

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

SECTION G50.618.1
Issue 1, May, 1948
AT&T Co Standard

CABLE SPLICING—GENERAL

PROTECTION OF CORE AT INTERNAL METALLIC SHIELDS

Contents	Page
1. General	1
2. Layer Shields	1
3. Multiple Shields	3
4. Copper Wire Shields	5

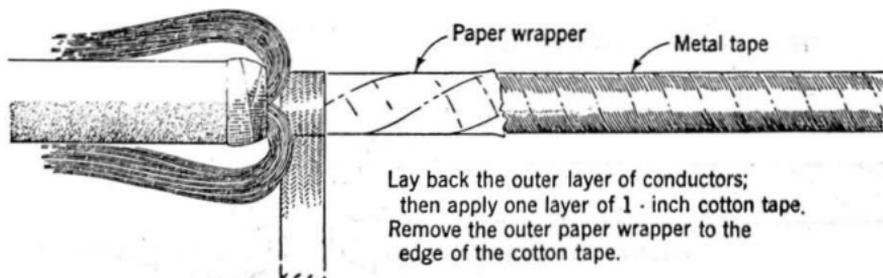
1. GENERAL

1.01 This section describes the methods of protecting the core of cables in which internal metallic shields are provided.

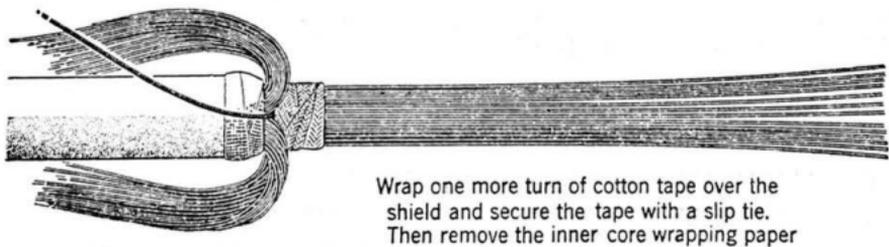
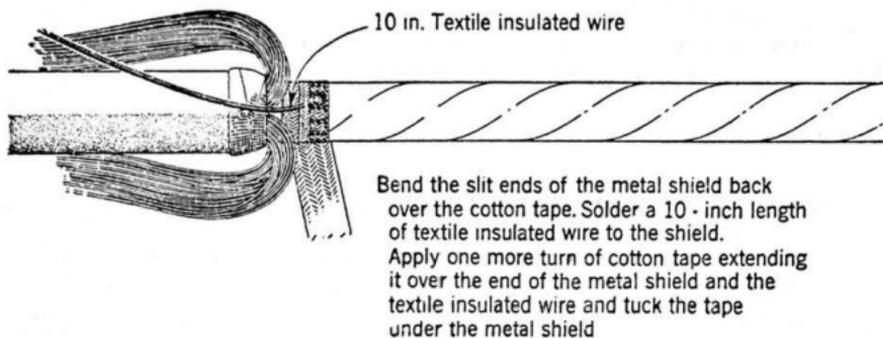
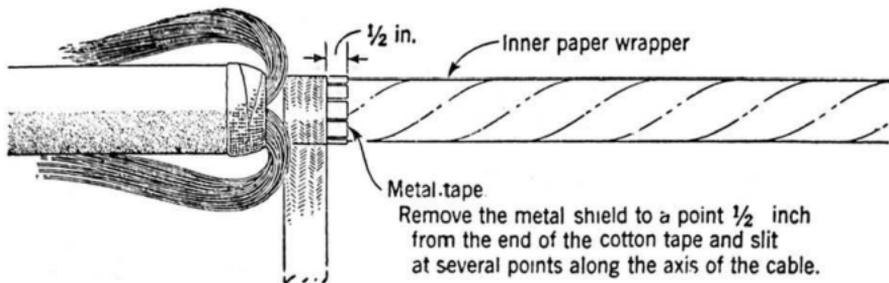
1.02 There are three general types of metallic shields: the layer shield, consisting of a single spiral wrapping of metallic tape; the multiple shield consisting of two or more metallic tapes; and the copper wire shield consisting of a spiralled layer of bare copper wire covered with a serving of copper and paper tapes.

2. LAYER SHIELDS

2.01 Cotton tape should be applied over the cut end of the cable sheath in the usual manner after the sheath is removed and before the outer core wrapper is torn off. The core should then be protected as outlined below.



Lay back the outer layer of conductors;
then apply one layer of 1-inch cotton tape.
Remove the outer paper wrapper to the
edge of the cotton tape.



2.02 If the cables contain several layer shields the method of protection is essentially the same as outlined above. The outer shield should first be treated as outlined in Paragraph 2.01, except that 1/2-inch cotton tape should be used and the metal shield should be removed to a point 1/4 inch from the cotton tie. After the operation is completed and the inner paper wrapper is removed the underlying conductors should be laid back and the second and any succeeding shields should be protected in the same manner.

