

STANDARD INFORMATION

Standard: UL 719

Standard ID: Nonmetallic-Sheathed Cables [UL 719:2025 Ed.14]

Previous Standard ID: Nonmetallic-Sheathed Cables [UL 719:2015 Ed.13+R:07Nov2023]

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: June 26, 2027

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 Reports not updated to this version by the effective date above will be withdrawn.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: Flatwise Crush Resistance Test. 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 – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records.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.



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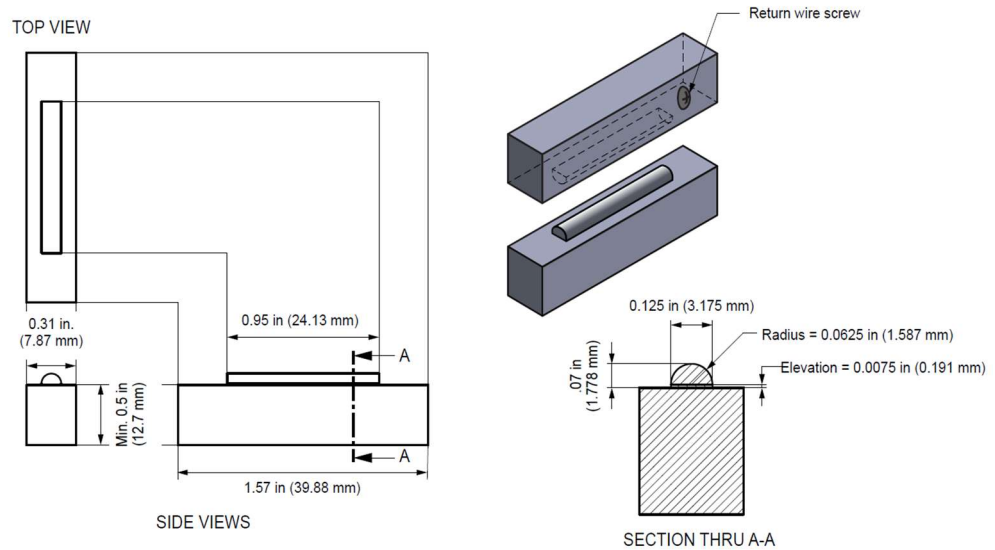
CLAUSE	VERDICT	COMMENT
24	Info	Crushing Resistance Test for Flat Cable <i>New clause added;</i>
24.1		Finished flat cables containing two or three 14 AWG copper aluminum or copper-clad aluminum circuit conductors with a grounding conductor, when tested in accordance with Section 44, shall show no dielectric breakdown after the crushing force is applied to the cable flatwise wise as indicated in 44.1 – 44.8.
44		Crushing Resistance Test for Flat Cable
44.1		A length of cable, nominally 18 inches (450 mm) long is used. Approximately six (6) inches (150 mm) of the jacket is to be stripped off each end, taking care not to damage the insulated conductors. The ends of the insulated conductors are to be made bare for a length of approximately 1 inch (25 mm) to facilitate connection to the dielectric test equipment.
44.2		The test fixture consists of two halves. Each half consists of a 1010 steel (or harder steel) block with a 0.125 inch ± 0.005 inch (3.2 mm ± 0.13 mm) in diameter cylinder. The cylinder is to be longer than the width of the specimen [nominally 1 inch (25 mm) long] mounted on a length of a steel bar that can accommodate the cylinder [nominally 1.6 inches (41 mm) long] and is 0.31 inch ± 0.005 in (7.9 mm ± 0.13 mm) wide and at least 0.5 inch (13 mm) tall. The cylinder shall protrude from the block 0.07 inch ± 0.005 inch (1.78 mm ± 0.13 mm). See Figure 44.1. A grounding conductor shall be connected to the fixture.



CLAUSE VERDICT COMMENT

Flatwise Crush Fixture

Figure 44.1



44.3

The cable, the test fixture, and the surrounding air are to be in thermal equilibrium with one another at a temperature of $25 \pm 10^\circ\text{C}$ ($77 \pm 18^\circ\text{F}$) during the test.

44.4

Each half of the fixture is to be tightened within the grips of a mechanical tester. The halves of the fixture shall be mounted such that the mandrels on the two halves are aligned. Pins, or another means shall be added to the fixture to maintain alignment. A support, such as a 2 inch x 4 inch piece of wood located such that it is approximately the same height as the top of the bottom grip and 1 to 2 inches away from the fixture. Can be used to prevent deflection of the test specimen when the test leads are attached.

44.5

The specimen of the finished flat cable is to be laid flat and perpendicular to the longitudinal axis of the cylinder on the test fixture. The specimen shall be centered in the test fixture.

44.6

Approximately 15 lbf (66 N) is applied by the mechanical tester. The circuit conductors and the test fixture are then connected to the dielectric equipment in a manner which will indicate the presence of a dielectric breakdown between the circuit conductors and the fixture after the voltage is applied. The ends of the conductors are to be spaced apart to prevent arcing at the cut ends.

44.7

The software-controlled mechanical tester is to apply compressive force to the specimen at a linear rate of 200 lbf/min (900 N/m) until it reaches 200 lbf (900 N) in 60 seconds. After reaching 200 lbf (900N), the mechanical tester is to maintain displacement (the force is no longer controlled and may change with time) for a period of five (5) minutes.



CLAUSE	VERDICT	COMMENT
44.8		After 5 minutes, with the test fixture still in place at the fixed displacement in the mechanical tester, a dielectric potential of 5000 V AC is to be applied between both circuit conductors tied together and the test fixture. The potential shall be applied at a rate of 500 V/s until 5000 V AC is reached and then held for 60 seconds. There shall be no breakdown.
44.9		The method described in 44.1 – 44.8 is to be repeated on nine additional specimens. There shall be no breakdown in any of the 10 specimens.