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International Building Code (IBC) – Complete Comparison with 2024 Practical Impact

2018 vs 2021 vs 2024 (Key Changes)

Topic / Provision	2018 IBC	2021 IBC	2024 IBC	Practical Impact of 2024 IBC
Scope of Code	Applies to all buildings except detached 1 & 2 family dwellings and townhouses ≤3 stories (Scope has not changed)	—	—	Reinforces IBC applicability and reduces misinterpretation at jurisdictional boundaries
Accessory Storage	Accessory storage of any size allowed within primary occupancy	—	—	No change from prior editions
Medical / Laboratory Uses	New medical gas and higher-education lab provisions	—	—	No change

Topic / Provision	2018 IBC	2021 IBC	2024 IBC	Practical Impact of 2024 IBC
Puzzle / Escape Rooms	—	Regulated as special amusement areas	—	No change
Shipping Containers	—	Use as buildings addressed	—	No change
Sleeping Lofts	—	—	New Appendix P regulating sleeping lofts in Group R	Allows more consistent loft approvals by reducing Authority Having Jurisdiction discretion and design uncertainty
Fire Walls – Building Separation	Fire walls limited to height/area determination	Fire wall portions treated as separate buildings for control areas	Fire-resistance continuity clarified for exterior walls and parapets	Reduces ambiguity in rated wall continuity and parapet design
Fire Wall Structural Loads	Minimum lateral load of 5 pounds per square foot is required	—	—	No change
Elevator Hoist ways	Smoke protection required at rated corridor openings	—	—	No change
Shaft Enclosures	—	—	Expanded exceptions for openings and penetrations	Improves constructability and coordination flexibility

Topic / Provision	2018 IBC	2021 IBC	2024 IBC	Practical Impact of 2024 IBC
Firestop / Joint Systems	—	Special inspection in large Group R fire areas	—	No change
Carbon Monoxide Detection	—	—	CO detection required wherever CO-producing devices exist	Increased life safety; adds electrical and coordination scope to many projects
Sprinklers – Parking Garages	—	Required in large S-2 open garages	—	No change
Sprinkler Trade-offs	—	Sprinkler allowances were removed for exterior metal composite material panels	Allows increased building height for Group R-2 buildings with an NFPA 13R sprinkler system	Encourages residential density while maintaining life safety
Occupant Load – Business	150 square feet per person occupant load factor was adopted	—	—	No change
Assembly Occupant Risk Category	—	>2,500 occupants = Risk Category III	—	No change

Topic / Provision	2018 IBC	2021 IBC	2024 IBC	Practical Impact of 2024 IBC
Classroom Acoustics	—	Enhanced acoustics for small Group E classrooms	—	No change
Adult Changing Tables	—	—	Required in large assembly, mercantile, higher-ed, and rest stops	Improves accessibility and inclusivity; adds restroom space and plumbing coordination
Occupiable Roofs	—	—	Egress requirements triggered when roofs are used beyond maintenance	Prevents unsafe roof use; increases stair, guard, and egress planning
Wind Loads	Wind maps updated	—	Wind provisions updated; aggregate roof wind resistance added	Increases roof system scrutiny; affects detailing and product selection
Tornado Loads	—	—	Tornado load provisions introduced	New design consideration in tornado-prone regions; potential cost and structural impacts
Seismic Design	Updated soil coefficients	—	Earthquake load provisions updated	Improved alignment with current hazard data

Topic / Provision	2018 IBC	2021 IBC	2024 IBC	Practical Impact of 2024 IBC
Snow Loads	—	Updated to ASCE 7-16	Updated again	More accurate load determination; fewer conservative assumptions
Rain Loads	—	Secondary rain loads updated	Rain loads now include static, hydraulic, and ponding head	Reduces roof failure risk; impacts drainage design
Decks & Balconies	Live load increased to 1.5 times of the area served	—	—	No change
Parapets	—	Minimum height required for aggregate roofs	Fire-resistance continuity clarified	Improves fire separation and reduces design disputes
Roof Coverings	—	—	Updated underlayment requirements	Improves durability and weather resistance
Temporary Structures	—	—	Expanded and clarified provisions	Easier permitting and safer temporary installations
Trusses & Wood Framing	Special inspection for tall truss bracing	—	—	No change
Fasteners & Decking	Alternate fastener schedules added	—	—	No change

Topic / Provision	2018 IBC	2021 IBC	2024 IBC	Practical Impact of 2024 IBC
Wood Header/Girder Spans	Exterior spans reduced	—	—	No change
Mass Timber	—	New Types IV-A, IV-B, IV-C	—	No change
Metal Composite Materials	—	Exterior wall rules simplified	—	No change
Metal Building Systems	—	—	New special inspection requirements	Increased quality assurance; impacts project schedules and fees
Concrete – Standards	—	ACI 117 & ITG-7 added	Chapter 19 reorganized; GFR concrete added	Easier code navigation; enables innovative reinforcement systems
Masonry	—	—	Updated to TMS 402/602 (2022)	Aligns design with current industry standards
Accessibility Standard	—	ICC A117.1-2017 adopted	—	No change
Vapor Retarders	—	—	Updated for IRC/IECC consistency	Reduces moisture failures and coordination conflicts

