

Subpart G

General Construction Requirements for

Transmission Lines and Mains

§ 192.301 Scope

This subpart prescribes minimum requirements for constructing transmission lines and mains.

§ 192.303 Compliance With Specifications or Standards

Each transmission line or main must be constructed in accordance with comprehensive written specifications or standards that are consistent with this part.

ESI RESPONSE TO § 192.303

All gas transmission pipelines, compressor station piping, and mains shall be constructed in accordance with the requirements of this subpart and applicable Company specifications; “Gas Transmission Pipelines Plant Engineering Specification” DOT-006, “Protection of Pipelines During Construction and Repair Activities” DOT-008, and “Corrosion Control and Monitoring Plant Engineering Specification” DOT-005 and procedure “Pipeline Repair” DOT-007.

Approved: Signature on file Date: _____
 Manager, Safety, Health, and Environmental

Approved: Signature on file Date: _____
Environmental Manager

§ 192.305 **Inspection: General**

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Each transmission line or main must be inspected to ensure that it is constructed in accordance with this part. Each operator shall notify the Pipeline Safety Section of the Office of Conservation, Louisiana Department of Natural Resources of any new proposed pipeline construction or replacement for a total length of one mile or more on transmission lines or mains at least 48 hours prior to commencement said construction.

ESI RESPONSE TO § 192.305

Provisions shall be made for inspection of gas transmission pipelines or main construction projects. Inspectors shall be qualified by both experience and training. Minimum qualifications for inspectors shall be the same qualifications as API 570 “Inspection, Repair, Alteration, and Rerating of In-Service Systems”. Reference CONDEA Vista “Gas Transmission Pipeline Plant Engineering Specification” section 8.2.5.2 Inspection Provisions.

§ 192.307 Inspection of Materials

Each length of pipe and each other component must be visually inspected at the site of installation to ensure that it has not sustained any visually determinable damage that could impair its serviceability.

§ 192.309 Repair of Steel Pipe

- (a) Each imperfection or damage that impairs the serviceability of a length of steel pipe must be repaired or removed. If a repair is made by grinding, the remaining wall thickness must at least be equal to either:
 - (1) The minimum thickness required by the tolerances in the specification to which the pipe was manufactured; or
 - (2) The nominal wall thickness required for the design pressure of the pipeline.

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- (b) Each of the following dents must be removed from steel pipe to be operated at a pressure that produces a hoop stress of 20% or more, of SMYS:
- (1) A dent that contains a stress concentrator such as a scratch, gouge, groove, or arc burn.
 - (2) A dent that affects the longitudinal weld or a circumferential weld.
 - (3) In pipe to be operated at a pressure that produces a hoop stress of 40% or more of SMYS, a dent that has a depth of:
 - (i) More than one-quarter inch in pipe 12-3/4 inches or less in outer diameter; or
 - (ii) More than 2% of the nominal pipe diameter in pipe over 12-3/4 inches in outer diameter.

For the purpose of this section a "dent" is a depression that produces a gross disturbance in the curvature of the pipe wall without reducing the pipe-wall thickness. The depth of a dent is measured as the gap between the lowest point of the dent and a prolongation of the original contour of the pipe.

- (c) Each arc burn on steel pipe to be operated at a pressure that produces a hoop stress of 40% or more, of SMYS must be repaired or removed. If a repair is made by grinding, the arc burn must be completely removed and the remaining wall thickness must be at least equal to either:
- (1) The minimum wall thickness required by the tolerances in the specification to which the pipe was manufactured; or
 - (2) The nominal wall thickness required for the design pressure of the pipeline.
- (d) A gouge, groove, arc burn, or dent may not be repaired by insert patching or by pounding out.

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- (e) Each gouge, groove, arc burn, or dent that is removed from a length of pipe must be removed by cutting out the damaged portion as a cylinder.

ESI RESPONSE TO § 192.309

Appendix L, ASME/ANSI B31.8 and 49CFR192 shall be used to determine the need for repair on all Company gas transmission pipelines. Temporary repairs shall be employed immediately, but permanent repairs shall be completed as soon as possible consistent with the requirements in the specification, ASME/ANSI B31.8 and 49CFR192. If the pipeline cannot be taken out of service during temporary repair work, the operating pressure shall be reduced to 20% or less of the SMYS during all welding operations for repair.

Reference CONDEA Vista “Gas Transmission Pipelines Plant Engineering Specification” section 9.2.4 Repair Procedures for Steel Pipelines Operating at or Above 40% of the Specified Minimum Yield Strength, section 9.2.5 Permanent Field Repairs of Injurious Gouges, Grooves, Dents and Welds, section 9.2.6 Permanent Field Repair and Nonleaking Corroded Areas, “Pipeline Repair Procedure” DOT-007, and “Protection of Pipeline During Construction and Repair Activities Plant Engineering Specification” DOT-008 .

