

Transportation of Hazardous Liquids by Pipeline
49 CFR 195

**THIS DOCUMENT CONTAINS ONLY THE SECTIONS
NEEDED FOR THE API 1169 ICP EXAMS**

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Subpart A—General

§195.2 Definitions.

As used in this part—

Abandoned means permanently removed from service.

Administrator means the Administrator, Pipeline and Hazardous Materials Safety Administration or his or her delegate.

Alarm means an audible or visible means of indicating to the controller that equipment or processes are outside operator-defined, safety-related parameters.

Barrel means a unit of measurement equal to 42 U.S. standard gallons.

Breakout tank means a tank used to (a) relieve surges in a hazardous liquid pipeline system or (b) receive and store hazardous liquid transported by a pipeline for reinjection and continued transportation by pipeline.

Carbon dioxide means a fluid consisting of more than 90 percent carbon dioxide molecules compressed to a supercritical state.

Component means any part of a pipeline which may be subjected to pump pressure including, but not limited to, pipe, valves, elbows, tees, flanges, and closures.

Computation Pipeline Monitoring (CPM) means a software-based monitoring tool that alerts the pipeline dispatcher of a possible pipeline operating anomaly that may be indicative of a commodity release.

Control room means an operations center staffed by personnel charged with the responsibility for remotely monitoring and controlling a pipeline facility.

Controller means a qualified individual who remotely monitors and controls the safety-related operations of a pipeline facility via a SCADA system from a control room, and who has operational authority and accountability for the remote operational functions of the pipeline facility.

Corrosive product means “corrosive material” as defined by §173.136 Class 8-Definitions of this chapter.

Exposed underwater pipeline means an underwater pipeline where the top of the pipe protrudes above the underwater natural bottom (as determined by recognized and generally accepted practices) in waters less than 15 feet (4.6 meters) deep, as measured from mean low water.

Flammable product means “flammable liquid” as defined by §173.120 Class 3-Definitions of this chapter.

Gathering line means a pipeline 219.1 mm (8⁵/₈ in) or less nominal outside diameter that transports petroleum from a production facility.

Gulf of Mexico and its inlets means the waters from the mean high water mark of the coast of the Gulf of Mexico and its inlets open to the sea (excluding rivers, tidal marshes, lakes, and canals) seaward to include the territorial sea and Outer Continental Shelf to a depth of 15 feet (4.6 meters), as measured from the mean low water.

Hazard to navigation means, for the purposes of this part, a pipeline where the top of the pipe is less than 12 inches (305 millimeters) below the underwater natural bottom (as determined by recognized and generally accepted practices) in waters less than 15 feet (4.6 meters) deep, as measured from the mean low water.

Hazardous liquid means petroleum, petroleum products, anhydrous ammonia, or ethanol.

Highly volatile liquid or *HVL* means a hazardous liquid which will form a vapor cloud when released to the atmosphere and which has a vapor pressure exceeding 276 kPa (40 psia) at 37.8 °C (100 °F).

In-plant piping system means piping that is located on the grounds of a plant and used to transfer hazardous liquid or carbon dioxide between plant facilities or between plant facilities and a pipeline or other mode of transportation, not including any device and associated piping that are necessary to control pressure in the pipeline under §195.406(b).

Interstate pipeline means a pipeline or that part of a pipeline that is used in the transportation of hazardous liquids or carbon dioxide in interstate or foreign commerce.

Intrastate pipeline means a pipeline or that part of a pipeline to which this part applies that is not an interstate pipeline.

Line section means a continuous run of pipe between adjacent pressure pump stations, between a pressure pump station and terminal or breakout tanks, between a pressure pump station and a block valve, or between adjacent block valves.

Low-stress pipeline means a hazardous liquid pipeline that is operated in its entirety at a stress level of 20 percent or less of the specified minimum yield strength of the line pipe.

Maximum operating pressure (MOP) means the maximum pressure at which a pipeline or segment of a pipeline may be normally operated under this part.

Nominal wall thickness means the wall thickness listed in the pipe specifications.

Offshore means beyond the line of ordinary low water along that portion of the coast of the United States that is in direct contact with the open seas and beyond the line marking the seaward limit of inland waters.

Operator means a person who owns or operates pipeline facilities.

Outer Continental Shelf means all submerged lands lying seaward and outside the area of lands beneath navigable waters as defined in Section 2 of the Submerged Lands Act (43 U.S.C. 1301) and of which the subsoil and seabed appertain to the United States and are subject to its jurisdiction and control.

Person means any individual, firm, joint venture, partnership, corporation, association, State, municipality, cooperative association, or joint stock association, and includes any trustee, receiver, assignee, or personal representative thereof.

Petroleum means crude oil, condensate, natural gasoline, natural gas liquids, and liquefied petroleum gas.

Petroleum product means flammable, toxic, or corrosive products obtained from distilling and processing of crude oil, unfinished oils, natural gas liquids, blend stocks and other miscellaneous hydrocarbon compounds.

Pipe or line pipe means a tube, usually cylindrical, through which a hazardous liquid or carbon dioxide flows from one point to another.

Pipeline or pipeline system means all parts of a pipeline facility through which a hazardous liquid or carbon dioxide moves in transportation, including, but not limited to, line pipe, valves, and other appurtenances connected to line pipe, pumping units, fabricated assemblies associated with pumping units, metering and delivery stations and fabricated assemblies therein, and breakout tanks.

Pipeline facility means new and existing pipe, rights-of-way and any equipment, facility, or building used in the transportation of hazardous liquids or carbon dioxide.

Production facility means piping or equipment used in the production, extraction, recovery, lifting, stabilization, separation or treating of petroleum or carbon dioxide, or associated storage or measurement. (To be a production facility under this definition, piping or equipment must be used in the process of extracting petroleum or carbon dioxide from the ground or from facilities where CO₂ is produced, and preparing it for transportation by pipeline. This includes piping between treatment plants which extract carbon dioxide, and facilities utilized for the injection of carbon dioxide for recovery operations.)

