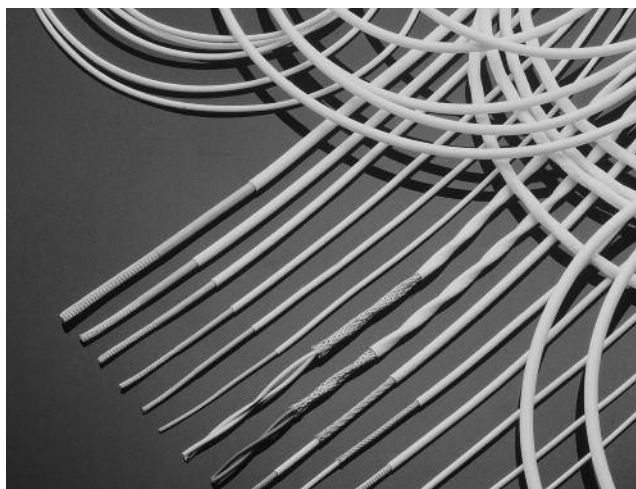


## SPEC 55

### Product Facts

- Resistant to electrical arc tracking in wet or dry conditions
- Single or dual wall constructions
- Small size, ultra light weight
- Exceptional chemical resistance
- -65°C to 200°C [-85°F to 392°F]



### Applications

SPEC 55 wire is insulated with modified radiation cross-linked ETFE polymer. It has a temperature rating of -65°C to 200°C [-85°F to 392°F] continuous using a silver plated copper conductor, and combines the easy handling of a flexible wire with excellent scrape abrasion and cut-through characteristics.

The dual wall airframe construction of SPEC 55 wire is currently used on numerous aircraft programs. It has a choice of two total wall thicknesses, 0.25 [.010] (55A08XX 10 mil) and 0.2 [.008] (55A02XX 8 mil). Both have a contrasting core color to act as a damage indicator. Chosen for its balance of properties, SPEC 55 wire has outstanding resistance to chemicals and solvents, excellent electrical arc track resistance, and is not susceptible to UV and moisture degradation. Single wall equipment wire constructions are available in 0.10 [.004] (55/03XX 4 mil) and 0.15 [.006] (6 mil) wall thicknesses for use inside black boxes where flexibility and solder-iron resistance make it a wire which is very easy to install reliably.

Both single and dual wall insulated wires are available

in twisted pairs, triples, etc., and as shielded and jacketed cables.

### Physical Characteristics

#### Size and Weight

SPEC 55 wire provides one of the most comprehensive wiring product ranges for aerospace users, with a wide choice of conductor sizes and insulation wall thicknesses. The dual wall airframe wire has an insulation wall thickness of either 0.2 [.008] or 0.25 [.010] for robustness in unprotected harnesses and has excellent wire to wire abrasion properties.

The single wall equipment wire has a 0.15 [.006] wall thickness for use inside equipment and protected harnesses. For high density, interconnect wiring, the 450 volt 55M041X series of equipment wire has a nominal 0.1 [.004] wall and provides considerable weight and size savings over other comparable wires.

### Handling

The excellent flexibility and handleability makes SPEC 55 the ideal wire to install, both in new aircraft and equipment and for maintenance purposes. The wire is easily stripped with conventional tooling. The insulation is readily marked

by hot stamp, ink jet or laser, and can be potted without pre-etching.

### SPEC 55PC Wire and Cable Insulation System

This product was originally developed to meet Boeing's material standard BMS13-48 for the 777 airliner. SPEC 55PC provides lightweight, compact insulation that matches the proven performance of our SPEC 55 wire. Today, 55PC is specified and utilized on the majority of aerospace platforms worldwide.

TE's rigorous, statistical-process-controlled manufacturing has produced wiring that is rugged and versatile enough for a wide range of commercial and defense aerospace applications, including electronic hook-ups in harsh, open air-frame environments.

SPEC 55PC wire and cable systems feature an 8-mil air-frame wire that is lighter and smaller than typical 10-mil wire, with little reduction in key mechanical performance features. SPEC 55PC wire offers flame resistance superior to FAA standards and also resists scrape abrasion, notch, propagation, cut-through, and electrical arc tracking.

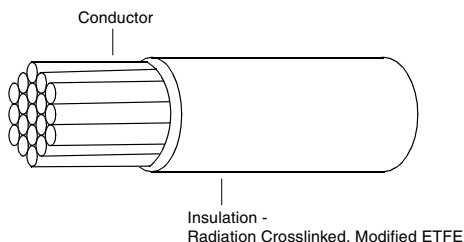
- Meets Boeing material standard BMS 13-48.
- Exceeds FAR 25 test requirements for flame resistance and smoke density.

