

44 Wire

High performance wire and cable

Applications

44 wire has a dual wall construction that combines the outstanding physical and electrical characteristics of radiation crosslinked polyalkene with the excellent mechanical and chemical properties of radiation crosslinked polyvinylidene fluoride (PVDF).

44 wire is used extensively throughout industry, applications include commercial wiring avionics, satellites, aircraft, helicopters, ships, trains, offshore platforms and high performance military and motorsport electronics or wherever there is a demand for reliable performance under extreme conditions.

Features & Benefits

- Dual wall construction
- 600,1000 & 2500 voltage ratings
- Small, lightweight and flexible
- Low smoke and low corrosive gas generation
- Resistance to most chemicals and electrical arc tracking

Operating Temperature

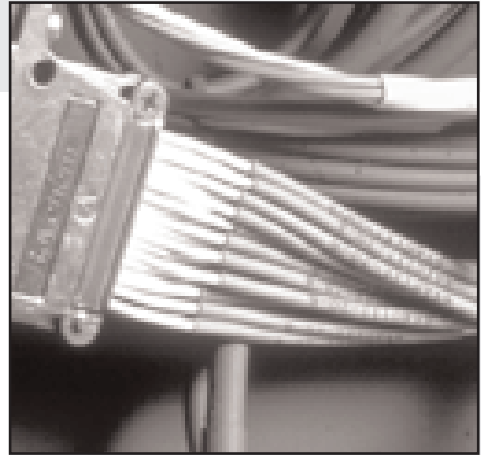
- -65°C to +150°C

Specifications/Approvals

- MIL-W-81044 (wires)
- NEMA-WC-27500 (cables)
- Def Stan 61-12, Part 18 (maintenance)
- Def Stan 61-12 Part 26
- MSV 34401
- VG 95218 Part 1000
- MTV 6145-005
- NATO stock numbers available for standard constructions
- Lloyds register of shipping
- NASA preferred product list

Airframe Application

In airframe applications 44 wire constructions can offer a modern dimensional alternative to PVC, Nylon and glass braid type wire and cables.

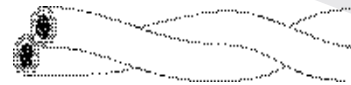


44 Wire Construction

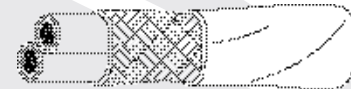
A wide range of 44 spec wire constructions are available, the most commonly used are:



Single Core



Twisted Single Cores



Screened & Jacketed

Note: 44 Wire is available in an extensive variety of constructions, voltage ratings, sizes and colours, for further assistance regarding your specific wire and cable requirements, please contact **IS-Rayfast**.

44 Wire Product Characteristics

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Product Characteristics

| | | Product Performance |
|-------------------------------|----------------------------------------------|------------------------------------------------------------|
| Physical | Operating temperature | -65°C to +150°C |
| | Tensile strength (primary insulation) | 30N/mm ² (3500psi) |
| | Ultimate elongation | 230% (min) |
| | Accelerated Ageing 6hrs @ +300°C | Passes mandrel wrap and Dielectric test as per MIL-W-81044 |
| | Electrical arc tracking | Tested to ASTM-D-3032 |
| | Solder iron resistance @ +370°C for 1 minute | Pass |
| | Notch propagation, 0.05mm notch | Pass |
| | Shrinkage @ +200°C | <1% |
| | Low temperature bend | -65°C |
| | Fuels, oils & Solvents resistance | Pass |
| Electrical | Voltage rating | 600V, 1000V and 2500V |
| | Insulation resistance (min) | 1500Mohms/Km (5000Mohms/1000ft) |
| | Voltage withstand | 2500V, 3000V and 5000V for 5 minutes, 60Hz, rms |
| Flammability | Federal aviation reg. FAR-25 | Pass |
| | MIL-W-81044 | Pass |
| | BS-4066 vertical flammability | Pass |
| | S-424 14751 (Swedish chimney) | Pass |
| | NFC-32070 (2) (French chimney) | Pass |
| IEC-332 Part 3 (cable ladder) | Pass | |
| Smoke/Toxicity | Smoke index, Def Stan 61-12 Part 18 | 6/metre of wire |
| | Toxicity index, Def Stan 61-12 Part 18 | 0.8/metre of wire |
| | Oxygen index, NES 714 | 30% oxygen |
| | Temperature index, NES 715 | >300°C |



