

55 Wire

Single or Dual Wall 200°C rated, XLETFE
High performance wire and cable

55 wire is insulated with modified radiation cross-linked ETFE polymer and combines the easy handling of a flexible thin wall wire, with excellent scrape abrasion and cut-through characteristics. The single wall construction is currently used extensively throughout industry, applications include commercial wiring, avionics, satellites, aircraft, helicopters and high performance military and motorsport electronics or wherever there is a demand for reliable performance under extreme conditions. The dual wall airframe construction is commonly used on numerous commercial and military aircraft programmes throughout the world.

Features & Benefits

- Resistant to electrical arc tracking in wet or dry conditions
- Single or dual wall construction
- Small size, ultra light weight
- Exceptional chemical resistance

Operating Temperature

- -65°C to +150°C
(Tin plated conductors - standard)
- -65°C to +200°C
(Silver/Nickel plated conductors)

Specifications/Approvals

- SAE AS22759/32-35 & 41-46 (wires)
- NEMA-WC-27500 (cables)
- Def Stan 61-12, Part 33
- VG95218 Part 20, Type 21, Type A; Part 22, Type A; Part 23, Type A; Part 1001 & 1002
- VDE 9426, 9427, 9428
- British Standards 3G233
- Boeing BMS 13-48
- Airbus ABS 0820 to 0826
- NASA preferred product list
- European Space Agency 3901/012, 3901/020 and 3901/022



Spec 55 Wire Construction

A wide range of 55 spec wire constructions are available, the most commonly used are:

Equipment Wire - Single Wall



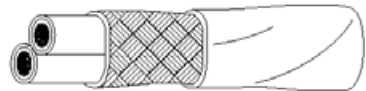
Airframe Wire - Dual Wall (light blue inner wall)



Twisted Single Cores



Screened & Jacketed Twisted Pair



Note

55 Wire is available in an extensive variety of constructions, sizes and colours. For further assistance regarding your specific wire and cable requirements, please contact us.

	Product Characteristics	Product Performance
Physical	Operating temperature (Tin plated conductor)	-65°C to +150°C
	Operating temperature (Silver or nickel plated conductor)	-65°C to +200°C
	Thermal endurance	200°C for 10,000 hours
	Scrape abrasion (BS3G 233)	>100 cycles at +150°C
	Flexible endurance (Boeing BSS 7324)	>1000 cycles
	Tensile strength + core elongation	(Airframe wire only) 35 N/mm ² , 125%
	Tensile strength + total elongation	(All primary wire) 35 N/mm ² , 75%
	Notch propagation BS3G 230 0.05mm notch	Pass
	Solder iron resistance (370°C, 1 minute)	Pass
	Solderability, tin plated copper conductor BS3G 233 conditions	<0.8 secs to wet
	Shrinkage @ +200°C	<1%
	Water absorption	<0.03%
	Permittivity 1 KHz (ASTM D150)	2.7
	Dissipation factor (ASTM D150)	0.001
	Electrical	Voltage rating
Vertical Flammability	After burn	0 secs
	Burn length	57mm
60° Flammability	FAA FAR 25 APP.F	Pass
Smoke/Toxicity	Oxygen index	>40%

Wire and Cable

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600V Primary Wire, Equipment/Interconnect Dimensions (all dimensions are in mm)

Conductor Size	Stranding No/mm	Nominal CSA (mm ²)	Nominal Dia. (mm)	Max Weight (g/m)	Ordering Description
30	7/0.10	0.06	0.61	0.98	55A0111-30-X
28	7/0.13	0.09	0.69	1.35	55A0111-28-X
26	19/0.10	0.16	0.81	2.08	55A0111-26-X
24	19/0.13	0.24	0.94	2.98	55A0111-24-X
22	19/0.16	0.38	1.09	4.17	55A0111-22-X
20	19/0.20	0.62	1.29	6.4	55A0111-20-X
18	19/0.25	0.96	1.55	9.67	55A0111-18-X
16	19/0.29	1.23	1.75	12.35	55A0111-16-X
14	19/0.36	1.94	2.18	19.34	55A0111-14-X
12	37/0.32	2.97	2.64	29.32	55A0111-12-X