#### Available in:

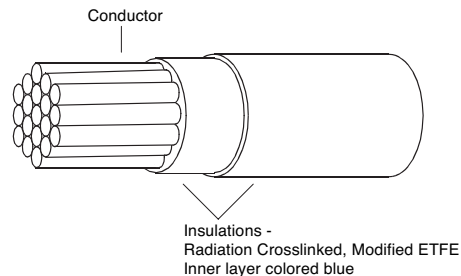
- Americas ■
- Europe ■
- Asia Pacific ■

## SPEC 55 (Continued)

### Specifications



**SPEC 55 Insulation System - Single Wall**



**SPEC 55 Insulation System - Dual Wall**

#### SAE AS22759/32-35 and /41 to /46 and NEMA-WC-27500 (Cables)

Defense Standard 61-12 Part 33 Issue 5

Part 1001 and Part 1002

VDE 9426, 9427, 9428

British Standard 3G233

Boeing BMS 13-48

Airbus ABS 0820 to 0826

NASA preferred product list

European Space Agency 3901/012, 3901/020 and 3901/022

TE Specification 55

Civil Aviation Authority Accessory Approval E11623

Contact TE for applicable product.

### Typical Properties

|                                                                    |                                      |
|--------------------------------------------------------------------|--------------------------------------|
| Temperature rating (Tin plated conductor)                          | -65°C to +150°C [-85°F to +302°F]    |
| (Silver or nickel plated conductor)                                | -65°C to +200°C [-85°F to +392°F]    |
| Thermal endurance                                                  | 200 °C [392°F], 10000 h              |
| Scrape abrasion (BS 3G233)                                         | >100 cycles at 150°C [302°F]         |
| Flexing endurance (Boeing BSS 7324)                                | >1000 cycles                         |
| Voltage rating                                                     | 600 V, 1000V                         |
| Tensile strength + elongation (core only)                          | (Dual wall wire) 35 N/mm², 125% min. |
| Tensile strength + total elongation (core & primary jacket)        | (Dual wall wire) 35 N/mm², 75% min.  |
| Notch propagation BS 3G230 0.05 mm notch                           | Pass                                 |
| Solder iron resistance (370 °C, 1 minute)                          | Pass                                 |
| Solderability - Tin plated copper conductor<br>BS 3G233 conditions | <0.8 secs to wet                     |
| Shrinkage                                                          | <1%                                  |
| Long term water resistance                                         | Will not hydrolyze                   |
| Permittivity 1 KHz (ASTM D150)                                     | 2.7                                  |
| Dissipation factor (ASTM D150)                                     | 0.001                                |
| FAR 25                                                             | ⊖                                    |
| Afterburn (sec)                                                    | 30 sec. max.                         |
| Burn length                                                        | 75 mm [3 in.] max.                   |

## SPEC 55 (Continued)

### Environmental Performance

#### Temperature Rating

SPEC 55 wire and cable is rated for continuous operation from -65°C to +200°C [-85°F to +392°F] and for short periods at temperatures as high as 400°C [752°F].

#### Mechanical Performance

Radiation crosslinking of the SPEC 55 insulation significantly improves the following mechanical characteristics; scrape (sharp edges), cross wire abrasion, cut-through resistance and creep resistance.

#### Solder Iron/Overload Resistance

Radiation crosslinking ensures that the insulation resists melting at high temperatures. As a result SPEC 55 wire is resistant to hot solder irons and current overloads which would melt most thermoplastic insulation.

#### Chemical Resistance

SPEC 55 is unaffected by all commonly used chemicals, eg. fuels, hydraulic fluids, defluxing agents, cleaners, coolants and de-icers. It also shows excellent resistance to weathering (UV, ozone, pollutants, water).

#### Space Wire

SPEC 55 is available in special versions suitable for use in outer space meeting both ESA and NASA requirements for outgassing.

#### Flammability

Special additives increase the flame retardance of SPEC 55 compared to unirradiated ETFE so that it meets the latest high performance tests, eg. BS 3G230 and vertical test FAR25.

#### Electrical Arc Tracking Resistance

SPEC 55 insulation demonstrates resistance to arc tracking under both wet and dry conditions at aircraft system voltages.

### SPEC 55 Wire & Cable: Standard Constructions, Nominal Sizes, Strandings, Diameters and Weights

| Conductor | Primary Wire                                                                        | Twisted Pair                                                                         | Shielded & Jacketed                                                                   |                                                                                       |
|-----------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|           |                                                                                     |                                                                                      | Single                                                                                | Pair                                                                                  |
|           |  |  |  |  |

### 55PC - Extra Light Weight Constructions

For applications where weight is critical, light weight tight tolerance conductors and insulation are available. These are manufactured using statistical process control methods and achieve weights that are equal or lighter than the equivalent polyimide/PTFE constructions.

