

# 2021 Oregon Boiler and Pressure Vessel Specialty Code (OBPVSC)

## Code adoption matrix

The following is a summary matrix showing the code review committee’s recommendations to the Board of Boiler Rules for the 2021 edition of the Oregon Boiler and Pressure Vessel Specialty Code (OBPVSC).

Where the committee has recommended a new Oregon amendment or a modification, the formatting denotes the following:

Blue/underline: Added language

~~Red/Strikethrough~~: Deleted language

### Major changes to the 2019 NBIC and 2021 NBIC

No.	Source of change	Section	Subject and summary	Committee recommendation
<b>NBIC Part 1 – Installation</b>				
0	21 NBIC	1.6.1	<p>Adds a requirement under the supports foundations and settings section for grounding or bonding to minimize electric electrolytic corrosion.</p> <ul style="list-style-type: none"> <li>Committee recommendation: Adopt a new amendment pointing to the Oregon Electrical Specialty Code (OESC) for additional provisions.</li> </ul> <p><b>The recommended amendment language</b> (the new NBIC language appears in red):</p> <p><b>1.6.1 Supports, foundations, and settings.</b></p> <p>Each boiler, potable water heater, thermal fluid heater and pressure vessel and the associated piping must be safely supported. Design of supports, foundations, and settings shall consider vibration (including seismic where necessary), movement (including thermal expansion and contraction), <b>grounding/bonding to minimize electrolytic corrosion</b> and loadings (including the weight of the fluid in the system during a pressure test) in accordance with jurisdictional requirement, manufactures recommendations, and/or other industry standards, as applicable.</p> <p><u>Note: These provisions apply in addition to provisions of the Oregon Electrical Specialty Code.</u></p>	<b>Approve as modified</b> by adding a pointer to OESC as the authority.
1	19 NBIC	1.6.9	<p>New requirements for the installation of carbon monoxide detectors for rooms containing fuel fired boilers and pressure vessels to be installed in accordance with the authority having jurisdiction.</p> <ul style="list-style-type: none"> <li>Carbon monoxide detectors are under the authority of the Oregon State Fire Marshal.</li> <li>Committee recommendation: New amendment excluding this section from the NBIC.</li> </ul> <p><b>The recommended amendment language:</b></p> <p><b>1.6.9 Carbon Monoxide (CO) Detector/Alarm.</b> <u>Not adopted.</u></p> <p><del>The owner or user shall install a carbon monoxide (CO) detector/alarm in equipment rooms where fuel fired boilers and/or fuel fire pressure vessels are location in accordance with the authority having jurisdiction.</del></p>	

## 2021 Oregon Boiler and Pressure Vessel Specialty Code (OBPVSC) Code adoption matrix

No.	Source of change	Section	Subject and summary	Committee recommendation
2	21 NBIC	1.6.10	Revisions to 1.6.10 to add additional details/specifications for Testing and Final Acceptance. (Draft – Page 3)	Approve
3	21 NBIC	2.9.1	New requirements to remove covers, caps, plugs, wires, or restraining devices used for shipping/transporting pressure relief valves prior to a valve’s installation. Also included in Part 4. (Draft – Page 8)	Approve
4	21 NBIC	3.9.1.5	New temperature rating requirements for discharge piping and fittings. (Draft – Page 13)	Approve
5	21 NBIC	S3.4	Revised CO <sup>2</sup> gas detection system requirements for Liquid Carbon Dioxide storage vessels. (Draft – Page 17) <ul style="list-style-type: none"> <li>This supplement is currently not adopted.</li> </ul>	Disapprove Retain amendment
6	21 NBIC	S5.7	Updated installation requirements for Thermal Fluid Heaters. (Draft – Page 18)	Approve
7	19 NBIC	S7	A new Supplement 7, Installation of Graphite Pressure Equipment.	Approve
8	21 NBIC	S8	New Supplement 8 for Installation of Pressure Vessels for Human Occupancy (PVHOs). (Draft – Page 21) <ul style="list-style-type: none"> <li>Adopting this new supplement also adopts a new construction standard: <b>ASME PVHO-1</b></li> </ul>	Approve
9	21 NBIC	S9	New Supplement 9 for High-Temperature Water Boilers. (Draft – Page 25)	Approve
<b>NBIC Part 2 – Inspection</b>				
10	21 NBIC	1.4.1 4.2.1	Adds allowance for remote visual inspections and a pointer to specific requirements in 4.2.1(c). (Draft – Page 27) <ul style="list-style-type: none"> <li>Committee recommendation: New amendment excluding items 1-6 from Section 4.2.1(c) because the requirements could exclude current inspection allowances.</li> </ul> <p><b>The recommended amendment language:</b></p> <p><b>1.4.1 Personal safety requirements for entering confined spaces</b> (c) Remote visual inspection is an acceptable alternative to confined space entry provided the requirements of 4.2.1 (c) are met and where allowed by the jurisdiction.</p> <p><b>4.2.1 Visual</b> (c) Remote Visual Inspection is an acceptable method of visual examination if the process is agreed upon by the owner and acceptable to the Inspector and Jurisdiction, if required.</p> <p><a href="#">(Items 1-6 are not adopted.)</a></p> <p>(7) All equipment used must produce results acceptable to the Inspector.</p>	1.4.1: Approve <b>4.2.1 Approve as modified by striking items 1-6</b>
11	19-21 NBIC	2.3.6.8	Updated inspection requirements and guidance for PVHOs. (Draft – Page 29)	Approve