Topic / Provision	2018 IBC	2021 IBC	2024 IBC	Practical Impact of 2024 IBC
Photovoltaic / Power Facilities	—	—	Risk category updates for PV and power generation	Improves resilience of critical energy infrastructure
Building Official Authority	—	—	Section 104 reorganized and modernized	More predictable approval of alternate materials and methods

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International Residential Code (IRC) – Complete Comparison with 2024 Practical Impact

2018 vs 2021 vs 2024 (Key Changes)

Topic / Provision	2018 IRC	2021 IRC	2024 IRC	Practical Impact
Seismic Design Maps	Seismic map was revised to no longer require the most restrictive earthquake design for all soil types, allowing reduced design requirements for certain soil conditions.	—	Snow, wind, and seismic maps updated	Designers must verify updated seismic criteria; potential cost savings or increases depending on site class
Townhouse / Two-Family Separation	Townhouse separation may use two separate fire-rated walls or a common wall	Rated separation for two-family dwellings is 1 hour regardless of lot line	Shared accessory rooms permitted in two-family dwellings; imaginary lot lines allowed for fire separation calculations	Greater flexibility in design while maintaining fire safety compliance

Topic / Provision	2018 IRC	2021 IRC	2024 IRC	Practical Impact
Emergency Escape & Rescue Openings	Not required in basement sleeping rooms if sprinklered and second egress provided	36-inch-wide clear path to public way required	—	Affects basement design, egress planning, and life safety features
Smoke Alarms	Exemption for interconnection in existing areas deleted	—	—	Increased retrofit requirements for existing dwellings
Structural Wood Design Tables	Revised girder/header tables using #2 Southern Pine	—	—	Broader material availability and alignment with industry practice
Stud Height / Wind Design	New tables for alternative stud heights and required full-height studs in high wind areas	Updated wind speed maps; component and cladding pressures revised	Snow and wind maps updated	More accurate wind design; may affect framing size and cost
Braced Wall Lines	—	Must be placed on physical walls or between multiple walls	—	Improves structural clarity and lateral load resistance
Storm Shelters	—	Engineered design required	–	Ensures occupant safety in high-wind regions

Topic / Provision	2018 IRC	2021 IRC	2024 IRC	Practical Impact
Habitable Attics / Lofts	—	Habitable attic limited to 1/2 area of story below and requires sprinklers	Sleeping loft requirements added; size limits for tiny homes	Impacts small home, attic conversions, and sprinkler requirements
Deck Design	—	Expanded deck design criteria (snow load, tributary area, post height, guard details); new guardrail requirements	—	Improves deck safety and consistency; may increase construction complexity
Footings	—	Minimum footing size tables revised	—	More accurate sizing reduces over- or under-design
Cripple Walls	—	Requirements apply only to exterior cripple walls	—	Reduces unnecessary interior construction requirements
Alternative Construction Methods	—	New appendices for monolithic adobe (COB) and 3D-printed construction	—	Allows innovation while maintaining code compliance

Topic / Provision	2018 IRC	2021 IRC	2024 IRC	Practical Impact
Ventilation	—	30% airflow reduction allowed for balanced systems	—	Energy savings and HVAC design flexibility
Commercial Cooking Appliances	—	Prohibited	—	Limits appliance selection in residential settings
DWV Testing	—	Head pressure increased to 10 feet; air vacuum testing permitted for plastic piping	Final DWV test may be visual	Simplifies inspections while maintaining system integrity
Dwelling Fire Sprinklers	—	Section P2904 expanded to align with NFPA 13D	—	Greater consistency with national sprinkler standards
Electrical – Service Disconnect	—	Outdoor emergency service disconnect is required, meaning the main electrical shutoff must be installed outside the home in a readily accessible location	—	Faster emergency response and improved safety

Topic / Provision	2018 IRC	2021 IRC	2024 IRC	Practical Impact
Electrical – Surge Protection	—	Surge-protective device required at service panel	—	Protects equipment from voltage surges
Kitchen Countertop Receptacles	—	Island and peninsular outlet count based on area	Kitchen islands no longer required to have receptacles	Simplifies kitchen layouts and reduces wiring complexity
GFCI Protection	—	Expanded to damp and wet locations	—	Increased electrical shock protection
Lighting Circuits	—	—	10-amp circuits allowed for some lighting and exhaust	Offers design flexibility and potential material savings
Energy Storage Systems	—	—	Many new ESS requirements added; battery protection in garages	Addresses growing use of home batteries and EV integration
Refrigerants	—	—	A2L refrigerants permitted	Enables use of newer, lower-GWP HVAC systems

