

# 431

## Grade

431 stainless steel

## Overview

431 is a martensitic stainless steel with a 17% chromium and 2.55 nickel content. It offers good corrosion resistance in mild marine and industrial atmospheres, where high tensile and yield strength along with excellent toughness are required

### Composition

Element	Weight%
Carbon	0.12 - 0.2
Silicon	1 max
Manganese	1 max
Phosphorus	0.04 max
Sulphur	0.03 max
Chromium	15 - 18
Nickel	1.25 - 3
Manganese	1 max

## Mechanical Properties

(Quenched and tempered condition) Can be single or double tempered.

Typically supplied in hardened and tempered condition (T)

Property	Values
0.2% Yield Strength	635 KSI min (4378 MPA min)
Ultimate Tensile Strength	850 - 1000 KSI (5861 - 6895 MPA)
Elongation	11
Charpy Impact Toughness	Izod KCV J @ RT - 34 min
Hardness	248 - 302 HBW