



Corporation
SEAMLESS PIPE



 **TK corporation**



| Pipe Applicable Standards

TK

Applicable
Standards

ASTM Pipe Code Designations

- A 106/A 106M** Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service
- A 312/A 312M** Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes
- A 333/A 333M** Standard Specification for Seamless and Welded Steel Pipe for Low-Temperature Service
- A 335/A 335M** Standard Specification for Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service
(GRADE P5, P9, P11, P22, P91)

ASTM Standards

- A 370** Test Methods and Definitions for Mechanical Testing of Steel Products
- A 530/A530M** Specification for General Requirements for Specialized Carbon and Alloy Steel Pipe
- A 999/A999M** Specification for General Requirements for Alloy and Stainless Steel Pipe
- E 23** Test Methods for Notched Bar Impact Testing of Metallic Materials
- E 165** Test Method for Liquid Penetrant Examination
- E 213** Practice for Ultrasonic Examination of Metal Pipe and Tubing
- E 309** Practice for Eddy-Current Examination of Steel Tubular Products Using Magnetic Saturation
- E 381** Method of Macroetch Testing Steel Bars, Billets, Blooms, and Forgings
- E 709** Guide for Magnetic Particle Examination

ASME Standards

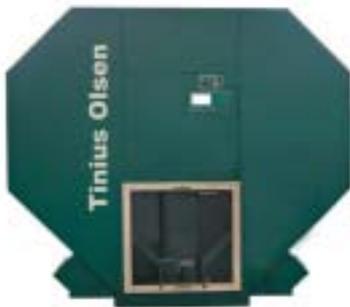
- B36.10M** Welded and Seamless Wrought Steel Pipe
- B36.19M** Stainless Steel Pipe

Other Standards

- SSPC-SP 6** Surface Preparation Specification No. 66
- SNT-TC-1A** Recommended Practice for Nondestructive Personnel Qualification and Certification
- SAE J 1086** Practice for Numbering Metals and Alloys (UNS)



Seamless Pipe



Test and Inspection

- Chemical Analysis
- Mechanical Test
(Tensile, Impact, Hardness, etc)
- Hydrostatic Test
- Visual and Dimension Inspection
- Ultrasonic Test
(Longitudinal and Transverse, Wall Thickness, Lamination)



