

Subpart B**Materials****§ 192.51 Scope**

This subpart prescribes minimum requirements for the selection and qualification of pipe and components for use in pipelines.

§ 192.53 General

Materials for pipe and components must be:

- (a) Able to maintain the structural integrity of the pipeline under temperature and other environment conditions that may be anticipated;
- (b) Chemically compatible with any gas that they transport and with any other material in the pipeline with which they are in contact; and
- (c) Qualified in accordance with the applicable requirements of this subpart.

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

Approved: Signature on file Date:
 Environmental Manager

ESI RESPONSE TO § 192.53

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General:

Items which fully conform to the standards or specifications referred to in the ESI Engineering and Plant Engineering Specifications may be used for the appropriate applications without further qualification. (Items must have complete, official documentation in accordance with an appropriate governing standard, specification or code.)

Items for which no standards or specifications are listed in this specification shall be qualified by ESI Company by investigation and tests, to demonstrate the material is suitable and safe for the proposed service and is recommended in the service by the manufacturer.

§ 192.55 Steel Pipe

- (a) New steel pipe is qualified for use under this part if:
 - (1) It was manufactured in accordance with a listed specification;
 - (2) It meets the requirements of---
 - (i) Section II of appendix B to this part; or
 - (ii) If it was manufactured before November 12, 1970, either section II or III of appendix B to this part; or
 - (3) It is used in accordance with paragraph (c) or (d) of this section.

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Qualification of New Steel Pipe--**Mill Test:**

The mill test pressure shall be in accordance with the requirements of the applicable ASTM or API Specification. If piping is purchased using ASTM or API standards, a mill test pressure is required as part of the qualification documents. Where the mill test limitation of 192.619 (a)(5) applies, consideration shall be given to requesting a higher mill test pressure. If a mill test pressure is selected that is higher than those shown in ASTM or API, it must not exceed a stress equal to the SMYS (specified minimum yield strength) of the pipe.

Mill Inspection:

All Company pipe orders from a mill shall be inspected by a competent independent mill inspection agency. The Project Engineers or Technology Engineers shall be responsible for securing said mill inspection service and evaluating periodically the performance of the agencies.

(THE FOLLOWING STATEMENT SHALL BE INCLUDED AS PART OF THE PURCHASE ORDER)

A report of the mill inspection shall be recorded and forwarded to the Purchasing Department. The Purchasing Department shall submit a copy of the report to the Engineering Department where the data contained shall be examined for compliance with specifications, particularly for physical and chemical properties. The following statement shall be included in the mill inspection agency's report:

"The pipe furnished on this order has been inspected in accordance with API Specification 5L 'API Specification for Line Pipe', or ASTM Standards 'Specification for Seamless Carbon Steel Pipe for High Temperature Service'. Our inspection indicates that the pipe shipped on this order meets the requirements of API Specification 5L, or ASTM Standards, whichever is applicable."

The Purchasing Department shall obtain mill inspection reports for all pipe purchased from third parties. Copies of the Reports should be sent to the DOT Coordinator.

Field Inspection:

When pipe is received, it shall be field inspected for physical damage to the pipe (gouges, nicks, dents, scratches, bevels, coating, etc.) Evidence of damage or other defects shall be reported immediately by telephone and later confirmed in writing to the Purchasing Department. If possible, photographs should be taken of the damage or defects. The Purchasing Department shall report damage or defects to the pipe mill, coating mill, transporting carrier and/or mill inspection agency, as appropriate.

(NOTE: Transportation damage must be reported to the carrier as soon as practicable.)

Field repair of defects or damage shall not be made until such damage or defects have been reported to the Purchasing Department and approval granted by the Technology Manager or Project Engineering Manager for such repairs. A record shall be kept of the additional expense involved in such repair.

Records shall be kept of situations where significant expenses due to pipe of poor quality are incurred during construction, even though the pipe complies with API or ASTM specifications. A copy of such records shall be sent to the Purchasing Department and to the DOT Coordinator. An example is pipe which meets API standards for end tolerances, but does not meet the line-up requirements for allowable offset.

- (b) Used steel pipe is qualified for use under this part if:
 - (1) It was manufactured in accordance with a listed specification and it meets the requirements of paragraph II-C of appendix B to this part;
 - (2) It meets the requirements of:
 - (i) Section II of appendix B to this part; or
 - (ii) If it was manufactured before November 12, 1970, either section II or III of appendix B to this part;
 - (3) It has been used in an existing line of the same or higher pressure and meets the requirements of paragraph II-C of appendix B to this part; or
 - (4) It is used in accordance with paragraph (c) of this section.

