

**OTHER
RECOGNIZED
DOCUMENT**

ULC/ORD-C312-07

CHECK VALVES FOR FIRE-PROTECTION SERVICE



**Underwriters'
Laboratories of Canada®**



Documents

Document Sharing Hub

UNDERWRITERS' LABORATORIES OF CANADA (ULC) is a not-for-profit organization incorporated in 1920 by letters patent issued by the Canadian Government. It maintains and operates laboratories, certification services and a quality system registration program for the examination, testing, and classification of devices, constructions, materials and systems to determine their relation to life, fire and property hazards. Underwriters' Laboratories of Canada also develops and publishes standards, classifications and other recognized documents for products having a bearing on fire, accident, or property hazards.

Underwriters' Laboratories of Canada is accredited by the Standards Council of Canada as a Certification Organization, a Testing Organization, a Quality Systems Registration Organization, and a Standards Development Organization, under the National Standards System of Canada, and is affiliated with Underwriters Laboratories Inc. in the United States of America.

Other Recognized Documents (ORD) developed by Underwriters' Laboratories of Canada are developed in accordance with the procedure outlined in the documents CAN-P-3, "General Requirements for Bodies Operating Product Certification Systems"; and CAN-P-1500, "Additional Requirements for Accreditation of Certification Bodies", published by the Standards Council of Canada.

The headquarters of Underwriters' Laboratories of Canada is located in Toronto, Ontario. In addition, ULC is represented across Canada as well as many countries worldwide.

CORPORATE HEADQUARTERS

Underwriters' Laboratories of Canada
7 Underwriters Road
Toronto, Ontario M1R 3B4
Telephone: (416) 757-3611 Fax: (416) 757-9540
Toll-free telephone: 1-866-9373-ULC

EASTERN OFFICE

6505 Trans-Canada Hwy., Suite 330
St. Laurent, Québec H4T 1S3
Telephone: (514) 363-5941 Fax: (514) 363-7014
Toll-free telephone: 1-866-9373-ULC

PACIFIC OFFICE

No. 130 – 13775 Commerce Parkway
Richmond, British Columbia V6V 2V4
Telephone: (604) 214-9555 Fax: (604) 214-9550
Toll-free telephone: 1-866-9373-ULC

For further information on ULC standards, please contact:

STANDARDS DEPARTMENT AND GOVERNMENT

RELATIONS OFFICE

200-440 Laurier Avenue West
Ottawa, Ontario K1R 7X6
Telephone: (613) 755-2729 Fax: (613) 231-5977

E-mail: customerservice@ulc.ca

Web site: www.ulc.ca

The STANDARDS COUNCIL OF CANADA is the coordinating body of the National Standards System, a federation of independent, autonomous organizations working towards the further development and improvement of voluntary standardization in the national interest.

The principal objects of the Council are to foster and promote voluntary standardization as a means of advancing the national economy, benefiting the health, safety and welfare of the public, assisting and protecting the consumer, facilitating domestic and international trade, and furthering international cooperation in the field of standards.

The National Standards System of Canada accepts the use of Other Recognized Documents (ORD) as defined in CAN-P-3, "General Requirements for Bodies Operating Product Certification Systems"; and CAN-P-1500, "Additional Requirements for Accreditation of Certification Bodies", published by the Standards Council of Canada.

The Standards Council of Canada is located at:

270 Albert Street
Suite 200
Ottawa, Ontario
K1P 6N7

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

Copies of this Other Recognized Document may be ordered from Underwriters' Laboratories of Canada.

CHECK VALVES FOR FIRE-PROTECTION SERVICE

ICS 13.220.20, 23.060.50

Prepared and Published by
UNDERWRITERS' LABORATORIES OF CANADA



First Edition OCTOBER 1995
Second Edition JULY 2007

Copyright © 2007

Underwriters' Laboratories of Canada

All rights reserved. No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without prior permission of Underwriters' Laboratories of Canada.

