



BACKGROUND | NOVEMBER 2019

2021 ICC National Model Codes: Group B - Online Voting Guide

The National Multifamily Housing Council (NMHC) and National Apartment Association (NAA) actively participate in the code development process, working to improve existing code provisions and opposing provisions that would result in unnecessary cost escalations or create impractical technical provisions. This document provides our recommendations for voting on apartment industry priorities during the ICC Online Governmental Consensus Voting Period beginning in November 2019.

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About NMHC

Based in Washington, D.C., the National Multifamily Housing Council (NMHC) is a national association representing the interests of the larger and most prominent apartment firms in the U.S. NMHC's members are the principal officers of firms engaged in all aspects of the apartment industry, including ownership, development, management and financing. NMHC advocates on behalf of rental housing, conducts apartment-related research, encourages the exchange of strategic business information and promotes the desirability of apartment living. Nearly one-third of Americans rent their housing, and almost 15 percent live in an apartment (buildings with five or more units). For more information, contact NMHC at 202/974-2300, email the Council at info@nmhc.org or visit NMHC's website at www.nmhc.org.

About NAA

The National Apartment Association (NAA) serves as the leading voice and preeminent resource through advocacy, education and collaboration on behalf of the rental housing industry. As a federation of 155 affiliates, NAA encompasses over 82,000 members representing more than 10 million apartment homes globally. NAA believes that rental housing is a valuable partner in every community that emphasizes integrity, accountability, collaboration, community responsibility, inclusivity and innovation. To learn more, visit www.naahq.org.

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Overview

The National Multifamily Housing Council (NMHC) and National Apartment Association (NAA) actively participate in the code development process, where we work to improve existing code provisions and oppose unnecessary escalations in costs or impractical technical provisions. The following outlines apartment industry priorities and provides our recommendations for voting during the ICC Online Governmental Consensus Voting Period beginning in November 2019.¹

We urge all Governmental Members to support the multifamily industry and ensure the continued availability of high-quality, safe and affordable apartment homes.²

Energy Performance Requirements

The apartment industry supports cost-effective and technologically feasible improvements to building energy performance. However, numerous proposed changes to the national model building codes fail to address the unique nature of multifamily design and construction and can add significant costs and technical impediments to apartment development and renovation. These compliance costs and challenges can directly impact housing affordability and exacerbate rental housing shortages in communities nationwide.

Despite significant improvements in building efficiency, proposed changes to the 2021 International Energy Conservation Code (IECC) continue to push for more aggressive building efficiency increases without comprehensive consideration of the multifamily cost impacts, acceptance of products and practices in residential construction and broader policy implications. Taken together, these proposals would significantly impact the overall design and construction of multifamily properties.

Existing Building Code Provisions

The International Existing Building Code (IEBC) provides requirements for the rehabilitation of existing buildings and establishes compliance conditions for fire protection, structural features, accessibility and life safety. While the ICC updated fire protection and accessibility measures for new construction during the Group A cycle, we are concerned about numerous proposals to extend onerous or unnecessary requirements to building renovations.

FOOTNOTES

¹ These provisions will continue to evolve throughout the code cycle and should not be considered final until the new code editions are published. Also, this document does not capture all the changes impacting apartment construction. Building professionals and property owners should consult the final codes directly for a full explanation of relevant code requirements.

² This guide includes only those issues of significant concern to the apartment industry and does not reflect all items open for voting during the online voting period or items where NMHC and NAA have a neutral position.