Rural area means outside the limits of any incorporated or unincorporated city, town, village, or any other designated residential or commercial area such as a subdivision, a business or shopping center, or community development.

Specified minimum yield strength means the minimum yield strength, expressed in p.s.i. (kPa) gage, prescribed by the specification under which the material is purchased from the manufacturer.

Stress level means the level of tangential or hoop stress, usually expressed as a percentage of specified minimum yield strength.

Supervisory Control and Data Acquisition (SCADA) system means a computer-based system or systems used by a controller in a control room that collects and displays information about a pipeline facility and may have the ability to send commands back to the pipeline facility.

Surge pressure means pressure produced by a change in velocity of the moving stream that results from shutting down a pump station or pumping unit, closure of a valve, or any other blockage of the moving stream.

Toxic product means “poisonous material” as defined by §173.132 Class 6, Division 6.1-Definitions of this chapter.

Unusually Sensitive Area (USA) means a drinking water or ecological resource area that is unusually sensitive to environmental damage from a hazardous liquid pipeline release, as identified under §195.6.

Welder means a person who performs manual or semi-automatic welding.

Welding operator means a person who operates machine or automatic welding equipment.

[Amdt. 195-22, 46 FR 38360, July 27, 1981; 47 FR 32721, July 29, 1982, as amended by Amdt. 195-33, 50 FR 15898, Apr. 23, 1985; 50 FR 38660, Sept. 24, 1985; Amdt. 195-36, 51 FR 15007, Apr. 22, 1986; Amdt. 195-45, 56 FR 26925, June 12, 1991; Amdt. 195-47, 56 FR 63771, Dec. 5, 1991; Amdt. 195-50, 59 FR 17281, Apr. 12, 1994; Amdt. 195-52, 59 FR 33395, 33396, June 28, 1994; Amdt. 195-53, 59 FR 35471, July 12, 1994; Amdt. 195-59, 62 FR 61695, Nov. 19, 1997; Amdt. 195-62, 63 FR 36376, July 6, 1998; Amdt. 195-63, 63 FR 37506, July 13, 1998; Amdt. 195-69, 65 FR 54444, Sept. 8, 2000; Amdt. 195-71, 65 FR 80544, Dec. 21, 2000; 68 FR 11749, Mar. 12, 2003; Amdt. 195-81, 69 FR 32896, June 14, 2004; Amdt. 195-82, 69 FR 48406, Aug. 10, 2004; 70 FR 11140, Mar. 8, 2005; Amdt. 195-93, 74 FR 63328, Dec. 3, 2009; ; Amdt. 195-100, 80 FR 12779, Mar. 11, 2015]

§195.3 What documents are incorporated by reference partly or wholly in this part?

(a) This part prescribes standards, or portions thereof, incorporated by reference into this part with the approval of the Director of the Federal Register in 5 U.S.C. 552(a) and 1 CFR part 51. The materials listed in this section have the full force of law. To enforce any edition other than that specified in this section, PHMSA must publish a notice of change in the FEDERAL REGISTER.

(1) *Availability of standards incorporated by reference.* All of the materials incorporated by reference are available for inspection from several sources, including the following:

(i) The Office of Pipeline Safety, Pipeline and Hazardous Materials Safety Administration, 1200 New Jersey Avenue SE., Washington, DC 20590. For more information contact 202-366-4046 or go to the PHMSA Web site at: <http://www.phmsa.dot.gov/pipeline/regs>.

(ii) The National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030 or go to the NARA Web site at: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(iii) Copies of standards incorporated by reference in this part can also be purchased from the respective standards-developing organization at the addresses provided in the centralized IBR section below.

(b) American Petroleum Institute (API), 1220 L Street NW., Washington, DC 20005, and phone: 202-682-8000, Web site: <http://api.org/>.

(1) API Publication 2026, "Safe Access/Egress Involving Floating Roofs of Storage Tanks in Petroleum Service," 2nd edition, April 1998 (reaffirmed June 2006) (API Pub 2026), IBR approved for §195.405(b).

(2) API Recommended Practice 5L1, "Recommended Practice for Railroad Transportation of Line Pipe," 7th edition, September 2009, (API RP 5L1), IBR approved for §195.207(a).

(3) API Recommended Practice 5LT, “Recommended Practice for Truck Transportation of Line Pipe,” First edition, March 12, 2012, (API RP 5LT), IBR approved for §195.207(c).

(4) API Recommended Practice 5LW, “Recommended Practice Transportation of Line Pipe on Barges and Marine Vessels,” 3rd edition, September 2009, (API RP 5LW), IBR approved for §195.207(b).

(5) ANSI/API Recommended Practice 651, “Cathodic Protection of Aboveground Petroleum Storage Tanks,” 3rd edition, January 2007, (ANSI/API RP 651), IBR approved for §§195.565 and 195.573(d).

(6) ANSI/API Recommended Practice 652, “Linings of Aboveground Petroleum Storage Tank Bottoms,” 3rd edition, October 2005, (API RP 652), IBR approved for §195.579(d).

(7) API Recommended Practice 1130, “Computational Pipeline Monitoring for Liquids: Pipeline Segment,” 3rd edition, September 2007, (API RP 1130), IBR approved for §§195.134 and 195.444.

(8) API Recommended Practice 1162, “Public Awareness Programs for Pipeline Operators,” 1st edition, December 2003, (API RP 1162), IBR approved for §195.440(a), (b), and (c).

(9) API Recommended Practice 1165, “Recommended Practice for Pipeline SCADA Displays,” First edition, January 2007, (API RP 1165), IBR approved for §195.446(c).

(10) API Recommended Practice 1168, “Pipeline Control Room Management,” First edition, September 2008, (API RP 1168), IBR approved for §195.446(c) and (f).

(11) API Recommended Practice 2003, “Protection against Ignitions Arising out of Static, Lightning, and Stray Currents,” 7th edition, January 2008, (API RP 2003), IBR approved for §195.405(a).

