

Whole Building Air Leakage Q&A

Q: What is Whole Building Air Leakage (WBAL)?

▶ **A:** Whole Building Air Leakage is a measured property of a building envelope that is related to the energy efficiency of the building.

Q: What is a “building envelope”?

▶ **A:** The exterior shell; anything exposed to the elements, i.e., the walls and the ceiling. In this case, the envelope includes the floor.

Q: The floor?

▶ **A:** Yes, the floor area is included in the WBAL calculation.

Q: Where have I heard about WBAL before?

▶ **A:** You may have seen it mentioned in the Director’s Corner section on page 66 of the fall 2021 edition of Door + Access Systems Newsmagazine.

Q: Why should I care about WBAL?

▶ **A:** WBAL is a recent addition to building codes, and manufacturer products can have an impact on the results. WBAL is relevant to all commercial, exterior doors.

Q: What building codes were changed?

▶ **A:** Most importantly, the International Energy Conservation Code. The Washington State Energy Code has included WBAL for a while now.

Q: How does this all affect doors?

▶ **A:** Any door mounted to the exterior of a building will let at least some air pass through and may thus affect the results of the test.



Dave Monsour,
DASMA Technical Director

Q: How are WBAL tests conducted?

▶ **A:** Interior doors are opened, and exterior doors and windows are closed but not sealed. The building is then pressurized, and air flow rates are measured. The test may be repeated with the building depressurized. See ASTM E779 and E3158 for details.

Q: Is the performance of doors under WBAL specifically regulated in the codes?

▶ **A:** No, the performance of doors is not measured in WBAL. Doors are affected only indirectly.

The component requirements for doors — 0.40 cfm/ft² sectional, 1.00 cfm/ft² rolling, and 1.30 cfm/ft² high-speed — are not expected to change in the near future.

Q: What is important for door manufacturers to know about WBAL?

▶ **A:** There are four key things:

1. WBAL is part of a trend focusing on air leakage as a way to assess the energy performance of buildings.
2. The code-permitted leakage amounts are getting smaller as part of a societal push to save energy.
3. The tests generally require pressurization of the building (exfiltration) in addition to, or instead of, depressurization (infiltration).
4. Over time, all of the above will affect the world of doors.

Contact us

If you have questions about this topic or suggestions for future content, please email Dave Monsour at dasma@dasma.com. ■

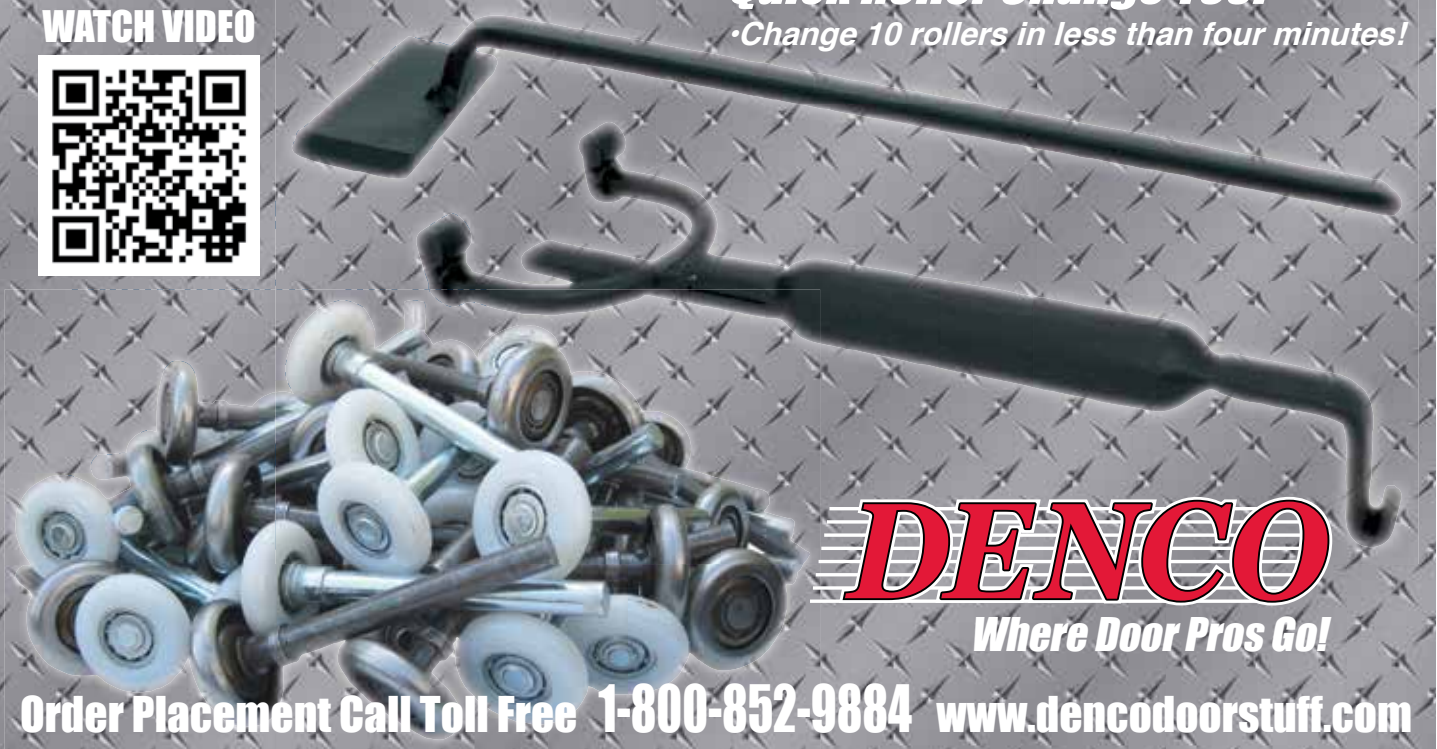
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