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Proposed Change 1782

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| Code Reference(s): | NPC20 Div.B 2.2.1.3. (first printing) |
| Subject: | Piping |
| Title: | Identification of Storm and Sanitary Drainage Systems |
| Description: | This proposed change adds requirements for the identification of storm and sanitary drainage systems. |
| Related Code Change Request(s): | CCR 1629, CCR 1630 |

This change could potentially affect the following topic areas:

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| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input checked="" type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

The National Plumbing Code of Canada (NPC) establishes requirements for sanitary and storm drainage piping, but it does not currently require this piping to be identified in the field. Similarity in the colour and shape of building drains has resulted in multiple cases of cross-connection between sanitary and storm drainage systems.

The pre-servicing of lots is very common in the industry. In some cases, servicing is completed years later, which can result in cross-connection between sanitary and storm drainage systems if municipal plumbing inspectors and contractors cannot differentiate between the two service lines.

Instances of cross-connection on some sites have resulted in the need for costly replacement of buried piping. Cross-connections can also result in harm to system users if they come into contact with unsanitary water. Finally, water treatment is an expensive and energy-intensive process, and wasting treated water is costly and increases energy consumption.

Justification

The proposed change would require piping systems to be permanently marked to allow contractors and municipal plumbing inspectors to differentiate between the various pipe applications in the field, with different options for marking determined by the authority having jurisdiction (AHJ). The change would improve alignment between the NPC and provincial and territorial requirements, as provinces such as Ontario have guidelines for marking and labelling different pipe services. The change would thus be a step towards harmonization with provincial and territorial requirements.

Proper marking of piping systems would help prevent cross-connection of pipes and thus reduce costs associated with repairs and insurance claims as well as municipal costs to pump, convey and treat extraneous flow directed to the wrong system.

Cross-connection of pipes also contributes heavily to raw sewage spills into watercourses. Sewer discharges into the environment are costly and can have significant environmental and health impacts.

PROPOSED CHANGE

[2.2.1.3.] 2.2.1.3. Identification

- [1] 1)** Every length of pipe and every fitting shall
- [a] a) have cast, stamped or indelibly marked on it the maker's name or mark and the weight or class or quality of the product, ~~or~~and
 - [b] b) be marked permanently in accordance with the relevant standard.
- [2] 2)** ~~Markings required in Sentence (1) shall be visible after installation.~~ Sanitary drainage systems connected to a public sanitary sewer, a public combined sewer or a private sewage disposal system and storm drainage systems connected to a public storm sewer, a public combined sewer or a designated storm water disposal location shall be identified by a permanent means of identification accepted by the authority having jurisdiction. (See Note A-2.2.1.3.(2).)

Note A-2.2.1.3.(2) Identification of Buried Pipe

Examples of permanent means of identification for buried pipe include permanent factory-applied writing on the pipe and utility-marking tape buried between the top of the pipe and the finished ground level.

Impact analysis

Manufacturers or contractors would be required to provide markings on piping products. In the latter case, this would most likely be in the form of a tape or marking added to the pipe during installation. The actual pipe products would not change and the marking would be applied on site. The cost of materials and the time required to add a tape marker or paint strip would not be excessive for the installer/contractor.

The proposed change would help to reduce operations and maintenance costs and prevent sanitary sewer discharges into the environment.

Enforcement implications

Enforcement of the proposed requirements would require additional monitoring. In addition to ensuring that there are no cross-connections, AHJs would need to check that the pipes are properly marked with their intended use.

The marking of pipes would assist engineers, inspectors and AHJs in following the planned flow and in other quality control measures.

Who is affected

Contractors, engineers and AHJs.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[\[2.2.1.3.\]](#) 2.2.1.3. ([1] 1) no attributions

[\[2.2.1.3.\]](#) 2.2.1.3. ([2] 2) [\[F43-OH5\]](#)