

STANDARD INFORMATION

Amendment 1: Products certified to the 3rd edition can remain certified to the 3rd edition. Products certified to the 3rd edition will be required to be certified to the 5th edition, not sooner than 2 years after the 5th edition is issued.

Standard: ULC S531

Standard ID: Standard for Smoke Alarms [CAN/ULC S531:2019 Ed.4]

Previous Standard ID: Standard for Smoke Alarms (R2018) [CAN/ULC S531:2014 Ed.3]

EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

Effective Date: **To be Determined once the 5th edition is released**

IMPACT, OVERVIEW, AND ACTION REQUIRED

Impact Statement: Products certified to the 3rd edition can remain certified to the 3rd edition. Products certified to the 3rd edition will be required to be certified to the 5th edition, not sooner than 2 years after the 5th edition is issued. Below are the changes between the 3rd and 4th edition that will be incorporated into the 5th edition.

Overview of Changes:

- New Firmware Requirements
- New Mechanical Push Test
- Supervised Battery as Primary/Sole Power Source for Alarm Accessories
- New Paintbrush Marking
- Trouble Signal for Detached Low Frequency or Tactile Accessories

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 – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records.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>
9	Info	Automatic Drift Compensation for Smoke Sensing
9.4		The compensation shall not adversely affect the operation of the smoke alarm. The summation of compensation steps over a twenty-four hour period shall not change the clean-air reference value by more than 50 percent of the shift necessary to indicate an alarm signal and shall not impact the smoke sensitivity of the smoke alarm as specified in Clause 9.2. <u>Maximum compensation rate of the clean air reference value shall not exceed 5 percent every 2.4 h.</u>
13	Info	Alarm Silencing Feature
13.1		Each smoke alarm shall be provided with an automatically resettable alarm silencing means that has a fixed or variable time setting which desensitizes the alarm <u>for a maximum of 10 min.</u> Alarm silencing shall not disable the smoke alarm. <u>Sensitivity shall not be reduced to a level that is less than the manufacturer's minimum sensitivity setting.</u> Each alarm shall produce a distinctive audible or visible trouble signal while in the silence mode. Following the silenced period, the alarm shall restore automatically to its intended operation. Silencing of one alarm of a multiple station system shall not prevent an alarm operation from the other alarms in the system. See Clause 40, Alarm Silenced Test.
		<i>New clause added;</i>
13.3		When single station smoke alarms are configured in a multiple station connection (interconnection of two or more smoke alarms), the smoke alarm that initiates an alarm signal shall be designed to be silenced through a manual operation by physically depressing the alarm silence feature on the initiating alarm.
		<i>New clause added;</i>
13.4		As an optional feature, the manufacturer is permitted to include an additional wireless communication remote silencing feature. If included and tested for compliance with the requirements outlined in Clause 13.7, the wireless communication remote silence feature may be activated through a remote device and shall be capable of providing additional instructions for the user to confirm his physical proximity to the initiating smoke alarm. Manufacturers that include a wireless communication remote silencing feature shall include language on their remote device for the user to confirm his physical proximity to the initiating smoke alarm, and that the user verified the presence or absence of smoke/fire at the initiating alarm(s) before silencing the alarm signal using the remote device.



