

Proposed Change 2116

Code Reference(s):	NFC25 Div.B 4.3.1.2.(1) (first printing)
Subject:	Storage of Combustible Products and Dangerous Goods
Title:	Addition of Reference to ANSI/CAN/UL/ULC 2152:2021
Description:	This proposed change adds reference to ANSI/CAN/UL/ULC 2152:2021, "Special Purpose Nonmetallic Containers and Tanks for Specific Combustible or Noncombustible Liquids" to permit the use of special purpose nonmetallic containers and tanks intended for combustible or noncombustible liquids.
Related Code Change Request(s):	CCR 1646

This change could potentially affect the following topic areas:

- | | |
|--|---|
| ☐ Division A | ☒ Division B |
| ☐ Division C | ☒ Design and Construction |
| ☒ Building operations | ☐ Housing |
| ☒ Small Buildings | ☒ Large Buildings |
| ☒ Fire Protection | ☒ Occupant safety in use |
| ☐ Accessibility | ☐ Structural Requirements |
| ☐ Building Envelope | ☐ Energy Efficiency |
| ☐ Heating, Ventilating and Air Conditioning | ☐ Plumbing |
| | ☐ Construction and Demolition Sites |

Problem

Sentence 4.3.1.2.(1) of the National Fire Code of Canada (NFC) outlines the requirements for atmospheric storage tanks that are used for storing flammable liquids and combustible liquids. Some of the tanks covered by this Sentence include shop-fabricated steel tanks and horizontal steel-contained tank assemblies for aboveground use, and steel tanks with external corrosion protection and fibre-reinforced plastic tanks for underground use.

A joint American National Standard and National Standard of Canada, ANSI/CAN/UL/ULC 2152:2021, "Special Purpose Nonmetallic Containers and Tanks for Specific Combustible or Noncombustible Liquids," was published recently. This new

standard replaces ULC/ORD-C142.14-2003, "Nonmetallic Bulk Containers for the Storage and Dispensing of Combustible and Non-Combustible Liquids," and allows manufacturers to test and certify their special-purpose nonmetallic containers in accordance with a National Standard of Canada.

Failure to reference the new standard may result in the exclusion of nonmetallic containers and tanks intended for special purpose storage of specific combustible or noncombustible liquids.

Justification

The primary purpose of ANSI/CAN/UL/ULC 2152 is to outline the minimum material properties, performance criteria, and design standards for nonmetallic containers intended for storing and dispensing combustible or noncombustible liquids.

The scope of ANSI/CAN/UL/ULC 2152 includes nonmetallic, special-purpose containers for bulk storing and dispensing liquids such as liquid chemicals, cooking oils, lube oils and vehicle fluids.

This standard does not cover other nonmetallic containers such as bulk shipping containers intended for commercial transportation, consumer portable fuel cans, portable containers and tanks for flammable and/or combustible liquids, commercial safety cans, or oil burner tanks.

ANSI/CAN/UL/ULC 2152 sets the minimum material properties and performance criteria for nonmetallic, non-pressure type containers intended to bulk store and dispense both combustible liquids and noncombustible liquids. The requirements apply to both single-wall containers and those with secondary containment, which dispense liquids through gravity or a non-pressure type pump, whether hand-operated or air-operated. The standard provides guidelines for the design, fabrication, inspection and testing of these containers to ensure they meet safety requirements before they are put into use. Additionally, containers must undergo leakage testing and be inspected for durability, strength and suitability for their intended applications before shipment. These requirements apply to containers used in stationary installations inside buildings, specifically in automotive repair and service centers or shops.

By broadening the range of approved storage solutions, the proposed change enhances flexibility in selecting materials for the storage of hazardous liquids, while ensuring that safety and performance requirements are rigorously met. In conclusion, referencing ANSI/CAN/UL/ULC 2152 would allow the use of nonmetallic containers for the storage and dispensing of specific liquids, emphasizing adherence to safety, performance and certification protocols, while providing a viable alternative to conventional metallic containers.