HSE

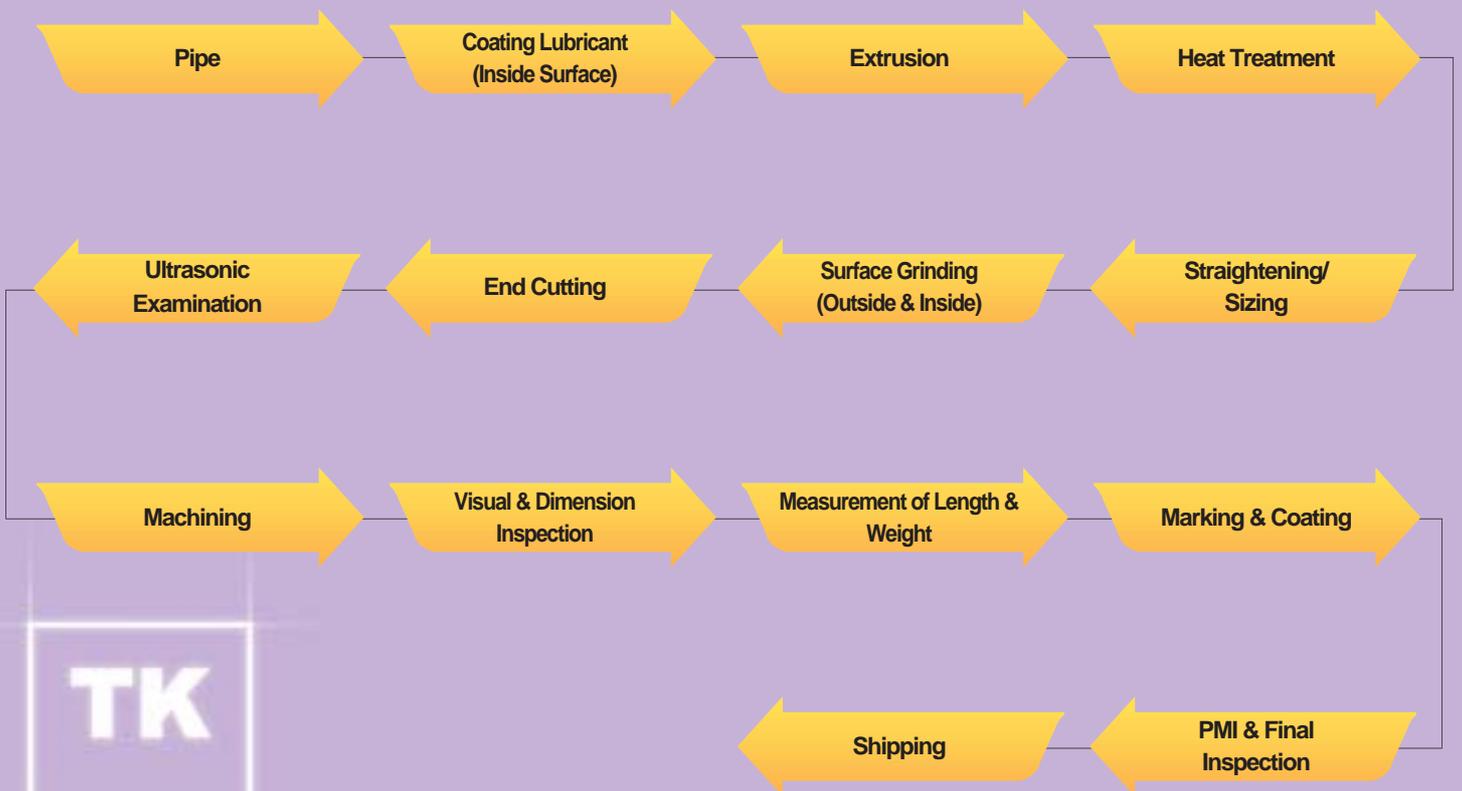
We recognize that health, safety and environment are very important factor of management and all TK employees will perform the followings to;

1. Comply all the rules and regulations of environment protection.
2. Do our continuous effort to improve our safe working condition.
3. Design and manufacture the products for our customers to use safely.

To perform this policy effectively, we will educate all the employees in regular basis and further, we will announce this policy to all our customers to show our willingness and the performance of HSE management intension.



Manufacture Process



Seamless Pipe Available Size Ranges



Carbon Steel & Alloy Steel

(in millimeters)

Thick. O.D.	9.5	12.7	14.3	15.9	17.0	17.5	20.6	23.8	26.0	26.2	31.0	35.0	37.0	45.0	46.0	47.6
457.2																
508.0																
558.8																
609.6																
660.4																
711.2																
762.0																
812.8																
863.6																
914.4																

* O.D 660.4 and over, length shall be negotiated between manufacturer and purchaser.