(12) API Recommended Practice 2350, “Overfill Protection for Storage Tanks in Petroleum Facilities,” 3rd edition, January 2005, (API RP 2350), IBR approved for §195.428(c).

(13) API Specification 5L, “Specification for Line Pipe,” 45th edition, effective July 1, 2013, (ANSI/API Spec 5L), IBR approved for §195.106(b) and (e).

(14) ANSI/API Specification 6D, “Specification for Pipeline Valves,” 23rd edition, effective October 1, 2008, (including Errata 1 (June 2008), Errata 2 (November 2008), Errata 3 (February 2009), Errata 4 (April 2010), Errata 5 (November 2010), and Errata 6 (August 2011); Addendum 1 (October 2009), Addendum 2 (August 2011), and Addendum 3 (October 2012)); (ANSI/API Spec 6D), IBR approved for §195.116(d).

(15) API Specification 12F, “Specification for Shop Welded Tanks for Storage of Production Liquids,” 12th edition, October 2008, effective April 1, 2009, (API Spec 12F), IBR approved for §§195.132(b); 195.205(b); 195.264(b) and (e); 195.307(a); 195.565; 195.579(d).

(16) API Standard 510, “Pressure Vessel Inspection Code: In-Service Inspection, Rating, Repair, and Alteration,” 9th edition, June 2006, (API Std 510), IBR approved for §§195.205(b); 195.432(c).

(17) API Standard 620, “Design and Construction of Large, Welded, Low-Pressure Storage Tanks,” 11th edition February 2008 (including addendum 1 (March 2009), addendum 2 (August 2010), and addendum 3 (March 2012)), (API Std 620), IBR approved for §§195.132(b); 195.205(b); 195.264(b) and (e); 195.307(b); 195.565, 195.579(d).

(18) API Standard 650, “Welded Steel Tanks for Oil Storage,” 11th edition, June 2007, effective February 1, 2012, (including addendum 1 (November 2008), addendum 2 (November 2009), addendum 3 (August 2011), and errata (October 2011)), (API Std 650), IBR approved for §§195.132(b); 195.205(b); 195.264(b), (e); 195.307(c) and (d); 195.565; 195.579(d).

(19) API Standard 653, “Tank Inspection, Repair, Alteration, and Reconstruction,” 3rd edition, December 2001, (including addendum 1 (September 2003), addendum 2 (November 2005), addendum 3 (February 2008), and errata (April 2008)), (API Std 653), IBR approved for §§195.205(b), 195.307(d), and 195.432(b).

(20) API Standard 1104, “Welding of Pipelines and Related Facilities,” 20th edition, October 2005, (including errata/addendum (July 2007) and errata 2 (2008), (API Std 1104)), IBR approved for §§195.214(a), 195.222(a) and (b), 195.228(b).

(21) ANSI/API Standard 2000, “Venting Atmospheric and Low-pressure Storage Tanks,” 6th edition, November 2009, (ANSI/API Std 2000), IBR approved for §195.264(e).

(22) API Standard 2510, “Design and Construction of LPG Installations,” 8th edition, 2001, (API Std 2510), IBR approved for §§195.132(b), 195.205(b), 195.264 (b), (e); 195.307 (e), 195.428 (c); and 195.432 (c).

(c) ASME International (ASME), Two Park Avenue, New York, NY 10016, 800-843-2763 (U.S/Canada), Web site: <http://www.asme.org/>.

(1) ASME/ANSI B16.9-2007, “Factory-Made Wrought Butt welding Fittings,” December 7, 2007, (ASME/ANSI B16.9), IBR approved for §195.118(a).

(2) ASME/ANSI B31G-1991 (Reaffirmed 2004), “Manual for Determining the Remaining Strength of Corroded Pipelines,” 2004, (ASME/ANSI B31G), IBR approved for §§195.452(h); and 195.587.

(3) ASME/ANSI B31.4-2006, “Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids” October 20, 2006, (ASME/ANSI B31.4), IBR approved for §§195.110(a); 195.452(h).

(4) ASME/ANSI B31.8-2007, “Gas Transmission and Distribution Piping Systems,” November 30, 2007, (ASME/ANSI B31.8), IBR approved for §§195.5(a) and 195.406(a).

(5) ASME Boiler & Pressure Vessel Code, Section VIII, Division 1, “Rules for Construction of Pressure Vessels,” 2007 edition, July 1, 2007, (ASME BPVC, Section VIII, Division 1), IBR approved for §§195.124 and 195.307(e).

(6) ASME Boiler & Pressure Vessel Code, Section VIII, Division 2, “Alternate Rules, Rules for Construction of Pressure Vessels,” 2007 edition, July 1, 2007, (ASME BPVC, Section VIII, Division 2), IBR approved for §195.307(e).

(7) ASME Boiler & Pressure Vessel Code, Section IX: “Qualification Standard for Welding and Brazing Procedures, Welders, Brazers, and Welding and Brazing Operators,” 2007 edition, July 1, 2007, (ASME BPVC, Section IX), IBR approved for §195.222(a).

(d) American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 119428, phone: 610-832-9585, Web site: <http://www.astm.org/>.

(1) ASTM A53/A53M-10, “Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless,” approved October 1, 2010, (ASTM A53/A53M), IBR approved for §195.106(e).

(2) ASTM A106/A106M-10, “Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service,” approved April 1, 2010, (ASTM A106/A106M), IBR approved for §195.106(e).

(3) ASTM A333/A333M-11, “Standard Specification for Seamless and Welded Steel Pipe for Low-Temperature Service,” approved April 1, 2011, (ASTM A333/A333M), IBR approved for §195.106(e).

(4) ASTM A381-96 (Reapproved 2005), “Standard Specification for Metal-Arc Welded Steel Pipe for Use with High-Pressure Transmission Systems,” approved October 1, 2005, (ASTM A381), IBR approved for §195.106(e).

