72	790	910
10	70	58	62	2,19	3,793	1,15	14,59	16,14	1,25	1,25	20,41	21,96	996	1169
16	91	75	83	1,38	2,390	1,84	16,55	19,18	1,25	1,25	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	1,60	1,60	27,89	31,17	2215	2732
50	169	138	163	0,4718	0,817	5,75	24,26	28,14	1,60	1,60	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	2,00	2,00	39,99	44,62	4901	6115
120	285	234	290	0,2012	0,348	13,80	33,38	38,10	2,00	2,00	42,18	47,40	5720	7269
150	320	263	332	0,1698	0,294	17,25	36,68	42,05	2,00	2,00	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	2,50	2,50	57,13	64,16	10767	13726
300	465	385	510	0,1090	0,189	34,50	51,10	58,53	2,50	2,50	62,20	70,13	12950	16544

Aluminium Conductors

Cable Size (mm ²)	Electrical Properties						Physical Properties							
	Current Rating			Impedance (Ω/km)	Volt Drop (mV/A/m)	1 Sec Short Circuit Rating (kA)	Nominal Diameters				Approx. Mass (kg/km)			
	Ground (A)	Ducts (A)	Air (A)				D1		d				D2	
				3c (mm)	4c (mm)	3c (mm)	4c (mm)	3c (mm)	4c (mm)	3c (kg/km)	4c (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	1,60	1,60	26,33	29,13	1477	1757
50	129	104	119	0,7749	1,342	3,61	21,87	25,05	1,60	1,60	29,07	32,25	1782	2150
70	158	130	151	0,5388	0,9333	5,05	24,76	29,27	1,60	1,60	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	2,00	2,00	39,89	44,24	3328	4023
150	245	201	250	0,2607	0,452	10,83	33,99	39,39	2,00	2,50	42,79	49,69	3837	5276
185	278	229	287	0,2133	0,369	13,35	37,80	44,51	2,00	2,50	47,10	54,81	4557	6231
240	324	268	342	0,1708	0,296	17,32	42,60	50,04	2,50	2,50	52,90	61,14	5977	7550

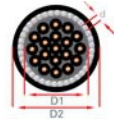
Under short circuit conditions a maximum conductor temperature of 160°C is allowed for a maximum of 1 second

PVC Current 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

Multicore Cable

Low-voltage Armoured Cable



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 600/1000 V 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 to use a supplementary earth continuity conductor.

Technical Data

1.5mm² Multicore Cables

No of Cores	Electrical Properties					Physical Properties			
	Current Rating			Impedance	Capacitance	Nominal Diameters			Mass
	Ground	Ducts	Air			(mm)			
(A)	(A)	(A)	(Ω/km)	(nF/lm)	D1	d	D2	(kg/km)	
2	29	23	22	14,4782	422	8,1	1,25	13,8	422
3	24	20	19	14,4782	422	8,6	1,25	14,3	456
4	24	20	19	14,4782	422	9,5	1,25	15,1	510
5	21	17	17	14,4782	422	10,3	1,25	15,8	577
6	20	16	16	14,4782	422	11,4	1,25	17,0	613
7	18	15	15	14,4782	422	11,4	1,25	17,0	629
8	17	14	14	14,4782	422	12,6	1,25	18,2	710
10	16	13	13	14,4782	413	14,8	1,25	20,7	837
12	15	12	12	14,4782	413	15,3	1,25	21,2	901
14	14	11	12	14,4782	413	16,2	1,60	22,0	980
19	12	10	11	14,4782	379	19,2	1,60	25,9	1404
24	11	9	10	14,4782	379	22,4	1,60	29,3	1687
27	11	8	10	14,4782	379	22,9	1,60	29,8	1783
30	10	8	9	14,4782	379	23,7	1,60	30,7	1867
37	9	7	9	14,4782	379	25,9	1,60	32,8	2153