Topic / Provision	2018 IRC	2021 IRC	2024 IRC	Practical Impact
Plumbing Materials	—	—	CPVC solvent cement joints allowed above and below ground	Increases installation flexibility
Air Exhaust Openings	—	—	Allowed near operable windows and doors	More flexible mechanical layouts
Accessibility – Care Facilities	—	—	Accessibility provisions clarified	Improves consistency in regulated care settings
Electric Vehicles	—	—	EVs added to feeder load calculations	Ensures electrical systems can handle EV charging loads

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International Fire Code (IFC) – Complete Comparison with 2024 Practical Impact

2018 vs 2021 vs 2024 (Key Changes)

Topic / Provision	2018 IFC	2021 IFC	2024 IFC	Practical Impact
Energy Storage Systems (ESS)	New chapter added addressing energy systems hazards	ESS requirements refined for new technologies, commissioning and decommissioning	Continued focus; references NFPA 855 and IFC 1207	Increased regulation and oversight of battery and ESS installations to reduce fire risk
Lithium-Ion Batteries	—	—	Specific provisions for research, storage, manufacturing, collection; active protection required	Improves safety for growing lithium-ion battery use and recycling
Powered Micromobility Devices	—	—	New section addressing charging hazards, listings, separation, detection	Reduces fire risk from e-bikes and similar devices

Topic / Provision	2018 IFC	2021 IFC	2024 IFC	Practical Impact
Carbon Monoxide Detection	—	—	CO alarms/detection required for all occupancies	Expands life-safety protection beyond residential and schools
A2L Refrigerants	—	—	A2L refrigerants regulated with hazard classification	Allows modern HVAC systems while addressing flammability risks
Distilled Spirits & Wine Storage	—	New chapter for storage in barrels and casks	Requirements further refined using FM Global data	Improves fire protection for beverage storage facilities
Outdoor Pallet Storage	New provisions addressing hazards	—	—	Reduces exterior fire exposure risks
Higher Education Laboratories	New hazard provisions added	—	—	Improves laboratory fire and life safety
Mobile Food Trucks	New provisions addressing fire hazards	—	—	Enhances safety for mobile cooking operations
Plant Processing & Extraction	New provisions added	—	—	Addresses fire/explosion hazards in processing facilities

Topic / Provision	2018 IFC	2021 IFC	2024 IFC	Practical Impact
Group E Sprinkler Thresholds	Expanded sprinkler protection based on fire area	—	—	Increases sprinkler coverage in educational occupancies
Group A Fire Alarm Systems	Manual fire alarm required at 300 occupants or >100 above/below exit discharge	—	—	Expands alarm requirements to improve occupant notification
Group R-4 Fire Alarm & Smoke Detection	Manual fire alarm and automatic smoke detection no longer required	—	—	Reduces unnecessary system requirements in R-4 occupancies
Mass Notification Systems	New requirements for college and university buildings	—	—	Improves emergency communication on campuses
Exit Discharge Illumination	Required for path to public way or safe dispersal area	—	—	Enhances visibility and egress safety
Group A-2 Existing Occupancies	Sprinklers required where OL ≥300 and alcohol is served	—	—	Improves fire safety in assembly occupancies

Topic / Provision	2018 IFC	2021 IFC	2024 IFC	Practical Impact
Outdoor Assembly / Trade Shows	New provisions for outdoor events and indoor trade shows	—	—	Addresses temporary event fire hazards
Construction Fire Safety	Fire watch requirements enhanced	Reorganized; site safety plan and safety director required	—	Strengthens fire prevention during construction
Fire Protection System Maintenance	Chapter 7 enhanced and reorganized	—	—	Improves ongoing reliability of life-safety systems
Decorative Materials	Applicability clarified in Chapter 8	—	—	Clearer enforcement of flame-spread controls
Integrated System Testing	Required for high-rise and smoke control systems	—	—	Ensures systems work together as designed
Gas Detection Systems	Requirements revised to reflect industry practice	—	—	Improves accuracy and effectiveness of gas detection
Additive Manufacturing (3D Printing)	—	New requirements for industrial and non-industrial uses	—	Addresses emerging fire hazards from 3D printing

