

**NATIONAL
STANDARD
OF CANADA**

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(Including Amendments 1 to 6)
(Reaffirmed 2007)

**STANDARD
FOR HALOGENATED AGENT HAND
AND WHEELED FIRE EXTINGUISHERS**



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FOR HALOGENATED AGENT HAND
AND WHEELED FIRE EXTINGUISHERS
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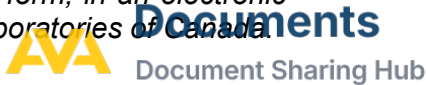


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REFERENCE PUBLICATIONS

The documents shown below are referenced in the text of this Standard. Unless otherwise stated elsewhere in this Standard such reference shall be considered to indicate the edition and/or revisions of the document available at the date on which the Committee approved this ULC Standard.

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- CAN/ULC-S508-02, including Amendment 1, Standard for the Rating and Fire Testing of Fire Extinguishers
 - CAN/ULC-S522-M86, including Amendment 1 (Reaffirmed 1999), Standard for Fire Extinguisher and Booster Hose
-

STANDARD FOR HALOGENATED AGENT HAND AND WHEELED FIRE EXTINGUISHERS

PREFACE

This is the First Edition of the Standard for Halogenated Agent Hand and Wheeled Fire Extinguishers, CAN/ULC-S512.

This Edition of the Standard has been formally approved by the ULC Committee on Portable Fire Extinguishers.

Only metric SI units of measurement are used in this Standard. If a value for measurement is followed by a value in other units in parentheses, the second value may be approximate. The first stated value is the requirement.

Appendices, identified as informative, are for informational purposes only.

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This Standard is intended to be used for conformity assessment.

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1. SCOPE

1.1 These requirements cover the construction and operation of halogenated agent hand portable and wheeled type fire extinguishers.

1.2 Halogenated agent type fire extinguishers shall also comply with the requirements of the Standard for the Rating and Fire Testing of Fire Extinguishers, CAN/ULC-S508.

NOTE: Reference to each applicable Test Method for a requirement is indicated by the letters TM and the appropriate clause number in parenthesis in the right hand margin.

2. CONSTRUCTION

2.1 GENERAL

2.1.1 The construction of an extinguisher shall be such that the method of operation is obvious.

2.1.2 The construction of an extinguisher shall be such that after discharge of the agent is initiated, the operator of the extinguisher shall not be required to take further manual actions, other than holding the operating device in the fully opened position, to maintain the maximum possible flow of agent.

2.1.3 The construction of an extinguisher shall be such that the method of recharging is obvious after reading the instructions on the unit.

2.1.4 A disposable type extinguisher (a unit which is not intended to be recharged) shall not be capable of being disassembled for internal examination and reassembled for use.

2.1.5 Rechargeable type extinguishers shall be constructed so that the valve assembly may be readily removed from the cylinder to permit inspection of all internal surfaces.

2.1.6 An extinguisher shall be of rugged and durable construction as evidenced by it being capable of withstanding the vibration and rough usage tests detailed in Sections 5.9 and 5.10 without failure of components or means of assembly which would require repair or replacement of the extinguisher, or components, or both, before it could be returned to normal service.

2.1.7 All parts of an extinguisher, including the finishes on coated or painted parts, the assemblies of moving parts, the nameplates as secured in place, brackets if provided, etc., shall be resistant to commonly encountered atmospheric corrosive influences, and to galvanic corrosion, as determined by a Salt Spray Corrosion Test. Examination after exposure to the salt-spray corrosion test shall show compliance with the following:

- A The extinguisher shall be recharged in accordance with its operating and recharging instructions as they appear on the unit;
- B Any corrosion-resistant coating (such as paint) shall remain intact and shall adhere to the surface so as not to be removable (when removal exposes a material subject to corrosion) by such action as washing or rubbing with a thumb or finger nail;
- C Galvanic corrosion between dissimilar metals shall not be evident;
- D The extinguisher and its bracket or mounting hook, if any, shall not show any incipient corrosion on unprotected and painted surfaces. Discoloration or staining is not to be interpreted as corrosion provided the integrity of the material's surface has not been affected.
- E Wheeled extinguishers shall be capable of being moved by a horizontal force not exceeding 250 N on an asphalt or concrete surface; and
- F The gauge on a stored-pressure extinguisher shall remain water-tight throughout the test.