2.5mm² Multicore Cables

No of Cores	Electrical Properties					Physical Properties			
	Current Rating			Impedance	Capacitance	Nominal Diameters			Mass
	Ground	Ducts	Air			(mm)			
(A)	(A)	(A)	(Ω/km)	(nF/lm)	D1	d	D2	(kg/km)	
2	37	31	31	8,8668	487	9,0	1,25	14,7	475
3	32	26	26	8,8668	487	9,6	1,25	15,2	524
4	32	26	26	8,8668	487	10,6	1,25	16,2	606
5	27	22	22	8,8668	487	11,5	1,25	17	690
6	25	20	21	8,8668	487	12,7	1,25	18,5	737
7	24	19	20	8,8668	487	12,7	1,25	18,5	756
8	22	18	19	8,8668	487	13,0	1,25	18,9	806
10	21	17	18	8,8668	477	16,6	1,60	22,5	1000
12	19	15	17	8,8668	434	18,1	1,60	24,8	1306
14	18	14	16	8,8668	434	19,0	1,60	25,7	1421
19	16	13	14	8,8668	434	21,4	1,60	28,1	1695
24	14	12	13	8,8668	434	25,1	1,60	32,0	2053
27	14	11	13	8,8668	434	25,7	1,60	32,6	2181
30	13	10	12	8,8668	434	26,6	2,00	34,8	2594
37	12	10	11	8,8668	410	29,4	2,00	37,6	3011

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

Multicore Cable

Low-voltage Armoured Cable



Technical Data

4mm² Multicore Cables

No of Cores	Electrical Properties					Physical Properties			
	Current Rating			Impedance	Capacitance	Nominal Diameters			Mass
	Ground	Ducts	Air			(mm)			
(A)	(A)	(A)	(Ω/km)	(nF/lm)	D1	d	D2	(kg/km)	
2	50	41	41	5,5171	487	10,2	1,25	16,3	597
3	42	34	35	5,5171	487	10,9	1,25	17,0	669
4	42	34	35	5,5171	487	12,3	1,25	18,4	764
5	35	28	29	5,5171	487	13,6	1,25	19,7	884
6	33	27	28	5,5171	487	14,9	1,25	21,0	961
7	31	25	26	5,5171	487	14,9	1,25	21,0	986
8	29	24	25	5,5171	487	18,1	1,25	24,2	1079
10	27	22	24	5,5171	477	20,2	1,60	27,0	1251
12	25	20	22	5,5171	434	20,4	1,60	28,2	1211
14	23	19	21	5,5171	434	22,8	1,60	29,6	1885
19	21	16	19	5,5171	434	24,9	2,00	32,5	2282

6mm² Multicore Cables

No of Cores	Electrical Properties					Physical Properties			
	Current Rating			Impedance	Capacitance	Nominal Diameters			Mass
	Ground	Ducts	Air			(mm)			
(A)	(A)	(A)	(Ω/km)	(nF/lm)	D1	d	D2	(kg/km)	
2	62	51	53	3,6868	556	11,8	1,25	17,4	684
3	53	43	45	3,6868	556	12,6	1,25	18,4	791
4	53	43	45	3,6868	556	13,9	1,25	19,7	911

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)			
	25	30	35	40		30	35	40	45
70	1,00	0,94	0,88	0,82	70	1,00	0,94	0,87	0,79

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

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

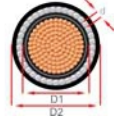
No of Cables in group	Direct in ground				
	Axial Spacing (mm)				
	Touching	150	300	450	600
2	0,81	0,87	0,91	0,93	0,94
3	0,70	0,78	0,84	0,87	0,90
4	0,63	0,74	0,81	0,86	0,89
5	0,59	0,70	0,78	0,83	0,87
6	0,55	0,67	0,76	0,82	0,86

No of Cables	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 Cable

Low-voltage AWA



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

Electrical and physical properties of single core stranded copper conductors, PVC Insulated, PVC bedded, AWA PVC sheathed 600/1000V cables manufactured to SANS 1507-3.

