

SELECTION OF WIRE AND CABLE

1.00 GENERAL

1.01 This section covers the selection of station wire and cable used for inside wiring of telephone equipment.



Do not use privately owned wire or cable systems without the approval of supervisor.

1.02 In selecting wire or cable consider :

- Location of terminal, protector, connecting block, telephone set, etc.
- Number of conductors necessary to provide service and an economical allowance for future requirements.

- Type and gauge of wire or cable to meet the specific requirements of the job.
- Customer satisfaction with routing of inside wire or cable.

2.00 SELECTION OF CABLE

2.01 Type, number of pairs, color, and use are shown in Table A.

2.02 The improved sheath on D inside wiring cable and jacketed station wire will withstand the direct outdoor rays of the sun; however, advantage of protection offered by the projection of buildings should be utilized.

TABLE A
 SELECTION OF CABLE

| Type | No. of Pairs | Gauge | Sheath | | | Color | | | Use | | | | Remarks |
|-----------------|------------------------------------|-------|--------|----------------------|------------|-------|-------|--------------------------|----------------|---------------|--|--|---------|
| | | | Lead | Vinyl Thermo-plastic | Sheathless | Beige | Ivory | Duct and Conduit Systems | Terminals at | | Runs Passing Locations Subject to Action of Steam or Close to Heat in Excess of 212° F | | |
| | | | | | | | | | Damp Locations | Dry Locations | | | |
| BUA | 6, 11, 16, 21, 26, 31, 41, 51, 76, | 22 | • | | | | | | | • | | Tinned-copper conductors (textile covered) Color coded | |
| OUA | 101, 152, 202 | 22 | • | | | | | | | • | | Enamel-coated, tinned-copper conductors (textile covered) Color coded | |
| Inside Wiring D | 6, 12, 16, 21, 25, 50, 75, 100 | 24 | | • | | • | • | • | • | | | Annealed-copper conductors (plastic covered) Color coded See 2.00 | |
| Inside Wiring E | 6 | 24 | | | • | | | | | • | • | Annealed-copper conductors (no over-all covering) Color coded See 2.08 | |

TABLE B
SELECTION OF WIRE

| Type | No. of Conductors | Gauge | Color | | | | | | | Black and Red | Use | | | | | | | | | | Remarks | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|-------------------|----------------------|------------|-----------|-------|------|-------|--------|--------|---------------|------------------|------------|-----|----------|-------------------------|---------------------------------|------------------|---|--|-------------------------------|---------|-------------|-------------------------------------|----------|------------|--|----|-------|-----------|----|--------|--|---|----|--------|--|---|----|-----------|--|--------|---|------------|--|------------|
| | | | Beige | Brown | Ivory | Gray | Black | Red | Signal | | Class of Service | | | Circuits | | | | | Cross Conn | Misc | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | Ground | Individual | Ply | Coin | Extended Induction Coil | Two Individual (Maximum 100 ft) | Extension Ringer | Teletype | | | | Leased Wire | Loudspeaker and Paging Systems, etc | | | | | | | | | | | | | | | | | | | | | | |
| Station | Jacketed | 2 (Pair) | 20 | • | • | | | | | | | • | | | | | | | Use for all interior station wiring including ducts and conduits, except where impracticable to route runs to avoid close proximity to temperatures which might exceed 212° F. May be run outside on wall of building for short runs between terminal and protector, protector and station, extension station, or bell where the wire run on building extends outdoors. See 3.03. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 3 (Triple) | 20 | • | • | | | | | | | * | • | • | • | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 4 (Quad) | 20 | • | • | | | | | | | • | † | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | GS | 1 (Single) | 22 | • | • | | | | • | | | | | | | | | | | Not recommended for outdoors. | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 2 (Pair) | 22 | • | • | | | | | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 3 (Triple) | 22 | • | • | | | | | | | | | • | • | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4 (Quad) | 22 | • | • | | | | | | | • | † | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SK | 2 (Pair) | 20 | • | | | | | | | | | | | | • | | | Shielded Wire | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ground | 1 (Single) | 14 | • | | | | | | | • | | | | | | | | | <table border="1"> <thead> <tr> <th colspan="4">Ground Wire Capacity</th> </tr> <tr> <th rowspan="2">Size No.</th> <th colspan="2">Protectors</th> <th rowspan="2">or</th> </tr> <tr> <th>Fused</th> <th>Fuseless‡</th> </tr> </thead> <tbody> <tr> <td>14</td> <td>1 to 3</td> <td></td> <td>1</td> </tr> <tr> <td>12</td> <td>4 to 6</td> <td></td> <td>2</td> </tr> <tr> <td>10</td> <td>7 or more</td> <td></td> <td>3 to 6</td> </tr> <tr> <td>6</td> <td>Any number</td> <td></td> <td>Any number</td> </tr> </tbody> </table> | Ground Wire Capacity | | | | Size No. | Protectors | | or | Fused | Fuseless‡ | 14 | 1 to 3 | | 1 | 12 | 4 to 6 | | 2 | 10 | 7 or more | | 3 to 6 | 6 | Any number | | Any number |
| | | Ground Wire Capacity | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Size No. | Protectors | | or | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Fused | Fuseless‡ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 14 | 1 to 3 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | 4 to 6 | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 7 or more | | 3 to 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Any number | | Any number | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Block D | 1 (Single) | 20 | | | | | | | • | | | | | | | | | Use near heat sources in excess of 212° F, outdoors, in freezing rooms, factories, and for short runs in homes or offices. May be taped for appearance reasons. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2 (Pair) | 20 | | | | | | | • | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3 (Triple) | 20 | | | | | | | * | • | • | • | | • | • | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cross-conn B | 1 (Single) | 22 | | | | | | • or • | | | | | | | | • | | Do not use in central office or building distributing frame. Use red for battery and black for ground. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2 (Pair) | 22 | | | | | | | | | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Drop C | 2 (Pair) | 18 | | | | | | • | | | | | | | | | | May be substituted for block D wire. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flat Cord | 4 (Quad) | 18 | • | | | | | | | | | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