(TM 5.14.4)

2.1.8 A material for an extinguisher part, the failure of which would cause the extinguisher to become inoperable, or cause risk of personal injury, shall not be subject to stress corrosion.

2.1.9 A brass part containing more than 15% zinc shall show no evidence of cracking when subjected to a moist ammonia air stress cracking test and subsequently examined using 25X magnification.

EXCEPTION: Cracking is not prohibited when the cracking does not impact the ability of the product to comply with the requirements of this Standard.

(TM 5.19)

(Amendment No. 4, dated September 1996, revised Clause 2.1.9)

2.1.10 A plastic or other nonmetallic part, other than an "O" ring or gasket, shall be judged on the basis of the following:

- A Mechanical strength, including resistance to impact;

(TM 5.10)

- B Moisture absorption;

(TM 5.21)

- C If the part is external, Flammability. This shall be evaluated on the basis of the Horizontal Burning Test.

(TM 5.25)

- D Resistance to deterioration due to aging;

(TM 5.20)

- E If the Part is external, exposure to ultraviolet light and water; and

(TM 5.21)

- F Exposure to the extinguisher agent.

(TM 5.26)

2.1.11 There shall be no cracking of an exposed valve, valve part or bracket made of plastic following exposure to ultraviolet light and water for a period of 720 h. Aged samples of the valve or valve part or bracket shall be capable of demonstrating acceptable performance when tested in accordance with: Clauses 3.11.2 and 3.13.3 (Valves); or Clauses 3.14.1 and 3.16.1 (Gauges); or Clauses 3.10.1 and 3.12.1 (Brackets). See Clauses 3.16.1 and 4.21.1. Where a gauge is involved in this test, the gauge shall remain watertight throughout the test.

(TM 5.21)

2.2 CONTAINERS

2.2.1 Shells

2.2.1.1 The container used in a hand extinguisher shall be fabricated of a material having rigidity, durability, and resistance to corrosion at least equivalent to:

- A An aluminium alloy, such as 6061-T6, see ASTM B209-73, having a minimum thickness of 0.71 mm; or
- B A mild steel alloy, such as SAE 1010, having a minimum thickness of 0.76 mm, painted. See Clause 2.2.1.2; or
- C An austenitic stainless steel having a wall thickness of at least 0.64 mm; or
- D The cylinder shall be constructed, tested and marked in accordance with the Transportation of Dangerous Goods Regulations, as applicable, and shall have a service pressure suitable for the maximum pressure developed at 55 °C or the maximum controlled temperature limit, whichever is the greater.

NOTE: Where the service pressure at 21°C exceeds 1400 kPa (gauge), a cylinder meeting the Transportation of Dangerous Goods Regulations is required.

(Amendment No. 3, dated April 1993, revised Note)

2.2.1.2 A container assembly, complete with permanently attached fittings, shall be resistant to any corrosive influence of the extinguishing agent.

(TM 5.26)

2.2.1.3 A steel shell shall be protected externally with a paint system capable of withstanding the Salt-Spray Corrosion Test, Section 5.22.

2.2.1.4 An opening in a metallic shell shall be punched or cut so that the metal will fit closely to the body of a fitting.

2.2.1.5 All joints in metal extinguishers shall be threaded, brazed, welded or of a mechanical gasketed type.

EXCEPTION: Brazed joints shall not be used on stainless steel shells.

