

Office of the Revisor of Statutes

Administrative Rules



TITLE: Adopted Permanent Rules Regulating the Board of High Pressure Piping

AGENCY: Department of Labor and Industry

REVISOR ID: R-4739

MINNESOTA RULES: Chapter 5230

INCORPORATIONS BY REFERENCE: [See attached]

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Filed on December 22, 2022
Office of the Minnesota
Secretary of State, Steve Simon

The attached rules are approved for
filing with the Secretary of State

A handwritten signature in black ink, appearing to read "Sheree Speer".

Sheree Speer
Chief Deputy Revisor

INCORPORATIONS BY REFERENCE:

Part 5230.0220, subpart 1: ASME BPE 2019 edition, Bioprocessing Equipment Standard adopted and published by ASME, Two Park Avenue, New York, New York, 10016, and is available in the office of the commissioner of labor and industry and the State Law Library, 25 Rev. Dr. Martin Luther King Jr. Blvd., Saint Paul, Minnesota 55155.

Part 5230.0260: ASME Code for Power Boilers 2021 edition of the ASME Boiler and Pressure Vessel Code, section I, as adopted and published by ASME, Two Park Avenue, New York, New York, 10016, and is available in the office of the commissioner of labor and industry and the State Law Library, 25 Rev. Dr. Martin Luther King Jr. Blvd., Saint Paul, Minnesota 55155.

Part 5230.0265: ASME B31.1 2020 edition of the standard for power piping, as approved and published by ASME, Two Park Avenue, New York, New York, 10016, and is available in the office of the commissioner of labor and industry and at the State Law Library, 25 Rev. Dr. Martin Luther King Jr. Blvd., Saint Paul, Minnesota 55155.

Part 5230.5001, subpart 1: ANSI/IIAR 2 2021 revision of the Safe Design of Closed-Circuit Ammonia Refrigeration Systems, as approved by the American National Standards Institute, published by the International Institute of Ammonia Refrigeration, 1001 North Fairfax Street, Suite 503, Alexandria, Virginia, 22314, and is available in the office of the commissioner of labor and industry and the State Law Library, 25 Rev. Dr. Martin Luther King Jr. Blvd., Saint Paul, Minnesota 55155.

Part 5230.5001, subpart 2: ASME B31.5 2019 revision of the Refrigeration Piping and Heat Transfer Components as approved and published by ASME, Two Park Avenue, New York, New York, 10016, and is available in the office of the commissioner of labor and industry and the State Law Library, 25 Rev. Dr. Martin Luther King Jr. Blvd., Saint Paul, Minnesota 55155.

Part 5230.5920, subpart 2: ASME section IX 2021 edition of section IX of the Boiler and Pressure Vessel Code, as approved and published by ASME, Two Park Avenue, New York, New York, 10016, and is available in the office of the commissioner of labor and industry and at the State Law Library, 25 Rev. Dr. Martin Luther King Jr. Blvd., Saint Paul, Minnesota 55155.

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1.1 **Department of Labor and Industry**

1.2 **Adopted Permanent Rules Regulating the Board of High Pressure Piping**

1.3 **5230.0220 BIOPROCESS PIPING.**

1.4 Subpart 1. **ASME BPE.** All bioprocess piping must meet the requirements of ASME
1.5 BPE. For purposes of this chapter, "ASME BPE" means the 2019 edition of the Bioprocessing
1.6 Equipment Standard adopted and published by ASME, Two Park Avenue, New York, New
1.7 York 10016. ASME BPE is incorporated by reference and made part of the code for high
1.8 pressure piping systems. ASME BPE is not subject to frequent change and a copy of ASME
1.9 BPE is available in the office of the commissioner of labor and industry and at the State
1.10 Law Library, 25 Rev. Dr. Martin Luther King Jr. Blvd., Saint Paul, Minnesota 55155.

1.11 *[For text of subpart 2, see Minnesota Rules]*

1.12 **5230.0260 SCOPE.**

1.13 Valves, fittings, and piping for boilers, as prescribed in the ASME Code for Power
1.14 Boilers, are within the scope for this code but provisions of the ASME Code for Power
1.15 Boilers shall govern where they exceed corresponding requirements of this code. For purposes
1.16 of this chapter, "ASME Code for Power Boilers" means the 2021 edition of the ASME
1.17 Boiler and Pressure Vessel Code, section I, as adopted and published by ASME, Two Park
1.18 Avenue, New York, New York 10016. The ASME Code for Power Boilers is incorporated
1.19 by reference in the code for steam or heating media piping systems. The ASME Code for
1.20 Power Boilers is not subject to frequent change and a copy is available in the office of the
1.21 commissioner of labor and industry and at the State Law Library, 25 Rev. Dr. Martin Luther
1.22 King Jr. Blvd., Saint Paul, Minnesota 55155.

