



PROPOSED RULE MAKING

CR-102 (June 2004)

(Implements RCW 34.05.320)

Do **NOT** use for expedited rule making

Agency: State Building Code Council

- ☒ Preproposal Statement of Inquiry was filed as WSR 10-09-070 ; or
☐ Expedited Rule Making--Proposed notice was filed as WSR _____; or
☐ Proposal is exempt under RCW 34.05.310(4).

- ☒ Original Notice
☐ Supplemental Notice to WSR _____
☐ Continuance of WSR _____

Title of rule and other identifying information: (Describe Subject)

Amending WAC 51-11-0101, Washington State Energy Code requirements for duct testing in existing dwellings.

Hearing location(s):Spokane City Council Chambers
W 808 Spokane Falls Blvd.
Spokane, WAShoreline City Hall
17500 Midvale Avenue N
Shoreline, WADate: September 9, 2011
Time: 10:00 a.m.Date: October 14, 2011
Time: 10:00 a.m.Date of intended adoption: November 18, 2011
(Note: This is **NOT** the effective date)**Submit written comments to:**

Name: Kristyn Clayton, Council Chair

Address: Post Office Box 41011
Olympia WA 98504-1011e-mail sbcc@ga.wa.govfax (360) 586-0493 by (date) October 14, 2011**Assistance for persons with disabilities:** ContactPeggy Bryden by September 6, 2011TTY (360) 753-7427 or (360) 725-2966**Purpose of the proposal and its anticipated effects, including any changes in existing rules:**

The State Building Code Council is considering permanent language to supersede the emergency rule adopted under WSR 11-10-039 and 11-01-084, and also found as a part of 10-13-114 and 10-22-055. The permanent language under consideration is the same as that of WSR 11-10-039 and 11-01-084 and eliminates the requirement in Section 101.3.2.6 for sealing of heating ducts when a system is repaired or replaced.

Reasons supporting proposal: RCW 19.27A.025 and RCW 19.27A.045**Statutory authority for adoption:** RCW 19.27A.025, 19.27A.045**Statute being implemented:** RCW 19.27, 19.27A and 34.05**Is rule necessary because of a:**

Federal Law? ☐ Yes ☒ No
Federal Court Decision? ☐ Yes ☒ No
State Court Decision? ☐ Yes ☒ No
If yes, CITATION:

DATE

June 17, 2011

NAME (type or print)

Kristyn Clayton

SIGNATURE**TITLE**

Council Chair

CODE REVISER USE ONLYOFFICE OF THE CODE REVISER
STATE OF WASHINGTON
FILED**DATE: August 01, 2011****TIME: 4:34 PM****WSR 11-16-082**

(COMPLETE REVERSE SIDE)

Agency comments or recommendations, if any, as to statutory language, implementation, enforcement, and fiscal matters:

The Council is seeking comments on the issue proposed in the attached rule.

Name of proponent: (person or organization) Washington State Building Code Council

☐ Private
☐ Public
☒ Governmental

Name of agency personnel responsible for:

Name	Office Location	Phone
Drafting..... Krista Braaksma	Post Office Box 41011, Olympia WA 98504-1011	(360) 902-7290
Implementation.... Krista Braaksma	Post Office Box 41011, Olympia WA 98504-1011	(360) 902-7290
Enforcement..... Local Jurisdictions		()

Has a small business economic impact statement been prepared under chapter 19.85 RCW?

☒ Yes. Attach copy of small business economic impact statement.

A copy of the statement may be obtained by contacting:

Name: Krista Braaksma
Address: PO Box 41011
Olympia, WA 98504-1011
phone (360) 902-7290
fax (360) 586-0493
e-mail sbcc@ga.wa.gov

☐ No. Explain why no statement was prepared.

Is a cost-benefit analysis required under RCW 34.05.328?