2.2.1.6 A joint of stainless-steel shell shall be electrically seam-welded or inert-gas shielded arc-welded.

2.2.1.7 A container of a hand extinguisher shall be so constructed that the rupture pressure is not less than six times the normal charged pressure at 21°C. If a hand extinguisher of the stored-pressure type is to be charged at a pressure in excess of 1400 kPa (gauge), the container shall also be constructed, tested, and marked in accordance with the applicable CTC¹ specification for shipping containers.

2.2.1.8 The material of the dome and bottom of a metal extinguisher shall be metallurgically compatible with the material used in the cylinder of the container and shall have a thickness after forming equal to or greater than the wall thickness of the cylinder.

2.2.1.9 The thickness of the cylindrical portion is to be measured on uncoated metal. The thickness of the dome and of the bottom is to be measured at various points after forming and before coating.

2.2.1.10 If a safety relief is provided, the maximum pressure at which it will function shall be not more than three times the normal charging pressure. The minimum pressure at which it will function shall be not less than the pressure measured at 70 °C on an extinguisher, under closed-nozzle conditions, normally charged and pressurized at 21 °C. If a fusible-metal plug is used, it shall melt in the specified temperature range. If the container is constructed, tested, and marked in accordance with the CTC specifications, the safety relief assembly, if required shall be acceptable to the CTC.

2.2.1.11 A stainless steel shell shall be constructed so as to minimize stress corrosion and carbide precipitation. All shell surfaces shall be free of abrasive marks.

(TM 5.15)

2.2.2 Fill Openings

2.2.2.1 The inside diameter of a fill opening of a rechargeable-type extinguisher shall be:

¹ CTC - Canadian Transportation Commission

- A Not less than 19.1 mm for an extinguisher having a capacity of 13.6 kg or less;
- B Not less than 25.4 mm for an extinguisher having a capacity above 13.6 to 34.0 kg;
- C Not less than 38.1 mm for an extinguisher having a capacity above 34.0 to 68.0 kg; and
- D Not less than 63.5 mm for an extinguisher having a capacity above 68.0 kg or greater.

EXCEPTION: The fill opening of a rechargeable type extinguisher that has a capacity greater than 13.6 kg may be 19.1 mm or more if the extinguisher has at least one other opening to permit complete inspection of the interior of the extinguisher's cylinder that has a minimum diameter of 6.4 mm.

2.2.2.2 The collar material shall be compatible with that of the shell.

2.2.2.3 If a collar with external threads is used, it shall have sufficient height to prevent the valve assembly from reaching the dome or bottoming when the gasket is removed.

2.2.3 Hydrostatic Strength

2.2.3.1 The complete extinguisher, exclusive of the hose, and gauge if used, shall be so constructed that it will not show leakage or permanent distortion when subjected to the test pressure for a period of 1 min, as specified in Clauses 2.2.3.2 through 2.2.3.5.

(TM 5.12)

Test Pressure

2.2.3.2 The test pressure for extinguishers of the type employing a separate expellant-gas cartridge shall be not less than three times the maximum pressure developed in the extinguisher when operated under closed-nozzle conditions after being charged with its exact rated capacity of agent and expellant gas and conditioned at 21 °C. The test pressure for other extinguishers shall be not less than three times the normal charged pressure at 21 °C.

(TM 5.12)

Rupture Pressure

2.2.3.3 Cartridge-operated - The agent chamber of a hand extinguisher of the type employing a separate expellant-gas cartridge shall be so constructed that its rupture pressure is not less than six times the maximum pressure developed in the chamber when operated under closed-nozzle conditions after being charged with its exact rated capacity of agent and expellant gas and conditioned at 21 °C.

(TM 5.12)

2.2.3.4 Other Than Cartridge Operated - A hand extinguisher shall be so constructed that the rupture pressure is not less than six times the normal charged pressure at 21 °C. If an extinguisher of the stored-pressure type is to be charged at a pressure in excess of 1400 kPa

(gauge), the agent chamber shall also be constructed, tested, and marked in accordance with the applicable Specifications for Shipping Containers of the CTC. Copies of the CTC inspection reports shall be made available for review by representatives of the certification or testing agency.