**SPEC 55** (Continued)

**55A - AWG Conductor:  
Equipment/Interconnect Wires  
& Cables**

| Wire<br>Size<br>(AWG) | Stranding<br>(mm) | 55A011X      |                                      | 55A012X      |                                      |
|-----------------------|-------------------|--------------|--------------------------------------|--------------|--------------------------------------|
|                       |                   | Nom.<br>OD   | Max. Weight<br>(g per m/lbs per kft) | Nom.<br>OD   | Max. Weight<br>(g per m/lbs per kft) |
| 30                    | 7/0.102           | 0.61 [0.024] | 0.98 [0.66]                          | 1.27 [0.048] | 1.94 [1.3]                           |
| 28                    | 7/127             | 0.68 [0.027] | 1.35 [0.91]                          | 1.42 [0.054] | 2.68 [1.8]                           |
| 26                    | 19/102            | 0.81 [0.032] | 2.08 [1.4]                           | 1.67 [0.064] | 4.16 [2.8]                           |
| 24                    | 19/127            | 0.94 [0.037] | 2.98 [2.0]                           | 1.93 [0.074] | 5.96 [4.0]                           |
| 22                    | 19/0.16           | 1.09 [0.043] | 4.17 [2.8]                           | 2.23 [0.086] | 8.63 [5.8]                           |
| 20                    | 19/0.203          | 1.27 [0.050] | 6.40 [4.3]                           | 2.66 [0.102] | 13.24 [8.9]                          |
| 18                    | 19/0.25           | 1.52 [0.060] | 9.67 [6.5]                           | 3.20 [0.122] | 20.09 [13.5]                         |
| 16                    | 19/287            | 1.73 [0.068] | 12.35 [8.3]                          | 3.58 [0.138] | 25.75 [17.3]                         |
| 14                    | 19/0.36           | 2.20 [0.085] | 19.34 [13.0]                         | 4.47 [0.172] | 39.58 [26.6]                         |
| 12                    | 37/0.32           | 2.62 [0.103] | 29.32 [19.7]                         | 5.38 [0.208] | 59.97 [40.3]                         |
| 10                    | 37/0.403          | 3.25 [0.128] | 47.32 [31.8]                         | 6.65 [0.256] | 96.58 [64.9]                         |
| 8                     | 133/0.287         | 4.77 [0.188] | 87.50 [58.8]                         | 9.80 [0.376] | 178.58 [120.0]                       |

| Wire<br>Size<br>(AWG) | Nom.<br>OD   | 55A111X    |                                      | 55A112X       |                                      |
|-----------------------|--------------|------------|--------------------------------------|---------------|--------------------------------------|
|                       |              | Nom.<br>OD | Max. Weight<br>(g per m/lbs per kft) | Nom.<br>OD    | Max. Weight<br>(g per m/lbs per kft) |
| 30                    | 1.51 [0.057] |            | 5.06 [3.4]                           | 2.12 [0.081]  | 8.03 [5.4]                           |
| 28                    | 1.59 [0.060] |            | 5.80 [3.9]                           | 2.27 [0.087]  | 9.37 [6.30]                          |
| 26                    | 1.71 [0.065] |            | 6.85 [4.6]                           | 2.53 [0.097]  | 11.75 [7.9]                          |
| 24                    | 1.84 [0.070] |            | 8.19 [5.5]                           | 2.80 [0.107]  | 14.58 [9.8]                          |
| 22                    | 1.99 [0.076] |            | 10.27 [6.9]                          | 3.07 [0.119]  | 18.15 [12.2]                         |
| 20                    | 2.20 [0.084] |            | 13.40 [9.0]                          | 3.50 [0.135]  | 24.10 [16.2]                         |
| 18                    | 2.45 [0.094] |            | 17.86 [12.0]                         | 4.10 [0.155]  | 32.60 [21.9]                         |
| 16                    | 2.67 [0.102] |            | 21.73 [14.6]                         | 4.43 [0.171]  | 39.73 [26.7]                         |
| 14                    | 3.10 [0.119] |            | 30.36 [20.4]                         | 5.30 [0.205]  | 57.13 [38.4]                         |
| 12                    | 3.55 [0.137] |            | 42.41 [28.5]                         | 6.30 [0.243]  | 81.98 [55.1]                         |
| 10                    | 4.20 [0.161] |            | 62.65 [42.1]                         | 7.40 [0.291]  | 123.63 [83.1]                        |
| 8                     | 5.80 [0.223] |            | 110.42 [74.2]                        | 10.60 [0.417] | 226.15 [152.0]                       |