Topic / Provision	2018 IFC	2021 IFC	2024 IFC	Practical Impact
Artificial Combustible Vegetation	—	Flame propagation verification required	—	Reduces rooftop and exterior fire spread risk
Emergency Responder Communication	—	Provisions revised for expanded systems	ERCES provisions updated; NFPA 1225 referenced	Improves responder communications during emergencies
Upholstered Furniture & Mattress Storage	—	Sprinkler rules updated; new exception for some self-storage	—	Clarifies protection needs while allowing limited exceptions
Open Parking Garages	—	Sprinklers required above certain fire area	—	Improves fire suppression in large garages
Valet Trash	—	—	Permitted only where approved; Appendix O added	Reduces corridor fire load and improves enforcement
Inflatable Amusement Devices	—	—	New Section 3107 added	Regulates temporary amusement fire risks
Temporary Heating & Cooking	—	—	New Chapter 41 consolidates requirements	Improves safety for temporary operations

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International Existing Building Code (IEBC) – Complete Comparison with 2024 Practical Impact

2018 vs 2021 vs 2024 (Key Changes)

Topic / Provision	2018 IEBC	2021 IEBC	2024 IEBC	Practical Impact
Code Organization & Chapter Renumbering	Section 410 Accessibility relocated to Section 305; Chapters 4, 5, 6, 13, and 14 reorganized and renumbered	—	Performance Method Chapter 13 renumbered for usability	Improves navigation and consistency across compliance methods
Live Load Requirements	Live load provisions from Chapters 4 and 8 combined into Chapter 3 for all compliance methods	—	—	Simplifies application of live load requirements across projects

Topic / Provision	2018 IEBC	2021 IEBC	2024 IEBC	Practical Impact
Snow Load – Structural Repairs	Structural components damaged by snow must be repaired using IBC new-building snow loads	Snow loads must be addressed during repair of substantial structural damage regardless of cause	—	Increases safety and consistency for repaired structures
Structural Loading Near Additions	New exception for loading of existing structural elements next to additions in IRC-designed buildings	—	—	Provides flexibility for IRC-based structures undergoing additions
Wall Anchors in Large Alterations	When work area exceeds half the building, wall anchors required at roof line of reinforced concrete and masonry walls	—	—	Enhances seismic and structural stability during major alterations
Change of Occupancy – Structural Loads	Live, snow, wind, and seismic loads must be checked using IBC-level forces	Seismic analysis required when Group S or U changes to another occupancy	Clarified risk category assignment when addition and existing building have different uses	Ensures buildings meet appropriate structural demands after occupancy changes

Topic / Provision	2018 IEBC	2021 IEBC	2024 IEBC	Practical Impact
Risk Category Increase	Higher risk category triggers seismic evaluation using IBC forces	—	Clarified assignment of risk categories in Prescriptive and Work Area methods	Improves consistency in structural design decisions
Access Through Adjacent Buildings	Access must be maintained when passing through or near other buildings	—	—	Maintains life safety during alterations and changes of occupancy
Storm Shelters – Trigger & Design	Additions to Group E occupancies with occupant load ≥50 trigger storm shelter requirement	Occupant capacity limited to classrooms, vocational rooms, and offices; travel distance deleted	Coordinated with IBC Section 423 and ICC 500; clarification of compliance	Clarifies when shelters are required and aligns with current national standards
Carbon Monoxide Detection	Added to Prescriptive Method, Level 2 Additions, and Additions for I-1, I-2, I-4, and R occupancies	—	—	Expands life-safety protections in altered and added spaces
Emergency Escape & Rescue Openings	Operational requirements added to Prescriptive Method and Alterations Level 1	—	—	Ensures continued functionality of egress features

Topic / Provision	2018 IEBC	2021 IEBC	2024 IEBC	Practical Impact
Single-Exit Provisions	Modified for Alteration Levels 2 and 3 to better align with IBC	—	—	Improves consistency between IEBC and IBC egress rules
Automatic Sprinkler – Water Supply	Level 2 requirement for sprinkler water at floor moved to Level 3; fire pump criterion deleted	Sprinkler requirements revised for Level 2 and 3 higher-hazard areas	New provision allowing removal of nonrequired existing sprinkler systems with criteria	Adds flexibility while maintaining fire protection where needed
Exterior Wall Coverings & Envelopes	—	Significant replacement must comply with IBC Chapters 14 and 26	High-rise combustible exterior wall coverings require full sprinkler protection (with exceptions)	Addresses exterior fire spread risks in existing buildings
Classroom Acoustics	—	Additions, Level 3 alterations, and occupancy changes in educational uses must meet ICC A117.1 Section 808	—	Improves learning environments and accessibility
Roof Equipment Loads	—	Equipment <400 lbs and <10% of roof dead load may be added without full analysis	—	Reduces engineering burden for minor rooftop installations