## 2021 Oregon Boiler and Pressure Vessel Specialty Code (OBPVSC) Code adoption matrix

No.	Source of change	Section	Subject and summary	Committee recommendation
12	21 NBIC	2.5.4	New inspection requirements to ensure all shipping caps, plugs, covers, wires, and or restraining devices were removed during the installation process. These requirements are also included in Part 4. (Draft – Page 33)	Approve
13	19 NBIC	5.2	New instructions for the replacement of stampings and nameplates, includes an update to Form NB-136.	Approve
14	19 NBIC	S2.14.16	A new subsection for Supplement 2 on the firing of historical boilers with liquid or gaseous fuels.	Approve
15	21 NBIC	S2.7.3.2	New requirements to allow for longer NDE cycles for Historical Boilers. (Draft – Page 39)	Approve
16	21 NBIC	S2.10.3.1	New MAWP requirements for Return Flue Boilers. (Draft – Page 40)	Approve
17	21 NBIC	S10	Several updates and revisions to Supplement 10. (Draft – Page 43)	Approve
18	21 NBIC	S12	Revised carbon dioxide gas detection system requirements for Liquid Carbon Dioxide storage vessels. <ul style="list-style-type: none"> <li>• Committee recommendation: New amendment not adopting this supplement.</li> </ul>	<b>Disapprove</b>
<b>NBIC Part 3 – Repairs and Alterations</b>				
19	19 NBIC	1.6	New requirements and guidance for the “NR” Program.	Approve
20	21 NBIC	1.6.3	Revised language to clarify Quality Assurance Program requirements. (Draft – Page 55)	Approve
21	19 NBIC	2.1, 2.2, 2.5	New requirements and guidance for brazing and fusing.	Approve
23	21 NBIC	2.3	Several revisions to Table 2.3 to only show the most recent edition of an SWPS. New language is included in Section 2.3 to allow the use of previous versions of the SWPSs listed in Table 2.3. (Draft – Page 62)	Approve
22	21 NBIC	2.5.3.7	New section detailing requirements for Welding Method 7. (Draft – Page 62)	Approve
24	21 NBIC	3.3.2	New language specifying that routine repairs are not permitted for ASME Section VIII, Div. 2 or Div. 3 vessels. (Draft – Page 76)	Approve
25	19 NBIC	3.3.3 u	New requirements and guidance for the repair of plate heat exchangers.	Approve
26	21 NBIC	3.3.4.6	New requirements for flush patches in stayed and unstayed areas of tubesheets. (Draft – Page 77)	Approve
27	21 NBIC	3.3.6	New Section 3.3.6 for Pressure Vessel Impact Testing. (Draft – Page 80)	Approve
28	21 NBIC	3.4.5.1	New language that allows for the engineer review and certification process for alteration plans to be waived. This change applies to ASME Section VIII, Div. 2, Class 1 vessels. (Draft – Page 81)	Approve
29	19 NBIC	5.1, 5.2, 5.12	New instructions and guidelines for the R-1, R-2, R-3, and R-4 repair forms. New requirements allowing for R-Certificate Holders to maintain their R-form logs using only the National Board EDT system.	Approve