Notable Proposals

- **Insulation and Prescriptive R-Values – RE 29, RE 32, RE 33, RE 36**
Increases stringency of prescriptive R-values for wood-framed walls, slab and ceiling insulation while penalizing climate zones with high construction rates. These proposals increase costs without meeting reasonable payback criteria. We urge continued Disapproval.
- **Duct Testing – RE 112**
Requires onerous duct leakage testing for all ductwork, even when completely inside the building envelope. The proposal fails to properly address multifamily buildings, which have numerous duct systems, and fails to provide a sampling protocol. It also fails to address multifamily central HVAC systems that cannot be tested with typical residential-scale equipment. We urge Disapproval.
- **Opaque Envelope Requirements – CE 63, CE 65, CE 66, CE 68, CE 69, CE 75**
Increases insulation values as part of a package of proposals to raise stringency of prescriptive tables according to ASHRAE 90.1. However, the proposals either fail to uniformly incorporate ASHRAE values, negating ASHRAE's underlying economic analysis, or otherwise increase costs without providing sufficient performance benefits. We urge Disapproval.
- **Air Barriers – CE 99**
Requires potentially onerous review of construction documents, inspection of air barrier installation during installation and final commissioning report by a registered design professional. We urge support for Public Comment #3 clarifying that such an inspection is not required where a building passes appropriate testing or urge Disapproval.
- **Electric Vehicle Charging - CE 217 Part I and Part II**
Requires a percentage of parking to be Electric Vehicle (EV)-Ready Spaces and EV-Capable Spaces without regard for actual EV usage rates or market penetration of EV equipment. We urge Disapproval pending further consideration of national EV needs.
- **Additional Energy Efficiency Packages – RE 206, 207, 209 and CE 218, 226, 240**
These proposals increase energy performance levels and add compliance requirements in various packages. However, they rely on the use of products and systems that are not practical or not widely used in multifamily construction. In particular, the commercial proposals substantially change the prescriptive compliance path in a way that could seriously impair the simplicity and viability of the Prescriptive option for apartments. We urge Disapproval.

2021 Code Proposals Multifamily Priority Proposals

AS	As Submitted
AM	As Modified
AMPC	As Modified by Public Comment
D	Disapproved

International Existing Building Code

PROPOSAL #	TYPE OF CHANGE	COMMITTEE ACTION	PUBLIC COMMENT HEARING RESULTS	RECOMMENDED ACTION FOR ONLINE VOTING	CODE SECTION & ANALYSIS
EB80-19	Revision	D	D	AS	803.4.4 Smoke Alarms Replacement: In Group R occupancies, allows single-station smoke alarms to be replaced with 10-year battery powered smoke alarm.
EB82-19	Revision / Limits Requirement	D	D	AS	803.2.2 Groups: Clarifies when sprinklers are required during Level 2 alteration. If there is not adequate municipal water supply and existing vertical piping to the work area, smoke detection system is allowed.
EB95-19	New Requirement	AS	D	D	908.1, 1010.2 Emergency Responder Radio Coverage: Requires emergency responder radio coverage in buildings undergoing a Level 3 alteration or complete change of occupancy. Note that practice is already common in Level 3 alteration.

International Energy Conservation Code - Residential

PROPOSAL #	TYPE OF CHANGE	COMMITTEE ACTION	PUBLIC COMMENT HEARING RESULTS	RECOMMENDED ACTION FOR ONLINE VOTING	CODE SECTION & ANALYSIS
RE29-19	Increases Requirement	D	D	D	Table R402.1.2 Insulation: Increases stringency of prescriptive R-values for wood-frame walls in Climate Zones 4-5 from R-20 or R-13+R5 to R-20+R-5 or R-13+R-10. Increases costs without meeting reasonable payback criteria.
RE32-19	Increases Requirement	D	D	D	Table 402.1.2 Prescriptive R-values: In Climate Zones 3-5: Increases slab insulation. Zone 3 – None to R-10, 2'; and Zones 4-5 – same R value but increases insulation depth from 2' to 4'.
RE33-19	Increases Requirement	D	D	D	Table 402.1.2 Prescriptive R-values: In Climate Zones 2-3: Increases ceiling insulation from R-38 to R-49. Also, changes U-factor table accordingly.
RE35-19	Increases Requirement	AS	AMPC #1	AMPC #1	Table 402.1.2 Fenestration U-factors: Increases stringency of U-factors in Climate Zones 2-4 to 0.35, 0.30 and 0.30, respectively, (from 0.40, 0.32 and 0.32). Proposed modification remedies flawed values that conflict with Energy Star criteria.
RE36-19	Increases Requirement	D	D	D	Table 402.1.2 Prescriptive R-values: In Climate Zones 4-8: Increases ceiling insulation from R-49 to R-60. Allows R-49 if full coverage over exterior walls and changes U-factor table accordingly.
RE39-19	Revision / Adds Option	D	AS	AS	Table 402.1.2 Prescriptive R-values: Limited to Zones 6-8: Adds option for above-grade wood-frame wall insulation - cavity only - R-23. Would also have to have U-0.28 windows and R-60 attic (or R-49 full coverage).
RE40-19	Revision / Adds Option	AS	D	AS	Table 402.1.2 Prescriptive R-values: Adds footnote to wood-frame wall assemblies in Climate Zones 3-8 allowing R-18 insulation in place of R-20 if framing factor is 20% or less in 24" on center spacing.
RE43-19	Revision / Enforcement	D	D	AS	R103.2, R401.2.2 Batch Sampling: Likely decreases inspection costs and expedites testing for blower door and duct leakage by extending allowance for batch sampling to prescriptive compliance path as well as performance for stacked multifamily buildings. Inspect 5 consecutive dwelling units; then, 1 in 5 units. If one fails, then inspect that one plus 3 more. Public Comment #1 recognizes that the committee supported