CLAUSE	VERDICT	COMMENT
13.5	New clause added;	<p>A multiple-station interconnected smoke alarm that produces an alarm signal (wired, wireless, relay, audible and/or visual) shall be permitted to be silenced by either of the following:</p> <ul style="list-style-type: none">a) By activating the alarm silence feature on any multiple station interconnected smoke alarm, provided the smoke alarm that initiated the alarm signal remains in alarm; orb) By physically depressing the alarm silence feature on the initiating smoke alarm(s), as noted in Clause 13.3; orc) By activating the wireless communication remote silencing feature using a remote device. <p>Exception: In the event that the initiating alarm(s) cannot be silenced per the requirements in Clause 13.1, it is permitted that the smoke alarms providing an alarm signal resulting from the multiple-station interconnect, excluding the initiating alarm(s), be silenced but not exceed the limits defined in Clause 13.1.</p>
13.6	New clause added;	<p>Upon activation of an alarm signal from a smoke alarm in the multiple-station circuit, or reactivation of the alarm signal from the originating smoke alarm, all alarms in the multiple-station interconnect shall reinitiate their alarm signal.</p>
13.7	New clause added;	<p>Smoke alarms with a wireless RF communication remote device and employing a remote alarm silence feature shall be tested in accordance with one of the following requirements:</p> <ul style="list-style-type: none">a) The remote transmission radio of the smoke alarm shall comply with ISED applicable Radio Specifications for the frequency band used and the field strength limits associated, orb) The manufacturer shall provide a defined test procedure, test frequency and field strength in compliance with ISED regulations that demonstrate the open field (line of sight) transmission range of the smoke alarm does not exceed 300 m.
13.8	New clause added;	<p>Where a visible signal device or component is used as an optional feature, the alarm silence feature may be permitted to deactivate the visible signal device or component.</p>



CLAUSE	VERDICT	COMMENT
14		<i>New section added;</i> Smoke Sensitivity Test Feature
14.1		smoke alarm shall incorporate means for manual test of its operability and sensitivity by mechanically or electrically simulating a preset level of smoke in the sensing chamber. The test means shall be externally accessible when the unit is installed as intended and shall test the operability of the entire unit with the exception of the trouble indicating part of the circuit, which may be excluded. See Clause 42.7, Smoke sensitivity test feature.
14.2		Where a visible signaling device or component is used for the smoke sensitivity test feature it shall also activate the visible signaling device or component.
15	Info	Batteries
15.1		<i>New section added;</i> This section contains requirements for batteries (see standard for details).
16		Firmware Update (if provided) This section contains requirements for firmware (see standard for details).
19	Info	Enclosure
19.3	Info	Sheet metal enclosures
19.3.2		At any point where conduit or metal clad cable is to be attached, sheet metal shall be of such thickness or shall be so formed or reinforced that it will have a stiffness at least equivalent to that of an uncoated, flat, sheet steel having a minimum thickness of 1.6 mm (1/16 in). <u>At any point where conduit or metal-clad cable is to be attached, sheet metal shall have a thickness not less than 0.81 mm (0.032 in) when of uncoated steel, not less than 0.86 mm (0.034 in) when of galvanized steel, and not less than 1.3 mm (0.05 in) when of nonferrous metal.</u>
19.5	Info	Ventilating openings
19.5.1		Ventilating openings in an enclosure, including holes, louvers, and openings protected by means of wire screening, expanded metal, or perforated covers, shall be of such size or shape that no opening will permit passage of a rod having a <u>diameter of 3.6 mm (9/64 in) for circuits greater than 30 Vrms (42.4 V peak)</u> . An enclosure for fuses or other overload protective devices and provided with ventilating openings shall afford adequate protection against the emission of flame or molten metal. Openings provided to permit cleaning or openings which may be used to clean internal parts shall be arranged to prevent damage to functional internal components during such cleaning operations. For units equipped with a cover, the requirements of this clause apply with the cover open for circuits greater than 30 Vrms (42.4 V peak).



