WASHINGTON STATE BUILDING CODE COUNCIL
APPLICATION FOR REVIEW OF A PROPOSED STATEWIDE AMENDMENT
TO THE WASHINGTON STATE BUILDING CODE

2012 Code Adoption Cycle

Log # 14-E03
(office use only)

1. State Building Code to be Amended:

[ ] International Building Code
[ ] International Existing Building Code
[ ] ICC ANSI A117.1 Accessibility Code
[ ] International Residential Code
[ ] International Fire Code
[ ] Uniform Plumbing Code
[X] State Energy Code
[ ] International Mechanical Code
[ ] International Fuel Gas Code
[ ] NFPA 54 National Fuel Gas Code
[ ] NFPA 58 Liquefied Petroleum Gas Code

Section **R403.2.2** **Page** RE-25

2. Applicant Name (Specific local government, organization or individual):

Gary Nordeen, WSU Energy Program

3. Signed:

Gary Nordeen Sr. Bldg. Science Spec.

		2/3/14
Proponent	**Title**	**Date**

4. Designated Contact Person:

Gary Nordeen — **Name**
Sr. Building Science Spec. — **Title**

Address: **905 Plum St SE**

Olympia, WA 98504-3165

Office **Phone:** (360) 956-2040 **Cell:**(____)

E-Mail address: **nordeeng@energy.wsu.edu**

5. Proposed Code Amendment. Reproduce the section to be amended. Underline all added language, strike through all deleted language. Insert any separate new sections in the appropriate place in the code in order to continue the established numbering system of the code. If more than one section is proposed for amendment or more than one page is needed for reproducing the affected section of the code, additional pages may be attached. (Please indicate number of additional pages below)

Code WSEC **Section** R403.2.2 **Page** RE-25

Amend section to read as follows:

R403.2.2 Sealing (Mandatory). Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with either the International Mechanical Code or International Residential Code, as applicable.
Exceptions:
1. Air-impermeable spray foam products shall be permitted to be applied without additional joint seals.
2. Where a duct connection is made that is partially inaccessible, three screws or rivets shall be equally spaced on the exposed portion of the joint so as to prevent a hinge effect.
3. Continuously welded and locking-type longitudinal joints and seams in ducts operating at static pressures less than 2 inches of water column (500 Pa) pressure classification shall not require additional closure systems.

Ducts shall be leak tested in accordance with WSU RS-33, using the maximum duct leakage rates specified. Where required by the *code official*, testing shall be conducted by an *approved* third party. Duct tightness shall be verified by either of the following:
1. Postconstruction test: Total leakage shall be less than or equal to 4 cfm (113.3 L/min) per 100 square feet (9.29 m2) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test. Leakage to outdoors shall be less than or equal to 4 cfm (133.3 L/min) per 100 square feet of conditioned floor area.
2. Rough-in test: Total leakage shall be less than or equal to 4 cfm (113.3 L/min) per 100 square feet (9.29 m2) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure. All registers shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 3 cfm (85 L/min) per 100 square feet (9.29 m2) of conditioned floor area.

Exception: The total leakage or leakage to outdoors test is not required for ducts and air handlers located ~~entirely~~ within the building thermal envelope. A maximum of 10 linear feet of return ducts and 5 linear feet of supply ducts are allowed to be located outside of the building thermal envelope. Ducts located in crawl spaces do not qualify for this exception.

Chapter 5: Update WSU RS-33 to 2014 edition for consistency with above changes.