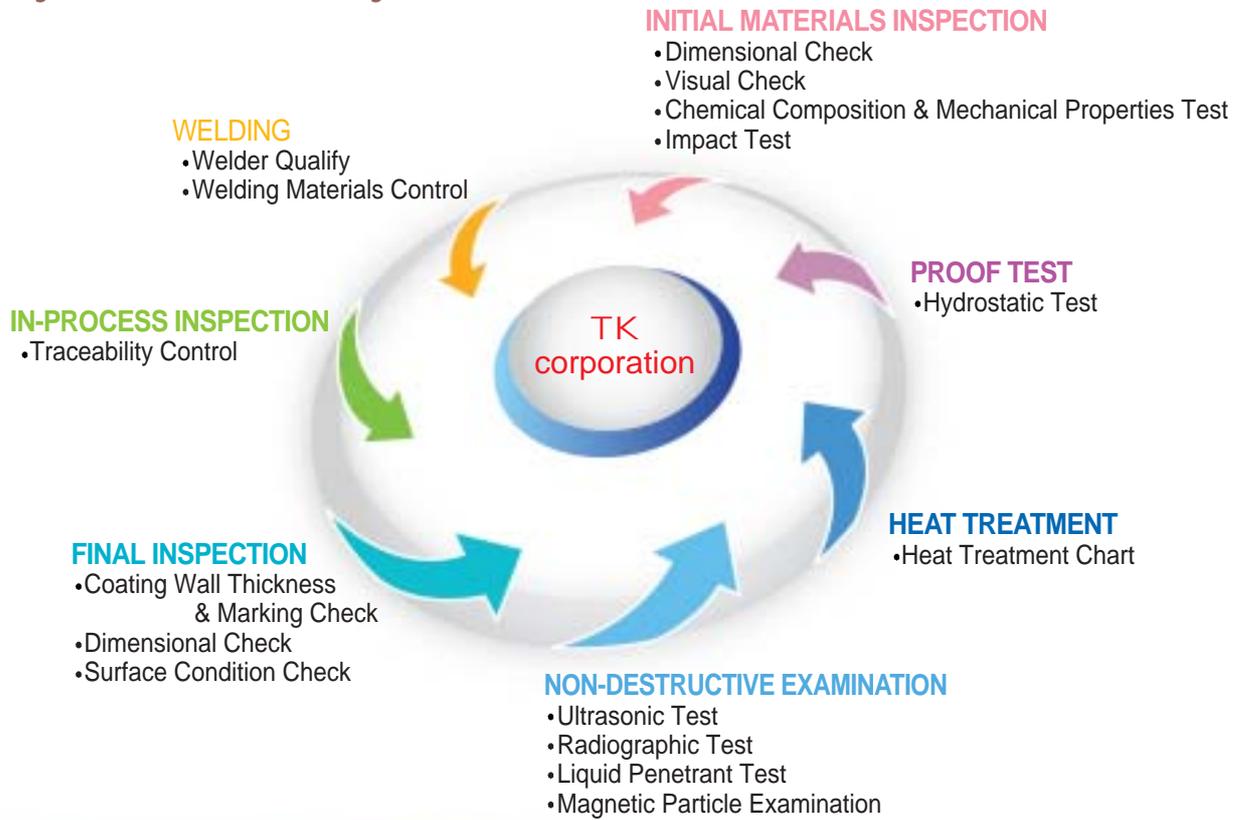
Stainless Steel

(in inches)

Sch. N.P.S	S5S	S10S	S10	S20	S30	S40S	STD	S40	S60	S80S	XS	S80	S100	S120	S140	S160
18																
20																
22																
24																



Quality Control Activity



Permissible Variation in accordance with ASTM A999/A999M.

1. Outside Diameter

①All material grade except A335/A335M shall be applied to as follows.

NPS Designator	Permissible Variations in Outside Diameter			
	Over		Under	
	in.	mm	in.	mm
Over 8 to 18, incl	3/32	2.4	1/32	0.8
Over 18 to 26, incl	1/8	3.2	1/32	0.8
Over 26 to 34, incl	5/32	4	1/32	0.8
Over 34 to 48, incl	3/16	4.8	1/32	0.8

②The material grade of A335/A335M shall be applied to as follows.
(Table 6 of ASME A335/A335M)

NPS Designator	Permissible Variations in Outside Diameter			
	Over		Under	
	in.	mm	in.	mm
Over 8 to 12, incl	3/32	2.4	1/32	0.8
Over 12	± 1% of specified outside diameter			

2. Wall Thickness

①The minimum wall thickness at any point shall not be more than 12.5% under the nominal wall thickness specified.