* Local option.

† Maximum run 100 feet. Circuit No. 1 uses red wire for ring, green wire for tip; circuit No. 2 uses yellow wire for ring, black wire for tip.

‡ Ground-wire current-carrying capacity for one fuseless protector is equivalent to three fused protectors.

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- 2.03 D inside wiring cable and jacketed station wire may be used in conduit that is buried between buildings.
- 2.04 Do not use D inside wiring cable or jacketed station wire outdoors where:
 - Run is not entirely on a wall or supporting surface. Do not span.
 - A splice will be required.
 - Drop or block wire can be used instead of jacketed station wire.
- 2.05 Where mechanical protection is required, eg, to seal a wire entrance hole, serve inside wiring cable or jacketed station wire with vinyl tape.
- 2.06 E inside wiring cable is intended for use in[†] prewiring of homes during construction.
- 2.07 The conductors are individually insulated with distinctively colored PVC and marked[‡]

at regular intervals (of approximately 3/4 inch)[†] with single dots of colored ink to provide tip, ring, and pair identification. See Table C. [‡]

3.00 SELECTION OF WIRE

- 3.01 Type, number of conductors, color, and use are found in Table B.
- 3.02 Refer to 2.00 for supplementary information on jacketed station wire.
- 3.03 Jacketed station wire may be used on short outdoor runs and terminate directly into an outside-type terminal located on wall of building. Do not use jacketed wire to span, eg, between buildings.
- 3.04 B cross-connecting wire is used in indoor and outdoor cross-connecting terminals. It should be used only within a single terminal box and should not be used between terminal boxes, either indoors or outdoors. Jacketed station wire should not be used for cross-connecting in terminals.

TABLE C

| Pair No. | Ring Conductor | | Tip Conductor | |
|----------|----------------|------------|---------------|--------|
| | Insulation | Dot | Insulation | Dot |
| | Color | | Color | |
| 1 | Blue | White ↓ | White ↓ | Blue |
| 2 | Orange | | | Orange |
| 3 | Green | | | Green |
| 4 | Brown | | | Brown |
| 5 | Slate | | | Slate |
| 6 | Blue | Red | Red | Blue |