PROPOSED CHANGE

[4.3.1.2.] 4.3.1.2. Atmospheric Storage Tanks

- [1] 1)** Except as permitted in Sentence (3) and in Section 4.10., *atmospheric storage tanks* shall be built in conformance with the following:
- [a] a) except as provided in Sentence (2), API SPEC 12B, "Specification for Bolted Tanks for Storage of Production Liquids",
 - [b] b) except as provided in Sentence (2), API SPEC 12D, "Specification for Field Welded Tanks for Storage of Production Liquids",
 - [c] c) except as provided in Sentence (2), API SPEC 12F, "Specification for Shop Welded Tanks for Storage of Production Liquids",
 - [d] d) API STD 650, "Welded Tanks for Oil Storage",
 - [e] e) CAN/ULC 652, "Standard for Tank Assemblies for the Collection, Storage and Removal of Used Oil",
 - [f] f) CAN/ULC 653, "Standard for Aboveground Horizontal Steel Contained Tank Assemblies for Flammable and Combustible Liquids",
 - [g] g) CAN/ULC 655, "Standard for Aboveground Protected Tank Assemblies for Flammable and Combustible Liquids",
 - [h] h) CAN/ULC 677, "Standard for Fire Tested Aboveground Tank Assemblies for Flammable and Combustible Liquids",
 - [i] --) ANSI/CAN/UL/ULC 2152:2021, "Special Purpose Nonmetallic Containers and Tanks for Specific Combustible or Noncombustible Liquids,"
 - [j] i) ANSI/CAN/UL/ULC 2258, "Standard for Aboveground Nonmetallic Tanks for Fuel Oil and Other Combustible Liquids",
 - [k] j) CAN/ULC-S601, "Standard for Shop Fabricated Steel Aboveground Tanks for Flammable and Combustible Liquids",
 - [l] k) CAN/ULC-S602, "Standard for Steel Aboveground Tanks for Fuel Oil and Lubricating Oil",
 - [m] l) CAN/ULC-S603, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids",
 - [n] m) CAN/ULC-S603.1, "Standard for External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids", or
 - [o] n) CAN/ULC-S615, "Standard for Fibre Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids".

(See Note A-4.3.1.2.(1).)

Note A-4.3.1.2.(1) Atmospheric Storage Tanks.

Sentence 4.3.1.2.(1) provides requirements for atmospheric storage tanks to be built in conformance with referenced standards, which address the construction and performance of the tanks. Fire safety considerations related to the

installation and use of these tanks within buildings are addressed in the Code, as applicable. While certain referenced standards, such as ANSI/CAN/UL/ULC 2152:2021, "Special Purpose Nonmetallic Containers and Tanks for Specific Combustible or Noncombustible Liquids," establish detailed product requirements within their defined scope, these standards may not address all fire protection considerations related to installation where containers or tanks are installed within buildings. In such cases, additional fire protection measures, such as the provision of an automatic sprinkler system, may be necessary depending on the type of liquid, tank and installation.

Impact analysis

This proposed change would not modify the existing allowances; rather, it would expand the options by adding a standard that permits the use of nonmetallic containers for specific combustible and noncombustible liquids. The existing Code provision would still allow the use of various atmospheric storage tanks that are constructed from both metallic and nonmetallic materials.

No additional costs are anticipated as a result of this proposed change. In fact, potential cost savings could arise, as the inclusion of a broader range of atmospheric storage tanks offers more flexibility, which may lower the cost of the design, construction and use of storage tanks.

Enforcement implications

No additional enforcement resources are expected to be required as a result of this proposed change. The proposed change would simply expand the range of containers and tanks acceptable for use, without impacting the enforcement process or the responsibility of authorities having jurisdiction to verify that atmospheric storage tanks comply with the applicable referenced standards for their intended applications.

Who is affected

This proposed Code change could affect a wide range of stakeholders involved in the design, specification, manufacture, approval, construction and operation of facilities for the storage of combustible products and dangerous goods, including designers, specifiers, manufacturers, building owners, contractors and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[4.3.1.2.] 4.3.1.2. ([1] 1) [F20,F80,F43,F81,F01-OS1.1]

[4.3.1.2.] 4.3.1.2. ([1] 1) [F20,F80,F43,F81-OH5]