CHAPTER 3 - ACOUSTIC COMFORT

400

403.03 EXPANSION JOINTS AND VIBRATION PREVENTION

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INTENT

To ensure the vibration isolation in piping system by utilising vibration control strategies.

REQUIREMENT

For all new buildings:

1. An automatic air vent shall be installed on each vertical water supply riser, addressed with an isolate valve. A drain valve shall be used at the bottom of the risers.
2. The water network pipes shall be installed with sufficient supports and connectors, to prevent any sound and vibration, while allowing thermal expansion of the pipes through the expansion joints.

SIGNIFICANCE

Vibrations in the piping systems are induced through the mechanical equipment connected to it. Flow induced vibration is generated by transmission occurring through pipe wall and the water column. Vibration can also be caused by:

- Improper specification or installation of equipment, poor balance, misalignments or operating outside of design conditions.
- Equipment and piping system with inadequate or improper vibration isolation.
- Resonances in equipment, vibration isolation system, building structure, or connected piping system.

Vibrations from the water-flow in pipes can be transmitted from the pipe-runs to the interior building structure. This could turn severe at places where pipes are in direct contact with large building surfaces like walls or slabs. Noise from vibrations may cause severe disturbance to the building occupants.

Prevention of vibrations can help maintaining the acoustic performance in the building, thereby resulting in increased occupant comfort and productivity.

APPLICABILITY

This regulation is applicable to all building types. Refer to Table 101.07(1) in Section One - Administration for detailed applicability levels.