



JOINT CANADA-UNITED STATES
NATIONAL STANDARD

ANSI/CAN/UL 1247:2024

STANDARD FOR SAFETY

Diesel Engines for Driving Stationary
Fire Pumps

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 Diesel Engines for Driving Stationary Fire Pumps, ANSI/CAN/UL 1247

Sixth Edition, Dated November 2, 2023

SUMMARY OF TOPICS

This revision of ANSI/CAN/UL 1247, dated November 6, 2024, includes the following changes:

– Requirement Clarifications and Updated Testing Details: [10.1](#), [Table 12.1](#), [22.3](#), [22.5](#), [22.6](#), [23.1](#), and [24.2](#); and

– Editorial revision: [9.8](#)

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

The revised requirements are substantially in accordance with Proposal(s) on this subject dated August 9, 2024.

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 ULSE Inc. (ULSE).

ULSE 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 ULSE 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 ULSE or an authorized ULSE representative has been advised of the possibility of such damage. In no event shall ULSE'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 ULSE 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

NOVEMBER 2, 2023
(Title Page Reprinted: November 6, 2024)

1

ANSI/CAN/UL 1247:2024

Standard for Diesel Engines for Driving Stationary Fire Pumps

The first through fourth editions were titled Standard for Diesel Engines for Driving Centrifugal Fire Pumps.

First Edition – July, 1981
Second Edition – August, 1989
Third Edition – May, 1995
Fourth Edition – September, 2004
Fifth Edition – May, 2007

Sixth Edition

November 2, 2023

This ANSI/CAN/UL Safety Standard consists of the Sixth Edition including revisions through November 6, 2024.

The most recent designation of ANSI/UL 1247 as an American National Standard (ANSI) occurred on November 6, 2024. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page, Preface or SCC Foreword.

This Standard has been designated as a National Standard of Canada (NSC) on November 6, 2024.

© 2024 ULSE Inc. All rights reserved.

No Text on This Page

CONTENTS

Preface	5
---------------	---

INTRODUCTION

1 Scope	7
2 Components	7
3 Units of Measurement	7
4 Referenced Publications	7

CONSTRUCTION

5 General	8
6 Instrumentation and Controls	8
7 Supplemental Overspeed Shutdown Device	10
8 Fuel Injection and Speed Controller	11
8.1 General	11
8.2 Mechanical fuel management control	11
8.3 Electronic fuel management control	11
9 Starting System	12
10 Automatic Heater	12
11 Engine Cooling System	13
11.1 General	13
11.2 Heat exchanger type	13
11.3 Radiator type	13
12 Wiring	13
13 Lubrication System	18
14 Air Induction System	18
15 Exhaust System	18
16 Fuel System	18
17 Power Takeoff	18
18 Charging System	18
19 Engines With Rated Speed Ranges	18

PERFORMANCE

20 General	19
21 Engine Tests	19
21.1 Starting	19
21.2 Endurance	20
21.3 Power rating	22
21.4 Speed controller	23
21.5 Overspeed shutdown	23
21.6 Engines with electronic fuel management control	23
22 Accessory, Indicator, and Signal Tests	26

MANUFACTURING AND PRODUCTION TESTS

23 General	26
------------------	----

MARKINGS

24 General	27
------------------	----

INSTRUCTIONS

25	Installation, Operation, and Maintenance Instructions.....	28
----	--	----

Preface

This is the Sixth Edition of ANSI/CAN/UL 1247, Standard for Diesel Engines for Driving Stationary Fire Pumps.

ULSE is accredited by the American National Standards Institute (ANSI) and the Standards Council of Canada (SCC) as a Standards Development Organization (SDO).

This Standard has been developed in compliance with the requirements of ANSI and SCC for accreditation of a Standards Development Organization.

This ANSI/CAN/UL 1247 Standard is under continuous maintenance, whereby each revision is approved in compliance with the requirements of ANSI and SCC for accreditation of a Standards Development Organization. In the event that no revisions are issued for a period of four years from the date of publication, action to revise, reaffirm, or withdraw the standard shall be initiated.

In Canada, there are two official languages, English and French. All safety warnings must be in French and English. Attention is drawn to the possibility that some Canadian authorities may require additional markings and/or installation instructions to be in both official languages.

Comments or proposals for revisions on any part of the Standard may be submitted to ULSE at any time. Proposals should be submitted via a Proposal Request in ULSE's Collaborative Standards Development System (CSDS) at <http://csds.ul.com>.

