





ANSI/CAN/UL/ULC 2166:2021

JOINT CANADA-UNITED STATES NATIONAL STANDARD

STANDARD FOR SAFETY

Halocarbon Clean Agent Extinguishing System Units





SCC FOREWORD

National Standard of Canada

A National Standard of Canada is a standard developed by a Standards Council of Canada (SCC) accredited Standards Development Organization, in compliance with requirements and guidance set out by SCC. More information on National Standards of Canada can be found at www.scc.ca.

SCC is a Crown corporation within the portfolio of Innovation, Science and Economic Development (ISED) Canada. With the goal of enhancing Canada's economic competitiveness and social well-being, SCC leads and facilitates the development and use of national and international standards. SCC also coordinates Canadian participation in standards development, and identifies strategies to advance Canadian standardization efforts.

Accreditation services are provided by SCC to various customers, including product certifiers, testing laboratories, and standards development organizations. A list of SCC programs and accredited bodies is publicly available at www.scc.ca.

UL Standard for Safety for Halocarbon Clean Agent Extinguishing System Units, ANSI/CAN/UL/ULC 2166

Third Edition, Dated May 10, 2017

Summary of Topics

This revision of ANSI/CAN/UL/ULC 2166 dated December 8, 2021 includes a change in requirements to:

- Electronic Documentation for Fire Suppression Standards; 5.1, 58.5A, 59.2, 59.3 and 61.2
- Elastomeric Part Test; 11.1 and Section 53A
- Flammability of Externally Exposed Parts; 20.2
- Salt Spray Applicability; 29.1 and 29.2

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The new and revised requirements are substantially in accordance with Proposal(s) on this subject dated June 18, 2021 and September 10, 2021.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form by any means, electronic, mechanical photocopying, recording, or otherwise without prior permission of UL.

UL provides this Standard "as is" without warranty of any kind, either expressed or implied, including but not limited to, the implied warranties of merchantability or fitness for any purpose.

In no event will UL be liable for any special, incidental, consequential, indirect or similar damages, including loss of profits, lost savings, loss of data, or any other damages arising out of the use of or the inability to use this Standard, even if UL or an authorized UL representative has been advised of the possibility of such damage. In no event shall UL's liability for any damage ever exceed the price paid for this Standard, regardless of the form of the claim.

Users of the electronic versions of UL's Standards for Safety agree to defend, indemnify, and hold UL harmless from and against any loss, expense, liability, damage, claim, or judgment (including reasonable attorney's fees) resulting from any error or deviation introduced while purchaser is storing an electronic Standard on the purchaser's computer system.

No Text on This Page

This is a preview. Click here to purchase the full publication.



MAY 10, 2017

(Title Page Reprinted: December 8, 2021)



1

ANSI/CAN/UL/ULC 2166:2021

Standard for Halocarbon Clean Agent Extinguishing System Units

First Edition – March, 1999 Second Edition – August, 2012

Third Edition

May 10, 2017

This ANSI/CAN/UL/ULC Safety Standard consists of the Third Edition including revisions through December 8, 2021.

The most recent designation of ANSI/UL 2166 as an American National Standard (ANSI) occurred on December 8, 2021. ANSI approval for a standard does not include the Cover Page, Transmittal Pages and Title Page. Any other portions of this ANSI/UL standard that were not processed in accordance with ANSI/UL requirements are noted at the beginning of the impacted sections.

This standard has been designated as a National Standard of Canada (NSC) on December 8, 2021.

COPYRIGHT © 2021 UNDERWRITERS LABORATORIES INC.

No Text on This Page

CONTENTS

Preface	e	7
INTROI	DUCTION	
1	Scope	11
2	General	
3	Glossary	
4	Components	
5	Design Manual	
6	Owner's Manual	
CONST	FRUCTION	
7	General	15
8	Electrically Operated Alarms	
9	Controls and Indicators	
10		
11	5	
12		
13	3 - J - J - J - J - J - J - J - J - J -	
13		
14		
14		
15		
16	Electrically Operated Valves and Pressure Switches	27
17	' Siphon Tubes	27
18	B Clean Agents	27
19	Expellant Gases	27
20	Polymeric Materials and Nonmetallic Parts	27
21		
22	Pressure Switches	28
PERFO	DRMANCE	
23	B General	28
24		
25	· · · · · · · · · · · · · · · · · · ·	
26	· · · · · · · · · · · · · · · · · · ·	
27	·	
28		
29	· · · · · · · · · · · · · · · · · · ·	
30	' '	
	·	
31	,	
32	· ·	
33	•	
34		
35		
	35.1 General test parameters	
	35.2 Class A fire extinguishment tests	
	35.3 Class B fire extinguishment tests	
36		
	36.1 General	
	36.2 Test enclosure	42

This is a preview. Click here to purchase the full publication.

		36.3 System arrangement				
		36.4 Minimum room height/nozzle area coverage test arrangement				
		36.5 Maximum room height test arrangement				
	37	Automatic Extinguisher Unit Fire Tests				
		37.1 General	44			
		37.2 Test enclosures				
		37.3 Nozzle distribution extinguishment test	45			
		37.4 Automatic operation extinguishment tests	45			
	38	Verification of Flow Calculation Method Test				
	39	Equivalent Length Determination				
	40	High Pressure Discharge Test				
	41	Flexible Hose Low Temperature Test				
	42	Operation Test of Manual Actuators and Manual Pull Stations				
	43	Pneumatic Operation Test				
	44	Pressure Relief Tests				
	45	Calibration Test – Gauges and Indicators				
	46	Burst Strength Test – Gauges and Indicators				
	47	Overpressure Test – Gauges				
	48	Impulse Test– Gauges				
	49	Pressure Gauge Relief Test				
		Water Resistance Test – Gauges and Indicators				
	50A	Primary Battery Tests – Electronic Gauges				
	50B	Electronic Hardware Tests – Electronic Gauges				
		Liquid Level Indicators				
		Aging Tests– Plastic Materials				
	-	52.1 Air-oven aging test				
		52.2 Exposure to extinguishing agent test				
		52.3 Light and water test	52			
	53	10-Day Moist Ammonia Air Stress Cracking Test				
	53A	Elastomeric Parts Test	54			
		Nameplate Exposure Tests				
	55	Nameplate Adhesion Test				
	56	Nameplate Abrasion Test				
			-			
MAN	IUFA	CTURING AND PRODUCTION TESTS				
	57	General	55			
		57.1 General				
		57.2 Hydrostatic pressure test – shells				
		57.3 Gauge calibration test				
		57.4 Leakage test				
		57.5 Clean agent				
MAF	RKING					
	58	General	56			
	59	Manuals				
	60	Placards				
INST	INSTALLATION INSTRUCTIONS					
	 /					
	61	Installation, Operation, and Maintenance Instruction Manual	59			
			•			

SUPPLEMENT SA – MARINE-TYPE HALOCARBON CLEAN AGENT EXTINGUISHING SYSTEM UNITS

This is a preview. Click here to purchase the full publication.

SA1	Scope	63
SA2	Installation, Operation, and Maintenance Instruction Manual	63
SA3	Wiring	63
SA4	Controls and Indicators	63
SA5	Pressure Vessels	63
SA6	Salt Spray Corrosion Test	63
SA7	Vibration and Shock Resistance Test	
	SA7.1 General	64
	SA7.2 Vibration test	64
	SA7.3 Shock resistance test	65
SA8	Area Coverage Test	65
SA9	Aging Tests – Polymeric Materials	
SA10		

ANNEX A (CAN) (normative) Markings – French Translation

ANNEX B NORMATIVE REFERENCES