☐ Yes A preliminary cost-benefit analysis may be obtained by contacting:

Name:
Address:

phone () _____
fax () _____
e-mail _____

☒ No: Please explain: A cost-benefit analysis is not required under RCW 34.05.328. The State Building Code Council is not a listed agency under RCW 34.05.328 (5)(a)(i).

Small Business Economic Impact Statement Residential Heating Duct Testing

Prepared by Washington State Building Code Council / Department of General Administration

Executive Summary

Impact on small business

Permanent rulemaking regarding requirements for duct testing when existing residential furnaces are replaced or repaired will result in some cost outlay for small businesses, which will be offset by the additional revenue provided through the required testing. A number of these businesses will be purchasing, or already have purchased, the necessary equipment in order to comply with the requirements for duct testing for new residential construction. Instruction on the requirements and testing methodology is being provided free of cost by Washington State University's Extension Energy Program.

While this proposed rule may pose a financial impact on small business to purchase the equipment, the cost for the equipment is offset by the additional revenue coming in from the testing itself, resulting in an overall neutral to positive impact. This impact is also a mitigated impact over the previously adopted rule, which required both testing and sealing of ducts. At the same time, the proposed rule provides a benefit to homeowners, who will ultimately bear the majority of the cost, in education and a potential for significant energy savings.

The proposed rule is anticipated to be job neutral. There are jobs anticipated to be gained for testing personnel, these gains would most likely be more closely associated with the testing requirements for new construction, which would be the driving factor. There are also potential job gains in any duct sealing work generated by the testing results. There has also been testimony provided that homeowners may elect to not replace or repair existing heating equipment, resulting in a loss of business for the installer.

Section I: Introduction/Compliance with the Rules

Background

The proposed rule modifies requirements in the 2009 Washington State Energy Code (WAC 51-11). The rule as originally adopted required that when a heating system was altered or replaced the duct systems attached to the equipment be tested for leaks and sealed. Prior to being implemented, businesses impacted by this rule petitioned the Council to rescind or modify these requirements. HVAC installers testified that they were unable to provide accurate estimates to customers seeking to replace their furnaces. While the cost for the furnace, the labor to install the furnace, and the duct testing were all known costs, the costs for sealing of the duct system could not be estimated until the ducts were tested and examined.

The Council established an emergency rule to help mitigate costs for replacement furnaces by requiring that the existing ducts be tested but not sealed. The sealing could be performed at the discretion of the homeowner. This allowed the testing, which has an easily estimated cost, to be performed while the sealing, where the costs could vary greatly based on the length of installed ductwork and accessibility of the ducts, could be

treated as a separate job. This emergency rule has been in place since the 2009 Washington State Energy Code was implemented on January 1, 2011.

Who is required to comply with the Rules?

When an existing residential furnace is replaced or repaired, the duct system for that piece of equipment must be tested for leakage. This is already a requirement for new construction. HVAC installers who already own the equipment can perform the test themselves or they can contract with a secondary firm to provide the service. Some houses are exempt from these requirements. If a house has any of the following, the ducts do not have to be tested:

- All of the ductwork is contained inside your house or less than 40 linear feet is outside of the conditioned space.
- The ducts have been previously tested and sealed.
- The ducts contain asbestos.

Section II: Compliance Costs for Washington Businesses Assumptions:

Since the testing is required to be performed when a furnace is being replaced or repaired, these costs would be passed on to the homeowner along with the cost of the furnace rather than fall to the installer/business owner. While installers may need to purchase duct testing equipment and train personnel to perform the test, they could contract the testing out to a third party. The initial cost of the equipment is approximately \$1,900¹. Training is currently provided by WSU at no cost. Testimony provided by the Washington HVAC Association reported that their members do not see a hardship in purchasing equipment; most have already made the investment in the equipment to comply with the requirements for new construction and feel this will have little impact. The average price being charged by installers to perform the testing is \$200.