Topic / Provision	2018 IEBC	2021 IEBC	2024 IEBC	Practical Impact
Permit Exempt Furniture	—	Furniture such as cubicles and desks exempt from permit and not Level 2 alterations	—	Clarifies scope of regulated work
Occupiable Roofs	—	—	Occupiable roof provisions incorporated and coordinated with IBC	Enables safe use of roofs for occupants
Smoke Compartments	—	—	Group I-1 Condition 2, and ambulatory care facilities may require multiple smoke compartments	Enhances fire and smoke protection in care occupancies
Adult Changing Stations	—	—	Where required by IBC, at least one accessible family/assisted toilet room must include station	Improves accessibility and inclusivity
Construction Site Safety	—	—	Owner must implement site safety plan; site safety director required	Strengthens fire safety oversight during construction

Topic / Provision	2018 IEBC	2021 IEBC	2024 IEBC	Practical Impact
Temporary Emergency Uses	—	—	New Appendix E provides checklist and guidance for emergency use of existing buildings	Supports rapid, safe building use during emergencies

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International Plumbing Code (IPC) – Complete Comparison with 2024 Practical Impact

2018 vs 2021 vs 2024 (Key Changes)

Topic / Provision	2018 IPC	2021 IPC	2024 IPC	Practical Impact
Plumbing Fixture Counts	Updated table for minimum number of required plumbing fixtures	–	Plumbing fixture requirements significantly updated for various Group I occupancies	Affects fixture sizing and compliance for new and altered buildings
Single-User Toilet Facilities	Single-user toilet rooms not required to be labeled male/female	–	–	Simplifies restroom signage and supports inclusivity
Multi-User All-Gender Toilets	–	Multiple-user toilet facilities permitted to serve all genders	Exception added allowing special door locking mechanisms	Expands inclusive restroom design while maintaining safety

Topic / Provision	2018 IPC	2021 IPC	2024 IPC	Practical Impact
Solar Thermal Water Heating	Systems must conform to ICC 900/SRCC 300	–	–	Aligns solar water heating with nationally recognized standards
Well Systems	Must comply with NGWA-01 where local rules are lacking	–	–	Improves safety and consistency of private water supplies
Sewer Rehabilitation	–	Two new methods for relining/rehabilitation of existing sewers added	–	Provides alternatives to full sewer replacement, reducing cost and disruption
Rooftop Solar & Vent Terminals	–	Accommodations added for rooftop solar panels over vent terminals	–	Allows better coordination between plumbing and solar installations
Rainwater Harvesting	–	CSA B805/ICC 805 allowed as alternative design method	–	Encourages water conservation strategies
Accessibility Provisions	–	Plumbing provisions from ICC A117.1-2017 incorporated	–	Improves accessibility consistency within the IPC
Buried Piping Support	–	–	Support required for buried piping under buildings in expansive soils	Prevents settlement and pipe failure

Topic / Provision	2018 IPC	2021 IPC	2024 IPC	Practical Impact
Tracer Wire	–	–	Tracer wire required for buried plastic sewer piping	Improves future location and maintenance
DWV Testing	–	–	Vacuum testing option added for DWV piping	Provides flexible testing methods
Water Heater Pans	–	–	Plastic pans for gas-fired water heaters must meet ASTM E84 or UL 723	Improves fire safety of water heater installations
Showerheads	–	–	Flow limited to 2.0 gpm with high-efficiency performance	Reduces water use while maintaining performance
Plastic Piping Joints	–	–	Installation standards added for solvent-cemented plastic joints	Improves reliability and inspection consistency

Topic / Provision	2018 IPC	2021 IPC	2024 IPC	Practical Impact
Chemical Waste Piping	–	–	Standards added for chemical waste piping materials	Enhances safety in laboratories and industrial facilities

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International Mechanical Code (IMC) – Complete Comparison with 2024 Practical Impact

2018 vs 2021 vs 2024 (Key Changes)

Topic / Provision	2018 IMC	2021 IMC	2024 IMC	Practical Impact
Pollution Control Units	Added coverage for pollution control units	–	–	Brings specialized air-cleaning equipment under IMC regulation
Type I Kitchen Hood Clearances	New exception allowing listed Type I hoods with <18-inch clearance to combustibles	–	–	Allows manufacturer-listed reduced clearances, improving kitchen design flexibility
Phenolic (Non-Metallic) Ducts	Added coverage for phenolic duct systems	–	–	Permits newer corrosion-resistant duct materials

Topic / Provision	2018 IMC	2021 IMC	2024 IMC	Practical Impact
High-Volume Large-Diameter Fans (HVLD/HVLS)	New provisions added	–	–	Regulates large air-movement fans commonly used in warehouses and gyms
Duct Joint Sealing	Sealing requirements relaxed for snap- and button-lock ducts within thermal envelope	–	–	Reduces installation labor while maintaining energy performance
Clothes Dryer Exhaust Terminations	–	Must terminate at least 3 ft from openings into buildings	–	Reduces moisture and lint intrusion into buildings
Exterior Duct Insulation	–	Polyurethane spray-applied foam insulation must meet flame/smoke index limits	–	Improves fire safety of insulated ducts in concealed spaces
Fire & Smoke Dampers Access	–	Approved access required for inspection and maintenance	–	Improves life-safety system reliability
Refrigerants – Tables	–	Refrigerant tables updated	–	Keeps code aligned with newer refrigerant technologies
Condensate Discharge Identification	–	Condensate terminations must be identified; discharge restrictions added	–	Simplifies inspection and reduces drainage issues

