SWA Cable (Steel Wire Armoured) BS5467

Application: Steel Wire Armour cable BS5467 (SWA) is a hard-wearing power cable, with mechanical protection, designed for the supply of mains electricity. SWA is suitable for indoors and outdoors, in cable ducts or directly buried in the ground. Multi-core steel wire armoured cable can also be used for auxiliary control.

Technical Data:

1	Conductor	Class 2 pain stranded copper conductor to BS EN 60228:2005
2	Insulation	XPLE (Cross Linked Polyethylene)
3	Bedding	PVC (Polyvinyl Chloride)
4	Armouring	Multi-core: SWA (Steel Wire Armour)
5	Sheath	PVC (Polyvinyl Chloride)

Voltage Rating 600/1000V

Conductor Operating Temperature 0ºC to +90ºC

Core Identification
1 Core: Brown
2 Cores: Brown, Blue
3 Cores: Brown, Black, Grey or Brown, Blue, Green/Yellow
4 Cores: Brown, Black, Grey, Blue
5 Cores: Brown, Black, Grey, Blue, Green/Yellow

Alternative Core Identification:
White cores with black numbers

Sizes and Dimensions - 2 core

Part No.	No. Cores	Conductor Cross Section Area (mm^2)	Cable Cross Section Area (mm^2)	Actual Armour Cross Section Area (mm^2)	Overall Diameter (mm)	Gland Size	Cleat Size	Nominal Weight (kg/km)	Resistance of Copper Conductor (Ω/Km) at 20^0C
6942X 1.5	2	1.5	114.93	15	12.1	20S	5	302	12.1
6942X 2.5	2	2.5	145.19	17	13.6	20S	6	346	7.41
6942X 4	2	4	169.63	19	14.7	20S	6	410	4.61
6942X 6	2	6	198.46	22	15.9	20	7	499	3.08
6942X 10	2	10	254.34	26	18.0	20	8	648	1.83
6942X 16	2	16	326.69	42	20.4	25	9	978	1.15
6942X 25	2	25	455.94	42	24.1	25	10	1290	0.727
6942X 35	2	35	426.17	60	23.3	25	10	1500	0.524
6942X 50	2	50	522.53	68	25.8	32	11	1890	0.387
6942X 70	2	70	660.19	80	29.0	32	12	2450	0.268
6942X 95	2	95	860.05	113	33.1	40	14	330	0.193
6942X 120	2	120	1023.02	125	36.1	40	16	4020	0.153
6942X 150	2	150	1212.42	138	39.3	40	18	4750	0.124
6942X 185	2	185	1568.50	191	44.7	50	20	5800	0.0991
6942X 240	2	240	1884.79	215	49.0	50	T9	7280	0.0754
6942X 300	2	300	2246.87	235	53.5	63	T9	8750	0.0601
6942X 400	2	400	2732.59	265	59.0	63	T10	10700	0.0470

NB: Actual Armour Cross Section Area (mm^2)

Red shows SWA too small to be used as protective conductor. Taken from table 54G in 17th Edition of the IET Wiring Regulations (but may comply by calculation).

Black shows SWA adequate to use as protective conductor. Taken from table 54G in 17th Edition of the IET Wiring Regulations.

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Part No.	No. Cores	Conduct or Cross Sec-tion Area (mm^2)	Cable Cross Section Area (mm^2)	Actual Armour Cross Section Area (mm^2)	Overall Diameter (mm)	Gland Size	Cleat Size	Nominal Weight (kg/km)	Resistance of Copper Conductor (Ω/Km) at 20°C
6943X 1.5	3	1.5	124.63	16	12.6	20s	6	330	12.1
6943X 2.5	3	2.5	156.07	19	14.1	20s	6	390	7.41
6943X 4	3	4	183.76	20	15.3	20s	6	464	4.61
6943X 6	3	6	216.31	23	16.6	20	7	568	3.08
6943X 10	3	10	298.50	39	19.5	20	8	866	1.83
6943X 16	3	16	366.25	45	21.6	25	10	1152	1.15
6943X 25	3	25	510.45	62	25.5	32	11	1800	0.727
6943X 35	3	35	615.44	68	28.0	32	11	2230	0.524
6943X 50	3	50	637.62	78	28.5	32	12	2490	0.387
6943X 70	3	70	813.92	90	32.2	40	14	3290	0.268
6943X 95	3	95	1074.67	128	37.0	40	16	4440	0.193
6943X 120	3	120	1281.25	141	40.4	50	16	5470	0.153
6943X 150	3	150	1625.15	201	45.5	50	18	6930	0.124
6943X 185	3	185	1946.83	220	49.8	50	20	8350	0.0991
6943X 240	3	240	2383.27	250	55.1	63	T9	10400	0.0754
6943X 300	3	300	2844.87	269	60.2	63	T10	12600	0.0601
6943X 400	3	400	3481.91	304	66.6	75	T11	14600	0.0470