1.23 Economizers, heaters, tanks, and other pressure vessels are outside the scope of this
1.24 code, but connecting piping shall conform to the requirements herein specified.

2.1 **5230.0265 ADOPTION OF ASME B31.1 BY REFERENCE.**

2.2 For purposes of this chapter, "ASME B31.1" means the 2020 edition of the standard
2.3 for power piping, as approved and published by ASME, Two Park Avenue, New York,
2.4 New York 10016. ASME B31.1 is incorporated by reference and made part of the code for
2.5 steam or heating media piping systems, except as amended in this chapter. Portions of this
2.6 chapter reproduce text from ASME B31.1. ASME B31.1 is not subject to frequent change
2.7 and a copy of ASME B31.1 is available in the office of the commissioner of labor and
2.8 industry and at the State Law Library, 25 Rev. Dr. Martin Luther King Jr. Blvd., Saint Paul,
2.9 Minnesota 55155. ASME B31.1 is copyright by ASME. All rights reserved.

2.10 **5230.0275 CHAPTER I, SCOPE AND DEFINITIONS.**

2.11 Subpart 1. **Section 100.1.2.** Subparagraph (a) of ASME B31.1, section 100.1.2 is
2.12 amended to read as follows:

2.13 (a) This Code covers boiler external piping as defined below for power boilers and
2.14 high-temperature, high-pressure water boilers in which: steam or vapor is generated at a
2.15 pressure of more than 15 psig [100 kPa (gage)]; and high-temperature water or other medium
2.16 used for heating is generated at pressures exceeding 30 psig [207 kPa (gage)] and
2.17 temperatures exceeding 250 degrees Fahrenheit (120 degrees Celsius).

2.18 Subp. 2. **Section 100.1.3.** Subparagraph (f) of ASME B31.1, section 100.1.3, is deleted.

2.19 **5230.0325 APPENDICES.**

2.20 Notwithstanding anything to the contrary in ASME B31.1, the following "Mandatory
2.21 Appendices" in ASME B31.1 are recommended rather than mandatory: A, D, G, H, and P.
2.22 The department shall not enforce compliance with "Mandatory Appendices" A, D, G, H,
2.23 or P of ASME B31.1.

3.1 **5230.5001 INCORPORATIONS BY REFERENCE.**

3.2 Subpart 1. **ANSI/IIAR 2.** For purposes of this chapter, "ANSI/IIAR 2" means the
3.3 2021 revision of the standard for Safe Design of Closed-Circuit Ammonia Refrigeration
3.4 Systems, as approved by the American National Standards Institute and as published by the
3.5 International Institute of Ammonia Refrigeration, 1001 North Fairfax Street, Suite 503,
3.6 Alexandria, Virginia 22314. ANSI/IIAR 2 is incorporated by reference and made part of
3.7 the code for ammonia refrigeration systems, except as amended in this chapter. Portions of
3.8 this chapter reproduce text from ANSI/IIAR 2. ANSI/IIAR 2 is not subject to frequent
3.9 change and a copy of ANSI/IIAR 2 is available in the office of the commissioner of labor
3.10 and industry and at the State Law Library, 25 Rev. Dr. Martin Luther King Jr. Blvd., Saint
3.11 Paul, Minnesota 55155. ANSI/IIAR 2 is copyrighted by the International Institute of
3.12 Ammonia Refrigeration. All rights reserved.

3.13 Subp. 2. **ASME B31.5.** For purposes of this chapter, "ASME B31.5" means the 2019
3.14 revision of the standard for Refrigeration Piping and Heat Transfer Components as approved
3.15 and published by ASME, Two Park Avenue, New York, New York 10016. ASME B31.5
3.16 is incorporated by reference and made part of the code for ammonia refrigeration piping.
3.17 ASME B31.5 is not subject to frequent change and a copy of ASME B31.5 is available in
3.18 the office of the commissioner of labor and industry and at the State Law Library, 25 Rev.
3.19 Dr. Martin Luther King Jr. Blvd., Saint Paul, Minnesota 55155.