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600V Primary Wire Dimensions (all dimensions are in mm's)

| Conductor Size | Stranding No/mm | Nominal Dia (mm) | Weight (g/m) | Ordering Description |
|----------------|-----------------|------------------|--------------|----------------------|
| 30 | 7/0.102 | 0.69 | 1.06 | 44A0111-30-X |
| 28 | 7/0.127 | 0.76 | 1.48 | 44A0111-28-X |
| 26 | 19/0.102 | 0.86 | 2.08 | 44A0111-26-X |
| 24 | 19/0.127 | 1.02 | 2.98 | 44A0111-24-X |
| 22 | 19/0.16 | 1.19 | 4.46 | 44A0111-22-X |
| 20 | 19/0.203 | 1.40 | 6.70 | 44A0111-20-X |
| 18 | 19/0.254 | 1.65 | 10.12 | 44A0111-18-X |
| 16 | 19/0.287 | 1.83 | 12.80 | 44A0111-16-X |
| 14 | 19/0.361 | 2.26 | 19.64 | 44A0111-14-X |
| 12 | 37/0.32 | 2.75 | 30.06 | 44A0111-12-X |

1000V Primary Wire Dimensions (all dimensions are in mm's)

| Conductor Size | Stranding No/mm | Nominal Dia (mm) | Weight (g/m) | Ordering Description |
|----------------|-----------------|------------------|--------------|----------------------|
| 24 | 19/0.127 | 1.17 | 3.57 | 44A0211-24-X |
| 22 | 19/0.16 | 1.37 | 5.21 | 44A0211-22-X |
| 20 | 19/0.203 | 1.57 | 7.54 | 44A0211-20-X |
| 18 | 19/0.254 | 1.85 | 11.46 | 44A0211-18-X |
| 16 | 19/0.287 | 2.06 | 14.58 | 44A0211-16-X |
| 14 | 19/0.361 | 2.49 | 21.88 | 44A0211-14-X |
| 12 | 37/0.32 | 2.97 | 32.89 | 44A0211-12-X |

600V Single Core Screened & Jacketed Cable Dimensions (all dimensions are in mm's)

| Conductor Size | Stranding No/mm | Nominal Dia (mm) | Weight (g/m) | Ordering Description |
|----------------|-----------------|------------------|--------------|----------------------|
| 30 | 7/0.102 | 1.40 | 4.18 | 44A1111-30-X-X |
| 28 | 7/0.127 | 1.47 | 4.92 | 44A1111-28-X-X |
| 26 | 19/0.102 | 1.57 | 5.83 | 44A1111-26-X-X |
| 24 | 19/0.127 | 1.83 | 8.20 | 44A1111-24-X-X |
| 22 | 19/0.16 | 2.00 | 10.30 | 44A1111-22-X-X |
| 20 | 19/0.203 | 2.26 | 14.02 | 44A1111-20-X-X |
| 18 | 19/0.254 | 2.62 | 19.70 | 44A1111-18-X-X |
| 16 | 19/0.287 | 2.79 | 23.40 | 44A1111-16-X-X |
| 14 | 19/0.361 | 3.22 | 32.50 | 44A1111-14-X-X |
| 12 | 37/0.32 | 3.70 | 45.67 | 44A1111-12-X-X |

Note: X = Colour (please refer to **Part Numbering Guide** for the range of colours available).



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600V 2-Core Screened & Jacketed Cable Dimensions (all dimensions are in mm's)

| Conductor Size | Stranding No/mm | Nominal Dia (mm) | Weight (g/m) | Ordering Description |
|----------------|-----------------|------------------|--------------|----------------------|
| 28 | 7/0.127 | 2.38 | 9.40 | 44A1121-28-X/X-X |
| 26 | 19/0.102 | 2.59 | 11.49 | 44A1121-26-X/X-X |
| 24 | 19/0.127 | 2.99 | 16.12 | 44A1121-24-X/X-X |
| 22 | 19/0.16 | 3.35 | 20.59 | 44A1121-22-X/X-X |
| 20 | 19/0.203 | 3.76 | 26.71 | 44A1121-20-X/X-X |
| 18 | 19/0.254 | 4.32 | 36.56 | 44A1121-18-X/X-X |
| 16 | 19/0.287 | 4.67 | 42.98 | 44A1121-16-X/X-X |
| 14 | 19/0.361 | 5.53 | 61.34 | 44A1121-14-X/X-X |