Technical Data

Rated Area (mm ²)	Approximate Diameters D1 d D2			Approx. Mass (kg/km)	Impedance (Ω/km)	Cables in Trefoil Formation			
						Current Rating			Voltage Drop per Amp per metre (mV)
						Ground (A)	Ducts (A)	Air (A)	
25	8,35	1,25	15,45	563	0,879	125	112	121	1,52
35	9,40	1,25	16,50	700	0,639	156	140	147	1,11
50	10,95	1,25	18,05	846	0,479	183	165	177	0,83
70	12,59	1,25	19,89	1128	0,339	223	200	221	0,59
95	14,74	1,25	22,04	1504	0,257	266	238	273	0,45
120	16,16	1,60	25,16	1784	0,213	301	269	314	0,37
150	17,99	1,60	26,99	2102	0,182	336	299	357	0,32
185	20,10	1,60	29,30	2547	0,157	370	329	401	0,27
240	23,11	1,60	32,31	3114	0,134	410	363	481	0,23
300	26,25	2,0	37,05	4124	0,123	476	420	546	0,21
400	29,50	2,0	41,50	5133	0,113	529	465	622	0,19
500	32,51	2,0	44,51	6203	0,106	581	509	695	0,18
630	38,75	2,5	51,75	8218	0,099	623	541	779	0,17

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

Armadac®

PVC PVC SWA PVC (FR) BLK/Red (1,9 / 3,3 kV)



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

Cable Description

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

Application 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, including game lodges.

Armadac® consists of 3 circular stranded plain soft copper conductors, PVC insulated, PVC bedded, Steel Wire Armoured, PVC sheathed, 1,9/3,3 kV manufactured to SANS 1507-3. Applications where this cable can typically be used include, amongst others, residential installations, game lodges 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 3,3 kV include the fact that volt 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 utilized 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

Specification	: SANS 1507-3
Temperature Range	: -10°C to 70°C
Voltage Rating	: 1900/3300V
Core Identification	: Red, Yellow, Blue
Packaging	: Available on 500 metre wooden drums

Technical Data

Electrical & Physical Properties

Cable Size (mm ²)	Electrical Properties						Physical Properties			
	Current Rating *			Impedance (Z) (Ω/km)	Volt Drop (mV/A/m)	1 Sec Short Circuit Rating (kA)	Nominal Diameters			Approx. Mass (kg/km)
	Ground (A)	Ducts (A)	Air (A)				D1 (mm)	d (mm)	D2 (mm)	
10	68	58	60	2.34	2,2	1,4	20,7	1,6	227,3	1543
16	91	76	81	1.47	1,4	2,2	22,8	1,6	29,6	1859
25	113	95	103	0.93	0,9	3,4	24,9	1,6	31,7	2221

- 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 - Separate 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 (mm ²)	10	16
Phase Conductor Resistance (Ohm/km) DC @ 20 °C	1,90	1,20
Earth Size (mm ²)	7,5	10
Neutral Size (mm ²)	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

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

Mechanical Properties

Cable Size (mm ²)	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

Installation Data

Span (m)		10	20	30	40	50	Based on	
							UTS**	MWT***
SAG* (mm)	10 mm ²	45	180	400	710	1110	3600	900
SAG* (mm)	16 mm ²	40	170	380	670	1050	5760	1440

- Note:**
- * Assuming worst conditions, i.e. - 5,5 °C with simultaneous wind speed of 31 m/s and measured at midspan.
 - ** UTS = Minimum ultimate tensile strength.
 - *** MWT = Minimum working tension.

