



Opposition to Intro. 994 As Presently Drafted

The American Council of Engineering Companies of New York (ACEC New York) is an association representing nearly 300 engineering and affiliate firms with 30,000 employees in New York.

Our members design the mechanical, electrical, energy performance, structural, plumbing, civil, environmental, fire protection and technology systems of buildings and infrastructure for public and private owners across New York. Our members have a concentrated presence in New York City.

ACEC New York as an organization has a proud history of providing technical expertise and feedback from the perspective of the licensed professional engineering firms who design buildings, for the city's policymakers to take into consideration as it amends laws and codes addressing changing needs.

As design professionals involved with building safety and efficiency, and as an organization devoted to science-based responses to climate change, including heat effects, we appreciate the concerns which this bill is intended to address. However, we have concerns about the bill in its present form.

Our Mechanical Code Committee reviewed the proposed legislation and submits the following comments:

1) A comprehensive assessment of the impact of Intro 994 is necessary.

While we understand and agree with the life safety aspects for requiring air conditioning in all dwelling units, it is not clear if the full impact of such a requirement has been studied. The following are some of our concerns:

- We would expect that some buildings would require major electrical system upgrades to support air conditioning. It is even possible that local electrical grids could be stressed by this requirement.
- The increase in energy usage should be assessed. Many older buildings are so poorly insulated that their energy usage would increase dramatically. This would impact Local Law 97 compliance in a manner that building owners could not have foreseen.
- Whereas the design to provide heat is based entirely on outdoor temperature, providing air conditioning is based on both outdoor conditions and internal loads such as number of occupants and how the space is used (e.g. cooking, dining, sleeping, etc.) Since these internal loads can vary significantly, they must be estimated and thus, compliance with an indoor temperature and humidity requirement can't be guaranteed.
- A strict requirement for indoor humidity of 50% will be problematic considering that indoor conditions can vary greatly, and the envelope of many buildings is permeable, allowing moisture to pass through it freely. Dehumidification systems are not typically provided in residential applications. Instead, dehumidification is achieved through the inherent ability of air conditioning systems to remove moisture as the air is cooled, but it is not controllable.

Specifically controlling the amount of dehumidification is a more complicated and costly process normally seen only in select commercial applications.

2) Upper design limit for outdoor air conditions, Paragraphs 27-2030.b.1 and 27-2030.b.2(a).

Intro 994 should clearly state the outdoor air temperature upper design limit. The outdoor air design temperature is required to properly design air conditioning systems. Currently the proposed language only states, “when the outdoor air temperature is 82 degrees Fahrenheit or higher,” which provides no upper temperature limit. We recommend instead to align this requirement with BC1204.2 which provides a design outdoor air temperature of 89 deg F. This will ensure compliance with the NYC Building Code, eliminate an interpretive contradiction with BC1204.2, and to avoid any misinterpretation that could lead to either unreasonable over-sizing of air conditioning systems or excessive, unintended complaints.

3) Clarification on who is responsible for AC operating/operating costs.

The standard practice for providing cooling in multi-family buildings involves cooling equipment that is connected to electrical power on the tenant’s direct-metered electrical service. This is typical for many types of systems, including Water Source Heat Pump (WSHP), Package Terminal Air Condition (PTAC), and Through Wall and Window AC units.

The language in the Intro 944 requiring the owner to maintain prescribed indoor temperatures is similar to that used for heat, and as such the bill seems to imply that the owner could be responsible for the cost of operating the cooling system.

If this interpretation is correct, then this policy would upset decades of operational precedence. If the intent is to place the cost of the increased power usage on a building owner, it creates a disincentive for the unit to be used judiciously, as well as putting a property out of compliance with Local Law 97. It would also require major electrical infrastructure modifications of existing buildings that are already equipped with cooling that meets the intent of the legislation.

Conclusion/Recommendation: We feel that this legislation is extremely broad and does not properly weigh logistics, energy-use, and other factors.

We recommend that a working group be established by the City’s Chief Climate Officer to draw on the expertise of all affected stakeholders to determine whether the fundamental approach of Intro 994 is indicated and if so, establish methodologies for compliance and implementation prior to adoption.