



ASTM A335 P91 ALLOY STEEL PIPE

ASTM A335 P91 is the part of ASTM A335, The pipe shall be suitable for bending, flanging, and similar forming operations, and for fusion welding. The steel material shall conform to chemical composition, tensile property, and hardness requirements.

Each length of pipe shall be subjected to the hydrostatic test. Also, each pipe shall be examined by a non-destructive examination method in accordance to the required practices.

The range of ASTM A335 P5 pipe sizes that may be examined by each method shall be subjected to the limitations in the scope of the respective practice.

The different mechanical test requirements for pipes, namely, transverse or longitudinal tension test, flattening test, and hardness or bend test are presented. Both ends of each crate will indicate the order no., heat no., dimensions, weight and bundles or as requested.

Outer Dimensions: 19.05mm – 610mm

Wall Thickness: 2.0mm – 70 mm

Length: max 16000mm

Steel grade: ASTM A335 P91

Packing:

Bare packing/bundle packing/crate packing/wooden protection at the both sides of tubes and suitably protected for sea-worthy delivery or as requested.

Inspection and Test:

Chemical Composition Inspection, Mechanical Properties Test(Tensile Strength, Yield Strength, Elongation, Flaring, Flattening, Bending, Hardness, Impact Test), Surface and Dimension Test, Non-destructive Test, Hydrostatic Test.

Surface treatment:

Oil-dip, Varnish, Passivation, Phosphating, Shot Blasting.

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ASTM A335 P91 Chemical Compositions(%)

Compositions	Data
UNS Designa-tion	K91560
Carbon(max.)	0.08-0.12
Manganese	0.30-0.60
Phosphorus(max.)	0.025
Silicon(max.)	0.50
Chromium	4.00-6.00
Molybdenum	0.45-0.65
Other Elements	...

Mechanical properties for ASTM A335 P91

Properties	Data
Tensile strength, min, (MPa)	415 Mpa
Yield strength, min, (MPa)	205 Mpa
Elongation, min, (%), L/T	30/20

Material & Manufacture

Pipe may be either hot finished or cold drawn with the finishing heat treatment noted below.

Heat Treatment

A / N+T

N+T / Q+T

N+T



Mechanical Tests Specified

Transverse or Longitudinal Tension Test and Flattening Test, Hardness Test, or Bend Test

For material heat treated in a batch-type furnace, tests shall be made on 5% of the pipe from each treated lot. For small lots, at least one pipe shall be tested.

For material heat treated by the continuous process, tests shall be made on a sufficient number of pipe to constitute 5% of the lot, but in no case less than 2 pipe.

Notes for Bend Test:

For pipe whose diameter exceeds NPS 25 and whose diameter to wall thickness ratio is 7.0 or less shall be subjected to the bend test instead of the flattening test.

Other pipe whose diameter equals or exceeds NPS 10 may be given the bend test in place of the flattening test subject to the approval of the purchaser.

The bend test specimens shall be bent at room temperature through 180 without cracking on the outside of the bent portion.