(5) ASTM A671/A671M-10, “Standard Specification for Electric-Fusion-Welded Steel Pipe for Atmospheric and Lower Temperatures,” approved April 1, 2010, (ASTM A671/A671M), IBR approved for §195.106(e).

(6) ASTM A672/A672M-09, “Standard Specification for Electric-Fusion-Welded Steel Pipe for High-Pressure Service at Moderate Temperatures,” approved October 1, 2009, (ASTM A672/A672M), IBR approved for §195.106(e).

(7) ASTM A691/A691M-09, “Standard Specification for Carbon and Alloy Steel Pipe, Electric-Fusion-Welded for High-Pressure Service at High Temperatures,” approved October 1, 2009, (ASTM A691), IBR approved for §195.106(e).

(e) Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS), 127 Park St. NE., Vienna, VA 22180, phone: 703-281-6613, Web site: <http://www.mss-hq.org/>.

(1) MSS SP-75-2008 Standard Practice, “Specification for High-Test, Wrought, Butt-Welding Fittings,” 2008 edition, (MSS SP 75), IBR approved for §195.118(a).

(2) [Reserved]

(f) NACE International (NACE), 1440 South Creek Drive, Houston, TX 77084, phone: 281-228-6223 or 800-797-6223, Web site: <http://www.nace.org/Publications/>.

(1) NACE SP0169-2007, Standard Practice, “Control of External Corrosion on Underground or Submerged Metallic Piping Systems” reaffirmed March 15, 2007, (NACE SP0169), IBR approved for §§195.571 and 195.573(a).

(2) ANSI/NACE SP0502-2010, Standard Practice, “Pipeline External Corrosion Direct Assessment Methodology,” June 24, 2010, (NACE SP0502), IBR approved for §195.588(b).

(g) National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02169, phone: 617-984-7275, Web site: <http://www.nfpa.org/>.

(1) NFPA-30 (2012), “Flammable and Combustible Liquids Code,” including Errata 30-12-1 (9/27/11), and Errata 30-12-2 (11/14/11), 2012 edition, copyright 2011, (NFPA-30), IBR approved for §195.264(b).

(2) [Reserved]

(h) Pipeline Research Council International, Inc. (PRCI), c/o Technical Toolboxes, 3801 Kirby Drive, Suite 520, P.O. Box 980550, Houston, TX 77098, phone: 713-630-0505, toll free: 866-866-6766, Web site: <http://www.ttoolboxes.com/>.

(1) AGA Pipeline Research Committee, Project PR-3-805 “A Modified Criterion for Evaluating the Remaining Strength of Corroded Pipe,” December 22, 1989, (PR-3-805 (RSTRING)). IBR approved for §§195.452(h); 195.587.

(2) [Reserved]

[Amdt. 195-99, 80 FR 184, Jan. 5, 2015, as amended by Amdt. 195-101, 82 FR 7998, Jan. 23, 2017]

Subpart D—Construction

§195.200 Scope.

This subpart prescribes minimum requirements for constructing new pipeline systems with steel pipe, and for relocating, replacing, or otherwise changing existing pipeline systems that are constructed with steel pipe. However, this subpart does not apply to the movement of pipe covered by §195.424.

§195.202 Compliance with specifications or standards.

Each pipeline system must be constructed in accordance with comprehensive written specifications or standards that are consistent with the requirements of this part.

§195.204 Inspection—general.

Inspection must be provided to ensure that the installation of pipe or pipeline systems is in accordance with the requirements of this subpart. Any operator personnel used to perform the inspection must be trained and qualified in the phase of construction to be inspected. An operator must not use operator personnel to perform a required inspection if the operator personnel performed the construction task requiring inspection. Nothing in this section prohibits the operator from inspecting construction tasks with operator personnel who are involved in other construction tasks.

[Amdt. 195-100, 80 FR 12780, Mar. 11, 2015]

§195.205 Repair, alteration and reconstruction of aboveground breakout tanks that have been in service.

(a) Aboveground breakout tanks that have been repaired, altered, or reconstructed and returned to service must be capable of withstanding the internal pressure produced by the hazardous liquid to be stored therein and any anticipated external loads.

(b) After October 2, 2000, compliance with paragraph (a) of this section requires the following:

(1) For tanks designed for approximate atmospheric pressure, constructed of carbon and low alloy steel, welded or riveted, and non-refrigerated; and for tanks built to API Std 650 (incorporated by reference, *see* §195.3) or its predecessor Standard 12C; repair, alteration; and reconstruction must be in accordance with API Std 653 (except section 6.4.3) (incorporated by reference, *see* §195.3).

(2) For tanks built to API Spec 12F (incorporated by reference, *see* §195.3) or API Std 620 (incorporated by reference, *see* §195.3), repair, alteration, and reconstruction must be in accordance with the design, welding, examination, and material requirements of those respective standards.

(3) For high-pressure tanks built to API Std 2510 (incorporated by reference, *see* §195.3), repairs, alterations, and reconstruction must be in accordance with API Std 510 (incorporated by reference, *see* §195.3).

[Amdt. 195-66, 64 FR 15935, Apr. 2, 1999, as amended by Amdt. 195-99, 80 FR 186, Jan. 5, 2015; 80 FR 46848, Aug. 6, 2015]

§195.206 Material inspection.

No pipe or other component may be installed in a pipeline system unless it has been visually inspected at the site of installation to ensure that it is not damaged in a manner that could impair its strength or reduce its serviceability.

§195.207 Transportation of pipe.

(a) *Railroad.* In a pipeline operated at a hoop stress of 20 percent or more of SMYS, an operator may not use pipe having an outer diameter to wall thickness ratio of 70 to 1, or more, that is transported by railroad unless the transportation is performed in accordance with API RP 5L1 (incorporated by reference, *see* §195.3).

(b) *Ship or barge.* In a pipeline operated at a hoop stress of 20 percent or more of SMYS, an operator may not use pipe having an outer diameter to wall thickness ratio of 70 to 1, or more, that is transported by ship or barge on both inland and marine waterways, unless the transportation is performed in accordance with API RP 5LW (incorporated by reference, *see* §195.3).