600V Primary Wire, Airframe Dimensions (all dimensions are in mm)

Conductor Size	Stranding No/mm	Nominal Dia. (mm)	Max Weight (g/m)	Ordering Description
26*	19/0.10	1.02	2.53	55A0814-26-X
24*	19/0.13	1.14	3.42	55A0814-24-X
22	19/0.16	1.27	4.76	55A0811-22-X
20	19/0.20	1.47	6.99	55A0811-20-X
18	19/0.25	1.78	10.71	55A0811-18-X
16	19/0.29	1.96	13.39	55A0811-16-X
14	19/0.36	2.39	20.54	55A0811-14-X
12	37/0.32	2.82	30.51	55A0811-12-X
10	37/0.40	3.40	48.22	55A0811-10-X

Note*: Conductor type Silver plated high strength copper alloy (SPHSCA).

450V Primary Wire, Light Weight Equipment Dimensions (all dimensions are in mm)

Conductor Size	Stranding No/mm	Nominal Dia. (mm)	Max Weight (g/m)	Ordering Description
30	7/0.10	0.51	0.87	55M0414-30-X
28	7/0.12	0.58	1.19	55M0414-28-X
26	19/0.10	0.69	1.80	55M0414-26-X
24	19/0.12	0.81	2.68	55M0414-24-X

Note: 55M0414 constructions are ideally suited for the performance demands of the Motorsport industry.

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600V Twisted Pair, Equipment/Interconnect Dimensions (all dimensions are in mm)

Conductor Size	Stranding No/mm	Nominal Dia. (mm)	Max Weight (g/m)	Ordering Description
30	7/0.10	1.22	1.94	55A0121-30-X/X
28	7/0.13	1.37	2.68	55A0121-28-X/X
26	19/0.10	1.62	4.32	55A0121-26-X/X
24	19/0.13	1.87	6.11	55A0121-24-X/X
22	19/0.16	2.18	8.64	55A0121-22-X/X
20	19/0.20	2.59	13.38	55A0121-20-X/X
18	19/0.25	3.09	20.20	55A0121-18-X/X
16	19/0.29	3.50	25.80	55A0121-16-X/X
14	19/0.36	4.37	39.67	55A0121-14-X/X
12	37/0.32	5.28	60.10	55A0121-12-X/X

600V Twisted Pair, Airframe Dimensions (all dimensions are in mm)

Conductor Size	Stranding No/mm	Nominal Dia. (mm)	Max Weight (g/m)	Ordering Description
26*	19/0.10	2.03	5.29	55A0824-26-X/X
24*	19/0.13	2.28	6.30	55A0824-24-X/X
22	19/0.16	2.59	10.08	55A0821-22-X/X
20	19/0.20	3.00	14.40	55A0821-20-X/X
18	19/0.25	3.55	22.76	55A0821-18-X/X
16	19/0.29	3.96	31.44	55A0821-16-X/X
14	19/0.36	4.83	43.22	55A0821-14-X/X
12	37/0.32	5.69	61.24	55A0821-12-X/X
10	37/0.40	6.80	96.94	55A0821-10-X/X

Note*: Conductor type Silver plated high strength copper alloy (SPHSCA).

450V Twisted Pair, Light Weight Equipment Dimensions (all dimensions are in mm)

Conductor Size	Stranding No/mm	Nominal Dia. (mm)	Max Weight (g/m)	Ordering Description
30	7/0.10	1.06	1.85	55M0424-30-X/X
28	7/0.12	1.22	2.54	55M0424-28-X/X
26	19/0.10	1.42	3.96	55M0424-26-X/X
24	19/0.12	1.68	5.86	55M0424-24-X/X

Note: X = Colour (please refer to **Part Numbering Guide** for the range of colours available). 55M0424 constructions are ideally suited for the performance demands of the Motorsport industry. 55 Wire is available in an extensive variety of constructions, sizes and colours, for further assistance regarding your specific wire and cable requirements, please contact us.

