

Oregon Department of Energy Premium Efficiency Duct System Standards

Performance Checked Duct Sealing Eligibility and Air-tightness Requirements, October 30, 2003

New Construction. Performance checked duct systems in new homes shall meet the following standards.

- A new home is defined as a home occupied by its original owner for less than one year.
- Based on the approved protocol for testing Total Duct Leakage, total duct leakage in new construction shall not exceed 0.06 cfm50 x floor area served by the system in square feet, or 75 cfm50, whichever is greater; or
- Based on the approved protocol for testing Duct Leakage to Outside, duct leakage to outside shall not exceed 0.06 cfm50 x floor area served by the system in square feet, or 75 cfm50, whichever is greater.
- Systems shall be continuously ducted. Building cavities shall not be used to transport conditioned air to or from the air handler.
- Each part of the system shall be mechanically attached and air sealed, to adjacent components.
- Return air ducts or passive pressure relief grilles shall be installed in each zone and on each level. Bathrooms, kitchens and rooms 75 square feet or less are exempt.
- Duct systems shall be designed, sized and installed using recommended industry standards so that calculated heating and/or cooling loads are delivered to each zone.
- Based on the approved protocol for testing Forced Air System Effects, forced air system operation shall not de-pressurize any zone served by the system or containing the system's air handling equipment by more than 3 Pascals with reference to Outside over ambient conditions. Manufactured homes tested as sections at the factory are exempt.

New Duct System in an Existing Home. Performance checked new duct systems in existing homes shall meet the following standards.

- Based on the approved protocol for testing Duct Leakage to Outside, duct leakage to outside shall not exceed 0.10 cfm50 x the floor area served by the system in square feet; or
- Based on the approved protocol for testing Total Duct Leakage, total duct leakage shall not exceed 0.10 cfm50 x the floor area served by the system in square feet.
- Based on the approved protocol for testing Forced Air System Effects, forced air system operation shall not depressurize any zone served by the system or containing the system's air handling equipment by more than 3 Pascals with reference to Outside over ambient conditions.

Duct Repair/Duct Sealing. To certify existing ducts in existing homes as performance checked ducts, the following standards shall be met.

- Eligibility. Based on the approved protocol for testing Duct Leakage to Outside, before sealing, duct leakage to outside shall equal or exceed the lesser of 250 cfm50 or 0.15 cfm50 x the floor area served by the system in square feet. Exception: a system with return ducting in an inaccessible building cavity, or using an inaccessible building cavity as a return air duct, may be tested for duct leakage to outside using the Split System Test provision described in the approved protocol for testing Duct Leakage to Outside that excludes return ductwork from the leakage test.
- After repairs, based on the approved protocol for testing Duct Leakage to Outside, duct leakage to outside shall be at least 50 percent less than it was before sealing measures were installed. Exception: a system with return ducting in an inaccessible building cavity, or using an inaccessible building cavity as a return air duct, may be qualified using the split system test that excludes return ductwork from the leakage test if a split system test was used to qualify the system for sealing.
- After repairs, based on the approved protocol for testing Forced Air System Effects, forced air system operation shall not de-pressurize any zone served by the system or containing the system's air handling equipment by more than 3 Pascals with reference to Outside over ambient conditions.