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(Includes Revision 1)

STANDARD FOR OVERFILL PROTECTION DEVICES FOR FLAMMABLE AND COMBUSTIBLE LIQUID STORAGE TANKS



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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 the particular application.

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Standard for overfill protection devices for flammable and combustible liquid storage tanks, ULC-S661

First Edition, Dated December 1, 2010

Summary of Topics

This revision of ULC-S661 dated February 23, 2021 is being issued to remove its NSC status and the CAN designation.

PLEASE NOTE THAT CERTAIN CODES MAY REFER TO A SUPERSEDED VERSION OF THIS STANDARD. IN THOSE INSTANCES, THE RELEVANT VERSIONS ARE AVAILABLE FOR PURCHASE.

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ICS 23.020.10, 75.200

ULC Standards
Normes ULC

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REVISION 1 . . . . . FEBRUARY 23, 2021

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PREFACE

This is the First Edition of the Standard for Overfill Protection Devices for Flammable and Combustible Liquid Storage Tanks, ULC-S661.

This Edition of the Standard has been formally approved by the ULC Standards Committee on Fittings for Flammable and Combustible Liquids.

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.

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.

Attention is drawn to the possibility that some of the elements of this Canadian standard may be the subject of patent rights. ULC Standards shall not be held responsible for identifying any or all such patent rights.

Requests for interpretation of this Standard should be sent to ULC Standards. The requests should be worded in such a manner as to permit a “yes” or “no” answer based on the literal text of the requirement concerned.

The initiation of the review of this Standard will commence within 5 years of the date of publication, unless the Standard is identified as fitting within a stabilized category, whereby the review will commence within the appropriate time frame set out by ULC Standards.

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/canada.

This Standard is intended to be used for conformity assessment.

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1 SCOPE

1.1 This Standard sets forth the minimum requirements for the construction and performance of *overfill protection devices* for installation in aboveground and underground *flammable liquid* and *combustible liquid* storage tanks.

1.1.1 For the purposes of this Standard, *flammable liquids* and *combustible liquids* include gasoline, *fuel* oil, kerosene and diesel *fuel*, including gasoline with small amounts of additives such as detergents, solvents for detergents and anti-icing chemicals, diesel with up to 5% *biodiesel* (B5) and gasoline with up to 15% ethanol (E15) in accordance with, but not limited to, the following documents:

A CAN/CGSB 3.18, Diesel Fuel for Locomotive – Type Medium – Speed Diesel Engines

B CAN/CGSB 3.2, Heating Fuel Oil

C CAN/CGSB 3.3, Kerosene

D CAN/CGSB 3.517, Automotive (On-road) Diesel Fuel

E CAN/CGSB 3.520, Automotive Low-Sulphur Diesel Fuel Containing Low Levels of Biodiesel Esters (B1-B5)

G CAN/CGSB 3.6, Regular Sulphur Diesel Fuel

H CAN/CGSB 5.511, Oxygenated Unleaded Automotive Gasoline Containing Ethanol

I ANSI/ASTM D396, Standard Specification for Fuel Oils

K ANSI/ASTM D975, Standard Specification for Diesel Fuel Oils

M ASTM D2880, Standard Specification for Gas Turbine Fuel Oils

N ANSI/ASTM D3699, Specification for Kerosene

O ANSI/ASTM D4814, Standard Specification for Automotive Spark-Ignition Engine Fuel B

S ASTM D6227, Standard Specification for Grade 82 Unleaded Aviation Gasoline

T ASTM D6448, Standard Specification for Industrial Burner Fuels from Used Lubricating Oils (Industrial Burners)

U ASTM D6823, Standard Specification for Commercial Boiler Fuels With Used Lubricating Oils

V ASTM D6985, Standard Specification for Middle Distillate Fuel Oil – Military Marine Application

1.2 The *overfill protection devices* shall be designated as Class I or II in accordance with the liquids they are intended to contain, as listed below:

A Class I devices shall be suitable for use with *flammable liquids* and *combustible liquids*, described in Clause 1.1.1; and

B Class II devices shall be proved suitable for use with the specific liquid(s) for which the device is intended, by additional testing in accordance with Subsection 6.4, Immersion Test, using the specific liquid(s).