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600V Single Core Screened & Jacketed, Equipment/Interconnect Dimensions (mm)

Conductor Size	Stranding No/mm	Nominal Dia. (mm)	Max Weight (g/m)	Ordering Description
30	7/0.10	1.45	5.06	55A1111-30-X-X
28	7/0.13	1.52	5.80	55A1111-28-X-X
26	19/0.10	1.65	6.84	55A1111-26-X-X
24	19/0.13	1.78	8.20	55A1111-24-X-X
22	19/0.16	1.93	10.33	55A1111-22-X-X
20	19/0.20	2.14	13.40	55A1111-20-X-X
18	19/0.25	2.39	17.86	55A1111-18-X-X
16	19/0.29	2.59	21.73	55A1111-16-X-X
14	19/0.36	3.02	30.36	55A1111-14-X-X
12	37/0.32	3.48	42.41	55A1111-12-X-X

600V Single Core Screened & Jacketed, Airframe Dimensions (mm)

Conductor Size	Stranding No/mm	Nominal Dia. (mm)	Max Weight (g/m)	Ordering Description
26*	19/0.10	1.85	7.88	55A1814-26-X-X
24*	19/0.13	1.98	9.37	55A1814-24-X-X
22	19/0.16	2.13	11.75	55A1811-22-X-X
20	19/0.20	2.33	14.88	55A1811-20-X-X
18	19/0.25	2.61	19.79	55A1811-18-X-X
16	19/0.29	2.82	23.81	55A1811-16-X-X

Note*: Conductor type Silver plated high strength copper alloy (SPHSCA).

450V Single Core Screened & Jacketed, Light Weight Equipment Dimensions (mm)

Conductor Size	Stranding No/mm	Nominal Dia. (mm)	Max Weight (g/m)	Ordering Description
30	7/0.10	1.18	3.61	55M1414-30-X-X
28	7/0.12	1.26	4.12	55M1414-28-X-X
26	19/0.10	1.35	4.92	55M1414-26-X-X
24	19/0.12	1.49	6.50	55M1414-24-X-X

Note: 55M1414 constructions are ideally suited for the performance demands of the Motorsport industry.

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High performance wire and cable

600V 2-Core Screened & Jacketed, Equipment/Interconnect Dimensions (mm)

Conductor Size	Stranding No/mm	Nominal Dia. (mm)	Max Weight (g/m)	Ordering Description
30	7/0.10	2.06	8.03	55A1121-30-X/X-X
28	7/0.13	2.21	9.37	55A1121-28-X/X-X
26	19/0.10	2.46	11.75	55A1121-26-X/X-X
24	19/0.13	2.72	14.58	55A1121-24-X/X-X
22	19/0.16	3.02	18.15	55A1121-22-X/X-X
20	19/0.20	3.43	24.10	55A1121-20-X/X-X
18	19/0.25	3.94	32.63	55A1121-18-X/X-X
16	19/0.29	4.34	39.73	55A1121-16-X/X-X
14	19/0.36	5.21	57.13	55A1121-14-X/X-X
12	37/0.32	6.17	81.98	55A1121-12-X/X-X

600V 2-Core Screened & Jacketed, Airframe Dimensions (mm)

Conductor Size	Stranding No/mm	Nominal Dia. (mm)	Max Weight (g/m)	Ordering Description
26*	19/0.10	2.87	14.28	55A1824-26-X/X-X
24*	19/0.13	3.12	16.36	55A1824-24-X/X-X
22	19/0.16	3.43	20.68	55A1821-22-X/X-X
20	19/0.20	3.85	27.08	55A1821-20-X/X-X
18	19/0.25	4.39	36.45	55A1821-18-X/X-X
16	19/0.29	4.80	42.85	55A1821-16-X/X-X

Note*: Conductor type Silver plated high strength copper alloy (SPHSCA).