②The wall thickness of material grade A335/A335M shall be applied to as follows.(Table 7 of ASME A335/A335M)

NPS Designator	Tolerance, % from specified	
	Over	Under
Above 2 1/2, t/D ≤ 5% *	22.5	12.5
Above 2 1/2, t/D > 5% *	15	12.5

* Where

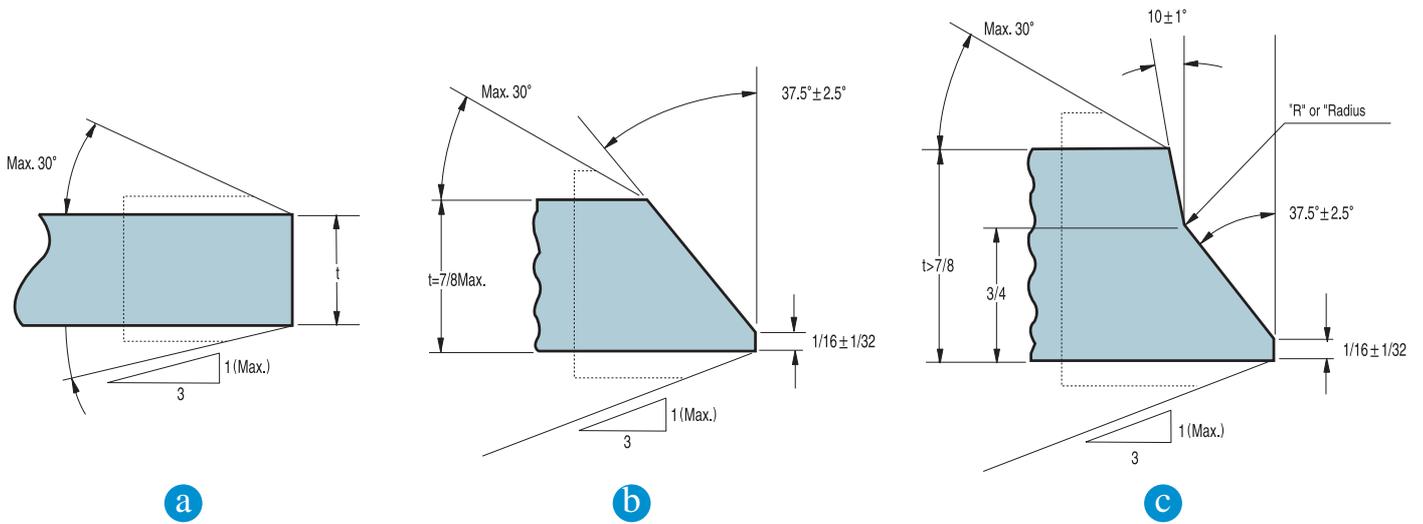
t = SPECIFIED WALL THICKNESS; D = SPECIFIED OUTSIDE DIAMETER

3. Length

Ordered Lengths	Over		Under	
	in.	mm	in.	mm
	24ft(7.3m) or less	1/4	6	0
over 24ft(7.3m)	2	50	0	0

4. Mass(Weight)

NPS Designator	Tolerance, % from specified	
	Over	Under
Over 12, incl	10	3.5



(in inches)

Nominal Pipe Wall Thickness(t)	End Preparation
All Thickness	as in sketch "a" above (Note 1)
7/8 and less	as in sketch "b" above (Note 2)
more than 7/8	as in sketch "c" above (Note 2)

Notes : 1. Unless otherwise specified, the expending pipe shall be furnished with plain ends.

2. When ordered on Bevel Ends, TK can be furnished with various bevel ends. For example ASME B 16.25, JIS B 2312 excetera.

Hydrostatic Test

1. If required by the applicable product specification or the purchase order, the pipe shall be tested by the hydrostatic test
2. The test pressure or stress shall be determined using the following equation :

$$P = 2St/D \text{ or } S = PD/2t$$

where:

P = hydrostatic test pressure in psi or [MPa]

S = pipe wall stress in psi or [MPa]

t = specified wall thickness, nominal wall thickness according to specified ASME schedule number, or 1.143 times the specified minimum wall thickness, in.[mm], and

D = specified outside diameter, outside diameter corresponding to specified ASME pipe size, or outside diameter calculated by adding 2t (as defined above) to the specified inside diameter, in.[mm].

