



August 24, 2020

Technical Model Code Review Committee  
Building Codes Division  
Oregon Department of Consumer and Business Services  
1535 Edgewater St. NW  
PO Box 14470  
Salem, OR 97309

Sent via Email To: [BCD.PTSPtech@oregon.gov](mailto:BCD.PTSPtech@oregon.gov)

**Re: American Chemistry Council Comments on Updates to the Oregon Residential Specialty Code (ORSC)**

Dear Members of the Oregon DCBS Technical Model Code Review Committee:

Thank you for the opportunity to comment on the proposed amendments to the Oregon Residential Specialty Code (ORSC), which seek to adopt the residential provisions of the 2018 International Energy Conservation Code ("IECC"). The American Chemistry Council strongly supports moving forward with Rulemaking to revise the residential energy efficiency provisions of the ORSC and adopt the 2018 IECC. We note however that the current draft proposed code eliminates several key efficiency improvements. We strongly urge the Committee to recommend, and the Building Codes Division to adopt, the full 2018 IECC without these weakening amendments.

### **ACC is an Important Stakeholder**

ACC represents more than 170 leading companies engaged in the business of chemistry. The chemical industry employs approximately 544,000 people in the U.S. and provides over 3,500 direct jobs in Oregon, generating approximately \$53 million in state and local taxes.

ACC has extensive knowledge regarding building code development. Through ACC's [Foam Sheathing Committee](#), [Center for the Polyurethanes Industry and Spray Foam Coalition](#), [North American Modern Building Alliance](#), and [Plastics Division](#), we partner in recent building science research, including projects with Home Innovation Research Labs and the U.S. Department of Energy. ACC representatives serve on the ICC, ASHRAE, ASTM, AAMA, and other code and standard setting bodies.

The chemical industry supplies many products and materials to the building and construction value chain, including those that deliver energy efficiency throughout the entire structure. ACC's members are also large users of energy, so the responsible use of energy is important to the industry's economic health and competitiveness. Energy efficiency is the lowest cost option for meeting energy demand. Energy efficient buildings create economic opportunities for businesses and industry by promoting new energy efficient technologies and reducing energy waste.



## ACC Urges Adoption of Air Tightness Requirements and Testing

ACC supports the adoption of the 2018 IECC as Oregon's residential energy code.

The IECC requires builders to achieve an air tightness of  $\leq 3.0$  ACH<sub>50</sub> in Climate Zones Marine 4 and 5 (i.e. the Climate Zones appropriate to Oregon.). The IECC also requires that homes be tested for air tightness. The current proposed revisions to the ORSC contains neither of these essential requirements.

There are many products and technologies available to help builders meet air-tightness requirements in a cost-effective manner. More importantly, air-tightness requirements do not require use of any particular product or approach—a variety of approaches can be used including sealing tapes and whole house wraps, board products with gap fillers and sealants as well as spray foams. This gives builders choices and options for meeting the requirements.

Although Table N1104.8 provides useful details that will promote building envelope tightness, it is no substitute for an objective blower door test. Mandatory testing provides builders with valuable feedback *before* airtightness issues become call-back problems. Given Oregon builders' likely familiarity with good air sealing practices, we do not expect that it will take much additional work to achieve these low air leakage numbers; our experience in other states is that builders rapidly adapt based on the results of testing. California, Montana, Washington, and most recently, Idaho, along with the majority of the rest of the Country have successfully adopted and implemented mandatory air-tightness requirements including testing.

An August 2020 study<sup>1</sup> of new homes in Oregon by the U.S. Department of Energy (DOE) found that current practices in Oregon result in homes being built with an air tightness slightly less than 5 ACH<sub>50</sub> on average (i.e. 50-60% leakier than the 2018 IECC) and some houses were as high as 8 ACH. That same study indicated that homes in Oregon typically are otherwise compliant with the requirements of the code, suggesting that improvements will be successfully implemented by the builders in the state.

The study's findings with respect to air tightness are significant not only because of the energy lost to heat and cool incoming air, but also because air leakage:

- degrades the performance of air permeable insulation
- increases the risk of concealed condensation problems
- adversely affects building durability, and
- can increase occupant discomfort

By not testing for air tightness, Oregon may already be creating unhealthy buildings for its citizens. A number of houses in the DOE study were found to have air tightness levels below 3.0 ACH<sub>50</sub>, with some as low as 1.7 ACH<sub>50</sub>. To meet accepted guidelines for air quality, such houses would require mechanical ventilation, which the 2018 IECC would require.

Without mandatory air tightness testing and a mechanical ventilation requirement, there is no way of knowing what homes may be putting occupants at risk nor is there assurance of remediation.

---

<sup>1</sup> Oregon Residential Energy Code Field Study, August 2020,

[https://www.energycodes.gov/sites/default/files/documents/Oregon\\_Residential\\_Field\\_Study\\_rev1.pdf](https://www.energycodes.gov/sites/default/files/documents/Oregon_Residential_Field_Study_rev1.pdf)



Risks include asthma and other respiratory conditions<sup>2</sup> and other health effects of exposure to many household pollutants.<sup>3</sup>

The 2018 IECC also serves an important health-related function in the design and construction of a home such as moisture management (rot, mold, and mildew).

## **A Stronger Energy Code is Essential to the Health and Safety of Oregon's Citizens**

There is a substantial financial toll monthly energy bills place on those with low or fixed income. By adopting the 2018 IECC, including the nationally vetted and widely adopted air tightness requirements, Oregon will help homeowners reduce monthly bills for electricity, natural gas, oil, and other energy sources. Energy savings resulting from the up-front investment in energy efficient technologies benefits the homebuyer monetarily from the moment they move into their home. Homeowners promptly recoup their investment as the realized savings on their energy bills quickly offsets any additional construction costs related to the installation of energy efficient products.

Even prior to the COVID-19 crisis, another DOE survey<sup>4</sup> showed that:

- About one in five households reported reducing or forgoing basic necessities like food and medicine to pay an energy bill and 14% reported receiving a disconnection notice for energy service.
- Nearly one-third of U.S. households (31%) reported facing a challenge in paying energy bills or sustaining adequate heating and cooling in their home in 2015.
- 11% of households surveyed reported keeping their home at an unhealthy or unsafe temperature.

Thank you for the opportunity to offer our comments. For any questions, please do not hesitate to contact me at (916) 448-2581 or via email at [Lindsay\\_Stovall@americanchemistry.com](mailto:Lindsay_Stovall@americanchemistry.com). ACC, its member companies and our employees thank you in advance for considering our views.

Sincerely,



Lindsay Stovall

Director, State and Regulatory Affairs

[Lindsay\\_Stovall@americanchemistry.com](mailto:Lindsay_Stovall@americanchemistry.com)

American Chemistry Council

---

<sup>2</sup> Lawrence Berkley National Laboratory, "Ventilation and Health", <https://homes.lbl.gov/ventilate-right/ventilation-and-health>

<sup>3</sup> <https://www.epa.gov/indoor-air-quality-iaq>

<sup>4</sup> October 31, 2017 analysis of DOE EIA's Residential Energy Consumption Survey (RECS)

[https://www.eia.gov/consumption/residential/reports/2015/energybills/?src=%E2%80%B9%20Consumption%20%20%20%20Residential%20Energy%20Consumption%20Survey%20\(RECS\)-f1](https://www.eia.gov/consumption/residential/reports/2015/energybills/?src=%E2%80%B9%20Consumption%20%20%20%20Residential%20Energy%20Consumption%20Survey%20(RECS)-f1)

