



# Code Amendment Proposal Application

Department of Consumer & Business Services  
 Building Codes Division  
 1535 Edgewater NW, Salem, Oregon  
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## STAFF USE ONLY

Application no.:

OMSC 10-04

 Approved Denied

**Instructions:** Fill in all the following information, attach any supplementary information you relied on, and mail to the address listed above. For more information, please refer to the Building Codes Division Web site, bcd.oregon.gov.

APPLICANT INFORMATION		
Name: <b>TODD BRUNELLE</b>		Date: <b>May 22, 2009</b>
Representing: <b>N.W. NATURAL</b>		Phone: <b>503-226-4211X5047</b>
Address (street or P.O. Box): <b>220 NW 2<sup>nd</sup> AVE.</b>		Fax: <b>503-721-2503</b>
City: <b>PORTLAND</b>	State: <b>OREGON</b>	ZIP: <b>97209</b>
E-mail address: <b>t3b@nwnatural.com</b>		
PROPOSED CODE LANGUAGE		
This proposed code amendment (check one):		
<input checked="" type="checkbox"/> Amends (code, edition, section): <b>OMSC, 2010, APPENDIX 'C' - SECTION 402</b>		
<input type="checkbox"/> Adopts a new section (code, edition): _____		
<input type="checkbox"/> Repeals (code, edition, section): _____		

You must provide language for review by the division. Failure to provide language will invalidate the application.

Please use the following format to show additions and deletions from the code — strike through ~~deleted text~~, underline and bold **new text**.

Use arrow keys to advance to the next text box.

### Proposed language:

Propose to reinstate the 2-psi and 5-psi schedule 40 steel pipe 10 percent pressure drop pipe sizing tables — see attached tables from the 2000 edition of the International Mechanical Code.

The proposal is to include the 10-percent pressure drop tables along with the high pressure drop pipe sizing tables currently in the 2007 OMSC — Table C402.4(3) and Table C402.4(5)

Reinstating the 10-percent pressure drop table will provide installers with an alternative to the high pressure drop pipe sizing tables in the current 2007 OMSC. Intermediate gas pressure regulator selection and performance can be impacted when using the high pressure drop tables resulting in the purchase of more expensive regulators. Example: Using the 5-psi, 3.5-psi pressure drop table, a regulator will have a static inlet pressure of 5-psi, and could have an inlet pressure of 1.5-psi when under load. Not many regulators can maintain a steady outlet pressure when exposed to high inlet pressure swings.

The 10-percent pressure drop tables were used for many years with very few problems relating to intermediate gas pressure regulator selection and performance. Reinstating the 10-percent pressure drop tables would provide installers and suppliers with a wider, more cost effective selection of gas pressure regulators.



**APPLICATION CRITERIA**

Attach to this application written responses to the following questions. If needed, include in the response an explanation as to why a question does not apply to your proposed code amendment. The division may reject an incomplete application.

**Questions:**

1. Is your proposed code amendment necessary to correct any unforeseen or probable outcomes resulting from the application of a code section, and if so, why? **NO**
2. Is your proposed code amendment needed to protect the health, safety, welfare, comfort, and security of occupants and the public, and if so, why? **NO**
3. Does your proposed code amendment correct inadequate application by a code section to a method, material, or design, and if so, how? **Current 2-psi and 5-psi schd. 40 steel piping sizing tables can impact the selection and performance of natural gas intermediate pressure reducing regulators.**
4. Is your proposed code amendment necessary to correct unique geographic or climatic conditions within Oregon, and if so, why? **NO**
5. Is your proposed code amendment needed to eliminate conflicting, obsolete, or duplicative code provisions or standards among Oregon-adopted codes, statutes, or regulations, and if so, why? **NO**
6. Does your proposed code amendment work to conserve scarce resources, and if so, how? **NO**
7. Does your proposed code amendment provide for the use of unique or emerging technologies or promote advances in construction methods, devices, materials, and techniques, and if so, how? **NO**
8. Does your proposed code amendment meet any energy conservation or indoor air quality requirements, and if so, how? **NO**
9. Does your proposed code amendment involve the adoption of an electrical or plumbing building product? If an electrical or plumbing building product is involved, note if the appropriate board approved the product. **NO**
10. Does your proposed code amendment create any adverse fiscal impact or cost savings for the general public, the construction industry, local and state governments, or small businesses? If so, please describe the added or reduced cost of the proposed code amendment, the adverse fiscal impact or cost savings in relation to the current Oregon specialty code, and any standards of measure used to arrive at the result given. **Could facilitate the purchasing of less expensive intermediate natural gas pressure regulators.**
11. If your proposed code amendment relates to the development of a 6,000-square-foot parcel and the construction of a 1,200-square-foot detached single-family dwelling on that parcel, please provide information to assist the division in preparing a housing cost impact statement. **NO**

