INCH-POUND

MIL-DTL-16878/32B
11 August 2000
SUPERSEDING
MIL-W-16878/32A(NAVY)
11 September 1992

DETAIL SPECIFICATION SHEET

# WIRE, ELECTRICAL, SILICONE RUBBER INSULATED, 200 °C, 1000 VOLTS, GLASS BRAID COVERING, ABRASION RESISTANT

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-16878G.

REQUIREMENTS.

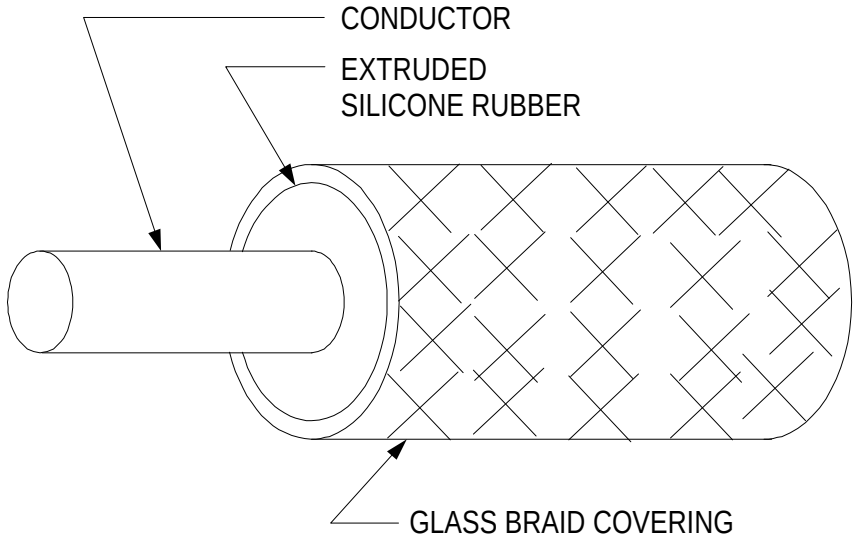


FIGURE 1. Wire configuration.

TABLE I. Wire configuration and dimensions.

| PIN 1/ | Wire size | Stranding | Conductor | | Conductor diameter (nominal) (inch) | Finished wire diameter (inch) | |
|---|---|---|---|---|---|---|---|
| | | | Material | Coating | | Min | Max |
| M16878/32BEB* | 24 | 7 X 32 | Copper | Tin | .024 | .083 | .106 |
| M16878/32BFB* | 22 | 7 X 30 | Copper | Tin | .030 | .089 | .112 |
| M16878/32BGB* | 20 | 7 X 28 | Copper | Tin | .038 | .097 | .120 |
| M16878/32BGC* | 20 | 10 X 30 | Copper | Tin | .038 | .097 | .120 |
| M16878/32BHB* | 18 | 7 X 26 | Copper | Tin | .048 | .107 | .130 |
| M16878/32BHD* | 18 | 16 X 30 | Copper | Tin | .048 | .107 | .115 |
| M16878/32BJE* | 16 | 19 X 29 | Copper | Tin | .057 | .116 | .139 |
| M16878/32BJF* | 16 | 26 X 30 | Copper | Tin | .057 | .116 | .139 |
| M16878/32BKE* | 14 | 19 X 27 | Copper | Tin | .072 | .161 | .191 |
| M16878/32BKH* | 14 | 41 X 30 | Copper | Tin | .072 | .161 | .191 |
| M16878/32BLE* | 12 | 19 X 25 | Copper | Tin | .091 | .180 | .210 |
| M16878/32BLJ* | 12 | 65 X 30 | Copper | Tin | .091 | .180 | .190 |
| M16878/32BMG* | 10 | 37 X 26 | Copper | Tin | .111 | .200 | .230 |
| M16878/32BMK* | 10 | 105 X 30 | Copper | Tin | .111 | .200 | .210 |
| M16878/32BNL* | 8 | 133 X 29 | Copper | Tin | .169 | .282 | .342 |
| M16878/32BPL* | 6 | 133 X 27 | Copper | Tin | .213 | .326 | .386 |
| M16878/32BRL* | 4 | 133 X 25 | Copper | Tin | .269 | .387 | .442 |
| M16878/32BSL* | 2 | 133 X 23 | Copper | Tin | .335 | .448 | .508 |
| M16878/32BTN* | 1 | 259 X 25 | Copper | Tin | .378 | .519 | .585 |
| M16878/32BUN* | 0 | 259 X 24 | Copper | Tin | .424 | .565 | .631 |
| M16878/32BWN* | 00 | 259 X 23 | Copper | Tin | .477 | .618 | .684 |
| M16878/32BYN* | 000 | 259 X 22 | Copper | Tin | .533 | .694 | .725 |
| M16878/32BZN* | 0000 | 259 X 21 | Copper | Tin | .601 | .742 | .808 |