NOTE: *Overfill protection devices* with materials made with exposed zinc or brass in the wetted area should not be used with jet *fuels*. Zinc or brass materials used for this application that are nickel plated in accordance with UL 87A, Outline for Power-Operated Dispensing Devices for Gasoline and Gasoline/Ethanol Blends with Nominal Concentrations Up to 85% (E0-E85), are considered acceptable.

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1.3 The installation, maintenance and use of these devices are not within the scope of this Standard, and shall be in accordance with, but not limited to, any of the following documents:

A National Fire Code of Canada;

B CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products; and

C Regulations of the appropriate *authority having jurisdiction*.

1.4 An *overfill protection device* shall function as one of the following:

A Automatic sensing device for interconnection with shutoff equipment or alarm devices acceptable to the *authority having jurisdiction*;

B Automatic overfill shutoff device of float valve or other mechanical type; or

C Overfill alarm devices of the audible or combined audible and visual types.

1.5 The shutoff device referred to in Sub-clause 1.4 (B) shall operate according to its type of application:

- *Pressure filled*; or
- *Gravity filled*.

1.6 This Standard does not cover *vent* restriction devices, or *vent* whistles.

NOTE: *Vent* whistles shall be in conformance with ULC/ORD-C180, Liquid Level Gauges and Indicators for Fuel Oil and Lubricating Oil Tanks.

2 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.

Documents Published by the American Society for Testing and Materials
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www.astm.org

- ASTM B117-2003, Standard Practice for Operating Salt Spray (Fog) Apparatus
- ANSI/ASTM D396 Rev B-2008, Standard Specification for Fuel Oils
- ASTM D573-2004, Standard Test Method for Rubber Deterioration in Air Oven
- ASTM D975 Rev A-2009b, Standard Specification for Diesel Fuel Oils
- ASTM D2880-2003, Standard Specification for Gas Turbine Fuel Oils
- ANSI/ASTM D3699-2008, Standard Specification for Kerosene
- ANSI/ASTM D4814-2009, Standard Specification for Automotive Spark-Ignition Engine Fuel

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• ASTM D6227-2004 Rev A, Standard Specification for Grade 82 Unleaded Aviation Gasoline

• ASTM D6448-2004, Standard Specification for Industrial Burner Fuels from Used Lubricating Oil

• ASTM D6751-2009, Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels

• ASTM D6823-2008, Standard Specification for Commercial Boiler Fuels with Used Lubricating Oils

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Documents Published by the Canadian Standards Association (CSA)
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• CSA C22.2 No. 142-M1987 (R2004), Process Control Equipment Industrial Products

• CAN/CSA C22.2 No. 157-92 (R2002), Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations; Consumer and Commercial Products

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Document Published by the National Task Force on Storage Tanks
For the Canadian Council of the Ministers of the Environment
326 Broadway, Suite 400, Winnipeg, MB R3C 0S5
Telephone: (204) 948-2090 Fax: (204) 948-2125
www.ccme.ca

• CCME PN 1326, October 2003, Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products

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Standards published by the Canadian General Standards Board (CGSB)
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• CAN/CGSB 3.2-2007, Heating Fuel Oil

• CAN/CGSB 3.3-2007, Kerosene

• CAN/CGSB 3.517-2007, Automotive (On-road) Diesel Fuel

• CAN/CGSB 3.6-2000, Regular Sulphur Diesel Fuel; Amendment 1: March 2004; Amendment 2: September 2004

• CAN/CGSB 3.18-2000, Diesel Fuel for Locomotive – Type Medium – Speed Diesel Engines; Amendment 1: March 2004; Amendment 2: March 2004

• CAN/CGSB 3.520-2005, Automotive Low-Sulphur Diesel Fuel Containing Low Levels of Biodiesel Esters (B1-B5); Amendment 1: March 2006; Amendment 2: April 2007

• CAN/CGSB 5.511-2005, Oxygenated Unleaded Automotive Gasoline Containing Ethanol; Amendment 1: April 2007

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