CLAUSE	VERDICT	COMMENT
22	Info	Remote Power Supply
22.2		<p>Where longer runs of interconnecting wiring are used in an installation, such as in a multiple station configuration, or where several alarms are supplied by a common power supply, the wiring is not required to be provided by the manufacturer. <u>However, the installation wiring diagram or manufacturer's published instructions shall be marked to specify that the wiring to be used shall be in accordance with the installation of electrical equipment shall be in accordance with CEC C22.1.</u></p> <p><u>Additionally, the resistance of the interconnecting wiring shall be a maximum of 10 ohms, unless otherwise specified by the manufacturer.</u></p>
31	Info	Printed Wiring Boards
		<i>New clause added;</i>
31.2		All printed-wiring boards shall have a minimum flammability rating of V-2, rated for direct support of current-carrying parts, and be suitable for the soldering process used.
	Info	PERFORMANCE
37	Info	General
37.6	Info	Accessories
		<i>New clause added;</i>
37.6.2		The primary power supply of optional accessories shall be either a utility supply (commercial light and power source) or a supervised integral battery or batteries.
37.6.3		Optional accessories used to assist persons with disabilities by enhancing the low frequency or signaling a tactile appliance shall include a source of secondary power meeting the requirements of 41.5.3. <u>If the accessory is powered solely from a primary battery, the primary battery shall comply with the primary battery requirements contained in this standard (including Clauses 15, 41.5, and 82.3).</u>
		Detached accessories utilizing a low frequency sound or actuating tactile appliances for single and multiple units shall provide a low frequency audible trouble signal or visual trouble indication <u>on the portion of the accessory intended to be visible to the user after installation</u> in the event of the following:
37.6.4		<p>a) <u>Low energy of the primary battery power source in accordance with Clause 53.2, Battery trouble voltage determination.</u></p> <p>b) Loss of primary power, (not required for accessories utilizing primary batteries as the sole power supply),</p> <p>c) Low energy of the secondary power source (not required for accessories utilizing primary batteries as the sole power supply), or</p> <p>d) The accessory unit cannot perform its intended function of enhancing the smoke or heat alarm's primary low frequency audible sound or operate the tactile appliance.</p>



CLAUSE	VERDICT	COMMENT
		<i>New clause added;</i>
37.6.5		Where secondary power is provided for visible signaling accessories, the secondary power shall meet the requirements of Clause 35.2, Secondary Power.
		<i>New clause added;</i>
37.6.6		Where secondary power is not provided for visible signaling accessories, the manufacturer's installation manual shall clearly indicate that the visible signal does not operate during loss of ac power. See Installation Instructions, 96.1(r).
		<i>New clause added;</i>
37.6.7		The visible signaling accessories shall comply with UL 1638, CAN/ULC S526, Visible Signaling Devices for Fire Alarm Systems Including Accessories.
		<i>New clause added;</i>
37.6.8		An open or short circuit on the connection to a visible signaling accessory shall not impair the stand-alone operation of the smoke alarm. Refer to Clause 41.1.2 of Electrical Supervision Test.
		<i>New clause added;</i>
		The interconnection to a nonintegral (remote) visible signaling accessory does not require electrical supervision for circuit integrity.
37.6.9		NOTE 1: Optional visible signaling devices do not require synchronization of the visible signals. NOTE 2: Where synchronization is provided, the visible signaling device shall meet the synchronization requirement of UL 1638, CAN/ULC-S526, Visible Signaling Devices for Fire Alarm Systems Including Accessories.
38	Info	Normal Operation Test
38.1	Info	General
38.1.7		No individual sensor of a smoke alarm shall be rendered inoperative by any of the Performance Tests (Clauses 37 – 85) of this standard. <u>Each principle shall contribute in response either entirely or partially to at least one of the fire tests or smoldering smoke tests in this standard unless the sensor is only used to identify nuisance alarm conditions.</u>



