ULC Standards
Normes ULC

JOINT CANADA-UNITED STATES
NATIONAL STANDARD

# ANSI/CAN/UL/ULC 1285:2022

## STANDARD FOR SAFETY

Pipe and Couplings, Polyvinyl Chloride (PVC), and Oriented Polyvinyl Chloride (PVCO) for Underground Fire Service

Approved American National Standard
ANSI

ANSI/UL 1285-2022

scc ccn

## 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 COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM UL INC.*

UL Standard for Safety for Pipe and Couplings, Polyvinyl Chloride (PVC), and Oriented Polyvinyl Chloride (PVCO) for Underground Fire Service, ANSI/CAN/UL/ULC 1285

Eighth Edition, Dated March 21, 2022

***Summary of Topics***

***The Eighth Edition of ANSI/CAN/UL/ULC 1285 dated March 21, 2022 has been issued to reflect the latest ANSI and SCC approval dates and to incorporate the proposal dated October 29, 2021.***

The requirements are substantially in accordance with Proposal(s) on this subject dated October 29, 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.

*UL COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM UL INC.*

ANSI/UL 1285-2022

MARCH 21, 2022



# ANSI/CAN/UL/ULC 1285:2022

## Standard for Pipe and Couplings, Polyvinyl Chloride (PVC), and Oriented Polyvinyl Chloride (PVCO) for Underground Fire Service

First Edition – January, 1982
Second Edition – March, 1991
Third Edition – April, 1995
Fourth Edition – April, 2001
Fifth Edition – July, 2008
Sixth Edition – March, 2016
Seventh Edition – November, 2020

**Eighth Edition**

**March 21, 2022**

This ANSI/CAN/UL/ULC Safety Standard consists of the Eighth Edition.

The most recent designation of ANSI/UL 1285 as an American National Standard (ANSI) occurred on March 21, 2022. 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 March 21, 2022.

**COPYRIGHT © 2022 UNDERWRITERS LABORATORIES INC.**

UL COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM UL INC.

## CONTENTS

**Preface .....5**

**INTRODUCTION**

1 Scope .....7
2 Units of Measurement .....7
3 Components .....7
4 Reference Standards .....7
5 Glossary .....8

**CONSTRUCTION**

6 Materials .....9
7 Gasketed Joints .....10
8 Dimensions and Pressure Class .....10
9 Imperfections .....10
10 Sealing Gaskets .....10

**PERFORMANCE**

11 General .....10
12 Nonmetallic Seals .....10
13 Plastic Components .....11
14 Tests for Pipe, Couplings, and Fittings with Unrestrained Joints .....12
14.1 General .....12
14.2 Leakage .....13
14.3 Assembly .....13
14.4 Sustained pressure .....13
14.5 Burst pressure .....13
14.6 Pressure integrity, fittings .....13
15 Tests for Pipe, Couplings and Fittings with Restrained Joints for Hydrostatic Thrust Forces (PVC only) .....13
15.1 General .....13
15.2 Leakage .....14
15.3 Assembly .....14
15.4 Sustained pressure .....14
15.5 Burst pressure .....14
15.6 Cyclic surge pressure .....14
16 Tests for Fusion Joints .....14
17 Tests for Fittings .....15
17.1 General .....15
17.2 Hydrostatic integrity .....15
18 Flattening Test .....15
19 Apparent Hoop Tensile Strength (Ring-Tensile) Test .....15
20 Extrusion Quality Test .....15
21 Pipe Intended for Potable Water Supply .....15
22 Identification Tests .....16

**MANUFACTURING AND PRODUCTION TESTS**

23 General .....16

UL COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM UL INC.

## MARKING

24 General ..... 17
25 Pipe ..... 17
25.1 General ..... 17
25.2 Pipe joints ..... 18
26 Couplings and fabricated fittings ..... 18
27 Rubber Gaskets ..... 18

## MANUFACTURING AND INSTALLATION INSTRUCTIONS

28 Installation Instructions ..... 18

UL COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM UL INC.

# Preface

This is the Eighth Edition of ANSI/CAN/UL/ULC 1285, Standard for Pipe and Couplings, Polyvinyl Chloride (PVC), and Oriented Polyvinyl Chloride (PVCO) for Underground Fire Service.