600V 3-Core Screened & Jacketed Cable Dimensions (all dimensions are in mm's)

| Conductor Size | Stranding No/mm | Nominal Dia (mm) | Weight (g/m) | Ordering Description |
|----------------|-----------------|------------------|--------------|----------------------|
| 28 | 7/0.127 | 3.14 | 13.26 | 44A1131-28-X/X/X-X |
| 26 | 19/0.102 | 3.45 | 18.85 | 44A1131-26-X/X/X-X |
| 24 | 19/0.127 | 3.91 | 24.66 | 44A1131-24-X/X/X-X |
| 22 | 19/0.16 | 4.29 | 32.14 | 44A1131-22-X/X/X-X |
| 20 | 19/0.203 | 4.63 | 40.78 | 44A1131-20-X/X/X-X |
| 18 | 19/0.254 | 5.20 | 53.02 | 44A1131-18-X/X/X-X |
| 16 | 19/0.287 | 5.57 | 67.31 | 44A1131-16-X/X/X-X |
| 14 | 19/0.361 | 6.41 | 85.88 | 44A1131-14-X/X/X-X |

Note: X = Colour (please refer to **Part Numbering Guide** for the range of colours available).

44 Wire is available in an extensive variety of constructions, voltage ratings, sizes and colours, for further assistance regarding your specific wire and cable requirements, please contact **IS-Rayfast**.



44 Wire Ordering

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Ordering Information

Preferred colours: 2 = (Red), 2L = (Pink), 4 = (Yellow), 6 = (Blue), 9 = (White)

Non Preferred colours: 0 = (Black), 1 = (Brown), 3 = (Orange), 5 = (Green), 7 = (Violet), 8 = (Grey)

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:

1. A single 22awg 600V white primary wire is required.
The part number required for the above is **44A0111-22-9**
2. A single 16awg 600V white primary wire, with shield and an outer white jacket is required.
The part number required for the above is **44A1111-16-9-9**
3. A two 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 the same coloured insulation i.e. red.
The outer jacket required is white with a red stripe.
The part number required for the above is **44A1121-18-2/2-92**
4. 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 24awg, each with a separate coloured insulation i.e. red, blue and white. The outer jacket required is white.
The part number required for the above is **44A1131-24-2/6/9-9**

Note: For further information or assistance on how to construct your cable requirements, please refer to the 44 wire **Part Numbering Guide** on the opposite page, or alternatively please contact **IS-Rayfast**.

44 Wire Building your part number

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Ordering Example: 44A1131-24-2/6/9-9

Wire Specification: 44
44 = 44 wire

A = AWG (American Wire Gauge) 44A

Wire Type:

0 = Primary wire
1 = Round braid shielded & jacketed
2 = Flat braid shielded & jacketed
3 = Round braid shielding no jacket 44A1
4 = Jacketed, no shield
5 = Spirally shielded & jacketed
6-9 = Special constructions

Class of Wire:

1 = 600V equipment wire
2 = 1000V equipment wire
3 = 2500V equipment wire 44A11
4 = 600V Space wire
8 = 600V Airframe wire

Number of Conductors: 44A113
1 to 9

Conductor Type:

1 = Tin plated copper (standard)
2 = Silver plated copper
3 = Nickel plated copper 44A1131
4 = SPHSCA, silver plated copper
6 = NPHSCA, nickel plated copper

Note: HSCA - High strength copper alloy

Wire Gauge Size: 44A1131-24

Conductor Insulation Colours:

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

44A1131-24-2/6/9

Note: Stripes are also available on request and are indicated by additional insulation colour numbers i.e. 92 = white with a red stripe.

Jacket Colour: (9 = white standard)

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

44A1131-24-2/6/9-9

Note: Stripes are also available on request and are indicated by additional jacket colour numbers i.e. 92 = white with a red stripe.

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