CLAUSE	VERDICT	COMMENT
		<i>New clause added;</i>
38.1.8		If low power wireless transmission between smoke alarms, is used, it shall be in compliance with the applicable requirements outlined in the section entitled "Short Range Radio Frequency Devices" in ULC-S545, Standard for Household Fire Warning System Units. The transmission signal of a smoke alarm with integral or remote transmitter to a compatible receiver shall result in an alarm signal, at the receiver, being locked-in for at least 4 min. The test is to be conducted at the maximum distance specified by the manufacturer when tested under free-field conditions with no obstructions between the smoke alarm transmitter and receiver units. Refer to Clause 96.1 (m) for instructions to be provided. Lock-in of the receiver is not required when the receiving unit audible alarm signal is energized in time sequence and duration with the smoke alarm.
42	Info	Sensitivity Test
42.1	Info	Smoke sensor (general)
42.1.1		A single criteria smoke alarm, when calibrated to maximum production sensitivity, shall not be more sensitive than the limit specified in Table 6, Visible smoke obscuration limits (gray smoke), or Table 7, Measuring ionization chamber (MIC) measurement, when subjected to a smoldering smoke or aerosol buildup condition using the test equipment described in Clauses 42.2 – 42.4 and when subjected to a range of air velocities. <u>The manufacturer shall define the gray smoke/aerosol limits for the smoke sensor in a multi-criteria smoke alarm.</u> The smoke generating method used for this test can be smoldering cotton lamp wick, aerosol generator, or punk sticks. Interchangeability between the methods is acceptable (e.g., conformity assessment testing utilizing a different method than the manufacturer) and shall be so documented in product reports and procedures created to document compliance to this standard. When the smoke alarm employs a variable field adjustable sensitivity setting, test measurements shall be made at the maximum sensitivity setting as specified in Table 6 or Table 7. The sensitivity measurement is to be made with the smoke alarm located in the air stream in the least and most favorable horizontal positions for smoke entry as determined in the Directionality Test, Clause 43.
43	Info	Directionality Test
43.1		The sensitivity of the smoke alarm shall comply with the requirements of Clause 42, Sensitivity Test, using gray smoke/aerosol in any orientation with the air flow in the chamber. The smoke alarm is to be <u>tested at an air velocity of 0.16 ±0.01 m/s (32 ±2 fpm)</u> in its least favorable position for smoke entry and at each 90 degree angle from this position. The positions are to include all four compass points with the smoke alarm in a horizontal position with the oncoming air directed to each of four sides and with the smoke alarm positioned on edge with the smoke alarm front facing the oncoming air illustrated in Figure 6. The locations of the least and most favorable smoke entry positions for the smoke sensors in the unit shall be marked on all smoke alarms to be used in subsequent tests. See Clause 42.1.1, Stability



CLAUSE	VERDICT	COMMENT
		Test, Clause 47, and Stability Tests – Multi-Criteria Smoke Alarms Incorporating Gas Sensor (s), Clause 48. The variation of the highest and lowest sensitivity position from the mean shall not exceed 50 percent.
44	Info	Velocity-Sensitivity Test
44.1	Info	Smoke sensor
44.1.2		Two smoke alarms, one at maximum and one at minimum sensitivity, shall be subjected, in turn, to the sensitivity test; first at a velocity of 0.16 m/s (32 fpm), and then at a velocity of 0.76 m/s (150 fpm) <u>1.52 m/s (300 fpm)</u> . At 0.76 m/s <u>1.52 m/s</u> the smoldering rate of the cotton lamp wick, punk stick, aerosol, or equivalent build-up is to be such that the relationship between the MIC output and percent light transmission remains within the limits represented by the curve illustrated in Figure 2. The visible smoke buildup rate is to be maintained within the limits illustrated in Figure 3.
46	Info	Reduction in Light Output Test
46.1		The sensitivity of a smoke alarm employing an LED as the functional light source shall not be reduced to less than the minimum levels when the light output from the LED is reduced to 50 percent of the intended output or to the light level anticipated at the end of the devices' specified lifetime. <u>The light level anticipated at the end of the devices' specified lifetime shall be determined through manufacturer's testing of the LED. During this determination, the duty cycle and test temperature of the LED under test shall be selected such that the burn-in test length multiplied by the as-tested duty cycle, divided by the end-use duty cycle, and related to the maximum device operating temperature by using the Arrhenius equation (as described in Clause C4.2.1), is equal to or greater than the devices' specified lifetime.</u>
49		<i>New section added;</i> Stability Tests for Multi-Criteria Smoke Alarms Incorporating CO Gas Sensor(s)
49.1		Two representative multi-criteria smoke alarm samples set at the manufacturer's defined CO gas sensitivity setting shall be subjected to the following CO gas concentrations and exposure times (absent of smoke or simulated smoke) and shall not produce an alarm signal: a) Exposure to 30 ±3 ppm of CO for a minimum of 30 days; b) Exposure to 70 ±5 ppm of CO for a minimum of 60 min; and c) Exposure to an increase in CO of 16 ppm per min (starting from fresh air) for a minimum of 19 min.
49.2		Tests defined in Clause 49.1 shall be conducted using equipment and methods identified in the Sensitivity Test specified in the Standard for Single and Multiple Station Carbon Monoxide Alarms, UL 2034.



