



# Technical Memo

**Date:** April 1, 2021

**To:** File

**From:** Ardel Jala, Building Official

**Subject:** 2018 Seattle Construction Codes – Key Changes

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The Seattle Construction Codes consists of the building, residential, existing building, mechanical, fire, plumbing, energy, electrical, fuel gas, boiler, and elevator codes. The new codes incorporate updates to the national code along with Washington State and Seattle amendments. Key changes to the 2018 Seattle construction codes are highlighted below.

## **2018 Seattle Building Code**

### **Mass Timber**

Since July 2019, Seattle has allowed use of the WA State-adopted standards for Mass Timber. The 2018 SBC adopts Mass Timber standards that create three new construction types, Type IV-A, Type IV-B, Type IV-C, and maintains Type IV Heavy Timber (IV-HT).

### **Efficiency dwelling units**

The living room/habitable space requirement of an efficiency dwelling unit is revised to 190 square feet of floor area to align with the requirements of a dwelling unit's net floor area.

### **Chapter 29 Enforcement of Minimum Fixtures**

For 2018 SBC projects, SDCI will enforce Chapter 29 Plumbing Systems including minimum fixture count. Public Health – Seattle King County will continue to enforce the Seattle Plumbing code. Upcoming Ch 29 errata to the SBC will include the WA state changes per Table 2902.1, Section 2902.1.1.3 Urinals in gender neutral facilities and Section 2902.3 Exception #5 requiring separate facilities for drinking or dining when greater than 30 total occupants.

### **Gender-neutral toilet facilities**

WA State changes provide guidance on how these facilities are constructed, when they are provided and specify that there is no reduction in the number of fixtures required based on separate facility requirements, full height walls surround the toilet fixtures, individual compartments are securable, egress from the room cannot be locked, among others.

### **High Rise Shaft Pressurization**

Submittal and testing requirements for stairway and hoistway pressurization have been enhanced and clarified. A smoke control conference is required in addition to the high-rise pre-submittal conference. Special Inspection by a design professional is required to verify the entire system operates as designed.

### **Seismic Loads**

This code adopts the newest version of the structural design standard – ASCE 7-16. Seismic design provisions per the new standard incorporate recent research related to site amplification models

and soil-structure interaction effects. ASCE 7-16 adopts new seismic ground motion values including mapped acceleration parameters and site class coefficients. For softer soil sites, the new standard requires the design to incorporate site-specific ground motion hazard analysis. Exceptions exist where the site-specific analysis may be omitted; however, these exceptions together with other changes in the standard can increase the design base shears significantly.

**Tsunami Loads**

This new section requires construction of Risk Category III and IV buildings and structures located in the Tsunami Design Zones to include tsunami loads for their structural design.

**Elevator Code (Seattle Building Code Ch.30)**

The 2018 Seattle Building Code adopts and amends the newest version of the reference standard ASME A17.1/CSA B44-2019. The entire 2008 WAC 296-96 Part D covering retroactive requirements for existing installations has been added to SBC Chapter 30. Sump pump and drain requirements for elevators with firefighters' emergency operation are found in ASME A17.1. This code update adds a requirement for quarterly testing of Firefighters' Emergency Operation. New elevators must have an emergency elevator communication system that is fully accessible for the deaf, hard of hearing and speech impaired.

**2018 Seattle Residential Code****Townhouses**

The 2018 SRC requires automatic sprinkler systems in all new townhouse buildings (3 townhouse units or more). Seattle strikes the WA State exception only requiring sprinklers at more than 4 units.

**Habitable Attic**

A habitable attic is considered a story, with certain exceptions.

**Sleeping Loft**

Adopts standards for access, egress and ceiling height in sleeping lofts to allow residential dwelling units the option of smaller sleeping spaces.

**Tiny House Appendix Q**

Appendix Q defines a tiny house and provides for modified energy code testing criteria for these smaller spaces.

**2018 Seattle Existing Building Code****Minimal changes**

Text was reorganized to mirror National Code structure and unnecessary text was eliminated which will make it easier for code users. Revised sections to allow the use of reduced seismic forces for wall anchorage in unreinforced masonry walls in major alterations.