					multifamily batch sampling and proposes modified language to address committee concerns.
RE95-19	Revision	D	D	AS	402.4.1.3 Sampling Options: Provides a favorable sampling protocol for multifamily buildings. Initial testing: 3 units + Sampling 15% of dwelling units in a building. If one fails, then test 30% in that building. Then, if any failures, test all units.
RE102-19	Revision	AS	D	AS	402.4.1.2.1 Multi-Unit Buildings: Provides flexibility for multifamily buildings and clarifies that multi-unit buildings can be tested as single zone, multiple zone or individual dwelling units.
RE112-19	New Requirement	AS	AS	D	R403.3.3 Duct Testing: Requires onerous duct leakage testing for all ductwork, even when completely inside the building envelope. Sets threshold at 8 cfm per 100sf floor area. Proposal fails to properly address multifamily buildings, which have numerous duct systems, and fails to provide a sampling protocol. Also fails to address multifamily central HVAC systems that cannot be tested with typical residential-scale equipment.
RE116-19	Revision / New Requirement	D	D	D	R403.3.3 Duct Testing: See RE112. Changes duct leakage test requirements and exceptions. But includes a higher leakage allowance for smaller buildings and dwelling units.
RE117-19	New Requirement	D	D	D	R403.3.3 Duct Testing: See RE112, requiring all ducts to be tested without appropriate accommodation for multifamily buildings.
RE119-19	Revision	AS	D	AS	R403.3.3 Duct Testing: Provides that duct leakage test can be total leakage or leakage to outside and maintains current maximum threshold of 4.0 cfm per 100sf floor area for both.
RE121-19	Revision	D	D	AS	R403.3.4.1 Sampling Options for R-2: Same as RE95.
RE126-19	Increases Requirement	D	D	D	R403.5.1 Water Heating Equipment: Imposes onerous and costly water heating equipment requirements. Specifies equipment types not commonly used in multifamily or requires additional measures to utilize typical equipment.
RE139-19	New Requirement	AS	AS	D	R403.6.1 Mechanical Ventilation: Requires a heat recovery (HRV) or energy recovery (ERV) ventilation system in Climate Zones 7 and 8 only. Limited geographic impact but can constitute notable added cost in some situations.