Leaky duct systems typically contribute to 20-40² percent of a home's heating and cooling costs. Duct sealing can increase a heating and/or cooling system's efficiency to a greater degree than upgrading to a high-efficiency furnace and with less of an investment. Estimated average energy savings are 1200 kilowatt hours per year in Climate Zone 1 and 2029 kilowatt hours in Climate Zone 2². The percent saved is about 14-28³ percent of total space heating energy use.

Average Testing Cost:

Industry experts estimate the cost for the testing at an average of \$200 per system. The homeowner can then decide if they want to take the additional step of sealing existing ductwork to increase the energy performance of the system.

Many local utilities provide rebates when the testing is done in conjunction with duct sealing. Specific information on available rebates was provided by the Energy Policy Office of the Department of Commerce. That data can be found in Appendix 1.

Impact on sales or revenue

There may be a negative impact on the sales and installation of replacement furnaces. Some homeowners may choose to install a cheaper model to mitigate the increased installation costs associated with testing or elect to not replace the furnace.

Section III: Analysis of Proportionate Impact on Small Businesses

Small businesses affected by the proposed rule are shown in Table One.

TABLE ONE: Small Businesses Impacted By Proposed Rule				
Type of business	NAICS CODE	# IN STATE (50 Employees or less)	# IN STATE (More than 50 Employees)	ANTICIPATED IMPACTS
Residential Remodelers	236118	1,854	52	Neutral to Positive – costs will be incurred for purchase of testing equipment or contract negotiations but will be offset by fees for required duct testing
Plumbing, Heating, and Air-Conditioning Contractors	238220	2,006	2	Neutral to Positive – costs will be incurred for purchase of testing equipment or contract negotiations but will be offset by fees for required duct testing
Other Building Equipment Contractors	238290	190	6	Positive – there may be a minor positive impact on the duct insulation industry if the homeowner decides to seal the ducts in response to test results. It is anticipated that this will also be the category for independent testers who will gain jobs through contracts with installers and remodelers, as noted above.
Heating and Air-conditioning Equipment and Supplies, Wholesale	423730	41	3	Neutral – the number of wholesale units sold is not expected to increase or decrease due to the proposed rule

The impact on small businesses compared to the largest businesses in the state will not be disproportionate.

Permanent rulemaking regarding requirements for duct testing when existing residential furnaces are replaced or repaired will result in some cost outlay for all businesses. However, a number of these businesses will be purchasing, or already have purchased, the necessary equipment in order to comply with the requirements for duct testing for new residential construction. In addition, the additional revenue provided through the required testing will further offset this outlay. There are also potential job and revenue gains in any duct sealing work the homeowner elects to move forward with based on the test results.

Instruction on the requirements and testing methodology is being provided free of cost by Washington State University's Extension Energy Program.

While this proposed rule does pose a financial impact on small business, it is a mitigated impact over the previously adopted rule requiring both testing and sealing of ducts. It is also mitigated by the additional \$200 fee for testing associated with the installation of each furnace or heating system.

Section IV: Small Business Involvement and Impact Reduction Efforts ***Actions Taken to Reduce the Impact of the Rule on Small Businesses***

The proposed rules are written in response to public comment to mitigate the effects of the required testing and sealing in the previously adopted rule and its unintended consequences during this economic downturn. The Council solicited testimony and worked with industry and trade associations to draft a proposed rule that is acceptable to the industry while also allows for the opportunity to reduce residential energy consumption.