NB: Actual Armour Cross Section Area (mm^2)

Red shows SWA too small to be used as protective conductor. Taken from table 54G in 17th Edition of the IET Wiring Regulations (but may comply by calculation).

Black shows SWA adequate to use as protective conductor. Taken from table 54G in 17th Edition of the IET Wiring Regulations.

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Sizes and Dimensions - 4 core

Part No.	No. Cores	Conductor Cross Section Area (mm^2)	Cable Cross Section Area (mm^2)	Actual Armour Cross Section Area (mm^2)	Overall Diameter (mm)	Gland Size	Cleat Size	Nominal Weight (kg/km)	Resistance of Copper Conductor (Ω/Km) at 20^0C
6944X 1.5	4	1.5	143.07	17	13.5	20s	6	365	12.1
6944X 2.5	4	2.5	176.63	20	15.0	20s	6	438	7.41
6944X 4	4	4	211.13	23	16.4	20	7	532	4.61
6944X 6	4	6	274.51	36	18.7	20	8	764	3.08
6944X 10	4	10	349.49	43	21.1	25	9	1013	1.83
6944X 16	4	16	411.66	49	22.9	25	11	1360	1.15
6944X 25	4	25	597.98	70	27.6	32	12	2160	0.727
6944X 35	4	35	725.47	78	30.4	32	12	2690	0.524
6944X 50	4	50	803.84	90	32.0	32	14	3130	0.387
6944X 70	4	70	1115.71	131	37.7	40	16	4500	0.268
6944X 95	4	95	1365.03	147	41.7	50	18	5600	0.193
6944X 120	4	120	1741.45	206	47.1	50	20	7400	0.153
6944X 150	4	150	2073.94	230	51.4	50	TC9	8780	0.124
6944X 185	4	185	2514.79	255	56.6	63	TC10	10630	0.0991
6944X 240	4	240	3115.75	289	63.0	63	TC11	13390	0.0754
6944X 300	4	300	3715.75	319	68.8	75	TC12	16290	0.0601
6944X 400	4	400	4788.19	452	78.1	75	TC14	19800	0.0470

NB: Actual Armour Cross Section Area (mm^2)

Red shows SWA too small to be used as protective conductor. Taken from table 54G in 17th Edition of the IET Wiring Regulations (but may comply by calculation).

Black shows SWA adequate to use as protective conductor. Taken from table 54G in 17th Edition of the IET Wiring Regulations.

Sizes and Dimensions - 5 core

Part No.	No. Cores	Conductor Cross Section Area (mm^2)	Cable Cross Section Area (mm^2)	Actual Armour Cross Section Area (mm^2)	Overall Diameter (mm)	Gland Size	Cleat Size	Nominal Weight (kg/km)	Resistance of Copper Conductor (Ω/Km) at 20°C
6945X 1.5	5	1.5	143.07	19	13.5		6	390	12.1
6945X 2.5	5	2.5	176.63	22	15.0		7	465	7.41
6945X 4	5	4	211.13	25	16.4		7	579	4.61
6945X 6	5	6	274.51	40	18.7		8	820	3.08
6945X 10	5	10	349.49	46	21.1		9	1090	1.83
6945X 16	5	16	411.66	72	22.9		10	1400	1.15
6945X 25	5	25	655.64	88	28.9		12	2100	0.727
6945X 35	5	35	808.87	100	32.1		14	2580	0.524
6945X 50	5	50	1133.54	144	38.0		16	3850	0.387