**55A - AWG Conductor:  
Airframe Wires & Cables**

| Wire<br>Size<br>(AWG) | Stranding<br>(mm) | 55A081X      |                                      | 55A082X      |                                      |
|-----------------------|-------------------|--------------|--------------------------------------|--------------|--------------------------------------|
|                       |                   | Nom.<br>OD   | Max. Weight<br>(g per m/lbs per kft) | Nom.<br>OD   | Max. Weight<br>(g per m/lbs per kft) |
| 26                    | 19/102            | 1.01 [0.040] | 2.5 [1.7]                            | 2.10 [0.080] | 5.06 [3.4]                           |
| 24                    | 19/127            | 1.14 [0.045] | 3.4 [2.3]                            | 2.33 [0.090] | 6.84 [4.6]                           |
| 22                    | 19/0.16           | 1.27 [0.050] | 4.8 [3.2]                            | 2.64 [0.102] | 9.98 [6.7]                           |
| 20                    | 19/0.203          | 1.47 [0.058] | 7.0 [4.7]                            | 3.07 [0.118] | 14.73 [9.9]                          |
| 18                    | 19/0.25           | 1.78 [0.070] | 10.7 [7.2]                           | 3.63 [0.140] | 21.88 [14.7]                         |
| 16                    | 19/287            | 1.96 [0.077] | 13.4 [9.0]                           | 4.06 [0.156] | 27.53 [18.5]                         |
| 14                    | 19/0.36           | 2.40 [0.094] | 20.5 [13.8]                          | 4.90 [0.190] | 42.26 [28.4]                         |
| 12                    | 37/0.32           | 2.82 [0.111] | 30.5 [20.5]                          | 5.80 [0.224] | 63.00 [42.3]                         |
| 10                    | 37/0.403          | 3.40 [0.134] | 48.3 [32.4]                          | 7.10 [0.272] | 98.96 [66.5]                         |

| Wire<br>Size<br>(AWG) | Nom.<br>OD   | 55A181X    |                                      | 55A182X      |                                      |
|-----------------------|--------------|------------|--------------------------------------|--------------|--------------------------------------|
|                       |              | Nom.<br>OD | Max. Weight<br>(g per m/lbs per kft) | Nom.<br>OD   | Max. Weight<br>(g per m/lbs per kft) |
| 26                    | 1.71 [0.073] |            | 7.89 [5.3]                           | 2.63 [0.113] | 14.29 [9.6]                          |
| 24                    | 1.84 [0.078] |            | 9.37 [6.3]                           | 2.80 [0.123] | 16.37 [11.0]                         |
| 22                    | 1.99 [0.084] |            | 11.76 [7.9]                          | 3.07 [0.135] | 20.68 [13.9]                         |
| 20                    | 2.20 [0.092] |            | 14.88 [10.0]                         | 3.50 [0.151] | 27.08 [18.2]                         |
| 18                    | 2.45 [0.103] |            | 19.79 [13.3]                         | 4.10 [0.173] | 36.46 [24.5]                         |
| 16                    | 2.67 [0.111] |            | 23.81 [16.0]                         | 4.43 [0.189] | 42.86 [28.8]                         |
| 14                    | 3.10 [0.128] |            | 33.03 [22.2]                         | 6.30 [0.225] | 61.61 [41.4]                         |
| 12                    | 3.55 [0.145] |            | 45.09 [30.3]                         | 6.30 [0.259] | 85.42 [57.4]                         |
| 10                    | 4.20 [0.168] |            | 66.97 [45.0]                         | — [0.308]    | 127.54 [85.7]                        |

**SPEC 55** (Continued)

**55PC - AWG Conductor:  
Statistical Process Controlled  
Airframe Wires & Cables**

| Wire<br>Size<br>(AWG) | Stranding<br>(mm) | 55PC021X      |                                        | 55PC022X     |                                        |
|-----------------------|-------------------|---------------|----------------------------------------|--------------|----------------------------------------|
|                       |                   | Nom.<br>OD    | Target Weight<br>(g per m/lbs per kft) | Nom.<br>OD   | Target Weight<br>(g per m/lbs per kft) |
| 26                    | 19/102            | 0.087 [0.035] | 2.05 [1.38]                            | —            | —                                      |
| 24                    | 19/127            | 1.00 [0.0395] | 2.95 [1.98]                            | 2.00 [0.079] | 5.95 [4.00]                            |
| 22                    | 19/0.16           | 1.15 [0.0455] | 4.31 [2.90]                            | 2.31 [0.091] | 8.74 [5.87]                            |
| 20                    | 19/0.203          | 1.37 [0.0540] | 6.51 [4.38]                            | 2.74 [0.108] | 13.2 [8.87]                            |
| 18                    | 19/0.25           | 1.61 [0.0635] | 9.81 [6.59]                            | 3.22 [0.127] | 19.84 [13.33]                          |
| 16                    | 19/287            | 1.80 [0.0710] | 12.46 [8.37]                           | 3.60 [0.142] | 25.21 [16.94]                          |
| 14                    | 19/036            | 2.18 [0.0860] | 19.17 [12.88]                          | 4.36 [0.172] | 38.80 [26.07]                          |
| 12                    | 37/0.32           | 2.66 [0.1047] | 29.36 [19.73]                          | 5.30 [0.209] | 59.42 [39.93]                          |
| 10                    | 37/0.403          | 3.27 [0.1290] | 46.31 [31.12]                          | 6.55 [0.258] | 93.92 [62.99]                          |

