

API 5CT C90

- ALLLAND Production Standards Overview



Definition and Applications

1. Definition

API 5CT C90 is a high-strength OCTG (Oil Country Tubular Goods) steel grade used in oil and gas wells, primarily for casing and tubing. It is the Sour Service (hydrogen sulfide corrosion-resistant) steel grade specified in the API 5CT standard, designed specifically for deep wells, high-pressure wells, H₂S-containing acidic environments, and highly corrosive conditions.

2. ALLLAND API 5CT C90 Steel Pipe Dimensions

Parameters	Dimensions
O.D.	Csing 4 1/2" – 20" (114.3 mm – 508 mm)
	Tubing 2 3/8" – 4 1/2" (60.33 mm – 114.30 mm)
WT	Csing 5.21 mm – 16.13 mm (common)
	Tubing 2.87 mm – 12.65 mm (common)
Length	Casing : R1 R2 R3 (4.88-14.63 m)
	Tubing : R1 R2 R3 (6.10–12.80 m)
End Finish	Plain End (PE), Threaded & Coupled (T&C), Upset Ends
Process	SEAMLESS / ERW
Connection	BTC, LTC, STC, EUE, NUE, Premium Thread
Product Type	Casing Pipe & Tubing Pipe
Color Code	Purple Band

3. Application

API 5CT C90 Steel Pipe is mainly used for oil and gas well drilling, completion, and production operations. As a high-strength OCTG pipe, it is commonly used for casing and tubing applications in deep wells, high-pressure wells, and sour service environments. It provides excellent resistance to collapse, pressure, and hydrogen sulfide-related cracking, ensuring reliable well performance and safety.

Critical Tolerances

Our API 5CT C90 standard steel pipes are manufactured in strict compliance with the specification requirements.

Item	Tolerance
Outside Diameter (OD)	OD < 4 1/2": ± 0.79 mm; OD $\geq$ 4 1/2": +1% / -0.5%
Wall Thickness (WT)	-12.5%
Weight (Mass)	-3.5% / +6.5%
Length	R1: 4.88–7.62 m; R2: 7.62–10.36 m; R3: 10.36–14.63 m

Standard Chemical Composition of API 5CT C90 Casing & Tubing

Element	Chemical Composition (Max, %)
Carbon (C)	0.35
Manganese (Mn)	1.35
Phosphorus (P)	0.020
Sulfur (S)	0.010
Silicon (Si)	0.45
Chromium (Cr)	1.50
Molybdenum (Mo)	0.25
Nickel (Ni)	0.30
Copper (Cu)	0.25

Note: The exact chemical composition may vary depending on the manufacturer's steelmaking process and product grade requirements. API 5CT C90 is normally supplied with controlled chemistry and heat treatment to achieve the required mechanical properties and sour service performance.

API 5CT C90 Standard Mechanical Properties

Property	Requirement
Minimum Yield Strength	621 MPa (90,000 psi)
Maximum Yield Strength	724 MPa (105,000 psi)
Minimum Tensile Strength	689 MPa (100,000 psi)
Hardness Requirement	Max. 22 HRC (for C90-1)
Elongation	According to API 5CT requirements
Impact Test	Required when specified by PSL and application conditions

API 5CT C90 Casing & Tubing Sizes Charts

API 5CT C90 Casing Pipe Size Chart (Common Sizes)

Casing Size (NPS)	OD (mm)	Wall Thickness (mm)	Weight (lb/ft)	Typical Application
4-1/2"	114.30	5.21 - 8.56	9.50 - 15.10	Production Casing
5"	127.00	6.43 - 9.19	11.50 - 18.00	Production Casing
5-1/2"	139.70	6.98 - 10.54	14.00 - 23.00	Production / Intermediate Casing
6-5/8"	168.28	7.32 - 10.59	20.00 - 28.00	Intermediate Casing
7"	177.80	6.91 - 14.27	17.00 - 38.00	Production / Intermediate Casing
7-5/8"	193.68	8.33 - 15.11	24.00 - 45.30	Deep Well Casing
8-5/8"	219.08	8.94 - 16.13	24.70 - 49.00	Intermediate Casing
9-5/8"	244.48	8.94 - 15.11	32.30 - 58.40	Production Casing
10-3/4"	273.05	7.09 - 13.84	32.75 - 65.70	Surface Casing
11-3/4"	298.45	8.46 - 13.56	42.00 - 60.00	Surface / Intermediate
13-3/8"	339.72	8.38 - 12.19	48.00 - 72.00	Surface Casing

API 5CT C90 Tubing Pipe Size Chart

Tubing Size (NPS)	OD (mm)	Wall Thickness (mm)	Weight (lb/ft)	Connection Type
1.050"	26.70	2.87 - 3.91	1.14 - 1.48	NU / EU
1.315"	33.40	3.38 - 4.55	1.70 - 2.19	NU / EU
1.660"	42.16	3.56 - 4.85	2.30 - 3.03	NU / EU
1.900"	48.26	3.18 - 5.08	2.40 - 3.73	NU / EU
2-3/8"	60.32	4.24 - 6.45	4.60 - 7.90	NU / EU
2-7/8"	73.02	5.51 - 7.01	6.40 - 9.20	NU / EU
3-1/2"	88.90	5.49 - 8.05	9.20 - 12.70	NU / EU
4"	101.60	6.65 - 8.38	10.60 - 14.00	NU / EU
4-1/2"	114.30	6.35 - 10.54	12.60 - 20.00	NU / EU

ALLLAND API 5CT L80 Product Images



The image shows steel pipes actually produced by our company