Topic / Provision	2018 IMC	2021 IMC	2024 IMC	Practical Impact
Intake/Exhaust Terminations	–	Factory-built combination intake/exhaust terminations permitted	–	Allows compact venting systems and simplified installation
Whole-House Ventilation Rates	–	30% reduction allowed for balanced systems	–	Improves energy efficiency while maintaining indoor air quality
Nail Salon Exhaust	–	Continuous operation required for manicure/pedicure exhaust	–	Protects occupants from chemical exposure
Grease Duct Cleanouts	–	Horizontal cleanout required within 3 ft of horizontal discharge fan	–	Improves maintenance and fire safety
Ductless Range Hoods	–	–	Prohibition in Groups I-1 and I-2 removed	Allows broader use of ductless hoods in care occupancies
Refrigerants – Identification	–	–	Identification required for Group A2L and B2L refrigerants	Improves safety awareness for mildly flammable refrigerants
Refrigerants – Machinery Rooms	–	–	Requirements revised for A2L; B2L added	Expands regulated refrigerant types while improving safety controls

Topic / Provision	2018 IMC	2021 IMC	2024 IMC	Practical Impact
Refrigerants – Human Comfort Limits	–	–	Use limits changed for A1 and A2L refrigerants	Enables newer refrigerants with appropriate safeguards
Commercial Dryer Exhaust	–	–	UL 2158A added as required standard	Aligns dryer exhaust design with updated safety standards
Outpatient Healthcare Ventilation	–	–	Ventilation aligned with ASHRAE 62.1-2019	Improves air quality in healthcare environments
Roof Hatch Landings	–	–	New minimum landing required at roof hatches	Improves worker safety during roof access
Grease Duct Testing	–	–	New testing option added	Provides flexibility in verifying duct integrity
Steam Baths	–	–	New requirements added	Clarifies design and safety expectations
CO_2 Refrigeration Systems	–	–	New standard requirement added	Addresses growing use of carbon dioxide refrigerants

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International Fuel Gas Code (IFGC) – Complete Comparison with 2024 Practical Impact

2018 vs 2021 vs 2024 (Key Changes)

Topic / Provision	2018 IFGC	2021 IFGC	2024 IFGC	Practical Impact
Arc-Resistant CSST	New section recognizing arc-resistant CSST products	—	—	Improves safety of flexible gas piping systems and reduces lightning-related failures
Steel Pipe Materials	Schedule 10 steel pipe permitted; joints may be welded, brazed, flanged, or press-connected; threading prohibited	—	—	Expands material options and reduces installation weight and cost while maintaining safety
Appliance Shutoff Valve Access	Clarified that shutoff valves behind movable appliances are considered accessible	—	—	Reduces unnecessary relocation of valves during inspections

Topic / Provision	2018 IFGC	2021 IFGC	2024 IFGC	Practical Impact
Plastic Vent Pipe Labeling	Plastic vent pipe must be labeled as complying with manufacturer-required standards	—	—	Improves verification of proper vent materials and code compliance
Direct-Vent Terminal Clearances	Revised clearances between vent terminals and building openings	—	—	Reduces risk of combustion products entering buildings
Condensate Drain Identification	—	Concealed condensate piping must be marked as primary or secondary drain	—	Improves maintenance, inspection, and troubleshooting of condensate systems
Press-Connect Joints (High Pressure)	—	Press-connect joints permitted indoors for systems over 5 psig	—	Allows modern joining methods for higher-pressure gas systems
Commercial Cooking in Dwellings	—	Commercial cooking appliances prohibited within dwelling units	—	Reduces fire and gas hazards in residential occupancies
Combustion Air & Vent Draft Testing	—	—	New Appendix D Section D105.2 added; prior language deleted	Provides standardized testing procedures for natural draft and Category I appliances

Topic / Provision	2018 IFGC	2021 IFGC	2024 IFGC	Practical Impact
Engineered Wood Products	—	—	Sections 302.3.2–302.3.4 deleted; 302.3.1 revised	Simplifies requirements related to fuel gas systems near engineered wood
General Requirements – Section 304.1	—	—	Entirely new section; previous language deleted	Clarifies baseline installation requirements
Protection from Fumes & Gases	—	—	Section 304.12 rewritten as entirely new language	Improves occupant safety from combustion byproducts
Workmanship & Defects	—	—	Section 403.6 rewritten and expanded	Raises installation quality and inspection consistency
Venting Tables – Table 503.8	—	—	Revisions noted as errata applicable to 2021 and 2024 IFGS	Corrects and clarifies vent sizing and application

