



City of Tukwila

Department of Community Development

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RESIDENTIAL HEATING AND VENTILATION COMPLIANCE FORM

MECHANICAL PERMIT NO.: _____

BUILDING PERMIT NO.: _____

Project Name: _____

Site Address: _____

(Complete Sections I and II for Group R Occupancies 4 Stories or Less)

I. WASHINGTON STATE ENERGY CODE HEATING DESIGN METHOD (select A, B or C below):

- A. System Analysis – W.S.E.C. Chapter 4 (submit documentation)
- B. Component Performance Approach – W.S.E.C. Chapter 5 (submit documentation)
- C. Prescriptive Option – W.S.E.C. Chapter 6 (for prescriptive, complete the following calculation):

House Square Footage (heated space): _____

X 20 BTU/h

= _____ Maximum BTU of Heating System Output

Heating System Installed, (check system type below):

- 1. Electric Resistance
- 2. Electric (forced air)
- 3. Other Fuels (gas, heat pump)

II. WASHINGTON STATE VENTILATION AND INDOOR AIR QUALITY CODE (select A or B below):

- A. Ventilation by Performance or Design Method - W.S.V.I.A.Q. Section 302 (submit documentation).
- B. Prescriptive Ventilation Options - W.S.V.I.A.Q. Section 303 (select one of the following):

- 1. Ventilation using Exhaust Fans (Section 303.4.1.)
 Exception for outdoor air inlets – Forced air heating system w/interior doors undercut ½”
- 2. Ventilation integrated with Forced Air System (Section 303.4.2.)
- 3. Ventilation using Supply Fan (Section 303.4.3.)
- 4. Ventilation using Heat Recovery System (Section 303.4.4.)

Prescriptive Minimum/Maximum Outdoor Air Calculation specified in Table 3-2 (see reverse side of form).

1. House Square Footage: _____

2. House Number of Bedrooms: _____

3. Required Outdoor Air Table 3-2: Minimum - _____ cfm

Maximum - _____ cfm

TABLE 3-2
VENTILATION RATES FOR ALL GROUP R OCCUPANCIES FOUR STORIES OR LESS
 Minimum and Maximum Ventilation Rates: Cubic Feet Per Minute (CFM)

Floor Area, ft ²	Bedrooms													
	2 or less		3		4		5		6		7		8	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
<500	50	75	65	98	80	120	95	143	110	165	125	188	140	210
501-1000	55	83	70	105	85	128	100	150	115	173	130	195	145	218
1001-1500	60	90	75	113	90	135	105	158	120	180	135	203	150	225
1501-2000	65	98	80	120	95	143	110	165	125	188	140	210	155	233
2001-2500	70	105	85	128	100	150	115	173	130	195	145	218	160	240
2501-3000	75	113	90	135	105	158	120	180	135	203	150	225	165	248
3001-3500	80	120	95	143	110	165	125	188	140	210	155	233	170	255
3501-4000	85	128	100	150	115	173	130	195	145	218	160	240	175	263
4001-5000	95	143	110	165	125	188	140	210	155	233	170	255	185	278
5001-6000	105	158	120	180	135	203	150	225	165	248	180	270	195	293
6001-7000	115	173	130	195	145	218	160	240	175	263	190	285	205	308
7001-8000	125	188	140	210	155	233	170	255	185	278	200	300	215	323
8001-9000	135	203	150	225	165	248	180	270	195	293	210	315	225	338
>9000	145	218	160	240	175	263	190	285	205	308	220	330	235	353

*For residences that exceed 8 bedrooms, increase the minimum requirement listed for 8 bedrooms by an additional 15 CFM per bedroom. The maximum CFM is equal to 1.5 times the minimum.

TABLE 3-3
PRESCRIPTIVE EXHAUST DUCT SIZING

Fan Tested CFM @ 0.25" W.G.	Minimum Flex Diameter	Maximum Length Feet	Minimum Smooth Diameter	Maximum Length Feet	Maximum Elbows ¹
50	4 inch	25	4 inch	70	3
50	5 inch	90	5 inch	100	3
50	6 inch	No Limit	6 inch	No Limit	3
80	4 inch ²	NA	4 inch	20	3
80	5 inch	15	5 inch	100	3
80	6 inch	90	6 inch	No Limit	3
100	5 inch ²	NA	5 inch	50	3
100	6 inch	45	6 inch	No Limit	3
125	6 inch	15	6 inch	No Limit	3
125	7 inch	70	7 inch	No Limit	3

1. For each additional elbow subtract 10 feet from length.
2. Flex ducts of this diameter are not permitted with fans of this size.