**APPLICANT SIGNATURE**

Signature:

*Todd Brunelle*

Date: May 22, 2009

*Copyright notice: By signing this proposed code amendment application, I understand and acknowledge that the work contained in this application is original, or if not original, I have the right to copy the work. By signing this work, I understand that any rights I may have in this work, including any form of derivative works and compilations, are assigned to the Department of Consumer and Business Services. I also understand that I do not retain or acquire any rights once this work is used in a Department of Consumer and Business Services publication.*

**APPLICATION PROCESSING**

The Building Codes Division screens proposed amendments to determine whether they meet the requirements of Oregon Administrative Rule (OAR) 918-008-0060. The division will return proposed code amendments that do not substantially meet the requirements of OAR 918-008-0060, with specific reasons included in the returned application

If you submit completed proposed code amendments to the division before the end of the timetable established under OAR 918-008-0020, the division will forward them to the appropriate advisory board for review. The division will not forward proposed code amendments that are not completed before the end of the timetable.

If you complete proposed code amendments but do not submit them to the division before the end of the timetable, you may submit them as completed applications for consideration during the next opportunity given to make amendments to the state building code.

*Note:* The division is not obligated to examine a proposed code amendment submitted after the end of the timetable.

APPENDIX C

**TABLE C402.3(7)**  
**PIPE SIZING TABLE FOR 1 POUND PRESSURE CAPACITY OF PIPES OF DIFFERENT DIAMETERS AND**  
**LENGTHS IN CUBIC FEET PER HOUR FOR AN INITIAL PRESSURE OF 1.0 PSI WITH A 10-PERCENT PRESSURE DROP**  
**(Based on a 0.60 Specific Gravity Gas)**

PIPE SIZE OF SCHEDULE 40 STANDARD PIPE (Inches)	INTERNAL DIAMETER (Inches)	TOTAL EQUIVALENT LENGTH OF PIPE (feet)										
		50	100	150	200	250	300	400	500	1000	1500	2000
1.00	1.049	717	493	396	338	300	272	233	206	142	114	97
1.25	1.380	1,471	1,011	812	695	616	558	478	423	291	234	200
1.50	1.610	2,204	1,515	1,217	1,041	923	836	716	634	436	350	300
2.00	2.067	4,245	2,918	2,343	2,005	1,777	1,610	1,378	1,222	840	674	577
2.50	2.469	6,766	4,651	3,735	3,196	2,833	2,567	2,197	1,947	1,338	1,075	920
3.00	3.068	11,962	8,221	6,602	5,650	5,008	4,538	3,884	3,442	2,366	1,900	1,626
3.50	3.548	17,514	12,037	9,656	8,273	7,332	6,644	5,686	5,039	3,464	2,781	2,381
4.00	4.026	24,398	16,769	13,466	11,525	10,214	9,255	7,921	7,020	4,825	3,875	3,316
5.00	5.047	44,140	30,337	24,362	20,851	18,479	16,744	14,330	12,701	8,729	7,010	6,000
6.00	6.065	71,473	49,123	39,447	33,762	29,923	27,112	23,204	20,566	14,135	11,351	9,715
8.00	7.981	146,849	100,929	81,049	69,368	61,479	55,705	47,676	42,254	29,041	23,321	19,960
10.00	10.020	266,718	183,314	147,207	125,990	111,663	101,175	86,592	76,745	52,747	42,357	36,252
12.00	11.938	422,248	290,209	233,048	199,459	176,777	160,172	137,087	121,498	83,505	67,057	57,392

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 cubic foot per hour = 0.0283 m<sup>3</sup>/h, 1 pound per square inch = 6.895 kPa.

