

STANDARD INFORMATION

Standard: UL 1653 / CSA C22.2 No. 227.1

Standard ID:

Electrical Nonmetallic Tubing [UL 1653:2019 Ed.3+R:30Mar2022]

Electrical Nonmetallic Tubing [CSA C22.2#227.1:2019 Ed.5+U1]

Previous Standard ID:

Electrical Nonmetallic Tubing [UL 1653:2019 Ed.3]

Electrical Nonmetallic Tubing [CSA C22.2#227.1:2019 Ed.5]

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **March 30, 2024**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: Per our accreditation, Intertek is required to review reports against the standard revisions to confirm compliance. Once compliance is confirmed, the standard reference in the report is updated to show continued compliance to the technical requirements of the standard. Reports not updated to this version by the effective date above will be withdrawn.

Overview of Changes:

- Resistance to Deflection Test Acceptance Criteria and Procedure
- Requirements for male threaded adapters or for transition couplings with internal threads

Specific details of new/revised requirements are found in table below.

Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.



STANDARD INFORMATION

CLAUSE	VERDICT	COMMENT
		<i>Additions to existing requirements are <u>underlined</u> and deletions are shown lined out below.</i>
4	Info	Construction
4.4	Info	End stops
		<i>New clause added;</i>
4.4.2		A transition coupling shall be provided with end stops as applicable for the ENT and/or conduit for which the coupling is intended.
		<i>New section added;</i>
4.5		Threads for fittings and conduit entries
4.5.1		General
4.5.1.1		The external threads of an adapter shall be straight or tapered and the thread form shall comply with NMX-J-554-ANCE or ANSI/ASME B1.20.1. Internal threads of a fitting or conduit entry shall be straight or tapered and comply with 4.5.1.2 and 4.5.1.3.
4.5.1.2		Internal threads of a transition coupling shall comply with NMX-J-554-ANCE, CSA C22.2 No. 0.5, or ANSI/ASME B1.20.1 and use National Standard Straight (NPS) or modified National Standard Pipe Taper (NPT) thread. For NPT threads, the entries shall be threaded to a gauging tolerance of L1 + 1/2 to L1 + 5 on a working NPT plug gauge.
4.5.1.3		Threaded openings of a fitting for the connection of conduit shall be smooth and rounded to provide protection to the conductors. The throat diameter of an opening shall be within the limits specified in Table 4. For NPT threaded entries, the minimum depth to an integral bushing or end stop shall be in accordance with Table 5.
4.5.2		Minimum thread projection
4.5.2.1		The external thread projection of an adapter, when measured from the shoulder stop to the end of the thread along the axis of the adapter, shall not be less than that specified in Table 6.
5	Info	Performance requirements for ENT
5.3	Info	Resistance to deflection
5.3.1		When tested in accordance with 7.5, six samples of each trade size of ENT submitted shall not deflect more than 30%. There shall not be evidence of <u>creasing, cracking or buckling</u> of the ENT when examined visually <u>during and upon completion of the test.</u>



CLAUSE	VERDICT	COMMENT
7	Info	Test methods for ENT
7.5	Info	Resistance to deflection
7.5.3	Info	Procedure
		The procedure shall be as follows:
7.5.3.1		a) the inside diameter of the sample shall be measured and recorded; b) the sample shall be placed between the platens of the compression machine so that the measured inside diameter is perpendicular to the platens; c) the machine shall be operated until the load specified in 7.5.1.1 has been applied; <u>d) the platens movement shall be stopped, and the inside diameter of the sample shall be remeasured while maintaining the current position of the platens. The sample shall also be examined for evidence of buckling. Then;</u> <u>e) retract the platens to fully release the sample from the applied load, remove the sample from the compression machine and examine the sample, using normal or corrected to normal vision, for evidence of creasing and/or cracking.</u>