

## Key Changes in the 2018 International Building Code (IBC)

- Accessory storage spaces of any size are now permitted to be classified as part of the occupancy to which they are accessory.
- New code sections have been introduced addressing medical gas systems and higher education laboratories.
- Use of fire walls to create separate buildings is now limited to only the determination of permissible types of construction based on allowable building area and height.
- Where an elevator hoistway door opens into a fire-resistance-rated corridor, the opening must be protected in a manner to address smoke intrusion into the hoistway.
- The occupant load factor for business uses has been revised to one occupant per 150 square feet.
- Live loads on decks and balconies increase the deck live load to one and one-half times the live load of the area served.
- The minimum lateral load that fire walls are required to resist is five pounds per square foot.
- Wind speed maps updated, including maps for the state of Hawaii. Terminology describing wind speeds has changed again with ultimate design wind speeds now called basic design wind speeds.
- Site soil coefficients now correspond to the newest generation of ground motion attenuation equations (seismic values).
- Five-foot tall wood trusses requiring permanent bracing must have a periodic special inspection to verify that the required bracing has been installed.
- New alternative fastener schedule for construction of mechanically laminated decking is added giving equivalent power-driven fasteners for the 20-penny nail.

## 2018 International Building Code (IBC) – Recommendation of adoption by the Idaho Building Code Board with following amendments:

- Correlated language with the residential code on personal care, custodial care and child care
- Clarification language to use commercial IBC code for medical care
- Less restrictive threshold of when a drinking fountain is required
- Correlated language on relocatable modular buildings referencing state statute provisions

*Attachment 1*  
*Docket 07-0301-1901*  
*Judy Egan*  
*2/4/2020*

## **Key Changes to the 2018 International Residential Code for One-and Two-Family Dwellings**

- An updated seismic map reflects the most conservative Seismic Design Category (SDC) based on any soil type and a new map reflects less conservative SDCs when Site Class A, B or D is applicable.
- The townhouse separation provisions now include options for using two separate fire-resistant-rated walls or a common wall.
- An emergency escape and rescue opening is no longer required in basement sleeping rooms where the dwelling has an automatic fire sprinkler system and the basement has a second means of egress or an emergency escape opening.
- The exemption for interconnection of smoke alarms in existing areas has been deleted.
- New girder/header tables have been revised to incorporate the use of #2 Southern Pine in lieu of #1 Southern Pine.
- New tables address alternative wood stud heights and the required number of full height studs in high wind areas.

## **Recommendation of adoption by the Idaho Building Code Board with the following amendments:**

- Correlated language with the IBC code on personal care, custodial care and child care
- More options to address protection of roof eaves close to property lines
- Elimination of requirement to protect floors of unfinished basements
- Exceptions from smoke detectors for exterior work or trade permits
- Replacement of footing section and Table to former edition of code