RE145-19	Revision / New Requirement	D	D	D	R404.2 Lighting: Increases requirements – all permanent lighting must be high efficacy, min 70 lumens per watt. For most applications (>40 W), this moves the code from 60 up to 70 lumens/Watts. Also requires dimmer or occupancy sensor for all permanently installed fixtures except bathrooms, hallways, exterior, safety/security.
RE147-19	New Requirement	D	D	D	R404.2 Electric Readiness: Requires dedicated receptacle where there are gas or propane water heaters, cooking equipment or dryers within 3' of each appliance. Also imposes unnecessary space requirements – must include 3'x3' space for a future electric water heater.
RE148-19	Revision / New Requirement	D	AMPC #1 and #2	D	R404.1.1 Exterior Lighting: Requires exterior lighting for R-2 buildings to comply with Section C405 of the IECC-Commercial (with exception for fixtures controlled by motion sensors).
RE157-19	Revision	D	AS	D	405.1 Performance Path: Removes batch sampling for stacked multifamily units. See RE43 for more favorable proposal.
RE176-19	Revision	D	D	AS	405.2 Performance Path: Adds flexibility. Includes federal minimum efficiencies for space heating, cooling and water heating in the reference design, which provides credit for more efficient equipment.
RE182-19	Revision	D	D	D	R406.2 ERI Path: Limited impact today, as only applicable where renewables are used. Provides that backstop for ERI Path is prescriptive tables in 2018 IECC.
RE190-19	Revision / Increases Requirement	D	D	D	R406.2 ERI Path: Applicable to ERI Path compliance only but would increase stringency and penalize buildings without renewable energy by including renewables in the calculation.
RE192-19	Revision / Increases Requirement	D	D	D	Table R406.4 ERI Path: Makes ERI Path more stringent, requiring scores between 51 and 55 (previously ranged from 57 to 62). Baseline of 100 is 2006 IECC.
RE206-19	Revision / Increases Requirement	D	D	D	R401.2 Additional Energy Efficiency: Adds additional compliance requirements and increases energy efficiency performance levels.
RE207-19	Revision / Increases Requirement	D	D	D	R401.2 Additional Energy Efficiency: Same as RE206 but with more stringent target efficiencies.

RE209-19	Revision / Increases Requirement	D	D	D	R401.2 Additional Energy Efficiency: Similar to RE206 and adds new compliance requirements. Requires selection of one from multiple options.
RE223-19	Adds Appendix	D	AMPC #2	D	Appendix - Zero Energy Residential Buildings: Adds Appendix for Zero Energy Buildings. While optional for a jurisdiction to adopt at this time, implications for multifamily construction are not well articulated and raises questions of cost-effectiveness and constructability.
RE224-19	Revision / Enforcement	D	D	D	Appendix - Stretch Code: Optional appendix, but would require new residential buildings or those undergoing renovation to comply with ASHRAE 90.2 – a standard that is rarely used in residential code compliance.

International Energy Conservation Code - Commercial

PROPOSAL #	TYPE OF CHANGE	COMMITTEE ACTION	PUBLIC COMMENT HEARING RESULTS	RECOMMENDED ACTION FOR ONLINE VOTING	CODE SECTION & ANALYSIS
CE44-19	Revision / Adds Exception	D	AMPC #2	AMPC #2	C401.2 Application - RESNET Standard Reference: Allows for code compliance via the Energy Rating Index (ERI) in Section R406 and updates RESNET Standard Reference to ANSI/RESNET/ICC 301-2019 - Standard for Calculation and Labeling of Dwelling and Sleeping Units using the Energy Rating Index. Would create flexibility for multifamily code compliance.
CE49-19	Revision	D	D	D	C401.2 Application/C407.3 Performance-Based Compliance: Increases Performance Path compliance by 5 percent.
CE53-19 CE263-19	New Requirement	D / CE263-19 (Part I) D / CE263-19 (Parts II and III) AM	D / D	D / D	C401.2.2 On-Site Renewable Energy: Requires renewable energy equipment equivalent to 0.25 w/sf multiplied by the sq. ft. of conditioned floor area of the 3 largest floors. CE263 develops an appendix requiring on-site photovoltaic systems. Cost-benefit for apartments is uncertain, and significant implementation concerns include wide variation in net metering policies, greater cost-efficiency through use of utility-scale renewables and service of common areas versus

