

# API 5CT

## -ALLLAND Production Standards Overview



## Definition and Applications

### 1. Definition

API 5CT specifies the technical conditions for the delivery of oil well casing, tubing, and related accessories such as couplings. The main steel grades include H40, J55, K55, N80, L80 and P110.

### 2. ALLLAND API 5L Steel Pipe Dimensions

Parameters	Dimensions
<b>O.D.</b>	73.0 mm–508.0 mm (1/5"–20")
<b>WT</b>	1.5 mm–25 mm
<b>Length</b>	5 m–14 m (196"–551")
<b>Material</b>	API 5CT H40/J55/K55 N80/L80/P110
<b>Process</b>	SEAMLESS
<b>Connection</b>	Butt-weld/Threaded

### 3. Application

API 5CT is applied in oil and gas drilling as casing to support the wellbore and tubing to transport oil and gas.

## Critical Tolerances

Our API 5CT standard steel pipes are manufactured in strict compliance with the specification requirements.

Item	Tolerance	Description
O.D.	±0.79mm	O.D.<114.3mm
	+1.0%/-0.5%	O.D.≥114.3mm
WT	-12.5%	Positive deviation is controlled through individual weight specifications(e.g.,+6.5%/-3.5%)

## Chemical and Mechanical Properties

### 1. Chemical Composition(wt%,max)

Element	Composition,%				
	H40	J55/K55	N80	L80(13Cr)	P110
C,max	0.35	0.34-0.39	0.34-0.38	0.15-0.22	0.26-0.35
Si,max	...	0.20-0.35	0.20-0.35	1.00	0.17-0.37
Mn,max	1.35	1.25-1.50	1.45-1.70	0.25-1.00	0.40-0.70
P,max	0.020	0.020	0.020	0.020	0.020
S,max	0.015	0.015	0.015	0.010	0.010
Cr	...	0.15	0.15	12.0-14.0	0.80-1.10
Ni,max	...	0.20	...	0.20	0.20
Cu,max	...	0.20	...	0.20	0.20
Mo	...	...	...	...	0.15-0.25
V	...	...	0.11-0.16	...	0.08
Al,max	...	0.020	0.020	0.020	0.020

### 2. Mechanical Properties

Grade		Tensile Strength,min	Yield Strength,min
H40	psi	60000	40000
	MPa	414	276
J55	psi	75000	55000
	MPa	517	379
K55	psi	95000	55000
	MPa	655	379
N80	psi	100000	80000
	MPa	689	552
L80	psi	95000	80000
	MPa	655	552
P110	psi	125000	110000

	MPa	862	758
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## Dimension Specifications Table

DIAMETER		O.D	WALL THICKNESS WEIGHT							
DN	INCH		STD		SCH40		SCH80		SCH160	
MM	MM	KG/M	MM	KG/M	MM	KG/M	MM	KG/M	MM	KG/M
3	1/8"	10.3	1.73	0.37	1.73	0.37	2.41	0.47	/	/
6	1/4"	13.7	2.24	0.63	2.24	0.63	3.02	0.8	/	/
9	3/8"	17.1	2.31	0.84	2.31	0.84	3.2	1.1	/	/
15	1/2"	21.3	2.77	1.27	2.77	1.27	3.73	1.62	4.78	1.95
20	3/4"	26.7	2.87	1.69	2.87	1.69	3.91	2.2	5.56	2.9
25	1"	33.4	3.38	2.5	3.38	2.5	4.55	3.24	6.35	4.24
32	1 1/4"	42.2	3.56	3.39	3.56	3.39	4.85	4.47	6.35	5.61
40	1 1/2"	48.3	3.68	4.05	3.68	4.05	5.08	5.41	7.14	7.25
50	2"	60.3	3.91	5.44	3.91	5.44	5.54	7.48	8.74	11.11
65	2 1/2"	73	5.16	8.63	5.16	8.63	7.01	11.41	9.53	14.92
80	3"	88.9	5.49	11.29	5.49	11.29	7.62	15.27	11.13	21.35
90	3 1/2"	101.6	5.74	13.57	5.74	13.57	8.08	18.63	/	/
100	4"	114.3	6.02	16.07	6.02	16.07	8.56	22.32	13.49	33.54
125	5"	141.3	6.55	21.77	6.55	21.77	9.53	30.97	15.88	49.11
150	6"	168.3	7.11	28.26	7.11	28.26	10.97	42.56	18.26	67.56
200	8"	2,191	8.18	42.55	8.18	42.55	12.7	64.64	23.01	111.27
250	10"	273	9.27	60.29	9.27	60.29	15.09	95.97	28.58	172.26
300	12"	323.8	9.53	73.86	10.31	79.7	17.48	132.04	33.32	238.68
350	14"	355.6	9.53	81.33	11.13	94.55	19.05	158.1	35.71	281.7
400	16"	406.4	9.53	93.27	12.7	123.3	21.44	203.53	40.49	365.36
450	18"	457.2	9.53	105.21	14.27	155.87	23.83	254.67	45.24	459.59
500	20"	508	9.53	117.15	15.09	183.42	26.19	311.18	50.01	564.81
550	22"	558.8	9.53	129.08	/	/	28.58	373.69	53.98	671.99
600	24"	609.6	9.53	141.02	17.48	255.24	30.96	441.78	59.54	807.63

## Testing Requirements

### 1. Physical Properties Test

- Tensile Test:Determines the yield strength,tensile strength,and elongation of steel pipes to verify their fundamental mechanical properties.
- Hardness testing:Particularly critical for steel grades like L80 used in corrosive environments(acidic service),ensuring hardness does not exceed specified upper limits to prevent cracking.

## 2. Hydrostatic Pressure Test

- Each steel pipe must undergo a non-destructive pressure test. Typically conducted at a pressure not less than a specified value (e.g., 3000 psi for pipes with flat ends), this test verifies the pipe's pressure integrity and leak-free condition.

## 3. Flattening Test

- The primary purpose is to evaluate the ductility and plastic deformation capacity of welded steel pipe welds and base materials.

## 4. Charpy V-notch impact Test

- The primary purpose is to evaluate the ductility and plastic deformation capacity of welded steel pipe welds and base materials.

## 5. Dimension and Geometric Test

- Each steel pipe is inspected for outer diameter, wall thickness, length, weight, straightness, and other specifications to ensure compliance with standard tolerance requirements.

## 6. Visual Quality Test

- Conduct visual or non-destructive testing on the inner and outer surfaces of steel pipes to inspect for defects such as cracks, folds, or scabs that may affect their serviceability.

## Surface treatment

Method: Oil Coating, Black Coating, Clear Coating, FBE, 3LBE, 3LPP.

## ALLLAND API 5CT Product Images



The image shows steel pipes actually produced by our company