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Flexible Cables and Cords

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DEF 61-12 Equipment Wires

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Application

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For internal wiring of electronic and other equipment.

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Specification

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- In accordance with DEF 61-12 Part 6 and BS4808 Part 2 RoHS Compliant
- **Conductors:** Tinned copper conductors to BS EN 60228
- **Insulation:** PVC insulation Type 2 to BS7655 (Types 1 and 2 equipment wires)
 - PVC insulation Type 1I.1 to BS EN 50363-3 (Types 3, 7, 8, 9, 10 equipment wires)
- Normal colours available: red, blue, green, yellow, black, white, brown, violet, orange, grey, pink
- **Temperature Rating:** 85°C maximum conductor operating temperature
- **Voltage Rating:** 750, 1000, 1500 V a.c. and 3000 V d.c.

DEF 61-12 Equipment Wires

Anixter Number	Nominal Conductor Area	Nominal Conductor Stranding	Insulation Thickness	Minimum O/D	Maximum O/D	Approximate Weight
	mm ²	#/mm	mm	mm	mm	kg/km
Type 1 - PVC hard grade working temp - 15°C to +85°C 750 Vrms						
A4-S01-1013-##	0.13	1/0.4	0.2	0.75	0.85	1.7
A4-S01-1028-##	0.28	1/0.6	0.2	0.95	1.05	3.3
A4-S01-1022-##	0.22	7/0.2	0.2	0.95	1.05	2.8
Type 2 - PVC hard grade working temp - 15°C to +85°C 1000 Vrms						
A4-S01-2013-##	0.13	1/0.4	0.3	0.9	1.1	2.1
A4-S01-2028-##	0.28	1/0.6	0.3	1.1	1.3	3.8
A4-S01-1064-##	0.64	1/0.9	0.3	1.4	1.6	7.4
A4-S01-2022-##	0.22	7/0.2	0.3	1.1	1.3	3.3
A4-S01-1050-##	0.50	16/0.2	0.3	1.45	1.65	6.4
A4-S01-1075-##	0.75	24/0.2	0.45	1.95	2.15	10.3
Type 3 - PVC general purpose working temp - 20°C to +85°C 1500 Vrms						
A4-S01-3028-##	0.28	1/0.6	0.45	1.4	1.6	4.8
A4-S01-1010-##	1.00	1/1.13	0.45	1.95	2.15	12.4
A4-S01-2050-##	0.50	16/0.2	0.6	2.0	2.25	9.0
A4-S01-2075-##	0.75	24/0.2	0.6	2.2	2.45	11.8
A4-S01-2010-##	1.00	32/0.2	0.6	2.4	2.65	14.6
A4-S01-1020-##	2.00	63/0.2	0.6	2.9	3.15	25.3
Type 7 - PVC hard grade working temp - 20°C to +85°C 3000 V d.c.						
A4-S01-1005-##	0.50	16/0.2	0.9	2.6	2.85	12.4

= colour, -02 = black, -03 = red, -04 = green, -05 = yellow, -06 = blue, -07 = brown, -09 = grey, -60 = green/yellow.

Other colours available upon request.

PVC hard grade and general purpose, available screened and PVC sheathed.

For further technical information see page 2:52.

For "LFH" equipment wire refer to DEF 61-12 Part 18 wires in Section 5.

Technical Specifications for Equipment Wires

The upper temperature limits in the table opposite refer to the maximum continuous temperature of the conductor due to the combination of ambient temperature and temperature rise due to current flow. The lower values quoted are the minimum temperatures for equipment wire, which may be subject to slight flexing during their normal operating life.

The current carrying capacities quoted are for wires carrying a continuous current in free air at an ambient temperature.

NOTE: Current carrying capacities will depend on circumstances but for general guidance the quoted current values will give a temperature rise of about 15°C, in ambient temperatures up to 70°C for single, freely ventilated, insulated wires. Different values will apply when equipment wires are bunched.



Technical Specifications for Equipment Wires

Type of Equipment Wire	Description	Maximum	
		a.c. (rms)	d.c.
1	Hard PVC insulated	750	-
2	Hard PVC insulated	1,000	-
2SB	As Type 2, screened	1,000	-
2SBM	As Type 2SB, with PVC sheath	1,000	-
3	General purpose PVC insulated	1,500	-
3SB	As Type 3, screened	1,500	-
3SBM	As Type 3SB with PVC sheath	1,500	-
4	Polyethylene insulated	1,500	-
4SB	As Type 4, screened	1,500	-
5	Silicone rubber insulated	750	-
5SB	As Type 5, screened	750	-
7	General purpose PVC insulated	-	3,000
8	General purpose, PVC insulated	-	5,000
9	General purpose, PVC insulated	-	10,000
10	General purpose, PVC insulated	-	15,000
11	Polyethylene insulated	-	7,500
12	Polyethylene insulated	-	15,000
13	Polyethylene insulated	-	30,000
14	Silicone rubber insulated	-	12,000

Type of Insulation	Temperature Range	Current Ratings	
PVC Hard grade	-15° to +85°C	1/0.4	0.8A
PVC General purpose	-20° to +85°C	7/0.2	1.4A
Polyethylene	-50° to +85°C	1/0.6	1.8A
Silicone rubber	-60° to +150°C	16/0.2	3.0A
-	-	1/0.9	4.0A
-	-	24/0.2	4.5A
-	-	1/1.13	6.0A
-	-	32/0.2	6.0A
-	-	63/0.2	11.0A

GUIDE TO MINIMUM BENDING RADII ON FLEXIBLE CORDS AND CABLES

Cable Type	Cable Diameter (mm)			
	$\leq 8 \leq$	$> 8 \leq 12$	$> 12 \leq 20$	> 20
	M.B.R. (Minimum Bending Radius)			
Flexible Cable Thermoplastic (e.g. PVC)				
Fixed installation	3D	3D	4D	4D
Free movement*	5D	5D	6D	6D
Flexible Cable Elastomeric (e.g. rubber)				
Fixed installation	3D	3D	4D	4D
Free movement*	4D	4D	5D	6D

Where D = cable diameter.

The above values are based on recommendations given in BS7540 "Use of cables with a rated voltage not exceeding 450/750 V".

*These values do not apply to cables used on festoon, reeling drum, cranes, robotics, etc., where repetitive flexing and/or twisting is anticipated.

For further details refer to BS7540.