					dwelling units. Not appropriate for inclusion as universal code requirement.
CE61-19	Revision / Increases Requirement	AS	AS	D	<p>Table C402.1.3 Opaque Envelope Requirements (Roofs): Increases required roof insulation for attics and aligns values with ASHRAE 90.1-2016 –</p> <ul style="list-style-type: none"> Climate Zone (CZ) 4 from R38 to R49 Changes Group R metal buildings in CZ 6 and above. <p>Proposals CE61, 63, 64, 66, 68 and 69 are a block of proposals from same proponents all seeking updates/increases to U- and R-values in the Prescriptive Path compliance tables.</p>
CE63-19	Revision / Increases Requirement	AS	AS	D	<p>Table C402.1.3 Opaque Envelope Requirements (Walls): Increases wall insulation for metal, metal-framed and wood-framed buildings in Climate Zones 4 and up. Part of package of proposals to increase efficiency tables per ASHRAE 90.1-2016.</p>
CE65-19	Revision / Increases Requirement	AS	AS	D	<p>Table C402.1.3 Opaque Envelope Requirements (Floors): Increases R-value requirement for frame floors in Zone 1 to R-13 (previously 0). Very limited geographic impact, and change can be avoided by using tradeoff method.</p>
CE66-19	Revision / Increases Requirement	AS	AS	D	<p>Table C402.1.3 Opaque Envelope Requirements (Floors): Increases R-value requirement for mass floors in Zones 4 and up. Increases R-value requirements for frame floors in Zones 6 and up. And, increases prescriptive U-factor table. Part of package of proposals to increase efficiency tables per ASHRAE 90.1-2016.</p>
CE68-19	Revision / Increases Requirement	AS	AS	D	<p>Table C402.1.3 Opaque Envelope Requirements (Slabs): Increases requirements for unheated slab insulation in Zones 3 and up. Increases prescriptive U-factor table in selected climate zones. Part of package of proposals to increase efficiency tables per ASHRAE 90.1-2016.</p>
CE69-19	Revision / Increases Requirement	AS	AS	D	<p>Table C402.1.3 Opaque Envelope Requirements (Slabs): Increases prescriptive requirements for unheated slabs in Zones 7-8. Increases minimum F-factors for unheated slabs in selected climate zones. Part of package of proposals to increase efficiency tables per ASHRAE 90.1-2016.</p>
CE75-19	Revision / Increases Requirement	AS	AS	D	<p>Table C402.1.4 Opaque Envelope Requirements (Walls): Decreases maximum U-factors for metal- and wood-framed above grade walls in Zones 5 and 7. Aligns with prescriptive R-value requirements for these assemblies.</p>

CE96-19	New Requirement	AM	AM	AM	C402.5.1.2 Air Barrier Compliance: Except in CZ 2B, 3C and 5C, requires a portion of dwellings to have a blower door test. Measured leakage must be ≤ 0.30 cfm per sf unit enclosure area (e.g., surface area) – which is about 5 to 6 ACH50, depending on geometry of the unit. For buildings with <8 units, all units must be tested. Provides a sampling protocol for 8 units or more – after the initial 7, test 20% of remaining units. If one unit fails, test another 20%. This is a continuation of air leakage testing efforts from previous cycles.
CE97-19	New Requirement	AM	AM	D	C402.5.1.2 Air Barrier Compliance: Except in CZ2B, 3B, 3C and 5C and buildings larger than 5,000 sf in CZ A-B, 1, 2A, 3A, 4-5B and 4C, requires blower door testing in buildings or portions of buildings other than Group R or Group I. This would mean that common areas or retail areas in multifamily buildings would need to be tested.
CE99-19	New Requirement / Enforcement Change	AM	AM	D	C103.2, C402.5.1, C402.5.3 Air Barriers: Requires potentially onerous review of construction documents, inspection of air barrier installation during installation, and final commissioning report by registered design professional.
CE111-19	New Requirement	AM	AM	AM	C403.2.3 Fault Detection System (New): Requires fault detection system for mechanical systems in buildings larger than 100,000 sf to monitor system performance and identify faults. Question practicality in multifamily construction and applicability to individual dwelling unit systems. Neutral for multifamily if modification is maintained specifically exempting R-2 occupancies.
CE124-19	Decreases Requirement	AS	AS	AS	C403.5 Economizers: Deletes requirement for economizer in VRF systems with dedicated outdoor air system.
CE129-19	Limits Exception	AS	AMPC #1	D	C403.7.2 Garage Ventilation Controls: Diminishes value of exception: 1) Requires CO and NO2 detectors rather than just "contamination detectors"; 2) Lowers exception trigger from systems with an exhaust capacity of 22,500 cfm down to 8,000 cfm; 3) Adds requirement for occupancy sensor that activates full ventilation rate.
CE133-19	New Requirement	AM	AM	D	C403.7.4 Energy Recovery Ventilation Systems: Requires energy recovery ventilation for multifamily dwelling units but only impacts prescriptive compliance path.