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International Energy Conservation Code (IECC) – Complete Comparison with 2024 Practical Impact

2018 vs 2021 vs 2024 (Key Changes)

Topic / Provision	2018 IECC	2021 IECC	2024 IECC	Practical Impact
Building Thermal Envelope	Reduced fenestration U-factors in Climate Zones 3–8; log homes permitted to comply with ICC 400	Minor clarification and reorganization of envelope provisions	Envelope backstop requirements added for performance and ERI compliance paths	Progressively tightens envelope performance and prevents excessive trade-offs
Fenestration (Windows & Skylights)	Lower maximum U-factors for windows and skylights; revised fenestration criteria	Editorial clarifications only	Further reductions to U-factor limits in multiple climate zones	Drives higher-performance glazing and reduced heating and cooling demand

Topic / Provision	2018 IECC	2021 IECC	2024 IECC	Practical Impact
Air Leakage Testing	ICC/RESNET 380 added as referenced standard for envelope air leakage testing	Clarified testing and documentation requirements	Updated air changes per hour at 50 Pascals (ACH50) limits in select climate zones; sampling allowed for multifamily buildings	Improves consistency, enforceability, and overall building airtightness
Duct Leakage & Distribution	Mechanical provisions reorganized; clarified duct sealing and testing requirements	Clarifications only	Expanded duct location trade-offs and flexible leakage targets	Reduces distribution losses while allowing design flexibility
Insulation Requirements	—	Ceiling insulation levels increased in Climate Zones 2 and 3 from R-38 to R-49, and in Climate Zones 4-8 from R-49 to R-60.	Ceiling, floor, slab, and basement insulation values reduced by climate zone. These insulation levels are consistent with the 2018 IECC. Table R402.1.3	Balances constructability with improved energy efficiency
Mechanical System Efficiency	Mechanical provisions reorganized by equipment type	Editorial clarification of efficiency references	Updated efficiency baselines and expanded performance modeling options	Encourages use of higher-efficiency HVAC systems
Service Water Heating	—	Minor clarification of pipe insulation applicability	Revised hot water pipe insulation thickness and coverage requirements	Reduces standby heat loss and water heating energy use

Topic / Provision	2018 IECC	2021 IECC	2024 IECC	Practical Impact
Lighting – Interior & Exterior	Revised interior and exterior lighting power budgets; clarified lighting controls	Clarifications only	Stricter exterior lighting allowances and refined interior control provisions	Reduces electrical consumption and supports high-efficacy lighting
Energy Rating Index (ERI) Path	ERI values increased slightly; ICC/RESNET 301 required	Clarified compliance process only	Revised ERI targets; renewable energy caps removed; averaging provisions added	Maintains flexible compliance while increasing overall performance
Performance-Based Compliance	—	Editorial clarification only	Significant revisions to simulated performance path targets and baselines	Enables innovative design solutions with clear performance limits
Commissioning & Inspections	Commissioning requirements clarified as mandatory regardless of compliance path	Clarifications only	Mandatory air barrier and insulation inspections added	Improves construction quality and enforcement consistency
Vestibules & Special Energy Uses	New limits on heated and cooled vestibules	Clarified applicability only	Expanded control requirements for outdoor heating, snowmelt, and deicing systems	Prevents unnecessary energy use in specialty applications

This document provides a side-by-side comparison of significant changes across recent editions of the adopted model codes.

The intent is to highlight how provisions have evolved between code cycles, identify areas of consistency or change, and summarize the practical impacts on design, construction, inspection, and enforcement.

This information is presented to support informed discussion, technical review, and decision-making by the Building Code Advisory and Appeals Board as part of its role in evaluating code updates and their implications for the jurisdiction.

International Swimming Pool and Spa Code (ISPSC) – Complete Comparison with 2024 Practical Impact

2018 vs 2021 vs 2024 (Key Changes)

Topic / Provision	2018 ISPSC	2021 ISPSC	2024 ISPSC	Practical Impact
Scope – Flotation Tank Systems	Clarified that flotation tank systems for sensory deprivation therapy are not within the scope of the ISPSC	–	–	Confirms that flotation therapy systems are regulated outside the ISPSC, preventing misapplication of pool and spa requirements
Hot Water Storage Tanks	Required to be listed and labeled to an applicable standard	–	–	Improves safety and consistency of hot water storage equipment
Solar Thermal Water Heating Systems	New sections added; installation requirements reference the IMC	–	–	Establishes clear requirements for solar thermal systems and coordination with the mechanical code