**TABLE C402.3(8)**  
**PIPE SIZING TABLE FOR 2 POUND CAPACITY OF PIPES OF DIFFERENT DIAMETERS AND**  
**LENGTHS IN CUBIC FEET PER HOUR FOR AN INITIAL PRESSURE OF 2.0 PSI WITH A 10-PERCENT PRESSURE DROP**  
**(Based on a 0.60 Specific Gravity Gas)**

PIPE SIZE OF SCHEDULE 40 STANDARD PIPE (Inches)	INTERNAL DIAMETER (Inches)	SCHEDULE TOTAL EQUIVALENT LENGTH OF PIPE (feet)										
		50	100	150	200	250	300	400	500	1000	1500	2000
1.00	1.049	1,112	764	614	525	466	422	361	320	220	177	151
1.25	1.380	2,283	1,569	1,260	1,079	956	866	741	657	452	363	310
1.50	1.610	3,421	2,351	1,888	1,616	1,432	1,298	1,111	984	677	543	465
2.00	2.067	6,589	4,528	3,636	3,112	2,758	2,499	2,139	1,896	1,303	1,046	896
2.50	2.469	10,507	7,217	5,796	4,961	4,396	3,963	3,409	3,022	2,077	1,668	1,427
3.00	3.068	18,564	12,759	10,246	8,769	7,772	7,042	6,027	5,342	3,671	2,948	2,523
3.50	3.548	27,181	18,681	15,002	12,840	11,379	10,311	8,825	7,821	5,375	4,317	3,694
4.00	4.026	37,865	26,025	20,899	17,887	15,853	14,364	12,293	10,895	7,488	6,013	5,147
5.00	5.047	68,504	47,082	37,809	32,359	28,680	25,986	22,240	19,711	13,547	10,879	9,311
6.00	6.065	110,924	76,237	61,221	52,397	46,439	42,077	36,012	31,917	21,936	17,616	15,077
8.00	7.981	227,906	156,638	125,786	107,657	95,414	86,432	73,992	65,578	45,071	36,194	30,977
10.00	10.020	413,937	284,497	228,461	195,533	173,297	157,020	134,389	119,106	81,861	65,737	56,263
12.00	11.938	655,315	450,394	361,682	309,353	274,351	248,582	212,754	188,560	129,596	104,070	89,071

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 cubic foot per hour = 0.0283 m<sup>3</sup>/h, 1 pound per square inch = 6.895 kPa.

APPENDIX C

**TABLE C402.3(9)**  
**PIPE SIZING TABLE FOR 5 POUND PRESSURE CAPACITY OF PIPES OF DIFFERENT DIAMETERS AND LENGTHS IN CUBIC FEET PER HOUR FOR AN INITIAL PRESSURE OF 5.0 PSI WITH A 10-PERCENT PRESSURE DROP (Based on a 0.60 Specific Gravity Gas)**