(TM 5.12)

2.2.3.5 Wheeled Type - An agent container of a wheeled extinguisher shall be so constructed that the rupture pressure is not less than six times the specified charging pressure at 21 °C for stored – pressure extinguishers; or for cylinder operated extinguishers, six times the maximum pressure developed in the container when normally charged and operated under closed-nozzle conditions after being conditioned at 21 °C.

(TM 5.12)

2.2.3.6 A container of an extinguisher formed of metal shall not have any permanent expansion in excess of 10 % of the total expansion when the extinguisher is pressurized for 1 min to three times the specified charging pressure at 21 °C for other than cartridge operated types or the maximum operating pressure at 21 °C for a gas cartridge-operated type extinguisher.

(TM 5.12)

2.2.3.7 If any extinguisher shell, tested to rupture, fails along the circumferential joints between the top or bottom dome and the side sheet or at the collar, the pressure at the rupture point shall be not less than eight times the maximum operating pressure at 21 °C.

(TM 5.12)

2.2.4 Filling Densities

2.2.4.1 Halon 1301 containers shall be charged to a filling density at 21 °C not greater than 1100 kg/m³.

2.2.4.2 Halon 1211 containers shall be charged to a filling density at 21 °C not greater than 1630 kg/m³.

2.2.4.3 Mixed Halon containers shall be charged to a filling density at 21 °C of between 1100 and 1630 kg/m³ calculated on the basis of the proportion of Halon 1301 to Halon 1211.

2.3 CLOSURES

2.3.1 A threaded closure shall engage the collar or the threaded opening by not less than four full threads with the gasket in place. The fit of the thread shall be not less than a Class 1 fit². For plastics or metallic materials having a Rockwell B hardness of 10 or less, the thread shall be of the UNC, NC, 8N, 12UN, or 12N Series or an equivalent series having not more than 12 threads/25 mm. For metallic materials having a Rockwell B hardness of more

² Thread and fit tolerances are contained in the Machinery's Handbook, by Oberg and Jones, published by the Industrial Press, New York, N.Y.

than 10, the threads shall be of the UNC, NC, UNF, NF, 8N, 12UN, 12N, 16UN, or 16N Series or an equivalent series having not more than 16 threads/25 mm.

2.3.2 A closure shall withstand the hydrostatic pressure test as specified for the container. See Clause 2.2.1.7 and Subsection 2.2.3.

2.3.3 All normally removable closures except pressure gauges, shall be provided with a means of relieving pressure should they be removed while the chamber is still under pressure. The pressure shall be relieved with not less than two threads engaged.

2.4 GASKETS AND "O" RINGS

2.4.1 A gasket or an "O" ring shall be retained in a recess, or the equivalent.

2.4.2 A gasket of a rubber-like material shall be of sufficient thickness to provide a compression-type seal.

2.4.3 A specimen of a rubber or rubber-like part shall have a compression set of not more than 15 % after being compressed by 25 % of its original thickness for 22 h at 70 °C.

(TM 5.27)

2.4.4 A gasket or an "O" ring of a general-purpose rubber (such as SBR, NBR, EPR, or NR) shall have the following properties after being subjected to 96 h in oxygen at 70 °C and at 2100 kPa (gauge):

- A A minimum of 70 % of the original tensile strength;
- B A minimum of 70 % of the original elongation; and
- C A maximum change in hardness of not more than ± 10 %.

(TM 5.28)

2.4.5 A gasket or an "O" ring of a silicone rubber (having the characteristic of poly-organo-siloxane) shall have the following properties after 60 d in a full-draft circulating-air oven at 210 ± 1 °C and atmospheric pressure:

- A A minimum of 60 % of the original tensile strength;
- B A minimum of 50 % of the original elongation; and
- C A maximum change in hardness of not more than ± 10 %.

(TM 5.28)

2.4.6 A seal, gasket or an "O" ring that is continuously exposed, during normal service, to the extinguishing agent, shall be subjected to a halon exposure test. There shall be no splitting or blistering of the component, and the change in any dimension of the part shall not exceed 5 %.

