
FIRE PREVENTION AND BUILDING SAFETY COMMISSION
Department of Homeland Security

Written Interpretation of the State Building Commissioner

Interpretation #: CEB-2021-39-2012 IPC-305.6.1

Building or Fire Safety Law Interpreted

675 IAC 16-1.4 2012 Indiana Plumbing Code, Section 305.6.1 Waterlines. Waterlines shall not be installed outside of a building, in attics or crawlspaces, or in any other place subjected to freezing temperatures, unless adequate provision is made to protect such waterlines from freezing by insulation, ambient heat, or alternate heat source. No waterlines shall be concealed in outside walls, above grade.

Issue

Whether Section 305.6.1 of the *2012 Indiana Plumbing Code* (IPC) allows water lines to be installed in unconditioned spaces when the water lines are fully drained prior to the onset of freezing ambient temperatures, in lieu of providing insulation or heat.

Interpretation of the State Building Commissioner

Yes, Section 305.6.1 of the *2012 IPC* does allow water lines to be installed in unconditioned spaces when the lines are fully drained prior to the onset of freezing ambient temperatures, in lieu of providing insulation or heat.

Rationale

Section 305.6.1 of the *2012 IPC* contains two requirements. They will be examined in the order they appear.

The first requirement is that waterlines shall not be installed outside of a building, or in other environments subject to freezing temperatures unless measures are taken to ensure the lines will not freeze. The section specifies three methods of preventing such freezing, and while it does not specifically open the possibility of additional methods being used, research into the commission's intent in adopting the regulation has not indicated that they wished to limit preventative measures to only those listed in the text. The intent in adopting the regulation is simply to prevent freezing water supply lines and the damage they cause. Standard design and construction practices in structures that are unoccupied and unconditioned in winter is not to provide a constant heat source, but rather to "winterize" the structure's systems, a process that includes a complete draining of all water supply lines, fixtures, and fittings. When done completely and faithfully before the onset of freezing temperatures each year, frozen water supply lines are not possible. In fact, this is the design principle employed in standard "frost-free" hose bibbs, devices which are always located on the exterior of structures where freezing temperatures are common, and which are designed to drain all water from them whenever they are turned off, eliminating the possibility of water freezing in the fitting. The section states that insulation is an acceptable means of preventing freezing, but the fact is that given enough time and the absence of a heat source, no amount of insulation will prevent eventual equalization of temperatures on each side of the insulation. This is even recognized in the ICC commentary on the subject.

The second requirement is that no waterlines are allowed to be concealed in outside walls above grade. This requirement is intended to apply to the exterior walls of buildings, where concealed lines would be subject to freezing even when the interior of the structure is conditioned. It is not a blanket prohibition on the installation of water lines in walls that are constructed completely outside the building's boundaries.

If IPC 305.6.1 were intended to limit the methods used to prevent frozen water lines to only heat and/or insulation, then it would effectively prohibit any building containing water lines (including those buildings intended to be unoccupied in winter) from being allowed to reach freezing temperatures at the location of those lines. Conversely, no building that is subject to freezing throughout would ever be allowed to contain water lines. Either would impose a substantial fiscal burden on Indiana's construction industry, which was not the intent of the commission in adopting the regulation.

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