§ 192.311 Repair of Plastic Pipe

NOT APPLICABLE. CONDEA VISTA DOES NOT USE PLASTIC PIPE FOR DOT PIPELINES.

§ 192.313 Bends and Elbows

- (a) Each field bend in steel pipe, other than a wrinkle bend made in accordance with § 192.315, 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.

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- (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 inches or less in outside diameter or has a diameter to wall thickness ratio less than 70.
- (b) Each circumferential weld of steel pipe 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.
- (c) Wrought-steel welding elbows and transverse segments of these elbows may not be used for changes in direction on steel pipe that is 2-inches or more in diameter unless the arc length, as measured along the crotch, is at least 1-inch.

ESI RESPONSE TO § 192.313

Reference CONDEA Vista's "Gas Transmission Pipelines Plant Engineering Specification" section 8.2.5.3.2. Changes in direction and elevation may be made by the use of bends and elbows. Wrinkle and Miter bends are not allowed on Company gas transmission pipelines.

§ 192.315 Wrinkle Bends in Steel Pipe

WRINKLE AND MITER BENDS ARE NOT ALLOWED ON COMPANY GAS TRANSMISSION PIPELINES.

§ 192.317 Protection from Hazards

- (a) The operator must take all practicable steps to protect each transmission line or main from washouts, floods, unstable soil, landslides or other hazards that may cause the pipeline to move or to sustain abnormal loads. In addition, the operator must take all practicable steps to protect offshore pipelines from damage by mud slides, water currents, hurricanes, ship anchors, and fishing operations.

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- (b) Each aboveground transmission line or main, not located offshore or in inland navigable water areas, must be protected from accidental damage by vehicular traffic or other similar causes, either by being placed at a safe distance from the traffic or by installing barricades.
- (c) Pipelines, including pipe risers, on each platform located offshore or in inland navigable waters must be protected from accidental damage by vessels.

ESI RESPONSE TO § 192.317

CONDEA Vista's "Protection of Pipeline During Construction and Repair Activities Plant Engineering Specification" DOT-008 provides engineering methods to prevent damage to pipelines and associated equipment both above and below ground. The "Gas Transmission Pipelines Plant Engineering Specification" section 8.0 Design, Installation, and Testing, with correct interpretation and application of ASME/ANSI B31.8 Code complimented by the requirements in 49CFR192 are intended to be adequate for public safety under all conditions encountered in the gas industry. However, additional stresses in the form of long self-supported spans, unstable ground, mechanical or sonic vibration, weight of special attachments, earthquake induced stresses, and thermal stresses must be considered and correctly engineered to minimize safety problems.

The Company's gas transmission pipelines have been designated as Location Class 3 and meet the requirements of Location Class 3 with a Design Factor, $F=0.50$. In the design of future Company pipelines, future non-Company planning and development should be considered that may promote a pipeline from Location Class 3 to 4. This consideration shall be taken in the design, installation and testing of a new pipeline.

8.2.2 Pipelines on Bridges

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Company-operated pipelines will be designed with an F factor equal to 0.50 for installations where the pipe is supported by railroad, vehicular, pedestrian, or pipeline bridges.

8.2.3 Protection of Pipelines From Hazards

Pipelines which must be installed in locations where high loading may occur due to natural hazards shall be constructed with increased wall thickness, moving soil containment, erosion prevention, and weight/anchor installation.

Cover requirements for normal excavation - 30 inches, rock excavation - 24 inches. At least twelve (12) inches of clearance must be maintained between CONDEA Vista pipelines and other underground structures either Company or foreign. The installation of casing, bridging, or insulation material shall be installed if 12 inch clearance cannot be assured. Casings shall be designed to withstand all expected loads, with a Design Factor(F)=0.50, Casing-to-pipe insulation, End seals, and Cathodic protection.

§ 192.319 Installation of Pipe in a Ditch

- (a) When installed in a ditch, each transmission line that is to be operated at a pressure producing a hoop stress of 20% or more of SMYS must be installed so that the pipe fits the ditch so as to minimize stresses and protect the pipe coating from damage.
- (b) When a ditch for a transmission line or main is backfilled, it must be backfilled in a manner that:
 - (1) Provides firm support under the pipe; and
 - (2) Prevents damage to the pipe and pipe coating from equipment or from the backfill material.
- (c) All offshore pipe in water at least 12 feet deep, but not more than 200 feet deep,

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as measured from the mean low tide, except pipe in the Gulf of Mexico and its inlets under 15 feet of water, must be installed so that the top of the pipe is below the natural bottom unless the pipe is supported by stanchions, held in place by anchors or heavy concrete coating, or protected by an equivalent means. Pipe in the Gulf of Mexico and its inlets under 15 feet of water must be installed so that the top of the pipe is 36 inches below the seabed for normal excavation or 18 inches for rock excavation.