Topic / Provision	2018 ISPSC	2021 ISPSC	2024 ISPSC	Practical Impact
Code Format & Readability	–	–	Single-column text format and modernized font styles	Improves usability and readability for code users
Identification of Code Changes	–	–	QR codes replace margin sidebars and arrows	Simplifies tracking and verification of code changes
Tables and Notes Presentation	–	–	Shading added for table headers and notes	Speeds navigation and reduces interpretation errors
Content Organization	–	–	Tables and figures grouped immediately after parent sections	Improves logical flow and ease of reference
Code Authentication & Registration	–	–	Ability to validate authenticity and register code books with ICC	Enhances document integrity and user engagement

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National Electrical Code (NEC) – Complete Comparison with 2024 Practical Impact

2017 vs 2020 vs 2023 (Key Changes)

Topic / Provision	2017 NEC	2020 NEC	2023 NEC	Practical Impact
Renewable & Alternative Energy Growth	Major additions reflecting growth in renewable power technologies	Added/edited content addressing new energy systems	Expanded provisions for distributed energy, floating/offshore PV and wind	Designers and AHJs must address increasingly complex alternative energy systems
Photovoltaic (PV) Systems	New Article 691 for large-scale PV (≥5 MW)	Modernized calculation tables; updated installation practices	Expanded PV interconnection, floating and offshore PV systems	Enables large-scale and innovative PV installations with clearer safety rules
Wind Power Systems	Expanded coverage of privately owned wind systems	–	Expanded coverage including offshore installations	Broadens NEC applicability beyond traditional utility systems

Topic / Provision	2017 NEC	2020 NEC	2023 NEC	Practical Impact
Energy Storage Systems (ESS)	New Article 706 governing ESS safety, shutdown, labeling	ESS rules refined; EVs as backup power addressed	Commissioning, delineation between storage and emergency systems	Increased safety and clarity as battery systems become common
Stand-Alone Systems	New Article 710 covering off-grid systems	—	—	Supports off-grid and remote power installations
DC Microgrids	New Article 712 introduced	—	—	Enables decentralized DC power distribution
Labeling & Arc Flash Warnings	Expanded equipment labeling including arc-flash warnings	Improved disconnect identification for worker safety	Expanded equipment servicing and access provisions	Improves worker awareness and reduces electrical injury risk
Working Space & Clearances	Revised minimum space clearances for equipment	New rules for housekeeping pads and exit enclosure wiring	Flat/level standing surfaces and door clearance requirements	Affects equipment room layout and inspection compliance
Industrial Process Heating	New Article 425 added	—	—	Clarifies requirements for specialized industrial equipment
AFCI Protection	Revised AFCI provisions for dwellings	AFCI expanded to patient sleeping areas in care facilities	AFCI expanded to first responder and public safety sleeping areas	Enhances fire protection in sleeping occupancies

Topic / Provision	2017 NEC	2020 NEC	2023 NEC	Practical Impact
GFCI Protection	Revised GFCI provisions	Expanded marina/boatyard GFCI rules	Expanded GFCI for specific appliances	Improves shock protection in wet and high-risk areas
Service Disconnects	—	Exterior emergency disconnects required for 1- and 2-family dwellings	Continued requirements for dwelling emergency disconnects	Improves emergency responder and occupant safety
Surge Protection	—	Surge protection required for dwelling services	—	Protects sensitive electronics from transient voltages
Kitchen Island / Peninsular Receptacles	—	Required installation for island and peninsular countertops	Optional installation permitted	Simplifies kitchen layouts while maintaining safety
Power over Ethernet (PoE)	—	Installation practices adapted for PoE systems	—	Supports modern low-voltage and data-driven buildings
Electric Vehicles (EVs)	—	EV power export and load calculation rules added	Expanded EVSE load calculations	Enables safe EV charging and vehicle-to-building power
Article 310 Reorganization	—	Article 310 reorganized with user-friendly tables	—	Improves usability and reduces misinterpretation

Topic / Provision	2017 NEC	2020 NEC	2023 NEC	Practical Impact
Worker Safety & Egress	Clarified installation safeguards	Expanded rules for identifying power sources and egress	Expanded servicing, maintenance, and door clearance rules	Reduces hazards during maintenance and emergencies
Grounding & Bonding	—	Grounding rules for supply-side disconnects clarified	Expanded bonding for splash pads and special installations	Improves fault clearing and shock protection
Wiring Methods	—	New allowances for exposed ceiling and sidewall cables	—	Provides flexibility for modern construction methods
Special Occupancies & Equipment	—	Splash pads, hazardous locations, pools reinspection	Cannabis facilities, Class 4 circuits, germicidal lighting	Addresses emerging building uses and technologies
Reconditioned Equipment	—	—	Use and approval of reconditioned electrical equipment	May reduce costs while requiring stricter evaluation
NEC Organization & Definitions	—	—	Expanded Article 100; full document reorganization	Improves navigation, training, and enforcement consistency