2.03 On completion of the splicing work the ends of the textile insulated wires attached to the terminated layer shield or shields shall be brought out through the muslin wrap-

pings to the surface of the cable, twisted together, lashed to the cable sheath and soldered.

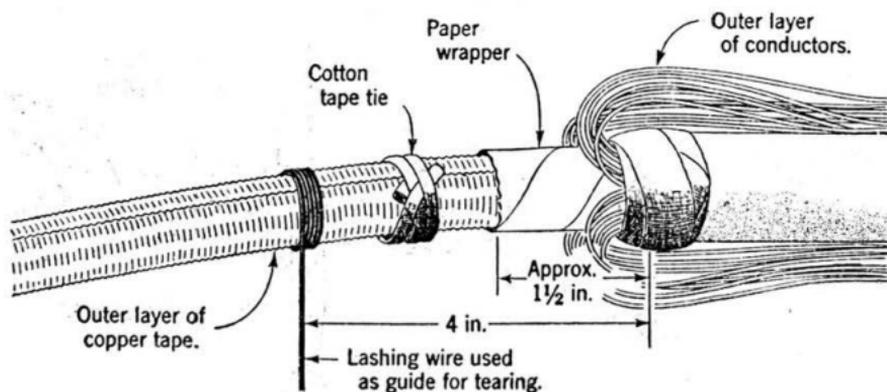
2.04 The operation of bonding the metallic tape shield to the sheath can be eliminated in working on loading coil stub cables as the shield is bonded to the cable sheath inside the case.

3. MULTIPLE SHIELDS

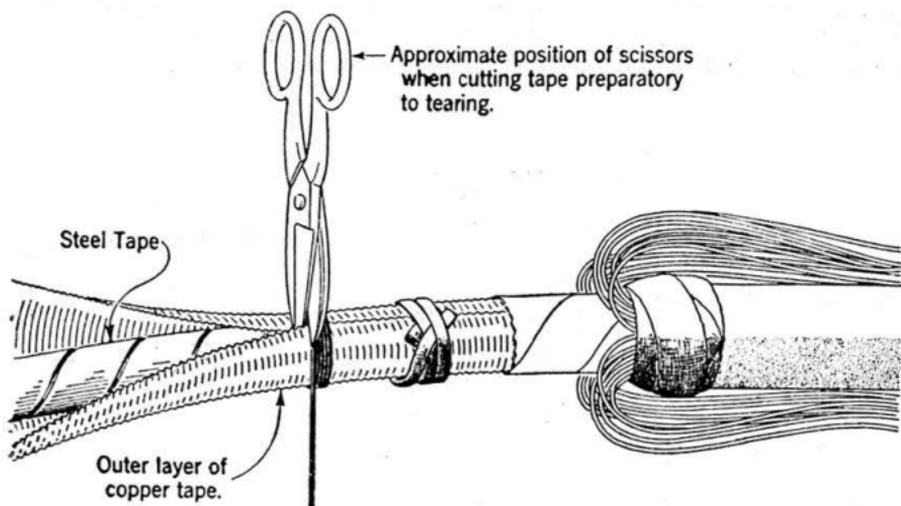
3.01 The multiple shield generally consists of two corrugated copper tapes with two spiralled layers of steel tape between them. There may be some variations of this combination but the method of terminating is essentially the same as that outlined below.

3.02 Cotton tape should be applied over the cut end of the cable sheath in the usual manner after the sheath is removed and before the outer core wrapper is torn off. The cable should then be protected as outlined below.

3.03 Remove the shield wrapping paper to a point about 1-1/2 inches from the sheath end, mark the metal tape about 4 inches from the sheath end and make a temporary cotton tape tie around the shield 1 inch from the mark and on the side toward the sheath. Solder one end of a length of lashing wire to the outer tape between the mark and the sheath end and wrap several turns of wire around the shield until the end of the lashing wire is at the mark, as illustrated below.



3.04 Using the scissors, loosen the end of the outer metallic tape to the wire. Cut the edge of the tape for a distance of 1/4 inch parallel and as close to the lashing wire as possible.



3.05 Holding the wire taut tear the tape around the circumference using the cut end of the tape as a starting point and the wire as a guide.

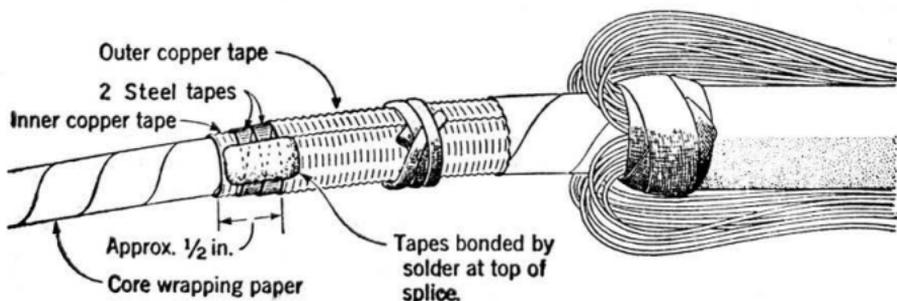
3.06 Continue wrapping wire for two additional turns around the remaining shields, loosen and cut the second tape and tear it around the circumference as outlined above.