Involvement of Small Business in the Development of the Proposed Rules

The Council held a number of public hearings and heard from a variety of industry and trade representatives at meetings across the state, including the following individuals:

- Washington HVAC Contractions – NAICS Code 238220
 - Larry Andrews, Andrews Mechanical
 - Jeff Demillia, Olsen Energy Source
 - Mike Frickberg, Washington HVAC Association
 - Jeff Holgate, Washington Energy Services
 - James King, Washington HVAC Association
 - Dan Schmause, Air Conditioning Contractors Association
 - Craig Williamson, MM Comfort Systems
- Washington Residential Remodelers – NAICS Code 236118
 - Adam Gloss, BelRed Energy Solutions
 - Garrett Huffman, Master Builders Association of King and Snohomish County
 - Derek Philips, BelRed Energy Solutions

In addition, the Council's Energy Code Technical Advisory Group (TAG) reviewed the current Emergency Rule, the language adopted in the 2009 Washington State Energy Code, and proposed language submitted from one of the industry stakeholders noted above. The members of that TAG represent stakeholders from the construction industry,

local government and the enforcement community. These members recommended the Council retain the current Emergency Rule as permanently adopted language.

Section V: Number of affected businesses in Washington:

- Residential Remodelers 2,008
(NAICS Code 236118)
- Plumbing, Heating, and Air-Conditioning 1,906
Contractors (NAICS Code 238220)
- Other Building Equipment Contractors 196
(NAICS Code 238290)
- Heating and Air-conditioning Equipment and 44
Supplies, Wholesale (NAICS Code 423730)

Section VI: Jobs created or lost as a result of these rules:

This proposed rule is anticipated to be job neutral, i.e., they will not result in any job gains or losses.

There are jobs anticipated to be gained for testing personnel, these gains would most likely be more closely associated with the testing requirements for new construction, which would be the driving factor.

There may be some jobs lost if homeowners are unable to finance the additional costs associated with the testing when replacing or repairing an existing furnace.

-
- ¹ See report from Chuck Murray, Dept. of Commerce Energy Policy, on Existing Home Duct Sealing Cost / Savings, dated May 26, 2011. Report is available appended to <https://fortress.wa.gov/ga/apps/sbcc/File.ashx?cid=1406>
 - ² Northwest Power and Conservation Council, Regional Technical Forum (RTF) Residential: Heating/Cooling - PTCS Duct Sealing SF
<http://www.nwcouncil.org/energy/rtf/measures/measure.asp?id=138>
 - ³ Bob Davis, Dave Baylon, others, Duct Sealing Pilot Project: Program Results For Puget Sound Energy, Ecotope, 1999

AMENDATORY SECTION (Amending WSR 10-03-115, 10-13-113 and 10-22-056, filed 1/20/10, 6/21/10 and 10/28/10, effective 1/1/11)

WAC 51-11-0101 Section 101--Scope and general requirements.

101.3.2.6 Mechanical Systems: Those parts of systems which are altered or replaced shall comply with Section 503 of this Code. When a space-conditioning system is altered by the installation or replacement of space-conditioning equipment (including replacement of the air handler, outdoor condensing unit of a split system air conditioner or heat pump, cooling or heating coil, or the furnace heat exchanger), the duct system that is connected to the new or replacement space-conditioning equipment shall be ~~((sealed, as confirmed through field verification and diagnostic testing in accordance with procedures for duct sealing of existing duct systems))~~ tested as specified in RS-33. The test results ~~((shall confirm at least one of the following performance requirements:~~

~~1. The measured total duct leakage shall be less than or equal to 8 percent of the conditioned floor area, measured in CFM @ 25 Pascals; or~~

~~2. The measured duct leakage to outside shall be less than 6 percent of the conditioned floor area, measured in CFM @ 25 Pascals; or~~

~~3. The measured duct leakage shall be reduced by more than 50 percent relative to the measured leakage prior to the installation or replacement of the space conditioning equipment and a visual inspection including a smoke test shall demonstrate that all accessible leaks have been sealed; or~~

~~4. If it is not possible to meet the duct requirements of 1, 2 or 3, all accessible leaks shall be sealed and verified through a visual inspection and through a smoke test by a certified third party)) shall be provided to the building official and the homeowner.~~

EXCEPTIONS:

1. Duct systems that are documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in RS-33.
2. Ducts with less than 40 linear feet in unconditioned spaces.
3. Existing duct systems constructed, insulated or sealed with asbestos.