CLAUSE	VERDICT	COMMENT
50	Info	Fire Tests
50.2	Info	Paper fire
		The materials and procedures shall be used as follows:
		a) Combustible – Shredded newsprint preconditioned in a relative humidity of 50 ±5% at a temperature of 23 ±2 °C (73 ±3.6°F) for at least 48 h prior to the test, is to be cut in strips as follows: <u>The paper, cut and weighted to the dimensions above, is to be placed into the receptacle, see (b), with the bottom covered temporarily by a flat plate. The receptacle is to be tamped periodically during the pouring operation until the paper contents are even with the top of the receptacle. The paper is then to be further tamped by hand or by a rod 25.4 mm (1 in) in diameter until the paper level is of a height specified by country, see #1 or #2, but below the top edge of the receptacle. A hole approximately 25.4 mm (1 in) in diameter is to be formed through the center from top to bottom of the paper. The temporary bottom plate is then to be removed and the assembly mounted 0.9 m (3 ft) above the floor on a 127 mm (5 in) diameter ring support at a height of 115 mm (4.5 in).</u>
50.2.2		b) Receptacle – To be formed of sheet metal seamed together, with no air gap at the seam (open at both ends). Dimensions are as follows: c) Point of Ignition – The probe tips of the igniter shall be placed at the bottom center of the receptacle and arcing sustained for up to 5 s. d) Smoke Profile – The test fire shall follow the test profile referenced in Figure 8. The test shall be terminated 4 min after ignition. All three samples shall respond prior to the termination of the test.
51	info	Smoldering Smoke Test
51.8		<u>Prior to the test, the MIC is to be calibrated in clean air for a value of 100 picoamperes. As the smoke level increases during the test, the meter reading decreases.</u> See Figure 12. The rate of smoke build-up shall be approximately uniform and maintained so as to provide a density of 6.0%/304 mm obscuration in 15.0 ±3.0 min.
58		<i>New section added;</i> Mechanical Push Test for Push-Type Features
58.1		This test shall be conducted on smoke alarms with a functional feature (i.e., test button, strobe test button, etc.) that is either elevated or protrudes from the surface of the alarm and that also serves as a method of activating the test feature or other operational feature of the smoke alarm.
58.2		The smoke alarm and any additional installation materials shall be installed and positioned as specified in the manufacturer’s published instructions. A 12.7 mm (0.50 in) ±10% diameter probe of a strain gage shall be positioned in at least 3 mutually exclusive locations/positions on the elevated or protruding feature. A force of 110 N (24.7 lbf) ±5% shall be gradually applied and maintained for a minimum of 60 s.



CLAUSE	VERDICT	COMMENT
58.3		The mounting, securement, and normal operation of the smoke alarm and elevated or protruding feature shall not be impaired as a result of this test. Dislodgment of parts shall not occur unless the dislodged part(s) does not affect the operation of the unit and does not result in an electrical shock or fire hazard.
60	Info	Variable Ambient Temperature Tests
60.1	Info	Operation in high and low ambients
60.1.5		For products that identify an installation temperature below 0°C (32°F) and above 38°C (100°F) it is permissible to conduct the sensitivity test at 0°C and 49°C (120°F) after conditioning at the temperatures identified in Clause 60.1.1. When conducting the transfer of the alarm between conditioning environments, the alarm shall: <ul style="list-style-type: none"> a) Be placed in an enclosure that was conditioned in the same environment as the alarm, such as a portable cooler, b) The enclosure shall be closed, prior to opening the door of the test environment, and c) Then the enclosure containing the alarm shall be transferred between environments. <p><i>New section added;</i></p>
72		Electric Shock Current Test <p>This section contains requirements for the electric shock current test (see standard for details).</p> <p><i>New section added;</i></p>
73		Locked Rotor Test <p>This section contains requirements for the locked rotor test (see standard for details).</p>
74	Info	Dielectric Voltage-Withstand Test <p><i>New clause added;</i></p>
74.2		Exposed dead-metal parts are non-current-carrying metal parts that are capable of becoming energized and are accessible from outside of the enclosure of a product. <p><i>New clause added;</i></p>
74.3		For the application of a potential between live parts of circuits operating at different potentials or frequencies, the voltage is to be the applicable value specified in 74.1 (a), (b), or (c), based on the highest voltage of the circuits under test. Electrical connections between the circuits are to be disconnected before the test potential is applied.