## 2021 Oregon Boiler and Pressure Vessel Specialty Code (OBPVSC) Code adoption matrix

No.	Source of change	Section	Subject and summary	Committee recommendation
30	21 NBIC	S4.19	New section S4.19 for the Repair of High-Pressure Filament Wound Vessels. (Draft – Page 113)	Approve
31	19 NBIC	S1.2.9.6	New requirements and guidelines for the installation of boiler flues.	Approve
32	19 NBIC	S3.5.4	New requirements and guidelines for testing tube plug repairs in graphite pressure vessels.	Approve
<b>NBIC Part 4 – Pressure Relief Devices</b>				
33	21 NBIC	S3	New Supplement for Pressure Relief and Pilot Valve Storage and Shelf Life. (Draft – Page 172)	Approve
34	21 NBIC	2.2.2	New pressure relief device requirements for boilers up to 4,000 lb/hr. (Draft – Page 149)	Approve
35	21 NBIC	2.3.6	New installation requirements for Thermal Fluid Heaters. (Draft – Page 151)	Approve
36	19 NBIC	2.4.2	Updated requirements and guidance for pressure relief valves for steam heating boilers.	Approve
37	21 NBIC	2.4.4.7	New temperature rating requirements for discharge piping and fittings. (Draft – Page 156)	Approve
38	19 NBIC	3.3	New accreditation requirements for the “T/O” Testing Only program. <ul style="list-style-type: none"> <li>• Approving these changes requires a change in rule to include.</li> </ul>	Approve
39	21 NBIC	4.6.2	New language requiring the manufacturer’s correction factor used in pressure testing be recorded on the valve repair document in paragraph 4.8.5.4 i.	Approve
40	19 NBIC	S6	New requirements and guidance for repairs of nuclear safety related pressure relief devices.	Approve
41	19 NBIC	S7	A new Supplement 7, Recommended Procedures for Test Only of Pressure Relief Valves.	Approve

## 2021 Oregon Boiler and Pressure Vessel Specialty Code (OBPVSC) Code adoption matrix

### Other adopted standards and codebooks

<b>1</b>	<b>2018 ASME CSD-1, Controls and Safety Devices for Automatically Fire Boilers</b>	Approve adoption
<b>2</b>	<b>2019 NFPA, 85 Boiler and Combustion Systems Hazard Code</b>	Approve adoption
<b>3</b>	<b>2021 ASME Boiler and Pressure Vessel Code:</b> Section I; Section II, Parts A, B, C, and D; Section IV; Section V; Section VIII, Division 1, 2, and 3; Section IX; and Section X only	Approve adoption
<b>4</b>	<b>2020 ANSI/ASME B31.1, Power Piping</b>	Approve adoption
<b>5</b>	<b>2020 ANSI/ASME B31.3, Process Piping</b>	Approve adoption
<b>6</b>	<b>2019 ANSI/ASME B31.5, Refrigeration Piping</b>	Approve adoption
<b>7</b>	<b>2020 ANSI/ASME B31.9, Building Service Piping</b>	Approve adoption
<b>8</b>	<b>2016 ASME PVHO-1, Safety Standard for Pressure Vessels for Human Occupancy (Construction standard)</b>	Approve adoption

## 2021 Oregon Boiler and Pressure Vessel Specialty Code (OBPVSC) Code adoption matrix

### Existing Oregon amendments to the 2015 NBIC

\*Bold notes in the committee recommendations column denote changes to the 2018 OBPVSC Table 2-b amendments.