(c) *Truck.* In a pipeline to be operated at a hoop stress of 20 percent or more of SMYS, an operator may not use pipe having an outer diameter to wall thickness ratio of 70 to 1, or more, that is transported by truck unless the transportation is performed in accordance with API RP 5LT (incorporated by reference, *see* §195.3).

[Amdt. 195-94, 75 FR 48606, Aug. 11, 2010, as amended by Amdt. 195-99, 80 FR 186, Jan. 5, 2015]

§195.208 Welding of supports and braces.

Supports or braces may not be welded directly to pipe that will be operated at a pressure of more than 100 p.s.i. (689 kPa) gage.

[Amdt. 195-22, 46 FR 38360, July 27, 1981, as amended by Amdt. 195-63, 63 FR 37506, July 13, 1998]

§195.210 Pipeline location.

(a) Pipeline right-of-way must be selected to avoid, as far as practicable, areas containing private dwellings, industrial buildings, and places of public assembly.

(b) No pipeline may be located within 50 feet (15 meters) of any private dwelling, or any industrial building or place of public assembly in which persons work, congregate, or assemble, unless it is provided with at least 12 inches (305 millimeters) of cover in addition to that prescribed in §195.248.

[Amdt. 195-22, 46 FR 39360, July 27, 1981, as amended by Amdt. 195-63, 63 FR 37506, July 13, 1998]

§195.212 Bending of pipe.

(a) Pipe must not have a wrinkle bend.

(b) Each field bend must comply with the following:

(1) A bend must not impair the serviceability of the pipe.

(2) Each bend must have a smooth contour and be free from buckling, cracks, or any other mechanical damage.

(3) On pipe containing a longitudinal weld, the longitudinal weld must be as near as practicable to the neutral axis of the bend unless—

(i) The bend is made with an internal bending mandrel; or

(ii) The pipe is $12\frac{3}{4}$ in (324 mm) or less nominal outside diameter or has a diameter to wall thickness ratio less than 70.

(c) Each circumferential weld which is located where the stress during bending causes a permanent deformation in the pipe must be nondestructively tested either before or after the bending process.

[Amdt. 195-22, 46 FR 38360, July 27, 1981, as amended by Amdt. 195-52, 59 FR 33396, June 28, 1994; Amdt. 195-63, 63 FR 37506, July 13, 1998]

§195.214 Welding procedures.

(a) Welding must be performed by a qualified welder or welding operator in accordance with welding procedures qualified under section 5, section 12 or Appendix A of API Std 1104 (incorporated by reference, *see* §195.3), or section IX of ASME Boiler and Pressure Vessel Code (BPVC) (incorporated by reference, *see* §195.3). The quality of the test welds used to qualify welding procedures must be determined by destructive testing.

(b) Each welding procedure must be recorded in detail, including the results of the qualifying tests. This record must be retained and followed whenever the procedure is used.

[Amdt. 195-38, 51 FR 20297, June 4, 1986, as amended at Amdt. 195-81, 69 FR 32897, June 14, 2004; Amdt. 195-99, 80 FR 186, Jan. 5, 2015; Amdt. 195-100, 80 FR 12780, Mar. 11, 2015; Amdt. 195-101, 82 FR 7999, Jan. 23, 2017]

§195.216 Welding: Miter joints.

A miter joint is not permitted (not including deflections up to 3 degrees that are caused by misalignment).

§195.222 Welders and welding operators: Qualification of welders and welding operators.

(a) Each welder or welding operator must be qualified in accordance with section 6, section 12 or Appendix A of API Std 1104 (incorporated by reference, *see* §195.3), or section IX of ASME Boiler and Pressure Vessel Code (BPVC), (incorporated by reference, *see* §195.3), except that a welder or welding operator qualified under an earlier edition than an edition listed in §195.3, may weld but may not re-qualify under that earlier edition.

(b) No welder or welding operator may weld with a welding process unless, within the preceding 6 calendar months, the welder or welding operator has—

(1) Engaged in welding with that process; and

(2) Had one weld tested and found acceptable under section 9 or Appendix A of API Std 1104 (incorporated by reference, *see* §195.3).

[Amdt. 195-81, 69 FR 54593, Sept. 9, 2004, as amended by Amdt. 195-86, 71 FR 33409, June 9, 2006; Amdt. 195-99, 80 FR 186, Jan. 5, 2015; Amdt. 195-100, 80 FR 12780, Mar. 11, 2015; Amdt. 195-101, 82 FR 7999, Jan. 23, 2017]

§195.224 Welding: Weather.

Welding must be protected from weather conditions that would impair the quality of the completed weld.

§195.226 Welding: Arc burns.

(a) Each arc burn must be repaired.

(b) An arc burn may be repaired by completely removing the notch by grinding, if the grinding does not reduce the remaining wall thickness to less than the minimum thickness required by the tolerances in the specification to which the pipe is manufactured. If a notch is not repairable by grinding, a cylinder of the pipe containing the entire notch must be removed.

(c) A ground may not be welded to the pipe or fitting that is being welded.

§195.228 Welds and welding inspection: Standards of acceptability.

(a) Each weld and welding must be inspected to insure compliance with the requirements of this subpart. Visual inspection must be supplemented by nondestructive testing.

(b) The acceptability of a weld is determined according to the standards in section 9 or Appendix A of API Std 1104 (incorporated by reference, *see* §195.3). Appendix A of API Std 1104 may not be used to accept cracks.

[Amdt. 195-22, 46 FR 38360, July 27, 1981, as amended by Amdt. 195-52, 59 FR 33397, June 28, 1994; Amdt. 195-81, 69 FR 32898, June 14, 2004; Amdt. 195-99, 80 FR 186, Jan. 5, 2015; Amdt. 195-100, 80 FR 12780, Mar. 11, 2015]

§195.230 Welds: Repair or removal of defects.

