



STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

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TO: Mechanical, Ventilation and Energy Codes Committee Members and All Interested Parties

FROM: Energy Code – Commercial – Technical Advisory Group

SUBJECT: **2021 Washington State Energy Code, Commercial TAG Report**

The TAG has completed their review of the Integrated Draft for the 2021 Washington State Energy Code, Commercial provisions (WSEC-C). The Integrated Draft was developed by reviewing the changes in the 2021 International Energy Conservation Code (IECC), determining which changes are equivalent or more stringent than the current WSEC-C, and how they fit with existing state amendment language. The resulting draft is attached.

Several of the state requirements from the 2015 and 2018 WSEC-C were incorporated into the 2021 IECC. These include requirements for greenhouse structures in Section C402.1.1.3 (IECC Section C402.1.1.1) and receptacle control in Section C405.10, which now mirror IECC language. Several concepts already present in the WSEC-C were also incorporated into the 2021 IECC, but the TAG determined that the current WSEC language should be retained due to issues with stringency, clarity or compatibility with other requirements. These concepts include specifications for tapered insulation in roof/ceiling assemblies, door/HVAC system interlock controls, primary and secondary daylighting zones, energy metering, and a credit options package systems for Section C406.

Additionally, the TAG reviewed the changes to identify those changes deemed significant or that represented a positive or negative cost impact. One significant change from the IECC, the creation of a new climate zone in western Washington, was rejected by the TAG based on statutory language from RCW 19.27A. Other changes are highlighted below.

Significant Changes incorporated from the 2021 International Energy Conservation Code

Section C401.3	Similar to the residential provisions of the WSEC, a requirement was added to include a certificate listing the specifics of the R-values and U-factors of the various building envelope components and the results of air barrier testing.
Table 402.4	The U-factor for fixed windows was slightly decreased, and the orientation allowances in SHGC requirements was replaced by requirements for fixed or operable fenestration resulting in much lower SHGC requirements in some windows. This will have a cost impact.
Section C402.5.2	The requirements for air barrier testing was divided into two sections—one for dwelling and sleeping units accessed from the outdoors and another for all other buildings. For the former, units are required to be tested individually, although sampling is allowed for buildings with eight or more testing units.

Section C403.2.3	New requirements for fault detection and diagnostics for buildings with HVAC systems serving a gross conditioned floor area of 100,000 sq. ft. or larger. This will have a cost impact.
Section C403.3.2	The efficiency tables have been updated to the latest federal requirements and are extracted from, and in the same order as, ASHRAE 90.1-2019. This also adds several new tables not previously in the IECC, including heat recovery chillers.
Section C403.7.1	The scope of the requirements for demand control ventilation was expanded to include all single-zone systems providing ventilation. This will have a cost impact.
Section C403.8.3	The metric for fan efficiency is changed from fan efficiency grade (FEG) to fan energy index.
Section C405	There are many small changes throughout the lighting control provisions that could cause an increase in cost. Integration of various systems could result in a significant cost increase.
Section C405.2.1.6	A new requirement is added for occupant sensor controls in corridors. This will have a cost impact.
Section C405.2.7.3	Specific requirements for setback lighting in outdoor parking areas was added to the exterior lighting controls section.
Section C405.2.8	A new section is added for parking garage lighting controls. This section was integrated with existing requirements to eliminate any conflicts.
Section C405.3	A new section for lighting efficiency for plant growth and maintenance was added, along with a new reference standard.
Section C405.10	The IECC requirements for controlled receptacles includes requirements for a controlled receptacle to be within 12 inches of each uncontrolled receptacle. The previous WSEC requirement was 72 inches.
Section C409.1	The threshold for requiring energy metering was reduced from 50,000 square feet to 25,000 square feet. This will have a cost impact.
Section C410	The refrigeration section includes new efficiency tables for commercial refrigerators and freezers.

Attachment: [2021 WSEC Integrated Draft](#)