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 600/1000 V 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 (mm ²)	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

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

Mechanical Properties

Cable Size (mm ²)	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 (mm ²)	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

Installation Data

Span (m)		10	20	30	40	50	Based on	
							UTS**	MWT***
SAG* (mm)	4 mm ²	40	165	370	650	1020	1480	370
SAG* (mm)	10 mm ²	35	140	310	550	870	3600	900

- Note:**
- * Assuming worst conditions, i.e. temperature -5,5°C with simultaneous wind speed of 31m/s and measured at midspan.
 - ** UTS = Minimum ultimate tensile strength. Safety factor of 2,5.
 - *** MWT = Minimum working tension.

Aerial Bundle Conductor (ABC) Cable



SELF SUPPORTING

SUPPORTING CORE

Cable Description

Self-supporting system consists of four cores of hard-drawn stranded and compacted aluminum conductors of equal cross-section and insulated with carbon-loaded XLPE to ensure UV protection. All cores strained equally. 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.

Installation Information

Economical Flexible Safe Vandal proof Durable Aesthetically pleasing Adaptable

Properties

Specification : 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 Strain-bearing (supporting) neutral, 1 longitudinal rib on one surface 0,5mm x 1,00mm
 Packaging : Available on 500 metre wooden drums

Technical Data

Electrical Properties

Cable Size	Current Rating (Note 1)	Short Circuit Rating (Note 2)	Conductor Resistance @ 20°C	Conductor Resistance (ac) @ 80°C	Self Supporting System		Supporting Core System		
					Induction Reactance @ 50Hz	Impedance (z) @ 50Hz at 80°C	Supporting Core Size	Induction Reactance @ 50Hz	Impedance (z) @ 50Hz at 80°C
mm ²	(A)	kA	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	mm ²	(Ω/km)	(Ω/km)
25	105	2,3	1,200	1,490	0,096	1,493	54,6	0,101	1,493
35	144	3,2	0,868	1,078	0,096	1,082	54,6	0,097	1,082
50	183	4,6	0,641	0,796	0,090	0,801	54,6	0,089	0,801
70	228	6,4	0,443	0,550	0,089	0,557	54,6	0,086	0,557
95	277	8,5	0,320	0,397	0,086	0,406	54,6	0,081	0,405
120	322	11,0	0,253	0,314	0,084	0,325	70	0,079	0,324
150	350	13,8	0,206	0,256	0,082	0,269	95	0,079	0,268

NOTES: 1. Continuous current ratings are given for ambient temperature of 35 °C, and maximum conductor temperature of 80 °C. For other ambient temperatures use adjoining rating factors
 2. Short circuit ratings of 1 second duration, for a final conductor temperature of 130 °C.

Temp °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		Self Supporting System			Supporting Core System			
					Approx. Assembly Diameter	Approx. Assembly Mass	Maximum Design Load	Supporting Core Size	Approx. Assembly Diameter	Approx. Assembly Mass	Maximum Design Load
Phase Cores	Min	Max	Min	Max	(mm)	(kg/km)	(kN)	mm ²	(mm)	(kg/km)	(kN)
mm ²	(mm)		(mm)		(mm)	(kg/km)	(kN)	mm ²	(mm)	(kg/km)	(kN)
25	5,6	6,5	8,4	9,6	25	400	5	54,6	26	507	6
35	6,6	7,5	9,8	11,1	27	540	7	54,6	28	612	6
50	7,7	8,6	10,9	12,3	29	697	9	54,6	32	730	6
70	9,3	10,2	12,9	14,3	33	982	14	54,6	34	944	6
95	11,0	12,0	14,6	16,2	37	1302	19	54,6	38	1183	6
120	12,5	13,5	16,1	17,5	41	1470	24	70,0	40	1600	8
150	13,9	15,0	17,5	19,2	45	2011	30	95,0	44	1870	13

Above Plus 25mm² Auxiliary Core

25	N/A	N/A	N/A	N/A	25	505	N/A	N/A	32	612	N/A
35					32	645			34	717	
50					34	802			36	835	
70					38	1087			38	1049	
95					42	1407			42	1288	
120					44	1575			50	1705	
150					48	2116			56	1975	