(a) Each weld that is unacceptable under §195.228 must be removed or repaired. Except for welds on an offshore pipeline being installed from a pipelay vessel, a weld must be removed if it has a crack that is more than 8 percent of the weld length.

(b) Each weld that is repaired must have the defect removed down to sound metal and the segment to be repaired must be preheated if conditions exist which would adversely affect the quality of the weld repair. After repair, the segment of the weld that was repaired must be inspected to ensure its acceptability.

(c) Repair of a crack, or of any defect in a previously repaired area must be in accordance with written weld repair procedures that have been qualified under §195.214. Repair procedures must provide that the minimum mechanical properties specified for the welding procedure used to make the original weld are met upon completion of the final weld repair.

[Amdt. 195-29, 48 FR 48674, Oct. 20, 1983]

§195.234 Welds: Nondestructive testing.

(a) A weld may be nondestructively tested by any process that will clearly indicate any defects that may affect the integrity of the weld.

(b) Any nondestructive testing of welds must be performed—

(1) In accordance with a written set of procedures for nondestructive testing; and

(2) With personnel that have been trained in the established procedures and in the use of the equipment employed in the testing.

(c) Procedures for the proper interpretation of each weld inspection must be established to ensure the acceptability of the weld under §195.228.

(d) During construction, at least 10 percent of the girth welds made by each welder and welding operator during each welding day must be nondestructively tested over the entire circumference of the weld.

(e) All girth welds installed each day in the following locations must be nondestructively tested over their entire circumference, except that when nondestructive testing is impracticable for a girth weld, it need not be tested if the number of girth welds for which testing is impracticable does not exceed 10 percent of the girth welds installed that day:

(1) At any onshore location where a loss of hazardous liquid could reasonably be expected to pollute any stream, river, lake, reservoir, or other body of water, and any offshore area;

(2) Within railroad or public road rights-of-way;

(3) At overhead road crossings and within tunnels;

(4) Within the limits of any incorporated subdivision of a State government; and

(5) Within populated areas, including, but not limited to, residential subdivisions, shopping centers, schools, designated commercial areas, industrial facilities, public institutions, and places of public assembly.

(f) When installing used pipe, 100 percent of the old girth welds must be nondestructively tested.

(g) At pipeline tie-ins, including tie-ins of replacement sections, 100 percent of the girth welds must be nondestructively tested.

[Amdt. 195-22, 46 FR 38360, July 27, 1981, as amended by Amdt. 195-35, 50 FR 37192, Sept. 21, 1985; Amdt. 195-52, 59 FR 33397, June 28, 1994; Amdt. 195-100, 80 FR 12780, Mar. 11, 2015]

§§195.236-195.244 [Reserved]

§195.246 Installation of pipe in a ditch.

(a) All pipe installed in a ditch must be installed in a manner that minimizes the introduction of secondary stresses and the possibility of damage to the pipe.

(b) Except for pipe in the Gulf of Mexico and its inlets in waters less than 15 feet deep, all offshore pipe in water at least 12 feet deep (3.7 meters) but not more than 200 feet deep (61 meters) deep as measured from the mean low water must be installed so that the top of the pipe is below the underwater natural bottom (as determined by recognized and generally accepted practices) unless the pipe is supported by stanchions held in place by anchors or heavy concrete coating or protected by an equivalent means.

[Amdt. 195-22, 46 FR 38360, July 27, 1981, as amended by Amdt. 195-52, 59 FR 33397, June 28, 1994; 59 FR 36256, July 15, 1994; Amdt. 195-85, 69 FR 48407, Aug. 10, 2004]

§195.248 Cover over buried pipeline.

(a) Unless specifically exempted in this subpart, all pipe must be buried so that it is below the level of cultivation. Except as provided in paragraph (b) of this section, the pipe must be installed so that the cover between the top of the pipe and the ground level, road bed, river bottom, or underwater natural bottom (as determined by recognized and generally accepted practices), as applicable, complies with the following table:

Location	Cover inches (millimeters)	
	For normal excavation	For rock excavation ¹
Industrial, commercial, and residential areas	36 (914)	30 (762)
Crossing of inland bodies of water with a width of at least 100 feet (30 millimeters) from high water mark to high water mark	48 (1219)	18 (457)
Drainage ditches at public roads and railroads	36 (914)	36 (914)
Deepwater port safety zones	48 (1219)	24 (610)
Gulf of Mexico and its inlets in waters less than 15 feet (4.6 meters) deep as measured from mean low water	36 (914)	18 (457)
Other offshore areas under water less than 12 ft (3.7 meters) deep as measured from mean low water	36 (914)	18 (457)
Any other area	30 (762)	18 (457)

¹Rock excavation is any excavation that requires blasting or removal by equivalent means.

(b) Except for the Gulf of Mexico and its inlets in waters less than 15 feet (4.6 meters) deep, less cover than the minimum required by paragraph (a) of this section and §195.210 may be used if—

- (1) It is impracticable to comply with the minimum cover requirements; and
- (2) Additional protection is provided that is equivalent to the minimum required cover.

[Amdt. 195-22, 46 FR 38360, July 27, 1981; 47 FR 32721, July 29, 1982, as amended by Amdt. 195-52, 59 FR 33397, June 28, 1994; 59 FR 36256, July 15, 1994; Amdt. 195-63, 63 FR 37506, July 13, 1998; Amdt. 195-95, 69 FR 48407, Aug. 10, 2004; Amdt. 195-101, 82 FR 7999, Jan. 23, 2017]

§195.250 Clearance between pipe and underground structures.

Any pipe installed underground must have at least 12 inches (305 millimeters) of clearance between the outside of the pipe and the extremity of any other underground structure, except that for drainage tile the minimum clearance may be less than 12 inches (305 millimeters) but not less than 2 inches (51 millimeters). However, where 12 inches (305 millimeters) of clearance is impracticable, the clearance may be reduced if adequate provisions are made for corrosion control.

[Amdt. 195-22, 46 FR 38360, July 27, 1981, as amended by Amdt. 195-63, 63 FR 37506, July 13, 1998]

§195.252 Backfilling.