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- (c) New or used steel pipe may be used at a pressure resulting in a hoop stress of less than 6,000 p.s.i. where no close coiling or close bending is to be done, if visual examination indicates that the pipe is in good condition and that it is free of split seams and other defects that would cause leakage. If it is to be welded, steel pipe that has not been manufactured to a listed specification must also pass the weldability tests prescribed in paragraph II-B of appendix B to this part.
- (d) Steel pipe that has not been previously used may be used as replacement pipe in a segment of pipeline if it has been manufactured prior to November 12, 1970, in accordance with the same specification as the pipe used in constructing that segment of pipeline.
- (e) New steel pipe that has been cold expanded must comply with the mandatory provisions of API Specification 5L.

<u>Documentation</u>		<u>Location Filed</u>
RKPG		
<u>Pre-DOT Construction/Maintenance Records</u>	<u>A-1</u>	<u>DOT Files</u>
RKPG		
<u>Post-DOT Construction/Repair Records</u>	<u>A-2</u>	<u>DOT Files</u>
RKPG		
<u>System Pressure Test Records</u>	<u>E-4</u>	<u>DOT Files</u>
RKPG		
<u>Safety Survey</u>	<u>E-6</u>	<u>DOT Files</u>
RKPG		
<u>DOT Determination Study for Gas</u>	<u>F-1</u>	<u>DOT Files</u>
RKPG		
<u>Pipeline Data Reference Sheet</u>	<u>F-3</u>	<u>DOT Files</u>
RKPG		
<u>Pipeline Regulations Compliance Program</u>	<u>F-4</u>	<u>DOT Files</u>

§ 192.57 **[Reserved]**

§ 192.59 **Plastic Pipe**

NOT APPLICABLE. ESI DOES NOT UTILIZE PLASTIC PIPE FOR DOT PIPELINES.

§ 192.61 **[Reserved]****§ 192.63** **Marking of Materials**

- (a) Except as provided in paragraph (d) of this section, each valve, fitting, length of pipe, and other component must be marked--
 - (1) As prescribed in the specification or standard to which it was manufactured, except that thermoplastic fittings must be marked in accordance with ASTM D 2513; or
 - (2) To indicate size, material, manufacturer, pressure rating, and temperature rating, and as appropriate, type, grade, and model.
- (b) Surfaces of pipe and components that are subject to stress from internal pressure may not be field die stamped.
- (c) If any item is marked by die stamping, the die must have blunt or rounded edges that will minimize stress concentrations.
- (d) Paragraph (a) of this section does not apply to items manufactured before November 12, 1970, that meet all of the following:
 - (1) The item is identifiable as to type, manufacturer, and model.
 - (2) Specifications or standards giving pressure, temperature, and other appropriate criteria for the use of items are readily available.

§ 192.65 **Transportation of Pipe**

In a pipeline to be operated at a hoop stress of 20% 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:

- (a) The transportation is performed in accordance with API RP 5L1.

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- (b) In the case of pipe transported before November 12, 1970, the pipe is tested in accordance with subpart J of this part to at least 1.25 times the maximum allowable operating pressure if it is to be installed in a class 1 location and to at least 1.5 times the maximum allowable operating pressure if it is to be installed in a class 2, 3, or 4 location. Notwithstanding any shorter time period permitted under subpart J of this part, the test pressure must be maintained for at least 8 hours.

ESI RESPONSE TO § 192.65**Table 65.0**

Pipe with an O.D. to wall thickness ratio of 70. to 1.

<u>Pipe Diameter</u>	<u>Thickness</u>	<u>Pipe Diamete</u>	<u>Thickness</u>
4.5	.06	16.0	.229
6.625	.09	18.0	.257
8.625	.123	20.0	.286
10.750	.154	22.0	.315
12.750	.182	24.0	.343
14.0	.200	26.0	.372
16.0	.229	30.0	.429
18.0	.257		

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Table 65.1

<u>Nominal Size</u>	<u>Pipe Diameter</u>	<u>Schedule</u>	<u>Thickness</u>
4	4.5	40	0.237
6	6.625	40	0.280
8	8.625	20	0.250
10	10.750	20	0.250
12	12.750	20	0.250
14	14.000	10	0.250
16	16.000	10	0.250
18	18.000	10	0.250
		20	0.375
20	20.000	10	0.250
		20	0.375
24	24.000	10	0.250
		20	0.375

This data shows that the outside diameter/thickness ratio does not become a concern for standard pipe thicknesses until Schedule 10, 18-inch pipe, However, most companies do not order Schedule 10 or 20 pipe in the larger diameters due to handling problems and associated mechanical damage.