UL is accredited by the American National Standards Institute (ANSI) and the Standards Council of Canada (SCC) as a Standards Development Organization (SDO). ULC Standards is accredited by 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/ULC 1285 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 at any time. Proposals should be submitted via a Proposal Request in the On-Line Collaborative Standards Development System (CSDS) at https://csds.ul.com.

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

To purchase UL Standards, visit the UL Standards Sales Site at
http://www.shopulstandards.com/HowToOrder.aspx or call tollfree 1-888-853-3503.

This Edition of the Standard has been formally approved by the UL Standards Technical Panel (STP) on Pipe And Couplings, Polyvinyl Chloride (PVC), And Oriented Polyvinyl Chloride (PVCO) For Underground Fire Service, STP 1285.

This list represents the STP 1285 membership when the final text in this standard was balloted. Since that time, changes in the membership may have occurred.

**STP 1285 Membership**

| Name | Represent | Interest Category | Region |
|---|---|---|---|
| Talal Al Fahad | Kuwait Fire Force | AHJ | Kuwait |
| Roland Asp | National Fire Sprinkler Association | General | USA |
| Ken Bush | Maryland State Fire Marshal's Office | AHJ | USA |
| Flora Chen | City of Hayward | AHJ | USA |
| Diane J. Haithcock | Underwriters Laboratories | Chair | USA |
| Jeff Hebenstreit | UL LLC | Testing & Stds Org | USA |
| Serge Leroux | Ipex Inc | Producer | Canada |

**STP 1285 Membership Continued on Next Page**

UL COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM UL INC.

## STP 1285 Membership Continued

| Name | Represent | Interest Category | Region |
|---|---|---|---|
| Richard Nichols | Uni-Bell PVC Pipe Association | General | USA |
| Thomas Noble | American Fire Protection Group | Supply Chain | USA |
| Pardeep Sharma | Hamilton Kent, Inc. | Producer | Canada |
| Nicolette Weeks | Underwriters Laboratories | Project Manager | USA |
| Trevor Wraight | Spears Manufacturing Co. | Producer | USA |

International Classification for Standards (ICS): 13.220.01, 13.220.20

For further information on UL standards, please contact:

Underwriters Laboratories Inc.
171 Nepean Street, Suite 400
Ottawa, Ontario K2P 0B4
Phone: 1-613.755.2729
E-mail: ULCStandards@ul.com
Web site: ul.org

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

UL COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM UL INC.

## INTRODUCTION

### 1 Scope

1.1 These requirements cover polyvinyl chloride (PVC) pressure pipe, machined couplings, fabricated fittings and gaskets and oriented polyvinyl chloride (PVCO) pressure pipe and gaskets for use in underground fire protection systems and connections to such systems.

1.2 These requirements do not cover fittings that consist of mechanical joint retainer devices even when intended for use with polyvinyl chloride (PVC) pressure pipe.

1.3 PVC pipe and couplings covered by these requirements shall be designated according to the Nominal Size, Pressure Class (PC), and Dimension Ratio (DR), as specified in ANSI/AWWA C900 for use with cast iron outside diameter (CIOD) or steel (IPS) pipe as applicable.

1.4 PVCO pipe covered by these requirements shall be designated according to the Nominal Size, Pressure Class (PC), Expansion Ratio (ER) and Wall-Thickness-Ratio (WTR), as specified in ANSI/AWWA C909 for use with ductile-iron equivalent OD (DIOD) pipe.

1.5 Requirements for the installation and use of PVC pressure pipe and couplings for fire protection service are specified in the Standard for the Installation of Private Fire Service Mains and their Appurtenances, NFPA 24 or the Standard for the Installation of Sprinkler Systems, NFPA 13.

### 2 Units of Measurement

2.1 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.

### 3 Components

3.1 Except as indicated in 3.2, a component of a product covered by this standard shall comply with the requirements for that component.

3.2 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.

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

3.4 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.

### 4 Reference Standards

4.1 The following standards are referenced in this standard, and portions of these referenced standards and codes identified in this standard may be essential for compliance.

UL COPYRIGHTED MATERIAL – NOT AUTHORIZED FOR FURTHER REPRODUCTION OR DISTRIBUTION WITHOUT PERMISSION FROM UL INC.