

STANDARD INFORMATION

Standard: UL 268 / ULC 529

Standard ID:

Smoke Detectors for Fire Alarm Systems [UL 268:2023 Ed.8]

Smoke Detectors for Fire Alarm Systems [CAN/ULC 529:2023 Ed.5]

Previous Standard ID:

Smoke Detectors for Fire Alarm Systems [UL 268:2016 Ed.7+R:11Nov2021]

Standard for Smoke Detectors for Fire Alarm Systems [CAN/ULC S529:2016 Ed.4+R3]

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **September 30, 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 Reports not updated to this version by the effective date above will be withdrawn.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:

- Five types of controlled fire tests as the standard for both the U.S. and Canada
- Harmonization of multiple tests
- One fire test room and smoke test chamber (smoke box)
- Reliability prediction and criteria for acceptance
- Incorporation of the U.S. smoke box for the Stack Effect test
- New requirements for air-sampling type (aspirated) smoke detectors
- Alarm silence feature revised to allow smoke detectors
- Audibility Test to specify the use of reverberant sound power

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 – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records.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
		<i>Additions to existing requirements are <u>underlined</u> and deletions are shown lined-out below.</i>
7	Info	Silencing Feature (Optional)
7.1		A smoke detector with integral alarm sounding appliance shall be permitted to be provided with an automatically resettable alarm silencing feature. The alarm silence feature shall have either a fixed or a variable time setting that desensitizes the detector. The alarm silence feature may be initiated at the detector or control panel. Alarm silencing shall not disable the smoke detector. <u>Sensitivity shall not be reduced to less than 125 % the manufacturer's minimum sensitivity setting test group as determined from the Uniformity of Operation minimum sensitivity defined in 32.1.6.3(b).</u> For example, a smoke detector with a minimum sensitivity of 4 %/m (%/ft) may have its sensitivity reduced to 5 %/m (%/ft) during the alarm silence period. Following the silenced period, the detector shall restore automatically to its intended operation. Each smoke detector shall continue to produce a visible alarm signal while in the silence mode.
32	Info	Sensitivity Test
32.1	Info	Sensitivity test – smoke sensor
32.1.6	Info	Uniformity of operation
		<i>New clause added;</i>
		Smoke detectors shall be uniform in operation when conducting Section 32, Sensitivity Test, as follows:
32.1.6.3		a) The sensitivity of any one smoke detector, based on the average of at least three trials, shall be within 25 % of the overall average when testing at least 12 detectors that are preset (as close to production calibration permits) to the nominal maximum production sensitivity (most sensitive setting); and b) The sensitivity of any one smoke detector, based on the average of at least three trials, shall be within 25 % of the overall average when testing at least 12 detectors that are preset (as close to production calibration permits) to the nominal minimum anticipated production sensitivity (least sensitive setting).
		<i>New clause added;</i>
32.1.6.4		Combination/multi-criteria smoke detectors shall be provided with a means for monitoring each principle of operation during Section 32, Sensitivity Test.



CLAUSE	VERDICT	COMMENT
32.1.6.5		New clause added; If a smoke detector has a variable sensitivity setting, the requirement in 32.1.6.1 applies to the end points of the variable range.
42	Info	Test for Effect of Air Velocity <i>New clause added;</i>
42.4		Sampling-type smoke detectors tested to the requirement of 42.3 shall have one sampling port in the duct fire apparatus. The sampling pipe network shall be designed to minimum sensitivity, maximum dilution.
43	Info	Air Sampling Smoke Detector Flow Fault <i>New clause added;</i>
43.1		An air sampling smoke detector shall product a fault/trouble signal within 90 s from when the air flow from the sampling pipe network changes by ± 20 % of its baseline flow as measured at the detector.
44	Info	Fire Tests <i>New section added;</i>
44.4		Flaming polyurethane foam test See standard for details. <i>New section added;</i>
44.6		Requirements for sampling-type smoke detectors A sampling-type detector shall meet the requirements of: See standard for details. <i>New section added;</i>
46		Smoldering Polyurethane Foam Test The foam shall be: See standard for details. <i>New section added;</i>
47		Cooking Nuisance Smoke Test (Excluding Projected-Beam Detectors) Four detectors (excluding projected beam detectors) shall not: See standard for details.



CLAUSE	VERDICT	COMMENT
		<i>New section added;</i>
		Go/No Go Flaming Polyurethane Foam Test
48		The Flaming Polyurethane Foam test requirements outlined in 44.4 shall be conducted with: See standard for details.
76	Info	Audibility Test (for Detectors with Integral Sounders)
		<i>New section added;</i>
		Alarm sounder duration test
76.4		An alarm sounding appliance of a detector other than a low frequency sounder, and powered by a primary or a non-rechargeable secondary battery that has been discharged to the trouble level condition, shall: See standard for details.
81	Info	Evaluation of Reduced Spacings on Printed-Wiring Boards
		<i>New clause added;</i>
81.6		Immediately following each fault described in 81.5, within one min of the conclusion of the test, the product shall be subjected to Section 69, Dielectric Voltage Withstand Test.
		<i>New annex added;</i>
		RELIABILITY PREDICTION AND CRITERIA FOR ACCEPTANCE
Annex A		INSTRUCTIONS FOR DETERMINING A RELIABILITY PREDICTION OF ELECTRONIC COMPONENTS AND MICROELECTRIC CIRCUITS See standard for details.