| Wire<br>Size<br>(AWG) | 55PC121X     |                                        | 55PC122X     |                                        |
|-----------------------|--------------|----------------------------------------|--------------|----------------------------------------|
|                       | Nom.<br>OD   | Target Weight<br>(g per m/lbs per kft) | Nom.<br>OD   | Target Weight<br>(g per m/lbs per kft) |
| 26                    | 1.52 [0.064] | 6.54 [4.4]                             | 2.33 [0.100] | 11.34 [7.62]                           |
| 24                    | 1.65 [0.069] | 7.86 [5.28]                            | 2.89 [0.109] | 13.90 [9.34]                           |
| 22                    | 1.80 [0.075] | 9.81 [6.59]                            | 2.89 [0.122] | 17.89 [12.02]                          |
| 20                    | 2.00 [0.083] | 12.83 [8.62]                           | 3.30 [0.139] | 23.84 [16.02]                          |
| 18                    | 2.23 [0.093] | 17.01 [11.43]                          | 3.78 [0.158] | 32.10 [21.57]                          |
| 16                    | 2.44 [0.100] | 20.36 [13.68]                          | 4.16 [0.174] | 39.00 [26.21]                          |
| 14                    | 2.79 [0.116] | 28.69 [19.28]                          | 4.92 [0.204] | 55.21 [37.10]                          |
| 12                    | 3.30 [0.135] | 40.73 [27.37]                          | 5.92 [0.243] | 80.23 [53.45]                          |
| 10                    | 3.98 [0.159] | 59.90 [40.25]                          | 7.39 [0.297] | 123.65 [83.09]                         |

X = 1 -Tin plated copper conductor.

4 -Silver plated high strength copper alloy conductor. (Recommended for size 24 &amp; 26 in airframe applications and mandatory for CAA release.)

## SPEC 55 (Continued)

### Part Numbering System 55A and 55LF — General Purpose

55 A 1 1 2 1 \* - AWG - 2/6 - 9

#### Jacket Color (code per MIL-STD-681)

Codes same as for Primary Wire Insulation Color

#### Primary Wire Insulation Color (code per MIL-STD-681)

|            |            |           |
|------------|------------|-----------|
| 0 - Black  | 4 - Yellow | 8 - Gray  |
| 1 - Brown  | 5 - Green  | 9 - White |
| 2 - Red    | 6 - Blue   |           |
| 3 - Orange | 7 - Violet |           |

#### Conductor Size (AWG)

#### \*Optional Shield Material

H - High strength copper alloy, shield coating same as conductor coating (No designator defaults to coated "copper" shield, if any)

#### Conductor Type

- 1 - Tin-coated copper
- 2 - Silver-coated copper
- 3 - Nickel-coated copper
- 4 - Silver-coated high strength copper alloy
- 6 - Nickel-coated high strength copper alloy
- A - Silver-coated ultra high-strength copper alloy

#### Number of Conductors

1 through 10 (designator for 10 conductor = 0)

#### Class of Wire

- 1 - 600 volt, lightweight
- 2 - 600 volt, medium weight
- 4 - 450V (55M 20-30 AWG only)
- 7 - 1000 volt, heavy duty, airframe
- 8 - 600 volt, normal weight, airframe

#### Constructions

- 0 - Primary wire; or unshielded & unjacketed cable
- 1 - \*\*Round braid shielded & jacketed cable
- 2 - \*\* Flat braid shielded & jacketed cable
- 3 - \*\* Round braid shielded cable, no jacket
- 4 - Jacketed cable, no shield
- 5 - \*\* Spiral braid shielded & jacketed cable
- 6-9- Special constructions

#### Product Type

- A - General purpose
- AC - General purpose, 90% min. shield coverage
- AF - General purpose, low fluoride
- D - Defense Standard 61-12 Part 33
- LF - General purpose, ultra low fluoride
- LFC - General purpose, ultra low fluoride, 90% min. shield coverage
- M - 450 Volt

#### Basic Product Number

\*\*Except for p/ns with Shield Material designation "H", shield coating same as conductor coating, **except**:

- for Conductor Type 4, shield shall be tin-coated cooper
- for Conductor Types 6 and A, flat braid only, shield shall be tin-coated copper

The UK manufactures and supply large volumes of 55Mx4x4 (450 volt) construction wires and cables for Aerospace and Multisport applications.