## Key Changes to the 2018 International Existing Building Code (IEBC)

- Section 303-(Organizational Change) Requirements for live loads from Chapters 4 and 8 have been combined and placed in Chapter 3 as they apply for all compliance methods.
- Section 303.3.2 – (Deletion) In order to clarify and simplify concrete evaluation and retrofit, ASCE 41 continues to be directly referenced. Appendix Chapter A5 Earthquake Hazard Reduction in Existing Concrete Buildings is deleted from the 2018 IEBC. In Section 303.3.2 to ASCE 41.
- Section 305- (Organizational Change) Section 410 Accessibility has been relocated to a new Section 305. Chapters 4, 5, 6, 13 and 14 have been relocated, resulting in a reorganization of the provisions and new chapter numbering.
- Section 405.2.1.1 – (Addition) Structural components damaged by snow events must be repaired assuming snow loads for new buildings from the IBC. Updated snow loads have been provided in the ASCE7-16 to include Idaho snow loads.
- Section 502.4 – (Modification) A new exception is added for loading of existing structural elements next to an addition in buildings designed using the IRC. Exemption provided for Buildings containing not more than 5 dwelling or sleeping units used solely for residential purpose where existing building and the addition together comply with Light framed construction methods.
- Section 502.7, 503.15, 804, 1105 - (Addition) Carbon monoxide provisions have been added in Prescriptive Method Additions, Alterations, Level 2 Additions, and Additions for Group I-1, I-2, I-4 and R occupancies.
- Section 503.7 – (Addition) Anchorage for concrete and reinforced masonry walls. When a work area includes more than half the building floor area in an alteration, wall anchors must be installed at the roof line along reinforced concrete and reinforced masonry walls. Seismic Design Category C, D, E or F.
- Section 503.10 – (Addition) Anchorage for unreinforced masonry partition in major alterations. A mitigation trigger has been added to the 2018 IEBC to address a common nonstructural falling hazard. When a work area includes more than half the building floor area in an alteration, unreinforced masonry partitions and nonstructural walls within the work area and adjacent to egress paths from the work area shall be anchored, removed, or altered to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. Seismic Design Category C, D, E or F.
- Section 505.4 and 701.4 – (Addition) Emergency Escape and Rescue Opening provisions related to being operational have been added to Prescriptive Compliance Method and Alterations Level 1.
- Section 506.4 – (Modification) Buildings undergoing a change of occupancy shall have live, snow, wind and seismic loads checked. Design loads are based on IBC-level forces. Exceptions: Structural elements whose demand-capacity ratio considering the change of occupancy is not more than 5% greater than the demand-capacity ratio based on previously approved live loads needed to comply with this section.
- Section 506.4.3 – (Modification) When a change of occupancy occurs placing a building in a higher risk category, the seismic loads on the building must be evaluated using IBC-level forces.

- Section 507.4 – (Addition) Historic buildings shall comply with the applicable structural provisions in this chapter. Exceptions: 1. The code official shall be authorized to accept existing floors and existing live loads and to approve operational controls that limit the live load on any floor. 2. Repair of substantial structural damage is not required to comply with section 405.2.3 and 4.5.2.4. Substantial structural damage shall be repaired in accordance with section 405.2.1.
- Section 805.3.1.1 – (Modification) Single exit buildings and spaces under Alteration Levels 2 and 3 have been modified to be more consistent with the IBC.
- Section 904.1.4 – (Modification) The Alterations Level 2 requirement that water for automatic fire sprinkler system be available at the floor of alteration without the need for a fire pump has been moved to Chapter 9 for Alterations Level 3 and the fire pump criterion was deleted.
- Section 906.7 – (Addition) The 2018 IEBC adds a mitigation trigger to address a common nonstructural falling hazard: unreinforced masonry partitions, parapet.
- **2018 International Building Code (IBC) – Recommendation of adoption by the Idaho Building Code Board with no amendments**

## Key Changes to the 2018 IECC

Significant Changes Between the Commercial Provisions of the 2015 IECC and 2018 IECC				
Topic	2015 IECC		2018 IECC	
<b>Scope (e.g. references and definitions)</b>				
ASHRAE Reference	References ASHRAE 90.1-2013		References ASHRAE 90.1-2016	
Language change	"Capable of"		"Capable of and configured to" or "Configured to". Note applies to HVAC and lighting control requirements.	
Language change	Vertical glazing		Sidelite	
Language change	Skylights		Toplite	
Climate Zones	N/A		Climate zones were updated per ASHRAE (doesn't affect Idaho)	
<b>Building Envelope</b>				
Slab-on-grade insulation	Requires slab edge insulation in Climate Zones 5 and 6 for heated slabs		Requires slab edge insulation and R-5 under slab insulation in Climate Zones 5 and 6 for heated slabs	
SHGC  PF < 0.2 0.2 ≤ PF < 0.5 ≥ 0.5	Climate Zone 5		Climate Zone 5	
	SEW	N	SEW	N
	0.40	0.53	0.38	0.51
	0.48	0.58	0.46	0.56
	0.64	0.64	0.61	0.61
Skylight area	Maximum 5% with automatic daylighting controls		Maximum 6% with automatic daylighting controls	
Maximum air leakage for fenestration assemblies Power-operated sliding doors and power operated folding doors	None		1.0 CFM	
<b>Mechanical Systems</b>				
Section reorganization	None		Reorganized Mechanical Chapter based on topics e.g. C403.1: General (Loads) C403.2: System Design C403.3: Equipment Efficiencies & Specs C403.4: HVAC Controls, etc.	
HVAC Equipment Efficiency Requirements	None		Updated a portion of the HVAC equipment efficiency tables based on updated ASHRAE 90.1-2016 equipment efficiency requirements	
Vestibule space conditioning	No requirement		Heating systems for vestibules required to shut off when outdoor air temperature is > 45°F	