ESI RESPONSE TO § 192.319

Stresses induced into the pipe during construction must be minimized. Pipe shall lay in the ditch with application of outside forces. Backfilling shall be performed to provide firm, continuous support under the pipe. When backfilling with material containing rocks, no rocks shall be closer to the pipe than 12 inches. A "rock-free" cylinder of sand or dirt shall be placed around the pipe maintaining the required 12 inches of small-particle backfill material. In addition, rock shields are required when the backfill material contains rocks over 4 inches in diameter.

§ 192.321 Installation of Plastic Pipe

NOT APPLICABLE. CONDEA VISTA DOES NOT UTILIZE PLASTIC FOR DOT PIPELINES.

§ 192.323 Casing

Each casing used on a transmission line or main under a railroad or highway must comply with the following:

- (a) The casing must be designed to withstand the superimposed loads.
- (b) If there is a possibility of water entering the casing, the ends must be sealed.
- (c) If the ends of an unvented casing are sealed and the sealing is strong enough to retain the maximum allowable operating pressure of the pipe, the casing must be designed to hold this pressure at a stress level of not more than 72% of SMYS.

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- (d) If vents are installed on a casing, the vents must be protected from the weather to prevent water from entering the casing.

ESI RESPONSE TO § 192.323

Casings shall be designed to withstand all expected loads with a Design Factor(F)=0.50, Casing-to-pipe insulation, End seals, and Cathodic protection.

§ 192.325 Underground Clearance

- (a) Each transmission line must be installed with at least 12 inches of clearance from any other underground structure not associated with the transmission line. If this clearance cannot be attained, the transmission line must be protected from damage that might result from the proximity of the other structure.
- (b) Each main must be installed with enough clearance from any other underground structure to allow proper maintenance and to protect against damage that might result from proximity to other structures.
- (c) In addition to meeting the requirements of paragraph (a) or (b) of this section, each plastic transmission line or main must be installed with sufficient clearance, or must be insulated, from any source of heat so as to prevent the heat from impairing the serviceability of the pipe.
- (d) Each pipe-type or bottle-type holder must be installed with a minimum clearance from any other holder as prescribed in § 192.175(b).

ESI RESPONSE TO §192.325

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Cover requirements for normal excavation - 30 inches, rock excavation - 24 inches. At least twelve (12) inches of clearance must be maintained between CONDEA Vista pipelines and other underground structures either Company or foreign.

§ 192.327 Cover

- (a) Except as provided in paragraphs (c) and (e), (f), (g) of this section, each buried transmission line must be installed with a minimum cover as follows:

Location	Normal soil	Consoli- dated rock
	Inches	
Class 1 locations	30	18
Class 2,3 & 4 locations ...	36	24
Drainage ditches of public road & railroad crossings	36	24

- (b) Except as provided in paragraphs (c) and (d) of this section, each buried main must be installed with at least 24-inches of cover.
- (c) Where an underground structure prevents the installation of a transmission line or main with the minimum cover, the transmission line or main may be installed with less cover if it is provided with additional protection to withstand anticipated external loads.
- (d) A main may be installed with less than 24-inches of cover if the law of the State or municipality:
- (1) Establishes a minimum cover of less than 24-inches;

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- (2) Requires that mains be installed in a common trench with other utility lines; and
- (3) Provides adequately for prevention of damage to the pipe by external forces.
- (e) Except as provided in paragraph (c) of this section, all pipe installed in a navigable river, stream, or harbor must be installed with a minimum cover of 48-inches in soil or 24-inches in consolidated rock, between the top of the pipe and the natural bottom.
- (f) All pipe installed offshore, except in the Gulf of Mexico and its inlets, under water not more than 200 feet deep, as measured from the mean low tide, must be installed as follows:
 - (1) Except as provided in paragraph (c) of this section, pipe under water less than 12 feet deep, must be installed with a minimum cover of 36 inches in soil or 18 inches in consolidated rock between the top of the pipe and the natural bottom.
 - (2) Pipe under water at least 12 feet deep must be installed so that the top of the pipe is below the natural bottom, unless the pipe is supported by stanchions, held in place by anchors or heavy concrete coating, or protected by an equivalent means.
- (g) All pipelines installed under water in the Gulf of Mexico and its inlets, as defined in § 192.3, must be installed in accordance with § 192.612 (b)(3).

ESI RESPONSE TO § 192.327

Cover requirements for normal excavation - 30 inches, rock excavation - 24 inches. At least twelve (12) inches of clearance must be maintained between CONDEA Vista pipelines and other underground structures either Company or foreign.