450V 2-Core Screened & Jacketed, Light Weight Equipment Dimensions (mm)

Conductor Size	Stranding No/mm	Nominal Dia. (mm)	Max Weight (g/m)	Ordering Description
30	7/0.10	1.75	5.51	55M1424-30-X/X-X
28	7/0.12	1.87	6.72	55M1424-28-X/X-X
26	19/0.10	2.07	8.93	55M1424-26-X/X-X
24	19/0.12	2.33	11.54	55M1424-24-X/X-X

Note: X = Colour (please refer to **Part Numbering Guide** for the range of colours available). 55M1424 constructions are ideally suited for the performance demands of the Motorsport industry. 55 Wire is available in an extensive variety of constructions, sizes and colours, for further assistance regarding your specific wire and cable requirements, please contact us.

Wire and Cable

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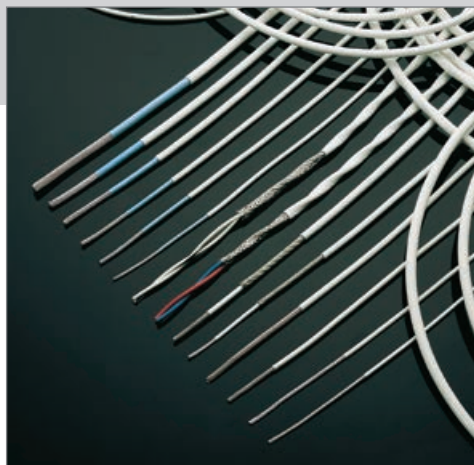
600V Three Core Screened & Jacketed, Equipment/Interconnect Dimensions (mm)

Conductor Size	Stranding No/mm	Nominal Dia. (mm)	Max Weight (g/m)	Ordering Description
30	7/0.10	2.16	9.54	55A1131-30-X/X/X-X
28	7/0.13	2.31	11.33	55A1131-28-X/X/X-X
26	19/0.10	2.59	14.47	55A1131-26-X/X/X-X
24	19/0.13	2.87	18.34	55A1131-24-X/X/X-X
22	19/0.16	3.20	23.71	55A1131-22-X/X/X-X
20	19/0.20	3.63	32.36	55A1131-20-X/X/X-X
18	19/0.25	4.19	45.34	55A1131-18-X/X/X-X
16	19/0.29	4.62	55.78	55A1131-16-X/X/X-X
14	19/0.36	5.61	80.53	55A1131-14-X/X/X-X
12	37/0.32	6.60	115.58	55A1131-12-X/X/X-X

Note: X = Colour (please refer to **Part Numbering Guide** for the range of colours available). 55M1424 constructions are ideally suited for the performance demands of the Motorsport industry. 55 Wire is available in an extensive variety of constructions, sizes and colours, for further assistance regarding your specific wire and cable requirements, please contact us.

55 Wire

Defence Standard 61-12 Part 33/001
High performance wire and cable



55D wire is an Aerospace wire, a range of which is held in stock by IS-Rayfast to service the needs of the UK Aerospace Defence Market

These products are manufactured and released in accordance with the latest Defence Standard 61-12 part 33/001 with a temperature rating of -65°C up to +150°C.

***Note:** The 135°C rated single wire without screen or jacket is no longer in the Defence Standard for sizes 001 and 002. For these constructions use the 150°C rated construction **55D0110-24-9** with copper alloy conductor.

Primary Equipment Wire

Part Number	NATO Stock Number	Defence Reference
55D0110-24-9*	6145-99-038-4091	DSP33/001-1S-002-1U
55D0111-22-9	6145-99-038-3954	DSP33/001-1T-004-1U
55D0111-20-9	6145-99-038-3955	DSP33/001-1T-006-1U

Primary Airframe Wire

Part Number	NATO Stock Number	Defence Reference
55D0214-24-9	6145-99-038-3911	DSP33/001-2P-002-1U
55D0211-22-9	6145-99-038-3912	DSP33/001-2T-004-1U
55D0211-20-9	6145-99-038-3913	DSP33/001-2T-006-1U