Log # _____
(office use only)

Supporting Data for Statewide Amendment Proposals This information is required for all statewide amendment proposals. **Attach supporting documentation, as necessary; incomplete proposals will not be accepted.**

The SBCC requires supporting data on any amendment proposal to show:

a. **That it meets basic criteria – See Part I to specify how this proposal meets the criteria for code amendment.**
b. **The intended effect—See Part II to describe the purpose of the proposed amendment, including the benefits and the problems addressed.**
c. **The potential impacts or benefits on business—See Part III/Types of Construction, to explain how methods in construction businesses, industries and services would be affected.**
d. **The potential impact on enforcement procedures, See Part III/Types of Services Required, to provide some analysis of the impacts on code enforcement in local jurisdictions.**
e. **Economic costs and benefits – Use the Table in Part IV of this form to estimate the costs and benefits of the proposal on the construction industry, the user and/or public, the enforcement community, and operation and maintenance.**

Part I ❖ Background information on amendment.

Code References: WSEC Title: Washington State Energy Code _____

Related codes: Yes. WSEC 406.2(4) _____ (Does this amendment change other related codes?)

Proponent: Gary Nordeen _____ Phone: 360-956-2040 __ Date: February 3, 2014 _____

NOTE: State-wide and emergency state-wide amendments to the state building code must be based on one of the following criteria; please indicate the pertinent rationale for the proposed amendment by selecting from the list below:

(1) The amendment is needed to address a critical life/safety need.
(2) The amendment is needed to address a specific state policy or statute.
(3) The amendment is needed for consistency with state or federal regulations.
(4) The amendment is needed to address a unique character of the state.
(5) The amendment corrects errors and omissions.

Part II ❖ Amendment Benefit:

PROBLEM(S) ADDRESSED (Describe the intended effect of the proposed code amendment): _____ _____

This proposal provides some flexibility when installing mechanical equipment and ducts inside the conditioned space. In many cases it is difficult to get all ductwork inside the conditioned space. For example, a short duct run may be necessary in an attic space to connect a return grill to the furnace. This run is typically less than 10 feet in length. The third party language allows the Building Official to require a third party to conduct the test if they think it is necessary, This language is identical to language for air leakage testing. Some jurisdictions have expressed concern about the validity of the tests and this change allows them to have the test done by an independent third party.

PRIMARY REASON FOR AMENDMENT: (Describe how the amendment meets one of the criteria listed above) _____

_This amendment allows some flexibility for builders and HVAC installers to obtain the credit for High Efficiency HVAC Distribution System. In addition, duct testing would not be required.

TYPE OF BENEFITS PROJECTED: _____The allowance of a small amount of ductwork in an unconditioned space will broaden the use of this option increasing energy savings throughout the state.

Part III ❖ Amendment Impacts or Benefits:

TYPES OF CONSTRUCTION: ☑ New Construction ☐ Alteration/Tenant Improvement/Repair

☑ Residential-Single Family ☐ Residential-Multi Family ☐ Commercial ☐ Industrial

List businesses/industries affected by amendment

Fire Protection Industry:

Specific Construction Contractors & Trades:

Construction Supply Industry:

Specialty Trades: Architects, building designers, HVAC installers

Types of Buildings:

Manufacturers:

Types of Services Required:

List any reporting, record keeping or other requirements. Indicate if equipment, material or services required by this proposal are available from multiple sources. No additional services needed

Part IV ❖ Amendment Costs and Benefits

Building Type	Construction[1]			Enforcement[2]			Operations & Maintenance[3]		
	Costs	% impact[4]	Benefits[5]	Costs	% impact[4]	Benefits[5]	Costs	% impact[4]	Benefits[5]
Residential	0			0			0		
Single family									
Multi-family									
Commercial/Retail									
Industrial									
Institutional									

[1] $ / square foot of floor area or other cost. Attach data. **Construction** costs are costs prior to occupancy, and include both design and direct construction costs that impact the total cost of the construction to theowner/consumer.

[2] Cost per project plan. Attach data. **Enforcement** costs include governmental review of plans, field inspection, and other action required for enforcement.

[3] Cost/benefits to building owner/tenants over the life of the project.

[4] Cost differential over a specific size project or range of projects as determined by the proponent. Provide sufficient cost and benefit detail to clarify the impact to the Council. All data should be created and referenced to third party reputable sources for verification.

[5] Include measurable benefit to the user and/or public from Part II.