Notes:
1/ PIN stands for part or identifying number (see figure 2).

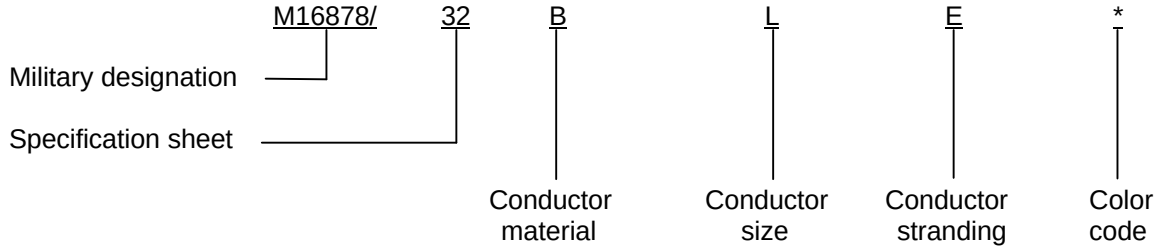


FIGURE 2. Example of PIN (see MIL-DTL-16878G).

| | |
|---|---|
| Configuration and dimensions: | See figure 1 and table 1 |
| Operating voltage: | Up to 1000 volts |
| Operating temperature: | Up to 200 °C |
| Insulation: | Extruded silicone rubber |
| Braid covering: | Abrasion resistant glass braid. Braid covering shall be tightly formed, uniform in appearance, and treated with a clear finisher coating to prevent fraying. The finisher coating shall be compatible with the temperature rating and performance requirements of the insulated wire. |

| | |
|---|---|
| Spark test voltage: | 5.0 kV |
| Impulse dielectric test voltage: | 8 kV, or 5.7 kV using the 3.0 kHz spark test |
| Dielectric withstanding voltage: | 3.0 kV |
| Insulation resistance: | $IR = K \log_{10} D/d$ |

Where: IR = Minimum insulation resistance in megohms per 1000 feet at 20 °C
K = 1,000
D = Maximum average diameter of finished wire
d = Conductor diameter

| | |
|---|---|
| Cold bend: | Condition 4 hours at -55±1 °C (see table II). The braid shall not open up as a result. |

TABLE II. Cold bend mandrel sizes.

| Wire size | Cold bend mandrel diameter (inches, maximum) |
|---|---|
| 24, 22 | 1 |
| 20 through 12 | 2 |
| 10 through 6 | 3 |
| 4, 2 | 4.5 |
| 1, 0 | 6 |
| 00, 000, 0000 | 10 |

| | |
|---|---|
| Surface resistance: | 5 megohm-inches (minimum) |
| Heat resistance: | Condition at 250 °C |
| Heat aging: | Not required |
| Insulation tensile strength: | 700 pounds force per square inch (minimum, braid shall be removed prior to testing) |
| Insulation elongation: | 125 percent (minimum, braid shall be removed prior to testing) |
| Marking and stripe durability: | Not required |

CHANGES FROM PREVIOUS ISSUE. Marginal notations are not used in this revision to identify changes with respect to the previous issue because of the extensiveness of the changes.

CONCLUDING MATERIAL

Custodians:
Navy - SH
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

(Project 6145-2193-016)

Review activity:
Navy - AS