(TM 5.26)

2.5 PRESSURE GAUGES

2.5.1 An extinguisher of the super-pressurized type shall be equipped with a pressure gauge to indicate the pressure in the chamber. (Mixed Halon extinguishers which are not additionally pressurized with nitrogen are not considered to be "super-pressurized".)

(TM 5.14)

2.5.2 Pressure gauges shall comply with the requirements for such products and materials. See Appendix B, Clause B1.10.

2.5.3 The range of a gauge dial shall be approximately twice the indicated charging pressure at 21 °C. A gauge dial shall indicate the operable pressure range and corresponding temperatures, based on a rated charge of the extinguisher. The zero, charging, and maximum gauge pressures shall be shown in numerals with a mark at the designated charging pressure. The arc of the dial from the zero pressure point to the lower end of the operable range shall be coloured red and shall read "Recharge." The operable pressure range is determined by the maximum and minimum pressures resulting from variations in temperature throughout the temperature range of the extinguisher.

2.5.4 A pressure gauge shall be resistant to the entry of water after exposure to the Salt Spray Corrosion Test (TM 5.22), and if plastic parts are used, after exposure to the Plastics Test (TM 5.20) and Ultraviolet Light and Water Test (TM 5.21).

(TM 5.14.4)

2.5.5 When installed on an extinguisher, a pressure gauge shall be so oriented as to face outward when the extinguisher is mounted on its wall support.

2.6 PUNCTURING MECHANISMS

2.6.1 The parts of a puncturing mechanism of cartridge operated and, as applicable, disposable extinguishers, with the exception of unexposed springs and pins, shall be made of nonferrous metal or corrosion-resistant stainless steel.

2.7 SAFETY LOCKING DEVICES AND SEALS

2.7.1 The operating mechanism(s) of an extinguisher shall be provided with a corrosion-resistant stainless steel or nonferrous locking pin or other device to prevent accidental discharge. Means shall be provided to retain the locking device and to indicate tampering or use of the extinguisher. A locking device retainer shall be made of corrosion-resistant material.

2.7.2 A nonferrous wire and lead seal or the equivalent, that can be broken by a normally applied force of 65 N or less, as installed with no external load on a locking device, shall be provided to retain the locking device and to indicate tampering with or use of the extinguisher. Where the construction of the extinguisher is such that the breaking of the seal is accomplished by taking the action needed to start discharge of the extinguisher, or where there is an internal load constantly applied to the safety-release mechanism, the normally applied force needed to accomplish discharge or release of the internal load shall not exceed 130 N.

(TM 5.3.2)

2.8 HOSE ASSEMBLY

2.8.1 An extinguisher having an agent content of 4.5 kg or more or an extinguishing rating and classification of 2A or higher, or 20B or higher, shall be equipped with a hose assembly to direct the discharge. The length of the hose assembly shall be such that restriction of the discharge, by kinking of the hose or other means, will not occur when the extinguisher is operated in the various positions in which it may be used.

2.8.2 Extinguishers having lesser capacities or ratings may be provided with a hose assembly.

2.8.3 A hose shall have a nominal internal diameter of not less than 10 mm and shall be in accordance with the requirements of CAN/ULC-S522, Standard for Fire Extinguisher and Booster Hose.

2.8.4 A hose with couplings attached shall be capable of withstanding, without leakage or separation of the couplings, a hydrostatic pressure of 2760 kPa (gauge) maintained for 1 min.

(TM 5.12.3)

2.8.5 A hose assembly, including connecting fittings, provided with a shut-off nozzle shall be capable of withstanding, for 1 min without rupture, a hydrostatic pressure of 2760 kPa (gauge) or three times the pressure developed in the extinguisher when operated under closed nozzle conditions after being charged with the exact rated capacity of agent and expellant gas and conditioned at 21 °C, whichever is greater

(TM 5.12.3)

2.8.6 A hose assembly shall be attached so that it can be readily removed and replaced for maintenance purposes.

2.8.7 The hose assembly shall be secured when not in use by a holding device, or the hose shall be preformed and have sufficient rigidity to provide an equivalent function.

