

STANDPIPE PERMIT SUBMISSION GUIDE

(Based on NFPA 14 – 2013 Edition and Ontario Building Code 2024)

1. GENERAL REQUIREMENTS (ALL PROJECTS)

- Commitment to General Review Form: Select Other – Fire Protection/Standpipe/Fire Suppression.
- Professional Engineer: All standpipe shop drawings and hydraulic calculations must be sealed by a P.Eng. licensed in Ontario.
- Standards: System must conform to NFPA 14-13 and OBC 2024 requirements.
- Fire Department Access: Show FDC location and nearest hydrant on site plan.
- Drawings Must Include: North arrow, scale, legend, system zoning, valves, method of valve supervision, test connections, and drains.

2. MINOR ALTERATIONS (e.g., Added or Relocated Hose Connections)

Provide enough detail to clearly illustrate all existing and modified conditions.

Drawings must show:

- Existing system layout is sufficient to show how new work connects.
- Clearly identify existing, new, relocated, and removed standpipe hose connections and piping.
- Pipe type, nominal size, schedule (wall thickness), and material.
- Hydraulic calculations may be required depending on the scope of changes. Calculations shall be based on current hydrant flow test data (≤ 12 months old).
- For tenant changes: show new operations and confirm that existing system design criteria remain suitable.

3. NEW SYSTEMS / MAJOR ALTERATIONS

For new standpipe installations or significant system revisions.

Submission must include:

- Fully detailed standpipe shop drawings conforming to NFPA 14 (2013) “Plans and Calculations.”
- Hydraulic calculations prepared in accordance with NFPA 14-2013 and 2024 OBC using current hydrant flow test data (≤ 12 months old).
- System layout including:
 - Design pressures and flows at each hose connection.
 - Remote area and zoning identification.
 - Valves, drains, test connections, and FDC location.
 - Pipe type, size, material, and wall thickness.
- Occupancy details: indicate if building use or hazard classification affects required standpipe class.
- Existing system layout (if applicable) to show integration with new or altered piping and hose connections.

- Drawings must note signage at the FDC indicating the pressure required to deliver full system demand at 690 kPa (100 psi) residual pressure if the demand at FDC is greater than 1034 kPa (150 psi).

4. IMPORTANT OBC 2024 UPDATES (DIFFERENCES FROM 2012 OBC)

- Residual Pressure Requirement: OBC 2024 allows the topmost hose connection to be less than 690 kPa (100 psi) if the building is fully sprinklered, the sprinkler riser water supply can meet design flow/pressure without the use of a fire pump, and the FDC provides the full demand at 690 kPa (100 psi).
- Flow Requirements:
 - Class II – 38 mm (1½”) Hose Connections – Class II: Minimum 6.3 L/s (100 gpm) at the hydraulically most remote hose. Maximum flow: 6.3 L/s (100 gpm).
 - Class I/III – 64 mm (2½”) Hose Connections – Class I/III: Maximum 15.8 L/s (250 gpm) at the most remote, second-most remote 14.2 L/s (225 gpm). Maximum system flow need not exceed 30 L/s (475 gpm) if multiple standpipes.
- Hydraulic Calculations:
 - Class II: At least two calculations – most remote outlet through building supply and via FDC.
 - Class I/III: At least four calculations – two most remote outlets on one riser, top of two most remote risers, and via FDC.