Our Standards for Safety are copyrighted by ULSE Inc. Neither a printed nor electronic copy of a Standard should be altered in any way. All of our Standards and all copyrights, ownerships, and rights regarding those Standards shall remain the sole and exclusive property of ULSE Inc.

This Edition of the Standard has been formally approved by the Technical Committee (TC) for Fire Pump Equipment, TC 448.

This list represents the TC 448 membership when the final text in this Standard was balloted. Since that time, changes in the membership may have occurred.

TC 448 Membership

Name	Representing	Interest Category	Region
C. Baker	Peerless Pump Company	Producer	USA
K. Bell	UL Solutions	Testing and Standards Organization	USA
A. Black	Carmel Fire Protection Associates	Authorities Having Jurisdiction	USA
D. Brush	Flotronix Corp	Supply Chain	USA
B. Buscher	Xylem INC	Producer	USA
P. Darley	Miami Beach Fire Department	Authorities Having Jurisdiction	USA
M. Dawson	Cummins Fire Power, Div Of Cummins Npower L L C	Producer	USA
M. Dembkowski	Clarke Fire Protection Products INC	Producer	USA
S. Deshpande	SPP Pumps Inc	Producer	USA

TC 448 Membership Continued on Next Page

TC 448 Membership Continued

Name	Representing	Interest Category	Region
G. Edwards	UL Standards & Engagement	TC Project Manager (Non-voting)	USA
K. Hall	American Fire Sprinkler Association INC	General Interest	USA
M. Hennegan	MLH Fire Protection LTD	Supply Chain	Canada
G. Ike	Talco Fire Systems	Producer	USA
A. Johnson	Fire Lion Global	Producer	USA
R. Kunst	Minnesota Department Of Public Safety	Authorities Having Jurisdiction	USA
F. Luz	UL Standards & Engagement	TC Chair (Non-voting)	Canada
P. Mazzuca	Ragsdale Heating, Air, Plumbing & Electrical	Commercial / Industrial User	USA
R. McCullough	Standards Individuals	General Interest	Canada
S. Pasternack	Intertek	Testing and Standards Organization	USA
P. Petrus	Indonesian Fire & Rescue Foundation	General Interest	Indonesia
J. Ruggieri	General Machine Corp	General Interest	USA
M. Savage	Marion County, FL	Authorities Having Jurisdiction	USA
K. Scott	KH Scott & Associates	Authorities Having Jurisdiction	USA
W. Stelter	Master Control Systems Inc	Supply Chain	USA
P. Xiao	CNP NM Fire Fighting System CO LTD	Producer	China
C. Yung	Electrical Apparatus Service Association	General Interest	USA

International Classification for Standards (ICS): 13.220.20, 13.220.01, 13.220.10

For information on ULSE Standards, visit <https://www.shopulstandards.com>, call toll free 1-888-853-3503 or email us at ClientService@shopULStandards.com.

This Standard is intended to be used for conformity assessment.

The intended primary application of this Standard is stated in its scope. It is important to note that it remains the responsibility of the user of the standard to judge its suitability for this particular application.

CETTE NORME NATIONALE DU CANADA EST DISPONIBLE EN VERSIONS FRANÇAISE ET ANGLAISE

INTRODUCTION

1 Scope

1.1 These requirements cover diesel engines for driving centrifugal fire pumps.

1.2 The engines covered by these requirements are intended for installation and use in accordance with the Standard for the Installation of Stationary Fire Pumps for Fire Protection, NFPA 20.

2 Components

2.1 Except as indicated in [2.2](#), a component of a product covered by this Standard shall comply with the requirements for that component.

2.2 A component is not required to comply with a specific requirement that:

- a) Involves a feature or characteristic not required in the application of the component in the product covered by this Standard, or
- b) Is superseded by a requirement in this Standard.

2.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

3 Units of Measurement

3.1 Where values of measurement are specified in both SI and U.S. Customary units, it is the responsibility of the user of this Standard to determine the unit of measurement appropriate for the user's needs.

4 Referenced Publications

4.1 Any undated reference to a code or standard appearing in the requirements of this Standard shall be interpreted as referring to the latest edition of that code or standard.

4.2 The following publications are referenced in this Standard:

ASTM D975, *Standard Specification for Diesel Fuel*

NFPA 20, *Installation of Stationary Fire Pumps for Fire Protection*

NFPA 25, *Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*

SAE J 1349, *Engine Power Test Code – Spark Ignition and Compression Ignition – As Installed Net Power Rating*

UL 50, *Enclosures for Electrical Equipment, Non-Environmental Considerations*

UL 50E, *Enclosures for Electrical Equipment, Environmental Considerations*