**Part Numbering System is a cross reference only and not meant for part creation.**

## SPEC 55 (Continued)

### Part Numbering System

#### 55/ — Outer Space

55 / 1 3 2 1 \* - AWG - 0/9 - 9

#### Jacket Color (code per MIL-STD-681)

Codes same as for Primary Wire Insulation Color

#### Primary Wire Insulation Color (code per MIL-STD-681)

|            |            |           |
|------------|------------|-----------|
| 0 - Black  | 4 - Yellow | 8 - Gray  |
| 1 - Brown  | 5 - Green  | 9 - White |
| 2 - Red    | 6 - Blue   |           |
| 3 - Orange | 7 - Violet |           |

#### Conductor Size (AWG)

#### \*Optional Shield Material

H - High strength copper alloy, shield coating same as conductor coating (No designator defaults to coated "copper" shield, if any)

#### Conductor Type

- 1 - Tin-coated copper
- 2 - Silver-coated copper
- 3 - Nickel-coated copper
- 4 - Silver-coated high strength copper alloy
- 6 - Nickel-coated high strength copper alloy
- A - Silver-coated ultra high-strength copper alloy

#### Number of Conductors

1 through 10 (designator for 10 conductor = 0)

#### Class of Wire

- 1 - 600 volt, lightweight
- 2 - 600 volt, medium weight
- 3 - 600 volt, ultra lightweight
- 4 - 300 volt (discontinued)
- 7 - 1000 volt, heavy duty
- 8 - 600 volt, normal weight

#### Constructions

- 0 - Primary wire; or unshielded & unjacketed cable
- 1 - \*\*Round braid shielded & jacketed cable
- 2 - \*\* Flat braid shielded & jacketed cable
- 3 - \*\* Round braid shielded cable, no jacket
- 4 - Jacketed cable, no shield
- 5 - \*\* Spiral braid shielded & jacketed cable
- 6-9- Special constructions

#### Product Type

- / - Outer Space
- /F - Outer Space, low fluoride
- /LF - Outer Space, ultra low fluoride
- /P - Outer Space, shield coating same as conductor coating (valid with the following conductor types only: 4 for round braid; 4, 6 or A for flat braid)

#### Basic Product Number

\*\*For 55/: Except for p/ns with Shield Material designation "H", shield coating same as conductor coating, **except**:  
- for Conductor Type 4, shield shall be tin-coated copper; - for Conductor Types 6 and A, flat braid only, shield shall be tin-coated copper. For 55/P, /LF: Shield coating same as conductor coating.  
For product released to ESCC 3901/012, 3901/020 and/or 3901/022, please refer to TE for product designation and construction.

**Part Numbering System is a cross reference only and not meant for part creation.**



## SPEC 55 (Continued)

### Part Numbering System 55PC and 55 PLF — Process Control

55 PC 1 1 2 4 \* - AWG - 2/6 - 9

#### Jacket Color (code per MIL-STD-681)

Codes same as for Primary Wire Insulation Color

#### Primary Wire Insulation Color (code per MIL-STD-681)

|            |            |           |
|------------|------------|-----------|
| 0 - Black  | 4 - Yellow | 8 - Gray  |
| 1 - Brown  | 5 - Green  | 9 - White |
| 2 - Red    | 6 - Blue   |           |
| 3 - Orange | 7 - Violet |           |

#### Conductor Size (AWG)

#### \*Optional Shield Material

H - High strength copper alloy, shield coating same as conductor coating (No designator defaults to coated "copper" shield, if any)

#### Conductor Type

- 1 - Tin-coated copper
- 2 - Silver-coated copper
- 3 - Nickel-coated copper
- 4 - Silver-coated high strength copper alloy
- 5 - Aluminum
- 6 - Nickel-coated high strength copper alloy
- A - Silver-coated ultra high-strength copper alloy

#### Number of Conductors

- 1 through 10 (designator for 10 conductor = 0)
- 0 - 10 conductors

#### Class of Wire

- 1 - 600 volt, lightweight, general purpose, single wall
- 2 - 600 volt, medium weight, general purpose
- 5 - 600 volt, lightweight, general purpose, dual wall
- 7 - 1000 volt, heavy duty, airframe, general purpose
- 8 - 600 volt, normal weight, airframe, general purpose

#### Constructions

- 0 - Primary wire; or unshielded & unjacketed cable
- 1 - \*\*Round braid screened & jacketed cable
- 2 - \*\* Flat braid screened & jacketed cable
- 3 - \*\* Round braid, screened cable, no jacket
- 4 - Jacketed cable, no shield
- 5 - \*\* Spiral braid shielded & jacketed cable
- 6-9- Special constructions

#### Product Type

PC- Process Control  
PCF- Process Control, low fluoride  
PCFL-Process Control, low fluoride (lite)  
PCL - Process Control (lite)  
PCT- Process Control (stripping thread under jacket, and shield, if any)  
PLF - Process Control, ultra low fluoride  
PLFL-Process Control, ultra low fluoride (lite)