2.8.8 A hose assembly shall be flexible and be of sufficient length to allow the discharge nozzle to be pointed readily in any direction.

2.8.9 If a hose is used, it shall not break or crack when handled at temperatures as low as -40°C.

(TM 5.16)

2.9 COUPLINGS

2.9.1 Hose couplings shall be made of corrosion-resistant material. The coupling shall be threaded or provided with equivalent means for its attachment to the outlet of the discharge valve. If the hose coupling incorporates a nozzle orifice, the threads or attachment means shall be such as to prevent the outlet end of the hose from being connected to the outlet of the discharge valve.

2.9.2 Hose couplings shall be so constructed that continued use of the hose will not cause loosening or detachment of the coupling, and of such design that there are no projections to catch on objects or otherwise interfere with proper operation of the extinguisher.

2.10 DISCHARGE TUBES

2.10.1 If a hand extinguisher is provided with a discharge tube, the tube shall be of heavy-walled tubular metal fastened to the discharge valve by a swivel joint and sealed against leakage. The swivel shall be movable with a slight force but provide sufficient friction to maintain the discharge tube in the same position with respect to the assembly when the extinguisher is held in any position.

2.10.2 The discharge end of the tube of an extinguisher pressurized in excess of 1650 kPa (gauge) shall be equipped with an antirecoil feature and shall be threaded to take the discharge nozzle, unless the antirecoil feature is an integral part of the valve and the swivel assembly is normally detached for recharging purposes.

2.10.3 The length of the discharge tube shall be such that, when rotated to the vertical-down position, the outer end of the discharge nozzle shall not extend beyond the plane formed by the extinguisher bottom.

2.11 NOZZLES AND DISCHARGE VALVES

2.11.1 A hand extinguisher shall be provided with a self-closing valve to permit intermittent discharge, and also with a nozzle.

2.11.2 The discharge valve and nozzle shall be free from blow holes, cracks, or other imperfections. The interior shall be smoothly finished.

2.11.3 A wheeled extinguisher shall be provided with a shut-off valve and nozzle at the discharge end of the hose assembly to permit intermittent discharge.

(TM 5.7)

2.11.4 The discharge valve and nozzle bodies shall be made of corrosion-resistant material.

(TM 5.22)

2.11.5 A discharge valve shall withstand, without leakage or permanent deformation, the applicable hydrostatic test specified in Subsection 2.2.3.

(TM 5.12)

2.11.6 The discharge valve and nozzle shall be designed to minimize the entrance of water when the extinguisher is mounted in the normal manner.

(TM 5.17)

2.12 ANTIRECOIL FEATURE

2.12.1 Extinguishers pressurized in excess of 1650 kPa (gauge) at 21 °C with discharge valves that are not intended to be removed for recharging shall be provided with an antirecoil feature at the point where the nozzle, or the hose and nozzle assembly is constructed to be detached for recharging.

2.13 SYPHON TUBES

2.13.1 A syphon tube shall be constructed of a material that will be resistant to the any adverse effects of the extinguishing agent with which it is to be used. The tube shall be retained in such a manner that it will not become dislodged after the extinguisher is assembled and subjected to the applicable tests for vibration, or rough usage.

(TM 5.9, 5.10)

2.14 HANDLES AND MOUNTING DEVICES

2.14.1 An extinguisher to be carried by hand, other than one of less than 1.5 kg gross weight and having a cylinder diameter of 75 mm or less, shall be provided with a carrying handle and a means for mounting on a wall. A handle shall be made of nonferrous metal, austenitic stainless steel, carbon steel protected against corrosion, or a plastic. The mounting means shall hold the extinguisher firmly in place.