TABLE OF CONTENTS

FOREWORD.....	i
REFERENCE PUBLICATIONS	ii
PREFACE	1
INTRODUCTION	2
1. SCOPE.....	2
2. COMPONENTS	2
3. UNITS OF MEASUREMENT	2
4. UNDATED REFERENCES	3
5. GLOSSARY	3
CONSTRUCTION	3
6. GENERAL	3
7. RATED PRESSURES.....	3
8. BODIES AND COVERS.....	3
9. VALVE MECHANISMS	4
10. CLAPPER SUPPORTS.....	4
11. CLAPPER STOPS	5
12. SEATS	5
13. CLEARANCES.....	6
PERFORMANCE.....	6
14. GENERAL	6
15. METALLIC MATERIALS TESTS.....	6
16. SPRING CYCLING TEST	7
17. NONMETALLIC MATERIALS TEST	7
18. ADHESION TEST FOR RESILIENT SEAT MATERIAL.....	8
19. LEAKAGE TEST	10
20. STRENGTH OF BODY TEST	10
21. HYDRAULIC FRICTION LOSS TEST.....	11
22. DETECTOR CHECK VALVE DIFFERENTIAL TEST	11
MANUFACTURING AND PRODUCTION TESTS.....	11
23. GENERAL	11
MARKING	11
24. GENERAL	12
ANNEX A – METRIC SI CONVERSION TABLE	13
A1. GENERAL	13

FOREWORD

Certification organizations are periodically requested to promptly provide certification services for devices, constructions, materials and systems where Canadian recognized standards do not currently exist or are not entirely applicable. Accordingly, the certification organization utilizes its experience, existing specifications and requirements in related areas, together with assistance from its advisory councils to develop and prepare Other Recognized Documents (ORD's) for use in conducting the necessary tests and evaluation investigation.

Underwriters' Laboratories of Canada has prepared many ORD's in response to requests from, and in conjunction with, industry, code writing bodies, regulatory agencies and others prior to promulgating a certification program. In many instances such documents have become published ULC Standards and subsequently National Standards of Canada. It is the intention of Underwriters' Laboratories of Canada to continue this practice, as appropriate.

Comments on the content of this ORD should be directed to the Head Office of Underwriters' Laboratories of Canada, 7 Underwriters Road, Toronto, Ontario, Canada M1R 3B4.

NOTE: These Recognized Documents are accepted under the National Standards Systems of Canada. Reference may be made to the Document CAN-P-3, "General Requirements for Bodies Operating Product Certification Systems"; and CAN-P-1500, "Additional Requirements for Accreditation of Certification Bodies", published by the Standards Council of Canada located at 270 Albert Street, Suite 200, Ottawa, Ontario Canada, K1P 6N7.

REFERENCE PUBLICATIONS

The documents shown below are referenced in the text of this Standard.

Document Published by ASME International (ASME),
22 Law Drive, Fairfield NJ 07004

- ASME B1.20.1, Pipe Threads, General Purpose (Inch)
- ASME B1.20.3, Dryseal Pipe Threads (Inch)
- ASME B16.1, Cast Iron Pipe Flanges and Flanged Fittings Classes 25, 125 and 250
- ASME B16.5, Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24 Metric/Inch

Document Published by ASTM International (ASTM),
100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States

- ASTM A307, Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength
- ASTM E145, Standard Specification for Gravity-Convection and Forced-Ventilation Ovens

Document Published by American Water Works Association (AWWA),
6666 W. Quincy Ave., Denver, CO 80235

- AWWA C207, Steel Pipe Flanges for Waterworks Service, Sizes 4 in. Through 144 in. (100 mm Through 3,600 mm)

Document Published by National Fire Protection Association (NFPA),
1 Batterymarch Park, Quincy, MA 02169-7471

- NFPA 11, Standard for Low-, Medium-, and High-Expansion Foam
- NFPA13, Standard for the Installation of Sprinkler Systems
- NFPA14, Standard for the Installation of Standpipe and Hose Systems
- NFPA15, Standard for Water Spray Fixed Systems for Fire Protection
- NFPA16, Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems
- NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection
- NFPA 22, Standard for Water Tanks for Private Fire Protection
- NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances

Documents Published by the National Research Council of Canada Institute for Research in Construction (NRC-CNRC), Ottawa, ON K1A 0R6

- NFC, National Fire Code of Canada
- NBC, National Building Code of Canada

Document Published by Underwriters Laboratories Inc. (UL),
333 Pfingsten Road, Northbrook, IL 60062-2096

- UL 157, UL Standard for Safety for Gaskets and Seals
- UL 312, UL Standard for Safety for Check Valves for Fire-Protection Service

.....