Sizes and Dimensions - Multi core

Part No.	No. Cores	Conductor Cross Section Area (mm^2)	Cable Cross Section Area (mm^2)	Actual Armour Cross Section Area (mm^2)	Overall Diameter (mm)	Gland Size	Cleat Size	Nominal Weight (kg/km)	Resistance of Copper Conductor (Ω/Km) at 20°C
6945X 1.5	5	1.5	143.07	19	13.5	20S	6	390	12.1
6947X 1.5	7	1.5	181.37	20	15.2	20S	6	470	12.1
694/12X 1.5	12	1.5	295.44	39	19.4	20	8	780	12.1
694/19X 1.5	19	1.5	386.88	45	22.2	25	9	1000	12.1
694/27X 1.5	27	1.5	559.62	70	26.7	25	10	1500	12.1
694/37X 1.5	37	1.5	660.19	78	29.0	32	12	1800	12.1
6945X 2.5	5	2.5	176.63	22	15.0	20S	7	465	7.41
6947X 2.5	7	2.5	229.54	24	17.1	20	7	600	7.41
694/12X 2.5	12	2.5	393.88	45	22.4	25	9	1000	7.41
694/19X 2.5	19	2.5	555.43	70	26.6	25	10	1540	7.41
694/27X 2.5	27	2.5	739.85	84	30.7	25	12	1950	7.41
694/37X 2.5	37	2.5	896.82	94	33.8	32	14	2350	7.41

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Conductor Cross Sectional area	Reference Method C (Clipped Direct)		Reference Method E (In free air on a perforated cable tray etc, horizontal or vertical)		Reference Method D (Direct in ground or in ducting in ground, in or around buildings)	
	1 Two core cable, single-phase a.c. or d.c.	1 three- or 1 four-core cable, three phase a.c.	1 two core cable, single-phase a.c. or d.c.	1 three or 1 four-core cable, three phase a.c.	1 two core cable, single-phase a.c. or d.c.	1 three or 1 four core cable, three-phase a.c.
(mm^2)	(A)	(A)	(A)	(A)	(A)	(A)
1.5	27	23	29	25	25	21
2.5	36	31	39	33	33	2
4	49	42	52	44	43	36
6	62	53	66	56	53	44
10	85	73	90	78	71	58
16	110	94	115	99	91	75
25	146	124	152	131	116	96
35	180	154	188	162	139	115
50	219	187	228	193	164	135
70	279	238	291	251	203	167
95	338	289	354	304	239	197
120	392	335	410	353	271	223
150	451	386	472	406	306	251
185	515	441	539	463	343	281
240	607	520	636	546	395	324
300	698	599	732	628	446	365
400	787	673	847	728	-	-

This table above is in accordance with Table 4E4A of the 17th Edition of IET Wiring Regulations

Notes:

1. Where is it intended to connect the cables in this table to the equipment or accessories designed to operate at a temperature lower than the maximum operating temperature of the cable, the cable should be rated at the maximum operating temperature of the equipment or accessory (see Regulation 512.1.5).

2. Where it is intended to group a cable in the table with other cables, the cables should be rated at the lowest of the maximum operating temperature of any of the cables in the group (see Regulation 512.1.5).

Conductor Cross Sectional Area	Two Core Cable, d.c	Two Core. Single Phase a.c.			Three- or Four-core cable, three-phase a.c.		
(mm^2)	(mV/A/m)	(mV/A/m)			(mV/A/m)		
1.5	31	31			27		
2.5	19	19			16		
4	12	12			10		
6	7.9	7.9			6.8		
10	4.7	4.7			4.0		
16	2.9	2.9			2.5		
		r	x	z	r	x	z
25	1.85	1.85	0.160	1.90	1.60	0.140	1.65
35	1.35	1.35	0.155	1.35	1.15	0.135	1.15
50	0.98	0.99	0.155	1.00	0.86	0.135	0.87
70	0.67	0.67	0.150	0.69	0.59	0.130	0.60
95	0.49	0.50	0.150	0.52	0.43	0.130	0.45
120	0.39	0.40	0.145	0.42	0.34	0.130	0.37
150	0.31	0.32	0.145	0.35	0.28	0.125	0.30
185	0.25	0.26	0.145	0.29	0.22	0.125	0.26
240	0.195	0.20	0.140	0.24	0.175	0.125	0.21
300	0.155	0.16	0.140	0.21	0.140	0.120	0.185
400	0.120	0.13	0.140	0.190	0.115	0.120	0.165

This table above is in accordance with Table 4E4B of the 17th Edition of IET Wiring Regulations