Single Screened & Jacketed Airframe Cable

Part Number	NATO Stock Number	Defence Reference
55D1114-24-9-9	6145-99-038-4017	DSP33/001-1P-002-1SJ
55D1111-22-9-9	6145-99-038-4018	DSP33/001-1T-004-1SJ
55D1111-20-9-9	6145-99-038-4019	DSP33/001-1T-006-1SJ

Twisted Pair Screened & Jacketed Airframe Cable

Part Number	NATO Stock Number	Defence Reference
55D1121-22-2/6-9	6145-99-038-4026	DSP33/001-1T-004-2SJ
55D1121-20-2/6-9	6145-99-038-4027	DSP33/001-1T-006-2SJ
55D1124-24-2/6-9	6145-99-038-4025	DSP33/001-1P-002-2SJ

55 Wire

Ordering

High performance wire and cable

1

Ordering Information

Colours:

0 = Black	5 = Green
1 = Brown	6 = Blue
2 = Red	7 = Violet
2L = Pink	8 = Grey
3 = Orange	9 = White
4 = Yellow	45 = Yellow/Green

Stripes are also available on request and are indicated by additional insulation colour numbers
e.g. 92 = White with Red stripe

Standard packaging:

300m reels for "standard" items

If the product is a non-stock item a Minimum Order Quantity (MOQ) will apply.

Ordering Description:

Follow steps 1 to 6.

- 1 Select the type of wire required
- 2 Select the number of conductors required
- 3 Select the type of conductor required
- 4 Select the wire gauge size required
- 5 Select the primary wire insulation colour(s) required
- 6 Select the outer jacket colour required

Ordering Examples:

- Where a single 26awg 600V white primary wire is required. The part number is **55A0111-26-9**
- Where a single 20awg 600V white primary wire, with shield and an outer white jacket is required. The part number is **55A1111-20-9-9**
- Where a two core 450V cable with an overall shield and an outer jacket is required. The gauge size for each of the primary wires is 24awg, each with a separate coloured insulation e.g. red and blue. The outer jacket required is white. The part number is **55M1424-24-2/6-9**
- Where a three core 600V cable with an overall shield and an outer jacket is required. The gauge size for each of the primary wires is 18awg, each with separate core colours e.g. red, blue and white. The outer jacket required is white. The part number is **55A1131-18-2/6/9-9**

Additional Information

The opposite page illustrates how to build your own part number. For further information or assistance please contact us.

55 Wire

Building your part number

High performance wire and cable

55 A 1 1 2 1 - 20 - 2/6 - 9

PART NUMBER EXAMPLE

JACKET COLOUR

See colour codes below

WIRE INSULATION COLOUR CODE

0	Black	5	Green
1	Brown	6	Blue
2	Red	7	Violet
2L	Pink	8	Grey
3	Orange	9	White
4	Yellow	45	Yellow/Green

CONDUCTOR SIZE

30 to 0000 AWG

CONDUCTOR TYPE

- 0 = Copper alloy
- 1 = Tin plated copper (standard)
- 2 = Silver plated copper
- 3 = Nickel plated copper
- 4 = Silver plated high strength Cu alloy (SPHSCA)
- 6 = Nickel plated high strength Cu alloy (NPHSCA)

NUMBER of CONDUCTORS

1 through 9

VOLTAGE - 55 Wire

- 1 = 600V Single wall equipment wire
- 2 = 600V Dual wall airframe wire, light weight
- 4 = 450V Single wall equipment wire (55M AWG 24-30 only).
- 7 = 1000V Dual wall airframe wire, heavy duty.
- 8 = 600V Dual wall airframe wire, normal weight

CONSTRUCTION

- 0 = Primary wire
- 1 = Round braid shielded and jacketed
- 2 = Flat braid shielded and jacketed
- 3 = Round braid shielded NO jacket
- 4 = Jacketed NO shield (2 core or more only)
- 5-9 = Special constructions

TYPE

- A = AWG
- D = Def Stan 61-12 pt 33
- M = Metric Conductor
- / = Special constructions

BASIC SPECIFICATION

Spec 55 - High performance wire and cable