CE162-19	Increases Requirement	AM	AM	AM	C405.1 Lighting: Requires high-efficacy lamps in at least 90% of permanently installed lighting in dwelling units (65 lumens/watts or luminaires with efficacy not less than 45 lumens/watts or comply with 405.2.4 and 405.3 (Lighting Controls and Lighting Power Allowance)).
CE198-19	New Requirement	AS	AS	D	C405.2.6.3 Lighting Setback: Occupancy sensors required for outdoor parking lot areas where wattage of luminaires 24' or less above ground is greater than 78 watts. Reduce wattage by 50%. Note safety and security considerations.
CE199-19	New Requirement	AM	AMPC	AMPC	C405.2.7 Parking Garage Lighting Controls: Requires occupancy sensors and dimming controls for parking garages. Exception where fenestration to wall ratio is less than 40%, but safety and security concerns remain in multifamily buildings.
CE215-19	New Requirement	AM	AM	AM	C405 Energy Monitoring: Original proposal requires energy monitoring in new buildings larger than 25,000 sf, with limited equipment and space exceptions. Important to maintain modification to exempt R-2 occupancies.
CE217-19	New Requirement	AM	AM	D	C405 Electric Vehicles: Requires percentage of parking to be EV-Ready Spaces and EV-Capable Spaces. Generally, 2 EV-Ready Spaces and 3-5 EV-Capable Spaces for up to 25 spaces, then 20% where 26 or more spaces provided.
CE218-19	Revision / Increases Requirement	AM	AM	D	C406 Additional Efficiency Packages: Substantially changes prescriptive compliance path by increasing efficiency levels and could seriously impair the simplicity and viability of the Prescriptive option for apartments. Proposal relies on products and systems that are not practical compliance options for multifamily buildings.
CE219-19	Increases Requirement	D	D	D	C406 Additional Efficiency Packages: Revises 2018 code provision requiring compliance with one of a set of eight efficiency packages to two or more. Majority of proposed options are not practical for typical multifamily construction, raising serious compliance questions for apartments.
CE220-19	Increases Requirement	D	D	D	C406 Additional Efficiency Packages: See CE219.
CE224-19	Increases Requirement	D	AMPC	D	C406.2 More Efficient HVAC Equipment Performance: Increases IEER stringency for air-cooled unitary systems for credit for HVAC Additional Energy Efficiency Option. IEERs are 25-40%

					above 2018 minimum efficiencies and 10% above federal minimums that go into effect in 2023.
CE226-19 CE240-19	Increases Requirement	AM / AS	AM / AS	D	C406 Additional Efficiency Packages: Very similar to CE218. Requires commercial buildings to achieve 10 credits/points from a list of 13 options. 95% of lighting in dwelling units and sleeping units must be 65 lumens per watt, e.g., LEDs.
CE229-19	Increases Requirement	D	D	D	C406 Additional Efficiency Packages: Relates to CE218. Proposal relies on products and systems that are not practical compliance options for multifamily buildings.
CE242-19	Revision / Adds Option	D	D	D	C406 Additional Efficiency Packages: Adds electrical vehicle supply equipment to list of compliance options. While other compliance options are allowed, note cost and viability of EV code proposals.
CE256-19	Adds Exception	D	D	AS	C503.1 Building Envelope: Adds exception for roof replacement on low-slope roofs, and CE256 and CE257 eliminates language that allows for subjective determinations ("where deemed by code official").
CE261-19	Increases Requirement / Enforcement	D	D	D	C505 General: Although provision is a significant change, it would seldom be triggered in multifamily construction or only arise during a major renovation where implementation would not be problematic. Relates to a change of occupancy and compliance with IECC requirements for new occupancy type.
CE264-19	New Appendix	AS	D	D	Appendix - Zero Code Renewable Energy Standard (New): Provides path for jurisdictions to impose renewable energy systems requirements to achieve zero-net-carbon. Establishes guidelines for determining required amount of renewable energy according to climate zone and building occupancy using EUI values. While optional at this time, implementation presents significant costs and practical issues for multifamily.