#### Basic Product Number

\*\*Except for p/ns with Shield Material designation "H", shield coating same as conductor coating, **except**:  
For 55PCL - for conductor type 6, flat braid only, shield shall be tin-coated copper  
For 55PC and 55PCT - for conductor Type 4 and A, shield shall be tin-coated copper  
for Conductor Type 6, flat braid only, shield shall be tin-coated copper

**Part Numbering System is a  
cross reference only and not  
meant for part creation.**



## SPEC 55 (Continued)

|                                 |                                                                                                                                                                       |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Typical Ordering Example</b> | 3 conductors, red, yellow, blue, 600 volt equipment wire with overall round braid, 20 AWG tinned conductor and white jacket: total part number is 55A1131-20-2/4/6-9. |
| <b>Ordering Information</b>     | A list of stock policy items can be identified by contacting TE.                                                                                                      |

## SPEC 55 Part Numbering System — General

| Temperature Rating                                                            | Conductor Material                | AWG Range Available | Part Number | MIL-SPEC No. |
|-------------------------------------------------------------------------------|-----------------------------------|---------------------|-------------|--------------|
| <b>600-V Lightweight Single-wall Hookup Wire, .152 [.006] Nominal Wall</b>    |                                   |                     |             |              |
| 150°C [302°F]                                                                 | Tin-coated copper                 | 12–30               | 55A0111     | M22759/32    |
| 200°C [392°F]                                                                 | Silver-coated copper              | 12–28               | 55A0112     | M22759/44    |
| 200°C [302°F]                                                                 | Nickel-coated copper              | 12–28               | 55A0113     | M22759/45    |
| 200°C [392°F]                                                                 | Silver-coated high-strength alloy | 20–30               | 55A0114     | M22759/33    |
| 200°C [392°F]                                                                 | Nickel-coated high-strength alloy | 20–28               | 55A0116     | M22759/46    |
| <b>600-V Lightweight Dual-wall Airframe Wire, .203 [.008] Nominal Wall</b>    |                                   |                     |             |              |
| 150°C [302°F]                                                                 | Tin-coated copper                 | 6–26                | 55A0211     | —            |
| 200°C [392°F]                                                                 | Silver-coated copper              | 10–26               | 55A0212     | —            |
| 200°C [392°F]                                                                 | Nickel-coated copper              | 10–26               | 55A0213     | —            |
| 200°C [392°F]                                                                 | Silver-coated high-strength alloy | 18–30               | 55A0214     | —            |
| 200°C [392°F]                                                                 | Nickel-coated high-strength alloy | 16–26               | 55A0216     | —            |
| <b>600-V Dual-wall Airframe Wire, .254 [.010] Nominal Wall</b>                |                                   |                     |             |              |
| 150°C [302°F]                                                                 | Tin-coated copper                 | 00–24               | 55A0811     | M22759/34    |
| 200°C [392°F]                                                                 | Silver-coated copper              | 00–26               | 55A0812     | M22759/43    |
| 200°C [392°F]                                                                 | Nickel-coated copper              | 00–26               | 55A0813     | M22759/41    |
| 200°C [392°F]                                                                 | Silver-coated high-strength alloy | 20–26               | 55A0814     | M22759/35    |
| 200°C [392°F]                                                                 | Nickel-coated high-strength alloy | 20–26               | 55A0816     | M22759/42    |
| <b>1000-V Medium-Weight Dual-wall Airframe Wire, .381 [.015] Nominal Wall</b> |                                   |                     |             |              |
| 150°C [302°F]                                                                 | Tin-coated copper                 | 10–24               | 55A0711     | —            |
| 200°C [392°F]                                                                 | Silver-coated copper              | 16–24               | 55A0712     | —            |
| 200°C [392°F]                                                                 | Nickel-coated copper              | 16–24               | 55A0713     | —            |
| 200°C [392°F]                                                                 | Silver-coated high-strength alloy | 16–24               | 55A0714     | —            |
| 200°C [392°F]                                                                 | Nickel-coated high-strength alloy | 16–26               | 55A0716     | —            |