No.	Source of change	Section	Subject and summary	Committee recommendation
<b>NBIC Part 1 amendments</b>				
1	OR A	1.6.3	<b>Exit.</b> Oregon amended this section by replacing it with a pointer to Chapter 10 of the Oregon Structural Specialty Code for exiting requirements.	Retain amendment
2	OR A	1.6.4	<b>Ladders and Runways.</b> Oregon amended this section to point to OAR 437 Division 2. Referring to the applicable OSHA standards.	Retain amendment
3	OR A	1.6.6	<b>Ventilation and Combustion Air.</b> Oregon amended this section to point to the Oregon Mechanical Specialty Code for additional ventilation and combustion air requirements.	Retain amendment
4	OR A	2.3.3(a)	<b>Clearances.</b> Oregon amended this section to allow boilers that operate up to 2,000,000 BTU be installed per manufacturer's instructions.	Retain amendment
5	OR A	2.10.6	<b>Boiler Installation Report.</b> Oregon does not adopt this section. <ul style="list-style-type: none"> <li>Committee recommendation: Retain the amendment and adopted new amendments doing the same in Sections 1.4.5 and 3.10.3.</li> </ul>	Retain amendment
6	OR A	3.3.4(a)	<b>Clearances.</b> Oregon amended this section to require that heating boilers exceeding 2,000,000 btu and operated in battery be installed a minimum of 48 inches from each other, and to allow heating boilers that operate at or below 2,000,000 btu to be installed according to the manufacturer's instructions.	Retain amendment
7	OR A	3.5.3.1	<b>Steam Heating, Hot Water Heating, and Hot Water Supply Boilers.</b> Oregon amended this section to specify that the boiler can be disconnected from all sources of potential <u>energy</u> .	<b>Rescind amendment</b>
8	OR A	3.5.3.2	<b>Potable Water Heaters.</b> Oregon amended this section to specify that the boiler can be disconnected from all sources of potential <u>energy</u> .	<b>Rescind amendment</b>
9	OR A	3.7.1(b)	<b>Oil Heaters.</b> Oregon amends this section by not adopting paragraph (b), which excludes the issue of external-type heaters. <ul style="list-style-type: none"> <li>Committee recommendation: Rescind the amendment because the NBIC language no longer poses concerns.</li> </ul>	<b>Rescind amendment</b>
10	OR A	4.3.2(a)	<b>Clearances.</b> Oregon amends this section by adding language to require accessibility for identification of nameplate data plates and safety release valve data plates.	Retain amendment

## 2021 Oregon Boiler and Pressure Vessel Specialty Code (OBPVSC) Code adoption matrix

No.	Source of change	Section	Subject and summary	Committee recommendation
11	OR A	4.3.3	<p><b>Piping.</b> Oregon amends this section by adding lanugage to clarify that piping be installed in accordance with the Oregon Boiler and Pressure Vessel Specialty Code (OBPVSC), specifically the adopted ASME B31 standards.</p> <ul style="list-style-type: none"> <li>Committee recommendation: Retain the amendment as modified by simplifying the requirement to just say the OBPVSC.</li> </ul>	<b>Retain as modified</b>
12	OR A	4.6(b)	<p><b>Testing and Acceptance. (b)</b> Oregon does not adopt paragraph (b).</p> <ul style="list-style-type: none"> <li>This amendment was adopted in 2008 and the section has been moved to Section 1.6.10 and rewritten.</li> <li>Committee recommendation: Rescind the amendment because it no longer presents the concerns that prompted the amendment.</li> </ul>	<b>Rescind amendment</b>
13	OR A	Supp3	<b>Installation of Liquid Carbon Dioxide Storage Vessels.</b> Oregon does not adopt Supplement 3.	Retain amendment
<b>NBIC Part 2 amendments</b>				
14	OR A	1.5.2.1	<p><b>Inspection Planning.</b> Oregon amends this section by adding a note that points to OAR 918-225-0570 for inspection plan requirements.</p> <ul style="list-style-type: none"> <li>Committee recommendation: Retain the amendment as modified to align with the OAR language that minimum inspection frequencies are established in OAR 918-225-0570.</li> </ul> <p><b>New amendment language:</b>  <b>1.5.2.1 Inspection Planning.</b> <a href="#">Note: Minimum inspection frequencies are established in OAR 918-225-0570.</a></p>	<b>Retain as modified for clarification</b>
15	OR A	2.3.6.6	<b>Transport Tanks.</b> Oregon does not adopt this section.	Retain amendment
15.1	OR A	Supp 6	<p><b>Continued Service and Inspection of DOT Transport Tanks.</b></p> <ul style="list-style-type: none"> <li>Committee recommendation: New amendment not adopting this supplement to align with the amendment to 2.3.6.6.</li> </ul>	<b>New amendment</b>
16	OR A	Supp7	<b>Inspection of Pressure Vessels in Liquefied Petroleum Gas Service.</b> Oregon does not adopt Supplement 7, LP gas is under the authority of OSFM.	Retain amendment
17	OR A	5.3.2	<p><b>Form NBIC-136 Replacement of Stamped Data Form, NB-136.</b> Oregon amends this section to require the use of the 2013 NB-136 instead of the 2017 NB-136.</p> <ul style="list-style-type: none"> <li>Committee recommendation: This amendment is no longer necessary, the changes to the NBIC form have fixed the issue.</li> </ul>	<b>Rescind amendment</b>