2.14.2 A side handle or hanger loop shall be so located that the operating instructions face outward when the extinguisher is supported by the mounting means. The strength of a handle or hanger loop and the means for attachment shall be such as to withstand normal rough

usage. In addition, the method of attachment of the handle and the hanger loop shall be such as to withstand a vertical load equal to five times the fully charged mass of the extinguisher, but not less than 45 kg.

(TM 5.10, 5.11)

2.14.3 A handle shall have a length of not less than 90 mm for an extinguisher of 7 kg or more gross weight and not less than 75 mm for an extinguisher of less than 7 kg gross weight. A handle shall have a clearance of at least 25 mm from the undersurface to the nearest surface of the extinguisher when the handle is in the raised or carrying position.

2.15 HALON CHARGES

2.15.1 Each extinguisher shall be charged with agent in an amount not less than the rated capacity of the extinguisher and, where used, with the proper quantity of expellant gas.

2.15.2 The agent shall consist of Halon 1211 or 1301 or mixtures having acceptable chemical and physical properties.

2.15.3 The Halon 1211 (bromochlorodifluoromethane – CBrClF_2) and the Halon 1301 (bromotrifluoromethane- CBrF_3) shall comply with the specifications of the International Standard for Fire Protection - Fire Extinguishing Media - Halogenated Hydrocarbons, ISO 7201-1982(E). See Tables 1 and 2.

2.15.4 Expellant gas, where used, shall be dry nitrogen for stored pressure units, and dry nitrogen or carbon dioxide for cartridge or cylinder operated extinguishers.

2.16 RUNNING GEAR (WHEELED EXTINGUISHERS)

2.16.1 The Halon container shall be securely fastened to the running gear, consisting of the wheels, axle, and the handle for hauling and manipulating the extinguisher.

2.17 HOSE RETAINERS (WHEELED EXTINGUISHERS)

2.17.1 A hose retainer shall retain the hose and nozzle on the extinguisher and shall prevent either the hose or the nozzle from striking or rubbing the wheels or the ground. It shall be such that the hose can be installed readily and withdrawn quickly and easily when the extinguisher is placed in operation.

2.18 RECORD TAG

2.18.1 An extinguisher shall be provided with a record tag that will afford ample space for recording the date on which the extinguisher was last inspected, recharged or maintained and the name or initials of the person conducting the inspection, recharging or maintenance.

3. PERFORMANCE

3.1 GENERAL

3.1.1 The extinguisher shall be constructed so as to be capable of being moved to the scene of the fire and operated by one person.

3.1.2 Unless otherwise specified in any of the following test requirements, an interval of 5 s, after the cartridge of a cartridge-operated type extinguisher has been punctured, or after the valve of a cylinder operated wheeled extinguisher has been opened, shall be allowed for pressure build-up before discharge of agent is initiated.

3.1.3 Unless otherwise specified all operational tests shall be conducted with the extinguisher hose fully extended.

3.2 DURATION OF DISCHARGE

3.2.1 The duration of effective discharge of an extinguisher conditioned at 21 °C for 16 h shall be not less than 8 s or the minimum duration specified in CAN/ULC-S508, for the appropriate Class A or B Rating, whichever is the longer.

(TM 5.1)

3.3 RANGE OF DISCHARGE

3.3.1 The discharge characteristics for all Halon extinguishers of 2.25 kg capacity or less shall be such that the bulk of the agent shall fall at a distance of not less than 1500 mm from the nozzle.

(TM 5.2)

3.3.2 The discharge characteristics for all Halon extinguishers over 2.25 kg capacity shall be such that the bulk of the agent shall fall at a distance of not less than 3000 mm from the nozzle.

(TM 5.2)

3.4 OPERATING TEMPERATURE RANGE

3.4.1 An extinguisher shall discharge not less than 90 % (by weight) of the rated capacity of agent, after being conditioned at any temperature in the range from -40 °C to 49 °C for 24 h and discharged to the gas point as defined in Clause 5.1.2.

(TM 5.3)