3.20 **5230.5005 CHAPTER 13, PIPING.**

3.21 *[For text of subparts 1 to 3, see Minnesota Rules]*

3.22 Subp. 4. **Chapter 13.3.** ANSI/IIAR 2, chapter 13.3, is amended by adding a subsection
3.23 as follows:

3.24 **13.3.2.9.** Operating speed of control valve actuators shall be considered in
3.25 the system design. Quarter turn valves (ball valves, butterfly valves, etc.) must

4.1 utilize an actuator that restricts the time from fully open to fully closed, both
4.2 directions, to at a minimum of 60 seconds.

4.3 **5230.5007 CHAPTER 15, OVERPRESSURE PROTECTION DEVICES.**

4.4 Subpart 1. **Chapter 15.2.7.** ANSI/IIAR 2, chapter 15.2.7, is amended to read as
4.5 follows:

4.6 **15.2.7.** Relief valves shall not be located in refrigerated spaces unless precautions
4.7 are taken to prevent moisture migration into the valve body or relief valve vent
4.8 line. A drip pocket the size of the discharge pipe and at least 24 inches in length
4.9 must be installed below a vertical riser in the discharge pipe and must be fitted
4.10 with a drain plug or valve.

4.11 Subp. 2. **Chapter 15.2.8.2.** ANSI/IIAR 2, chapter 15.2.8.2, is amended by adding the
4.12 following paragraph at the end:

4.13 Rupture discs may only be used when installed in series with a pressure relief
4.14 valve.

4.15 Subp. 3. **Chapter 15.3.3.** ANSI/IIAR 2, chapter 15.3.3, is amended by adding a
4.16 subsection as follows:

4.17 **15.3.3.1.** Where the refrigerant inlet and outlet of air-cooled or evaporative
4.18 condensers can be isolated, they shall be equipped with overpressure protection.

4.19 *[For text of subpart 4, see Minnesota Rules]*

4.20 **5230.5920 QUALIFICATION OF WELDING PROCEDURES, WELDERS, AND**
4.21 **WELDING OPERATORS.**

4.22 Subpart 1. **Scope.** This part applies to welding that is part of any high pressure piping
4.23 work, except where the welding is regulated by other codes or Minnesota state regulatory

5.1 bodies, such as the Power Boiler and Pressure Vessel sections of the ASME Boiler and
5.2 Pressure Vessel Code.

5.3 Subp. 2. **Incorporation by reference.** For purposes of this chapter, "ASME section
5.4 IX" means the 2021 edition of section IX of the Boiler and Pressure Vessel Code, as approved
5.5 and published by ASME, Two Park Avenue, New York, New York 10016. ASME section
5.6 IX is incorporated by reference and made a part of this chapter. ASME section IX is not
5.7 subject to frequent change. A copy of ASME section IX is available in the office of the
5.8 commissioner of labor and industry and at the State Law Library, 25 Rev. Dr. Martin Luther
5.9 King Jr. Blvd., Saint Paul, Minnesota 55155.

5.10 *[For text of subparts 3 and 4, see Minnesota Rules]*

5.11 Subp. 5. **Weld procedure and qualification requirements.** No welding may be
5.12 performed on high pressure piping systems without a welding procedure specification and
5.13 an associated procedure qualification record. Welding performed on high pressure piping
5.14 systems must be performed using only welders or welding operators properly qualified in
5.15 accordance with ASME section IX. All welding procedures must meet the requirements of
5.16 ASME section IX.

5.17 Subp. 6. **Department evaluation.** The welding procedure specifications, procedure
5.18 qualification records, and welder or welding operator performance qualification and
5.19 associated continuity records must be objectively evaluated by and acceptable to the
5.20 administrative authority in accordance with ASME section IX.

5.21 Subp. 7. **Documentation required.** Welding performed on high pressure piping
5.22 systems must be supported by the mandatory documents of the welding procedure
5.23 specification and procedure qualification record. These documents, along with support for
5.24 welder qualification, must be available at the work site upon request.

Subp. 8. **Welder identification requirement.** A welder or welding operator qualified for a project must be assigned an identification number, letter, or symbol unique to that welder. Each weld must be stamped or marked with the welder's unique identifier. Alternatively, the contractor shall maintain records that identify welds made by the welder or welding operator.

[For text of subpart 9, see Minnesota Rules]

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