IPC

2025 GROUP B PROPOSED CHANGES TO THE I-CODES

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IPC Code Change Proposals

The following code change proposal is labeled as a P code change proposal because it is a proposal for changes to sections in chapters of the International Plumbing Code that are designated as the responsibility of the IPC Code Development Committee (see page viii of the Introductory pages of this monograph), which met in the Group A cycle in 2024. However, the changes included in this Group B code development cycle are to sections of the code that have been prefaced with a [S] and meaning that they are the responsibility of a different IBC Code Development Committee— the IBC-Structural [S] Committees.

The committee assigned for each code change proposal is indicated in a banner statement near the beginning of the proposal. See the IBC-Structural hearing orders.

P1-25

IPC: [BS] 1101.7

Proponents: Erik Madsen, representing NCSEA (emadsen@dci-engineers.com); John Grenier, representing National Council of Structural Engineers Associations (NCSEA) (jgrenier@grenierenng.com); Emily Guglielmo, representing NCSEA (eguglielmo@martinmartin.com)

THIS CHANGE WILL BE HEARD BY THE IBC STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

2024 International Plumbing Code

Revise as follows:

[BS] 1101.7 Roof design. Roofs shall be designed for the maximum possible depth of water that will pond thereon as determined by the relative levels of roof deck and overflow weirs, scuppers, edges or serviceable drains in combination with the deflected structural elements. In determining the maximum possible depth of water, all primary roof drainage means shall be assumed to be blocked. The maximum possible depth of water on the roof shall include the height of the water required above the inlet of the secondary roof drainage means to achieve the required flow rate of the secondary drainage means to accommodate the greater of the design rainfall ~~rate~~ intensities as required by Section ~~1106~~1108.3 and *International Building Code* Section 1611.1.

Reason: This proposal seeks to coordinate the rain loading provisions in the IPC and the International Building Code.

There is currently a discrepancy between the secondary drainage rainfall intensity that the IBC requires to determine roof rain loads, and the rainfall intensity that IPC requires for the design of the secondary drainage system. IBC and ASCE 7 utilize a 15-minute duration storm event with increased return periods for higher Risk Categories, while the IPC utilizes a 60-minute duration storm event with a 100-year return period.

The IBC rainfall rates are currently larger than the IPC rainfall rates. This can result in large hydraulic heads and rain loads, or in some cases when the rainfall rates exceed the capacity of the secondary drainage system, the hydraulic heads cannot be determined by conventional means.

The systems as designed now may not be capable of handling the calculated flows and heads. This issue exists with both gravity and siphonic roof drainage systems and can be more significant for the latter as slight changes to the flow greatly affect the performance of siphonic systems.

Cost Impact: Increase

Estimated Immediate Cost Impact:

$0.25-$0.30/square foot of roof area.

Estimated Immediate Cost Impact Justification (methodology and variables):

Cost change should be minimal. As an example, a single-story industrial building with 40-foot square bays and interior gravity roof drains, the drainage area will be 6,400 square feet. The cost increase of the drain should be zero since only the no-hub outlet diameter changes. The drainage piping material could be PVC, CPVC, FRP or cast iron. Assuming cast iron as worst case, the cost increase to go from 8” diameter to 10” diameter pipe is about $15/ft. The cost of pipe hangers and other accessories should be about the same. The piping cost increase is $15*80=$1,200 and the overall cost per square foot impact is $1,200/6400=$0.19/sf. Considering the potential cost increases for the downstream piping (downcomers at columns & below-grade piping) I think we could safely say the cost increase is in the range of $0.25-$0.30/square foot. Note also, this stormwater is already in IBC. We are aiming to match IPC with IBC.

Staff Analysis: CC # S95-25 and CC # P1-25 addresses requirements in a different or contradicting manner. The committee is urged to make their intensions clear with their actions on these proposals.