		<p>Heating systems configured to limit heating to &lt; 60°F</p> <p>Cooling systems configured to limit cooling to &gt; 85°F</p>
Hydronic system part load controls	Systems ≥ 500,000 Btu/h heating must include part load controls	<p>Systems ≥ 300,000 Btu/h heating must include part load controls</p> <p>Systems ≥ 500,000 Btu/h heating must include part load controls</p>
Economizers serving dwelling units	Systems that serve <i>residential</i> spaces where the system capacity is less than five times the requirement listed in Table C403.3(1).	<p>Individual fan systems with cooling capacity greater than or equal to 270,000 Btu/h (79.1 kW) in buildings having a <i>Group R</i> occupancy.</p> <p>The total supply capacity of all fan cooling units not provided with economizers shall not exceed 20 percent of the total supply capacity of all fan cooling units in the building or 1,500,000 Btu/h (440 kW), whichever is greater.</p>
Automatic control of HVAC systems serving guest rooms	No requirements	<p>In Group R-1 buildings with &gt; 50 guestrooms, each guestroom will be provided with controls that:</p> <ul style="list-style-type: none"> <li>• Automatically raise cooling setpoint and lower heating setpoint by not less than 4°F from occupant setpoint within 30 minutes after occupants leave (vacant)</li> <li>• Automatically raise cooling setpoint to not lower than 80°F and lower heating setpoint to not higher than 60°F when guestroom is unrented and is unoccupied more than 30 minutes (unrented).</li> <li>• Automatically turn off ventilation and exhaust fans within 30 minutes of occupants leaving OR</li> <li>• Isolation devices provided to each guestroom capable of automatically shutting off supply of outdoor air to and exhaust air from guestroom</li> </ul>
Commissioning Report Checklist	None	Commissioning requirement checklist required

<b>Lighting Systems</b>				
Allowed Lighting Power Density	No Change		Approximately 10% reduction in ALPD from 2015 IECC LPD levels	
Additional Retail Light Power	500 Watts +		1,000 Watts +	
	Retail Type	LPD	Retail Type	LPD
	1	0.6	1	0.45
	2	0.6	2	0.45
	3	1.4	3	1.05
	4	2.5	4	1.87
Occupancy sensors required	Required spaces where lights are typically left on after the occupant leaves.		Adds breakrooms, enclosed offices and open plan offices	
Occupancy sensor controls for open office plans	No requirement		Requires open plan office spaces to control general lighting in zones no greater than 600 square feet. General lighting in each zone required to be reduced by at least 80% after occupant leaves. Daylighting controls can only activate light after occupant is in the space.	
Exterior Lighting Power Allowance	No Change		Overall reduction in lighting due to LED base lighting assumptions	
<b>Options Packages</b>				
Additional efficiency option packages	Included 6 options to select from		Adds two more options: Enhanced envelope performance <ul style="list-style-type: none"> <li>• Reduce UA by 15% from prescriptive requirements</li> </ul> Reduced air infiltration <ul style="list-style-type: none"> <li>• 0.30 cfm / ft<sup>2</sup></li> </ul>	

**2018 Residential and Commercial Energy Codes – Recommendation of adoption by the Idaho Building Code Board with the following amendments:**

- Air leakage for Idaho is 5 air changes per hour vs. 3 ACH for national code
- Blower door test required on 20% of homes built by a contractor (*this requirement is a reduction and has an implementation schedule of an additional 6 months after code adoption for soft implementation for education period for contractors*)
- Reduction of requirements in hot water pipe insulation
- Lighting requires a minimum of 75% of permanently installed fixtures must have high-efficacy lamps
- Energy Rating Index (ERI) (compliance alternative) required score is 68 or less in Climate Zones 5 & 6 (*relaxed to a figure currently being met in Idaho*)