When a ditch for a pipeline is backfilled, it must be backfilled in a manner that:

- (a) Provides firm support under the pipe; and
- (b) Prevents damage to the pipe and pipe coating from equipment or from the backfill material.

[Amdt. 195-78, 68 FR 53528, Sept. 11, 2003]

§195.254 Above ground components.

(a) Any component may be installed above ground in the following situations, if the other applicable requirements of this part are complied with:

- (1) Overhead crossings of highways, railroads, or a body of water.
- (2) Spans over ditches and gullies.
- (3) Scraper traps or block valves.
- (4) Areas under the direct control of the operator.
- (5) In any area inaccessible to the public.

(b) Each component covered by this section must be protected from the forces exerted by the anticipated loads.

§195.256 Crossing of railroads and highways.

The pipe at each railroad or highway crossing must be installed so as to adequately withstand the dynamic forces exerted by anticipated traffic loads.

§195.258 Valves: General.

(a) Each valve must be installed in a location that is accessible to authorized employees and that is protected from damage or tampering.

(b) Each submerged valve located offshore or in inland navigable waters must be marked, or located by conventional survey techniques, to facilitate quick location when operation of the valve is required.

§195.260 Valves: Location.

A valve must be installed at each of the following locations:

(a) On the suction end and the discharge end of a pump station in a manner that permits isolation of the pump station equipment in the event of an emergency.

(b) On each line entering or leaving a breakout storage tank area in a manner that permits isolation of the tank area from other facilities.

(c) On each mainline at locations along the pipeline system that will minimize damage or pollution from accidental hazardous liquid discharge, as appropriate for the terrain in open country, for offshore areas, or for populated areas.

(d) On each lateral takeoff from a trunk line in a manner that permits shutting off the lateral without interrupting the flow in the trunk line.

(e) On each side of a water crossing that is more than 100 feet (30 meters) wide from high-water mark to high-water mark unless the Administrator finds in a particular case that valves are not justified.

(f) On each side of a reservoir holding water for human consumption.

[Amdt. 195-22, 46 FR 38360, July 27, 1981; 47 FR 32721, July 29, 1982; Amdt. 195-50, 59 FR 17281, Apr. 12, 1994; Amdt. 195-63, 63 FR 37506, July 13, 1998]

§195.262 Pumping equipment.

(a) Adequate ventilation must be provided in pump station buildings to prevent the accumulation of hazardous vapors. Warning devices must be installed to warn of the presence of hazardous vapors in the pumping station building.

(b) The following must be provided in each pump station:

(1) Safety devices that prevent overpressuring of pumping equipment, including the auxiliary pumping equipment within the pumping station.

(2) A device for the emergency shutdown of each pumping station.

(3) If power is necessary to actuate the safety devices, an auxiliary power supply.

(c) Each safety device must be tested under conditions approximating actual operations and found to function properly before the pumping station may be used.

(d) Except for offshore pipelines, pumping equipment must be installed on property that is under the control of the operator and at least 15.2 m (50 ft) from the boundary of the pump station.

(e) Adequate fire protection must be installed at each pump station. If the fire protection system installed requires the use of pumps, motive power must be provided for those pumps that is separate from the power that operates the station.

[Amdt. 195-22, 46 FR 38360, July 27, 1981, as amended by Amdt. 195-52, 59 FR 33397, June 28, 1994]

§195.264 Impoundment, protection against entry, normal/emergency venting or pressure/vacuum relief for aboveground breakout tanks.

(a) A means must be provided for containing hazardous liquids in the event of spillage or failure of an aboveground breakout tank.

(b) After October 2, 2000, compliance with paragraph (a) of this section requires the following for the aboveground breakout tanks specified:

(1) For tanks built to API Spec 12F, API Std 620, and others (such as API Std 650 (or its predecessor Standard 12C)), the installation of impoundment must be in accordance with the following sections of NFPA-30 (incorporated by reference, *see* §195.3);

(i) Impoundment around a breakout tank must be installed in accordance with section 22.11.2; and

(ii) Impoundment by drainage to a remote impounding area must be installed in accordance with section 22.11.1.

(2) For tanks built to API Std 2510 (incorporated by reference, *see* §195.3) , the installation of impoundment must be in accordance with section 5 or 11 of API Std 2510.

(c) Aboveground breakout tank areas must be adequately protected against unauthorized entry.

(d) Normal/emergency relief venting must be provided for each atmospheric pressure breakout tank. Pressure/vacuum-relieving devices must be provided for each low-pressure and high-pressure breakout tank.

(e) For normal/emergency relief venting and pressure/vacuum-relieving devices installed on aboveground breakout tanks after October 2, 2000, compliance with paragraph (d) of this section requires the following for the tanks specified:

(1) Normal/emergency relief venting installed on atmospheric pressure tanks built to API Spec 12F must be in accordance with section 4 and Appendices B and C of API Spec 12F (incorporated by reference, *see* §195.3) .

(2) Normal/emergency relief venting installed on atmospheric pressure tanks (such as those built to API Std 650 or its predecessor Standard 12C) must be in accordance with API Std 2000 (incorporated by reference, *see* §195.3).

(3) Pressure-relieving and emergency vacuum-relieving devices installed on low-pressure tanks built to API Std 620 must be in accordance with Section 9 of API Std 620 (incorporated by reference, *see* §195.3) and its references to the normal and emergency venting requirements in API Std 2000 (incorporated by reference, *see* §195.3).

(4) Pressure and vacuum-relieving devices installed on high-pressure tanks built to API Std 2510 must be in accordance with sections 7 or 11 of API Std 2510 (incorporated by reference, *see* §195.3).

[Amdt. 195-66, 64 FR 15935, Apr. 2, 1999, as amended by Amdt. 195-86, 71 FR 33410, June 9, 2006; Amdt. 195-94, 75 FR 48606, Aug. 11, 2010; Amdt. 195-99, 80 FR 186, Jan. 5, 2015; 80 FR 46848, Aug. 6, 2015]

§195.266 Construction records.

