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	TRANSPORTADORA DE GAS DEL PERU CAMISEA NATURAL GAS AND NGL TRANSPORTATION SYSTEM
	TECHINT COMPAÑÍA TÉCNICA INTERNACIONAL
	REQUIREMENTS FOR PIPING MATERIALS SUPPLY- PIPES TECHNICAL SPECIFICATION

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	ESC.: NONE	



TECHNICAL SPECIFICATION
**REQUIREMENTS FOR PIPING MATERIALS
 SUPPLY
 PIPES**

2794-P-SP-00010

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Job: E300-50113


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1 SCOPE

- 1.1 This specification is intended to supplement the ITEM DESCRIPTION shown on the Bills of Material. If the ITEM DESCRIPTION differs from or is in conflict with, any requirement of this specification, the ITEM DESCRIPTION shall govern.
- 1.2 WHEN THE TERM "AUTHORIZED" OR "AUTHORIZATION" IS USED IN THIS SPECIFICATION IT IS INTENDED THAT THIS SHALL MEAN AUTHORIZED OR AUTHORIZATION BY THE BUYER.
- 1.3 Items specified or referenced by manufacturer and figure number are not intended to exclude equal items offered by other manufacturers. Products of reputable manufacturers and of comparable type, quality and characteristics may be submitted for acceptance.

2 CODES


The following codes and standards apply to this specification. When an edition date is not indicated for a code or standard, the latest edition in force at the time of purchase shall apply.

- 2.1 American Society of Mechanical Engineers (ASME)
 - B1.20.1 Pipe Threads (Except Dryseal)
 - B16.25 Buttwelding Ends
 - B31.3 Process Piping
 - B31.4 Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids
 - B31.8 Gas Transmission and Distribution Piping Systems
 - B36.10M Welded and Seamless Wrought Steel Pipe

3 MATERIALS

- 3.1 The steel for seamless, electric resistance welded, double submerged arc welded, or electric fusion welded carbon steel pipe shall be made by the open-hearth, basic-oxygen or electric furnace process.
- 3.2 Where carbon steel welded pipe is specified as non-expanded in the ITEM DESCRIPTION, cold expanding for final sizing is acceptable and shall not exceed 1-1/2% of the outside diameter.
- 3.3 Transversal weld joints are not permitted without authorization.
- 3.4 Threaded and coupled galvanized steel pipe shall be furnished with galvanized couplings with taper threads in accordance with ANSI B1.20.1.

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MATERIALS (cont.)

- 3.5 Welded carbon steel pipe (welded seam) with wall thickness greater than 3/4 inch shall be furnished in stress relieved condition .
- 3.6 When Grade B steels with a specified minimum yield strength of 35 Ksi or less are specified, high yield steels with a specified minimum yield strength of 42 Ksi or greater (e.g. API-5LX grades), are not acceptable. Grade B steels with a reported yield strength of 42 Ksi or greater are acceptable provided that the carbon equivalent (CE), as determined by the formula below, does not exceed 0.42 and good weldability is provided.

$$CE = \%C + \frac{\%Mn}{6} + \frac{\%Cr + \%Mo + \%V}{5} + \frac{\%Ni + \%Cu}{15}$$

4 SUBSTITUTIONS

All material offered and/or furnished to the requirements of this Specification shall be in strict accordance with all requirements of the Request for Quotation. Any deviations from the Request for Quotation requirements shall be clearly listed in the Quotation and approved in writing by the Buyer.

5 LENGTHS

The pipe length must be in accordance with respective ASTM specification; A 53; A-106; pipes must be provided in "double random lengths" in accordance with ASTM A 53 paragraph 17.1.3; A-106 paragraph 17.1.3.; A-312 paragraph 11. Quotations shall specify any exception to this requirement.

6 DIMENSIONS AND WEIGHTS

- 6.1 Pipe specified as Schedule 10, 20, 30, 40, 60, 80, 100, 120, 140, 160 (without the suffix "S") or XX-strong shall be in accordance with ANSI B36.10M.