CLAUSE	VERDICT	COMMENT
74.5		<p>The test potential shall be obtained from any convenient source having sufficient capacity to maintain the specified voltage. <u>The output voltage of the test apparatus is to be monitored. The method of applying the test voltage is to be such that there are no transient voltages that result in instantaneous voltage being applied to the circuit exceeding 105% of the peak value of the specified test voltage. The applied potential is to be:</u></p> <p><u>a) Increased from 0 at a uniform rate so as to arrive at the specified test potential in approximately 5 s; and then</u> <u>b) Maintained at the test potential for 1 min without an indication of a breakdown.</u></p> <p><u>Manual or automatic control of the rate of rise is not prohibited.</u></p>
77	Info	Strain Relief Test
77.4	Info	Field-wiring leads
		<i>New clause added;</i>
77.4.1		<p>Each lead employed for field connections shall withstand for 1 min a pull of 44.5 N (10 lbs) without any evidence of damage or transmittal of stress to internal connections. A connector used in the lead assembly shall withstand a pull of 22.2 N (5 lbs) without any evidence of damage, transmittal of stress to internal connections, or separation.</p>
		<i>New section added;</i>
77.5		Battery connections
		<p>This section contains requirements for battery connections (see standard for details).</p>
83	Info	Conformal Coatings on Printed Wiring Boards
		<i>New section added;</i>
83.4		Evaluation of reduced spacings on printed-wiring boards
		<p>This section contains requirements for spacings on printed-wiring boards (see standard for details).</p>
85	Info	Smoke Alarms for Use in Recreational Vehicles (RV) and Boats
85.2	Info	Marking
85.2.1		<p>In addition to the applicable requirements in Markings, Clause 95, General, a single criteria or multicriteria smoke alarm for use in a recreational vehicle/boat shall be permanently and legibly marked with the following information. The markings shall be in contrasting color, finish or equivalent, in letters at least 1.2 mm (3/64 in) high. Items (f) and (g) shall be readily visible after installation:</p>



