

Tentative Specifications for

ROUND PHENOLIC LAMINATED TUBING FOR RADIO APPLICATIONS¹



A.S.T.M. Designation: D 616 - 41 T

ISSUED, 1941.²

These Tentative Specifications have been approved by the sponsoring committee and accepted by the Society in accordance with established procedures, for use pending adoption as standard. Suggestions for revisions should be addressed to the Society at 1916 Race St., Philadelphia 3, Pa.

Scope

1. These specifications cover round phenolic laminated tubing for radio and similar applications where high frequencies are involved. Either rolled or molded tubes may be furnished in accordance with these specifications provided they conform to the prescribed requirements. The grade of tubes shall be specified in the order. In general, molded tubes are somewhat more dense and have slightly better moisture resistance than rolled tubes, but have mold seams which are a source of weakness both mechanically and electrically, particularly in thin-walled tubes. Where molded tubes are threaded, the threads may be poor at the seams. The following grades are covered:

Grade No. T-1.—A strong, tough paper base tube in which dielectric losses are of minor importance, and

Grade No. T-2.—A paper base tube with low dielectric loss and excellent

threading characteristics, but not quite as tough as grade T-1.

NOTE.—Usual applications for these grades are given in the Appendix.

Material

2. The material shall consist of layers of paper suitably impregnated with a phenolic type resinous compound and formed into tubular shape, these layers being subsequently consolidated under action of heat and pressure into a hard dense tube which shall then be ground to size. Rolled tubes shall be cured by baking in ovens after rolling and molded tubes shall be cured in molds under pressure.

Punching Quality

3. (a) Grade T-2 is not quite as suitable for punching as grade T-1, but either grade may be punched in simple shapes and thin sizes provided good punching practice (Note) sharp, close-clearance dies, proper strippers, and proper heating conditions are used.

(b) The maximum wall thickness at which satisfactory punching results may

¹ Under the standardization procedure of the Society, these specifications are under the jurisdiction of the A.S.T.M. Committee D-9 on Electrical Insulating Materials.

² Accepted by the Society at annual meeting, June, 1941.