7 FINISH

Unless otherwise specified in the ITEM DESCRIPTION, carbon steel pipe shall be furnished with a black finish.

8 ENDS

- 8.1 Unless otherwise noted in ITEM DESCRIPTION, ends of pipe shall be in accordance with the following:
- 7.1.1 1-1/2 inch NPS and smaller shall be furnished with plain ends, cut square.
- 7.1.2 2 inch NPS and larger shall be furnished with beveled ends.
- 8.2 Beveled ends shall be in accordance with ASME B16.25 .
- 8.3 When threaded ends are specified (in the ITEM DESCRIPTION) they shall be taper pipe threads in Accordance with ASME B1.20.1.

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9 ENGINEERING DATA REQUIREMENTS

9.1 MANUFACTURER'S TEST REPORTS

These documents shall provide the capability to identify the chemical and mechanical properties of materials and shall be traceable to the piping component.

9.1.1 The documents shall be originated by the prime materials manufacturer and they shall be traceable to both the Purchase Order and the material itself. The documents shall report the actual results of tests in accordance with the material specifications required by the Purchase Order.

9.1.2 Data on Manufacturer's test reports shall include the following requirements:

- a) Name of the Seller.
- b) Name of prime material manufacturer and plant location.
- c) Buyer's Purchase Order number and the Seller's Purchase Order number when purchased by the Seller. The Seller shall include the Buyer's Purchase Order number for reference on all reports.
- d) Purchase Order item number and item code number.
- e) Quantity, size, heat number (or equivalent) and brief description of item(s).
- f) Material specification and grade, class or type designation.
- g) Actual test results of chemical and mechanical properties in accordance with the material specifications.
- h) Date test was performed
- i) Test method (if applicable).

10 PROTECTION


10.1 Exposed threaded ends of pipe shall be fitted with a thread protector.

10.2 "Black" steel pipe shall be supplied with Manufacturer's standard mill protective type coating. The coating shall not be of a type which requires sand blasting.

11 EXAMINATION

11.1 Examinations and/or tests may be reviewed and/or witnessed by the Buyer or its authorized agent at the Seller's facility.

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12 MARKING

12.1 Both ends of each pipe shall have the following mark:

Purchase order number
 Purchase order item number
 Article number of the element

12.2 The marking shall be easily legible, weather proof and their size shall be as large as allowed by the available room.

12.3 Following items or the like shall be indicated on all pipes. Marking shall normally be accomplished by stenciling and/or punching, in the following order:

- (1) Manufacturer's name or trade mark.
- (2) Codes or standards (JIS, JPI, ASTM, ... etc.)
- (3) Material specification
- (4) Manufacturing method
- (5) Date of manufacture (a)
- (6) Dimension (b)
- (7) Manufacturing No. or mark (Charge No. or lot No.)

Notes:

- (a) For lined pipes, the date of lining work shall also be indicated.
- (b) Dimensions shall be indicated in "Nominal size x Schedule n° x Length". When nominal sizes and schedule n° cannot be applied, actual size shall be in accordance with inch system (NPS).

12.4 Marking Location

a) For pipes of Nominal Pipe Size (NPS) 1.1/2 and smaller, a stiff tag on which all items in Para. 12.3 are indicated, shall be attached to each bundle of pipes. However, material specification shall be marked on the outer surface of individual pipe

b) For pipes of NPS 2 and larger, all items Para. 12.3 shall be marked on the outer surface of each pipe.

c) For coated pipes of NPS 3 and smaller, a tag on which all items in Para. 12.3 shall be attached to each bundle of pipes.

d) For coated pipes of NPS 4 and larger, all items in Para. 12.3 shall be marked on the inner surface of one end of each pipe. Any item which cannot be marked on the inner surface, shall be indicated on a tag, which shall be attached to the pipe

12.5 The inspection should control, before approve, the marking and identifications to permit the pipes pursuit during construction

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