A complete record that shows the following must be maintained by the operator involved for the life of each pipeline facility:

(a) The total number of girth welds and the number nondestructively tested, including the number rejected and the disposition of each rejected weld.

(b) The amount, location; and cover of each size of pipe installed.

(c) The location of each crossing of another pipeline.

(d) The location of each buried utility crossing.

(e) The location of each overhead crossing.

(f) The location of each valve and corrosion test station.

[Amdt. 195-22, 46 FR 38360, July 27, 1981, as amended by Amdt. 195-34, 50 FR 34474, Aug. 26, 1985]

Subpart E—Pressure Testing

§195.302 General Requirements.

(a) Except as otherwise provided in this section and in §195.305(b), no operator may operate a pipeline unless it has been pressure tested under this subpart without leakage. In addition, no operator may return to service a segment of pipeline that has been replaced, relocated, or otherwise changed until it has been pressure tested under this subpart without leakage.

(b) Except for pipelines converted under §195.5, the following pipelines may be operated without pressure testing under this subpart:

(1) Any hazardous liquid pipeline whose maximum operating pressure is established under §195.406(a)(5) that is—

- (i) An interstate pipeline constructed before January 8, 1971;
- (ii) An interstate offshore gathering line constructed before August 1, 1977;
- (iii) An intrastate pipeline constructed before October 21, 1985; or
- (iv) A low-stress pipeline constructed before August 11, 1994 that transports HVL.

(2) Any carbon dioxide pipeline constructed before July 12, 1991, that—

- (i) Has its maximum operating pressure established under §195.406(a)(5); or
- (ii) Is located in a rural area as part of a production field distribution system.

(3) Any low-stress pipeline constructed before August 11, 1994 that does not transport HVL.

(4) Those portions of older hazardous liquid and carbon dioxide pipelines for which an operator has elected the risk-based alternative under §195.303 and which are not required to be tested based on the risk-based criteria.

(c) Except for pipelines that transport HVL onshore, low-stress pipelines, and pipelines covered under §195.303, the following compliance deadlines apply to pipelines under paragraphs (b)(1) and (b)(2)(i) of this section that have not been pressure tested under this subpart:

(1) Before December 7, 1998, for each pipeline each operator shall—

- (i) Plan and schedule testing according to this paragraph; or
- (ii) Establish the pipeline's maximum operating pressure under §195.406(a)(5).

(2) For pipelines scheduled for testing, each operator shall—

- (i) Before December 7, 2000, pressure test—

(A) Each pipeline identified by name, symbol, or otherwise that existing records show contains more than 50 percent by mileage (length) of electric resistance welded pipe manufactured before 1970; and

(B) At least 50 percent of the mileage (length) of all other pipelines; and

(ii) Before December 7, 2003, pressure test the remainder of the pipeline mileage (length).

[Amdt. 195-51, 59 FR 29384, June 7, 1994, as amended by Amdt. 195-53, 59 FR 35471, July 12, 1994; Amdt. 195-51B, 61 FR 43027, Aug. 20, 1996; Amdt. 195-58, 62 FR 54592, Oct. 21, 1997; Amdt. 195-63, 63 FR 37506, July 13, 1998; Amdt. 195-65, 63 FR 59479, Nov. 4, 1998]

§195.310 Records.

(a) A record must be made of each pressure test required by this subpart, and the record of the latest test must be retained as long as the facility tested is in use.

(b) The record required by paragraph (a) of this section must include:

(1) The pressure recording charts;

(2) Test instrument calibration data;

(3) The name of the operator, the name of the person responsible for making the test, and the name of the test company used, if any;

(4) The date and time of the test;

(5) The minimum test pressure;

(6) The test medium;

(7) A description of the facility tested and the test apparatus;

(8) An explanation of any pressure discontinuities, including test failures, that appear on the pressure recording charts;

(9) Where elevation differences in the section under test exceed 100 feet (30 meters), a profile of the pipeline that shows the elevation and test sites over the entire length of the test section; and

(10) Temperature of the test medium or pipe during the test period.

[Amdt. 195-34, 50 FR 34474, Aug. 26, 1985, as amended by Amdt. 195-51, 59 FR 29385, June 7, 1994; Amdt. 195-63, 63 FR 37506, July 13, 1998; Amdt. 195-78, 68 FR 53528, Sept. 11, 2003]

Subpart F—Operation and Maintenance

§195.410 Line markers.

(a) Except as provided in paragraph (b) of this section, each operator shall place and maintain line markers over each buried pipeline in accordance with the following:

(1) Markers must be located at each public road crossing, at each railroad crossing, and in sufficient number along the remainder of each buried line so that its location is accurately known.

(2) The marker must state at least the following on a background of sharply contrasting color:

(i) The word “Warning,” “Caution,” or “Danger” followed by the words “Petroleum (or the name of the hazardous liquid transported) Pipeline”, or “Carbon Dioxide Pipeline,” all of which, except for markers in heavily developed urban areas, must be in letters at least 1 inch (25 millimeters) high with an approximate stroke of $\frac{1}{4}$ inch (6.4 millimeters).

(ii) The name of the operator and a telephone number (including area code) where the operator can be reached at all times.

(b) Line markers are not required for buried pipelines located—

(1) Offshore or at crossings of or under waterways and other bodies of water; or

(2) In heavily developed urban areas such as downtown business centers where—

(i) The placement of markers is impractical and would not serve the purpose for which markers are intended; and

(ii) The local government maintains current substructure records.

(c) Each operator shall provide line marking at locations where the line is above ground in areas that are accessible to the public.

[Amdt. 195-22, 46 FR 38360, July 27, 1981, as amended by Amdt. 195-27, 48 FR 25208, June 6, 1983; Amdt. 195-54, 60 FR 14650, Mar. 20, 1995; Amdt. 195-63, 63 FR 37506, July 13, 1998]