

Proposed Change 2244

Code Reference(s):	NPC25 Div.B 2.2.10.5. (first printing)
Subject:	Plumbing
Title:	Addition of Requirements for Mechanical Tee Fittings
Description:	This proposed change adds requirements for mechanical tee fittings to be used in potable water systems and introduces a reference to NSF/ANSI/CAN 372-2024, "Drinking Water System Components – Lead Content."
Related Code Change Request(s):	CCR 1365, CCR 1364, CCR 1366, CCR 1367

This change could potentially affect the following topic areas:

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| ☐ 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

Mechanical tee fittings are commonly used in plumbing and mechanical installations due to their proven performance and efficient installation. However, the National Plumbing Code of Canada (NPC) does not currently identify mechanical tee fittings as a distinct type of fitting from saddle fittings. Because the NPC does not distinguish between these two types of fittings and does not permit saddle fittings to be used in certain applications, the NPC is often misinterpreted as not permitting the use of mechanical tee fittings. Consequently, despite the widespread use of mechanical tee fittings in Canada, approvals for project-specific alternative solutions are required, which results in added cost, administrative burden and project delays.

Because the NPC does not explicitly permit the use of mechanical tee fittings, designers and installers must rely on indirect references to mechanical tee fittings (e.g., in standards or other reference documents) or discretionary approvals, which leads to inconsistent interpretation and enforcement across jurisdictions and uncertainty for designers, installers and authorities having jurisdiction.

The absence of a clear compliance pathway for the use of mechanical tee fittings limits the consistent application of the NPC and complicates plan review and inspection activities, despite the availability of established consensus standards that evaluate mechanical tee fittings for performance, durability and suitability for use in potable water systems.

Justification

This proposed change addresses the absence of an NPC provision that explicitly covers the use of mechanical tee fittings in potable water systems.

Since these plumbing fittings are widely used in Canada and have demonstrated satisfactory performance when evaluated against nationally recognized consensus standards for water systems, the NPC should prevent their misclassification as saddle fittings, thus avoiding the need for approvals for project-specific alternative solutions. This proposed change would prevent inconsistent enforcement, increased administrative burden, and avoidable project delays.

Covering the use of mechanical tee fittings that are compliant with applicable standards for performance and potable water in the NPC would also provide Code users with a clear compliance pathway and facilitate consistent enforcement of the NPC by simplifying plan review and inspection activities. This proposed change also supports the NPC's public health and safety objectives without introducing new inspection or training requirements for enforcement agencies.

PROPOSED CHANGE

NPC25 Div.B 2.2.10.5. (first printing)

[2.2.10.5.] 2.2.10.5. Mechanical Tee and Saddle ~~Hubs~~Fittings

- [1] --) Mechanical tee fittings are permitted to be used in a *potable water system*. (See Note A-2.2.10.5.(1)-2030.)
- [2] --) The mechanical tee fittings referred to in Sentence (1) shall conform to NSF/ANSI/CAN 61, "Drinking Water System Components - Health Effects," and NSF/ANSI/CAN 372-2024, "Drinking Water System Components – Lead Content."
- [3] 1) A saddle ~~hub or~~ fitting or hub shall not be installed in *drainage, venting or water systems*. (See Note A-2.2.10.5.(~~13~~3).)

Note A-2.2.10.5.(1)-2030 Mechanical Tee Fittings.

A mechanical tee provides a direct branch connection where a hole is cut in a pipe according to the manufacturer's instructions with regard to dimension requirements. The mechanical tee includes an internal gasket seal and a lower housing that rigidly secures the fitting to the pipe. A locating collar that is integral to the upper housing provides a mechanical interlock with the pipe, thereby supporting the expected loads and securing the mechanical tee fitting in place. A mechanical tee fitting should meet the bending test requirements of ANSI/CAN/UL 213:2023, "Rubber Gasketed Fittings for Fire-Protection Service."

Note A-2.2.10.5.(13) Saddle ~~Hubs or~~ Fittings or Hubs.

Saddle ~~hubs or~~ fittings or hubs may have proven acceptable on the basis of past performance in some localities and their acceptance under this Code may be warranted.

Impact analysis

This proposed change would not impose additional costs on contractors or building owners. This proposed change could reduce overall costs by simplifying installation through a reduction in the joint count, which would use fewer materials, create labour savings, and reduce the risk of joint-related failure.

Enforcement implications

This proposed change could be enforced by the existing infrastructure. No additional resources, new inspection methods, or specialized enforcement training would be required. This proposed change aligns with existing plumbing inspection practices.

Clearly identifying reference standards in the Code would reduce Code users' reliance on discretionary approvals and reviews of alternative solutions, and thereby improve consistency and predictability of enforcement across jurisdictions.

Who is affected

Designers and specification writers would benefit from the addition of clearly identified reference standards to the Code, which would reduce their reliance on discretionary approvals and reviews of alternative solutions.

Contractors and installers would benefit from a clear option for Code-compliant installation without needing additional approvals.

Manufacturers and suppliers would benefit from a clear and consistent regulatory framework that defines the performance and compliance requirements for mechanical tee fittings.

Building officials and regulators would benefit from a clear and consistent enforcement framework that would eliminate differing interpretations among authorities having jurisdiction and establish a concise compliance pathway.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NPC25 Div.B 2.2.10.5. (first printing)

[2.2.10.5.] -- ([1] --) no attributions

[2.2.10.5.] -- ([2] --) [F20,F46-OH2.2]

[2.2.10.5.] -- ([2] --) [F20-OP5]

[2.2.10.5.] 2.2.10.5. ([3] 1) [F81-OH2.1,OH2.3]

[2.2.10.5.] 2.2.10.5. ([3] 1) [F81-OP5]