



PRODUCT DATASHEET

8630

Grade

AISI 8630 (UNS G86300, ASTM A29)

Type

Cr-Mo Steel usually supplied in the hardened, quenched and tempered condition.

Overview

The grade has poor through hardenability to a depth dependent on the chemical composition, and it is critical that the hardenability of the grade must be taken into account when designing and selecting it for specific equipment.

Impact toughness is generally good to temperatures as low as -46°C with typically 27J average and 20J single achieved, this is limited though dependent on a number of factors such as ruling section, chemical composition and heat treatment condition, with impact toughness achieved decreasing with higher strength, ruling section and at lower test temperatures due to the materials Ductile / Brittle transition temperature.

Minimum hardness is based on API 6A requirements. Maximum hardness shown is based on compliance with NACE MRO175 / ISO 15156

Is typically used in oil patch applications for connectors, hangers and block valves.

Composition

Element	Weight%
Carbon	0.28 - 0.33
Silicon	0.15 - 0.35
Manganese	0.7 - 0.9
Phosphorus	0.025 max
Sulphur	0.025 max
Molybdenum	0.15 - 0.25
Chromium	0.4 - 0.6
Nickel	0.4 - 0.7
Manganese	0.7 - 0.9

Notes: Various other hybrid analysis available in order to enhance hardenability and mechanical properties.

S and P values conform with API 6A, PSL 3 requirements. Higher values may be permitted if delivered to alternative specifications

Mechanical Propeties

Hardened followed by oil quenching and tempering

Typical tempering range is 620 – 680°C, depending on properties required



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Property	Values
0.2% Yield Strength	80 KSI min (551 MPA min)
Ultimate Tensile Strength	100 KSI min (689 MPA min)
Elongation	17
Reduction of area	35% min
Hardness	197 - 237 HBN

Notes: Low alloy steel typically containing 0.3% Carbon and alloyed with 0.5% Chromium and 0.2% Molybdenum to give enhanced mechanical properties.

Higher strength levels may be obtained through suitable heat treatment but these are not NACE MRO175 approved.