## **2020 Seattle Electrical Code**

### **Calculated Electric Load**

Modify Article 220.84 to prevent calculated excess service capacity when using advanced heat pump systems.

### **Electric Vehicle Charging Infrastructure**

Modifies Article 220.57 and 625. 27 to align EV charging infrastructure requirements with the Land Use Code.

## **2018 Seattle Mechanical Code**

### **Smoke filtration**

Air handlers and energy recovery ventilators serving occupiable spaces with a capacity greater than 500 cfm are required to have filter box that can accommodate a minimum MERV 13 filter. This will assist with maintaining the air quality in a building during a forest fire or other adverse event.

### **Sound attenuators in grease ducts**

Allow the of sound attenuators in grease ducts if they meet listing and labeling requirements. This will assist in reducing complaints about noisy restaurant systems.

## **2018 Seattle Plumbing Code**

### **Air admittance valve**

This change identifies the allowable locations and installation requirements for air admittance valves.

## **2020 Seattle Boiler Code**

This code update clarifies requirements and exemptions for installation permits and inspections to align with Chapter 70.79 RCW and Chapter 296-104 WAC. Section 6 clarifies requirements for pre-approvals, code compliance, notifications, approval, and documentation of repairs and alterations.

## **2018 Seattle Energy Code**

The items listed below comprise the most significant 2018 Seattle Energy Code amendments to the Washington State Energy Code. Each amendment is designed to reduce building energy use and carbon emissions, as required by state and City legislation.

These amendments apply to multifamily buildings taller than three stories and all commercial buildings (not to houses or low-rise multifamily), and improve the building insulation, space heating, water heating, lighting, and renewable energy.

The rules apply to new construction, as well as to the alteration or replacement of existing building components.

1. Intent. Revise the code's "intent" section to include *reduction of carbon emissions*, in addition to energy efficiency.

2. Insulation integrity. Recognize heat loss of *through-wall mechanical equipment, concrete balconies, and window frames* when calculating insulating value of walls.
3. Fenestration. Require *improved thermal properties* of fenestration (10% - 15% less heat loss).
4. TSPR (the HVAC Total System Performance Ratio). Add *multifamily and medical office buildings* to list of buildings required to comply with TSPR. (Washington code lists office, education, library, and retail).
5. Heating system type. Formalize existing code *restrictions on electric resistance and fossil fuel space heating*, extend to multifamily buildings, delay implementation until June 1, 2021. Many exceptions allowing small and special-purpose electric resistance heating.
6. HVAC controls. Add new control and efficiency provisions for ventilation and heat recovery. 60% energy recovery effectiveness, vs. 50% for Washington code.
7. Hot water circulation. Insulation, control, and efficiency improvements to hot water circulation.
8. Water heating system type. Restrict fossil fuel and electric resistance central water heating systems, typically in favor of *heat pump water heating*, in R-1 & R-2 buildings, delay implementation until January 2022. In spring 2021, City Council will be reviewing a code change proposal to extend this restriction to all occupancies with substantial water heating loads.
9. Lighting in open office areas. Provide LLC (luminaire-level lighting controls) or networked lighting control system for open office areas larger than 5,000 square feet.
10. Lighting power. Reduce interior LPAs (lighting power allowances) 10% below state code levels.
11. Future electrification of appliances. Provide electrical receptacles and circuits at dwelling unit gas-fired appliances, to accommodate future electric appliances.
12. Solar. Increase on-site solar photovoltaics from 0.07 W/sf of floor area to 0.25 W/sf, based on area of all floors.
13. Additional efficiency credits. Increase number of credits required from 6 to 8 credits
14. Target performance path (TPP) (rarely used). Set TPP targets as 12% above Washington state Building Performance Factor values, replacing the current list of target values.
15. Energy modeling & building envelope. Prohibit envelope heat loss more than 10% worse than allowed in the prescriptive code when using energy modeling for code compliance. (State code threshold allows 20% worse.)

### **Seattle Fire Code**

A summary of significant changes in the 2018 Seattle Fire Code can be found on the Seattle Fire Codes webpage. <https://www.seattle.gov/fire/business-services/fire-code-and-fire-safety-documents>