3.07 Tear the remaining tapes in a similar manner adding two turns of lashing wire for each tape.

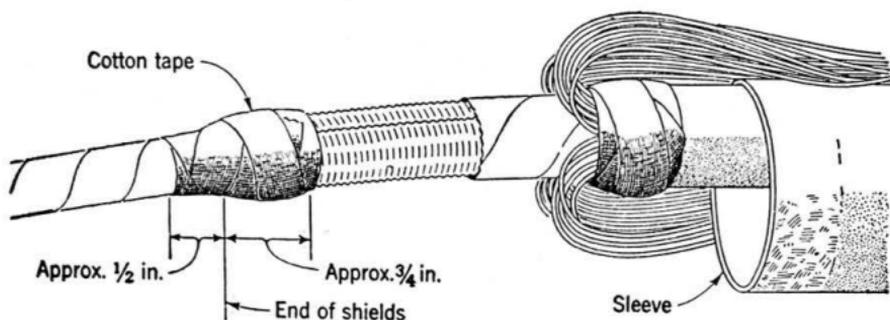
3.08 Remove the lashing wire. Remove any sharp projections on the tapes by pressing them smooth with the flat side of the scissors.

3.09 Bond the tape ends together at the top of the splice as illustrated below, using rosin core solder.

GENERAL APPEARANCE OF TAPE TERMINATION

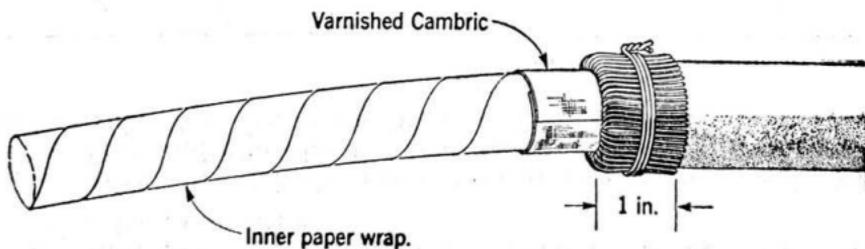
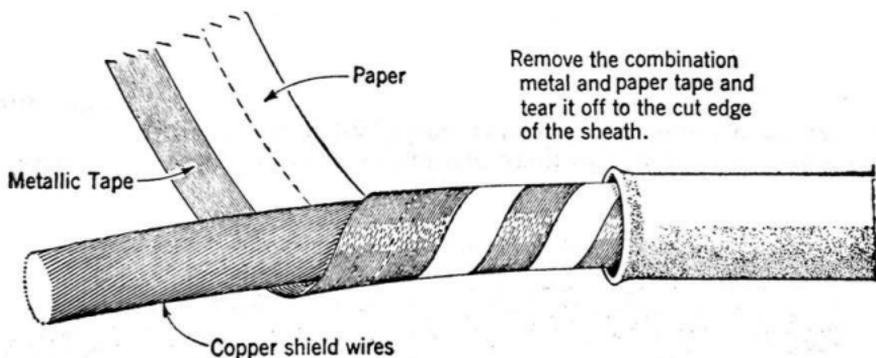


3.10 Remove the cotton tape tie. Apply a wrapping of 1-inch cotton tape over the bonded shield ends and 1/2 inch of the core as illustrated below.



4. COPPER WIRE SHIELDS

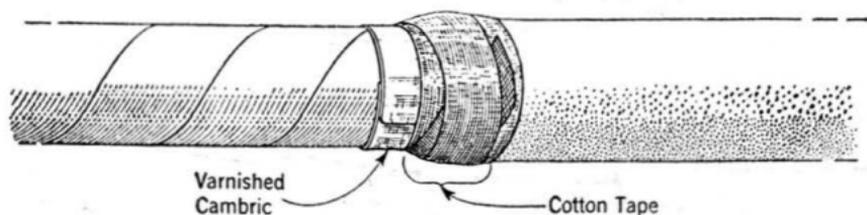
4.01 After the sheath is removed the core shall be protected as outlined below.



Cut the copper shield wires around the core approximately 1 inch from the sheath and bend them back. Secure them with three turns of lashing wire.

4.02 Wrap a strip of 1-1/2-inch varnished cambric, long enough to go around the core with a 1/2-inch overlap, tightly around the core wrapping paper and work it under the sheath about 1/2 inch, as shown above. Turning the cambric in the direction of the lay of the core wrapping paper will facilitate its application.

4.03 Wrap dry 1-inch cotton tape over the varnished cambric and the sheath, covering the ends of the copper wire shields. Terminate the tape with a slip tie.



4.04 Tear off the excess cambric around the core to the edge of the cotton tape. Then remove the inner core wrapping paper.