PIPE SIZE OF SCHEDULE 40 STANDARD PIPE (Inches)	INTERNAL DIAMETER (Inches)	TOTAL EQUIVALENT LENGTH OF PIPE (feet)										
		50	100	150	200	250	300	400	500	1000	1500	2000
1.00	1.049	1,989	1,367	1,098	940	833	755	646	572	393	316	270
1.25	1.380	4,084	2,807	2,254	1,929	1,710	1,549	1,326	1,175	808	649	555
1.50	1.610	6,120	4,206	3,378	2,891	2,562	2,321	1,987	1,761	1,210	972	832
2.00	2.067	11,786	8,101	6,505	5,567	4,934	4,471	3,827	3,391	2,331	1,872	1,602
2.50	2.469	18,785	12,911	10,368	8,874	7,865	7,126	6,099	5,405	3,715	2,983	2,553
3.00	3.068	33,209	22,824	18,329	15,687	13,903	12,597	10,782	9,556	6,568	5,274	4,514
3.50	3.548	48,623	33,418	26,876	22,968	20,356	18,444	15,786	13,991	9,616	7,722	6,609
4.00	4.026	67,736	46,555	37,385	31,997	28,358	25,694	21,991	19,490	13,396	10,757	9,207
5.00	5.047	122,544	84,224	67,635	57,887	51,304	46,485	39,785	35,261	24,235	19,461	16,656
6.00	6.065	198,427	136,378	109,516	93,732	83,073	75,270	64,421	57,093	39,241	31,512	26,970
8.00	7.981	407,692	280,204	225,014	192,583	170,685	154,651	132,361	117,309	80,626	64,745	55,414
10.00	10.020	740,477	508,926	408,686	349,782	310,005	280,887	240,403	213,065	146,438	117,595	100,646
12.00	11.938	1,172,269	805,694	647,001	553,749	490,777	444,680	380,588	337,309	231,830	186,168	159,336

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 cubic foot per hour = 0.0283 m<sup>3</sup>/h, 1 pound per square inch = 6.895 kPa.

**TABLE C402.3(10)**  
**PIPE SIZING TABLE FOR 10 POUND PRESSURE CAPACITY OF PIPES OF DIFFERENT DIAMETERS AND LENGTHS IN CUBIC FEET PER HOUR FOR AN INITIAL PRESSURE OF 10.0 PSI WITH A 10-PERCENT PRESSURE DROP (Based on a 0.80 Specific Gravity Gas)**

PIPE SIZE OF SCHEDULE 40 STANDARD PIPE (Inches)	INTERNAL DIAMETER (Inches)	TOTAL EQUIVALENT LENGTH OF PIPE (feet)										
		50	100	150	200	250	300	400	500	1000	1500	2000
1.00	1.049	3,259	2,240	1,798	1,539	1,364	1,216	1,058	938	644	517	443
1.25	1.380	6,690	4,598	3,692	3,160	2,801	2,538	2,172	1,925	1,323	1,062	909
1.50	1.610	10,024	6,889	5,532	4,735	4,197	3,802	3,254	2,884	1,982	1,592	1,362
2.00	2.067	19,303	13,268	10,655	9,119	8,082	7,323	6,268	5,555	3,818	3,066	2,624
2.50	2.469	30,769	21,148	16,982	14,535	12,882	11,672	9,990	8,854	6,085	4,886	4,182
3.00	3.068	54,395	37,385	30,022	25,695	22,773	20,634	17,660	15,652	10,757	8,638	7,393
3.50	3.548	79,642	54,737	43,956	37,621	33,343	30,211	25,837	22,916	15,750	12,648	10,825
4.00	4.026	110,948	76,254	61,235	52,409	46,449	42,086	36,020	31,924	21,941	17,620	15,080
5.00	5.047	200,720	137,954	110,782	94,815	84,033	76,140	65,166	57,755	39,695	31,876	27,282
6.00	6.065	325,013	223,379	179,382	153,527	136,064	123,288	105,518	93,519	64,275	51,615	44,176
8.00	7.981	667,777	458,939	368,561	315,440	279,569	253,310	216,800	192,146	132,061	106,050	90,765
10.00	10.020	1,212,861	833,393	669,404	572,924	507,772	460,078	393,767	348,988	239,858	192,614	164,853
12.00	11.938	1,920,112	1,319,682	1,059,751	907,010	803,866	728,361	623,383	552,493	379,725	304,933	260,983

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 cubic foot per hour = 0.0283 m<sup>3</sup>/h, 1 pound per square inch = 6.895 kPa.