CLAUSE	VERDICT	COMMENT
		<p>f) <u>The type of product, such as “RV Smoke Alarm” or “RV Multi-criteria Smoke Alarm”, “Marine Smoke Alarm or “Marine Multi-criteria Smoke Alarm” or “RV/Marine Smoke Alarm” or equivalent. It is not prohibited that this marking be incorporated in (g);</u></p> <p>h) <u>“Watertight” if the alarm complies with the requirements for watertightness in Clause 85.5, and</u></p> <p>i) <u>“For enclosed spaces only,” or the equivalent if not marked in accordance with (h).</u></p>
85.3		<p><i>New section added;</i></p> <p>Operating and installation instructions</p> <p>This section contains requirements for operating and installation instructions for RVs and boats (see standard for details).</p>
85.5	Info	<p><i>New section added;</i></p> <p>Watertightness test</p> <p>This section contains requirements for the watertightness test (see standard for details).</p>
91	Info	<p>Production Line Voltage Dielectric Voltage-Withstand Test</p> <p><u>Each product rated at more than 30 V AC rms (42.4 V DC or AC peak) shall withstand, without a breakdown or leakage of greater than 0.5 mA, as a routine production-line test, the application of an essentially sinusoidal AC potential of a frequency within the range of 40 – 70 Hz, or a DC potential. The test potential is to be applied between high-voltage live parts and the enclosure, high-voltage live parts and exposed dead-metal parts, and live parts of circuits operating at different potentials or frequencies. The test potential is to be:</u></p>
91.1		<p>a) <u>For a unit rated at 150 V AC rms or less – either 1000 V (1414 V, when a DC potential is used) applied for 60 s or 1200 V (1697 V, when a DC potential is used) applied for 1 s.</u></p> <p>b) <u>For a unit rated at more than 150 V – either 1000 V plus twice the rated AC rms voltage (1414 V plus 2.828 times the rated AC rms voltage, when a DC potential is used) applied for 60 s or 1200 V plus 2.4 times the rated AC rms voltage (1697 V plus 3.394 times the rated AC rms voltage, when a DC potential is used) applied for 1 s.</u></p>
91.2		<p>A printed-wiring assembly or other electronic circuit component that will be damaged by or will short circuit because of the application of the test potential, is to be removed, disconnected, or otherwise rendered inoperative before the test. Where applicable, a representative subassembly is to be tested instead of an entire unit. <u>Also, where applicable, rectifier diodes in the power supply are to be individually shunted before the test to avoid destroying them in the case of a malfunction elsewhere in the secondary circuits.</u></p>



CLAUSE	VERDICT	COMMENT
		<i>New clause added;</i>
91.3		<p>When the unit employs both high-voltage and low-voltage circuits, the test may be conducted with the low voltage circuits connected to the cabinet, chassis, or other dead-metal parts so that the potential that is applied between the high-voltage live parts and dead-metal parts will simultaneously be applied between high-voltage live parts and low-voltage circuits.</p> <p>Exception: The test potentials may be applied between the primary and core of all high voltage input transformers located within the product. Other high voltage components and wiring shall be visually examined to verify that required spacings have been maintained to the enclosure or other dead metal parts.</p>
	Info	MARKING
95	Info	General
		<p>A smoke alarm shall be permanently marked with the following information unless specifically indicated that it appears on the installation wiring diagram. The marking shall be in a contrasting color, finish, or equivalent. Unless the letter height is specified, all markings shall be at least 1.2 mm (3/64 in) high.</p>
95.1		<p>t) The smoke sensitivity setting for a smoke alarm having a fixed setting. For an alarm which is intended to be adjusted in the field, the range of sensitivity shall be indicated. The marked sensitivity shall be indicated as a percent per ft obscuration level. The marking shall include a nominal value plus tolerance. <u>For an alarm that is capable of receiving a firmware update, and the sensitivity production range is impacted by the content of the firmware update (such as a new smoke algorithm), a means of indicating the current certified sensitivity or sensitivity range for the current firmware version of the unit shall be provided.</u></p>
	Info	INSTRUCTIONS
96	Info	General
		<p>For smoke alarms for use on recreational boats, the smoke alarm installation instructions shall <u>include the following or equivalent:</u></p>
96.4		<p>a) <u>The smoke alarm is intended to be installed in enclosed accommodation compartments where smoke from undetected fire may accumulate.</u></p> <p>b) <u>The instructions shall indicate that the devices shall be wired in accordance with the applicable requirements of Transport Canada, Construction Standard for Small Vessels, TP 1332 E.</u></p>



CLAUSE	VERDICT	COMMENT
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New clause added;

For multiple-station interconnected smoke alarms with alarm silencing means, other than physically depressing the silence button, the silencing of the initiating alarm shall describe the following:

96.5

- a) An example and information detailing the alarm information as communicated to the user;
 - b) As described in Clause 13.4 all operating instructions shall include detailed information for the user to confirm that he has checked for the presence or absence of smoke at the initiating alarm before activating the silence feature;
 - c) As described in Clause 13.4, all wireless communication remote device notifications shall include a means for the user to confirm that he has checked for the presence or absence of smoke at the initiating alarm before activating the silence feature.
-