## SPEC 55 (Continued)

### SPEC 55 Cable Constructions

| Construction                     | Number of Components | Component Conductor <sup>1</sup> | Shield Material <sup>1</sup> | Part Number            |               |
|----------------------------------|----------------------|----------------------------------|------------------------------|------------------------|---------------|
|                                  |                      |                                  |                              | Light Wt. <sup>2</sup> | Medium Wt.    |
| Unshielded, unjacketed           | 2-10                 | 1                                | —                            | 55*01X1-AWG-Y          | 55*08X1-AWG-Y |
|                                  |                      | 2                                | —                            | 55*01X2-AWG-Y          | 55*08X2-AWG-Y |
|                                  |                      | 3                                | —                            | 55*01X3-AWG-Y          | 55*08X3-AWG-Y |
|                                  |                      | 4                                | —                            | 55*01X4-AWG-Y          | 55*08X4-AWG-Y |
|                                  |                      | 6                                | —                            | 55*01X6-AWG-Y          | 55*48X6-AWG-Y |
| Unshielded, jacketed             | 2-10                 | 1                                | —                            | 55*41X1-AWG-Y          | 55*48X1-AWG-Y |
|                                  |                      | 2                                | —                            | 55*41X2-AWG-Y          | 55*48X2-AWG-Y |
|                                  |                      | 3                                | —                            | 55*41X3-AWG-Y          | 55*48X3-AWG-Y |
|                                  |                      | 4                                | —                            | 55*41X4-AWG-Y          | 55*48X4-AWG-Y |
|                                  |                      | 6                                | —                            | 55*41X6-AWG-Y          | 55*48X6-AWG-Y |
| Shielded (round braid), jacketed | 1-10                 | 1                                | 1                            | 55*11X1-AWG-Y          | 55*18X1-AWG-Y |
|                                  |                      | 2                                | 2                            | 55*11X2-AWG-Y          | 55*18X2-AWG-Y |
|                                  |                      | 3                                | 3                            | 55*11X3-AWG-Y          | 55*18X3-AWG-Y |
|                                  |                      | 4                                | 1                            | 55*11X4-AWG-Y          | 55*18X4-AWG-Y |
|                                  |                      | 6                                | 3                            | 55*11X6-AWG-Y          | 55*18X6-AWG-Y |
| Shielded (flat braid), jacketed  | 1-10                 | 1                                | 1                            | 55*21X1-AWG-Y          | 55*28X1-AWG-Y |
|                                  |                      | 2                                | 1                            | 55*21X2-AWG-Y          | 55*28X2-AWG-Y |
|                                  |                      | 3                                | 1                            | 55*21X3-AWG-Y          | 55*28X3-AWG-Y |
|                                  |                      | 4                                | 1                            | 55*21X4-AWG-Y          | 55*28X4-AWG-Y |
|                                  |                      | 6                                | 1                            | 55*21X6-AWG-Y          | 55*28X6-AWG-Y |

<sup>1</sup>Type of conductor or shield material:

- 1 = tin-coated copper
- 2 = silver-coated copper
- 3 = nickel-coated copper
- 4 = silver-coated high-strength copper alloy
- 6 = nickel-coated high-strength copper alloy
- \* = A or PC

<sup>2</sup> X = no. of wire components

Y = color code

For complete part number, see Part Numbering System on page 9-15.

## SPEC 55 (Continued)

### NEMA WC-27500 Cable Part Numbering System

M27500 X AWG XX X X XX

#### Basic Specification Number

#### Component Wire ID/Shield Coverage Code

##### Shield Coverage

85%  
-

90%  
C

A

B

F

G

K

L

P

S

D

E

H

J

M

N

R

T

##### Component Wire Identification

Colored Stripes on White Wire

(9/96/93/95/92/90/94/97/98/91... etc.)

Solid Color Wires (9/6/3/5/2/0/4/7/8/1...etc.)

Band Marks on Solid Colors (by AWG)

Alternate Colored Stripes

(92/96/94/95/9/90/91/93/97/98...etc)

Alternate Solid Colors (2/6/4/5/9/0/1/3/7/8...etc.)

Number Marking on Solid Colors (by AWG)

Number Marking on White Wires

Band Marks on Colored Stripes (by AWG)

Band Marks on White Wires

#### Conductor Size (AWG)

#### Basic Wire Spec Code (SAE-AS-22759) and Slash Sheet

SB - 32 = 55A0111

SC - 33 = 55A0114

SD - 34 = 55A0811

for 2 AWG and larger, use 55A8039

SE - 35 = 55A0814

SM - 41 = 55A0813

for 2 AWG and larger, use 55A8595

SN - 42 = 55A0816

SP - 43 = 55A0812

for 2 AWG and larger, use 55A6089

SR - 44 = 55A0112

SS - 45 = 55A0113

ST - 46 = 55A0116

#### Number of Component Wires

1 through 9; 10 Components = 0

#### Shield Material and Style Code

U - No shield

T - Tin-coated copper, round

J - Tin-coated copper, flat

S - Silver-coated copper, round

G - Silver-coated copper, flat

N - Nickel-coated copper, round

V - Tin-coated copper, round, double shield

W - Silver-coated copper, round, double shield

#### Jacket Material and Style Code

00 - No jacket

23 - Single jacket crosslinked, modified ETFE, white

73 - Double jacket crosslinked, modified ETFE, white

Example: M27500-22SB3T23 = 55A1131-22-9/96/93-9

Tyco Electronics Part No.

Military Part No.

**Part Numbering System is a  
cross reference only and not  
meant for part creation.**



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Электрон  
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**Наши контакты:**

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331