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SANHE

Grade HA Sucker Rod

Product Information

Ver 2407

HS

PRODUCT DATASHEET

MECHANICAL PROPERTIES

Strength

TENSILE STRENGTH	YIELD	ELONGATION (2″, %)	REDUCTION %
140-150 KSI	>115 KSI	>10	> 45

Max Torque

7/8″		1″		1-1/4″	
Nm	Lb·ft	Nm	Lb·ft	Nm	Lb·ft
1100	811	1600	1180	3097	

SANHE recommends 0.9 service factor for torque load in well design to ensure reliability.

Goodman Formula

$$Sa = SF\left(\frac{140{,}000}{2.8} + 0.375\, S_{min}\right)$$

SANHE recommends service factor 0.9 for tensile load in well design to ensure reliability.

CHEMICAL COMPOSITION

AISI 4138

C	Mn	S	P	Si	Ni	Cr	Cu
0.36-0.42	1.00-1.30	0.025 Max	0.025 Max	0.20-0.35	0.30 Max	0.55-0.85	0.35 Max

DIMENSIONS

Typical Length	Typical Sizes	Uncommon Size	Special Order
25, 30 ft	3/4″, 7/8″, 1″	5/8″, 1-1/8″	1-1/4″, 1-1/2″

APPLICATION NOTES

MATERIAL & HEAT TREATMENT

HA is manufactured with AISI 4138 alloy steel in a special heat-treatment process.

PRODUCT FEATURES

The special Q&T heat-treatment process for HS is fine-tuned to create stronger internal martensitic grain structure and improved fatigue and corrosion resistance performance. This allows HS to outlast normalized and tempered products in the same product category.

HS features standard API design. Pin threads are cold rolled, giving it extra strength in the toughest operating conditions. Rod body is shot-peened for improved fatigue resistance.

SUITABE APPLICATIONS

Due to its high strength, exceptional fatigue and corrosion resistance, HS is ideal for heavy load, corrosive and inhibited wells. Additionally, customers have adopted HS in wells with minimal or no corrosion to extend product runtime and reduce overall operational costs.

DESIGN CONSIDERATIONS

When designing with KH, we recommend using a service factor of 0.9 to ensure reliability. While some customers have successfully used HS with service factors greater than 1.0 in design software, the majority adopt a more conservative approach, using service factors < 1.0.

PCP APPLICATION

HS is suitable for use in PCP wells. Alternatively, SANHE's DR series product, featuring modified API pins, is specifically designed for PCP applications. Please consult with SANHE to determine the most suitable product for your needs.

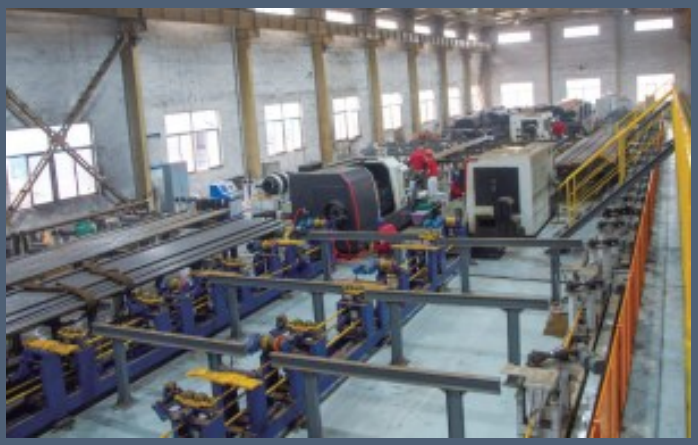
SANHE

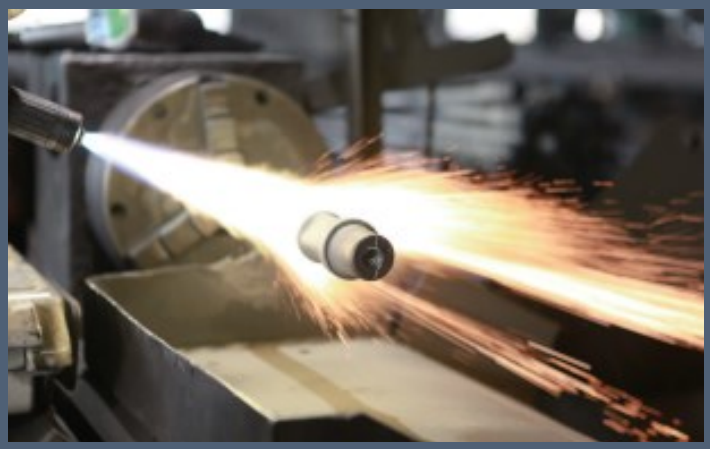
New Sucker Rod Plant

In 2024, SANHE proudly inaugurated its cutting-edge sucker rod manufacturing facility. This state-of-the-art plant is equipped with the latest in automated forging, threading, and heat-treatment lines, setting a new industry standard for quality and efficiency in sucker rod production.

The facility's advanced technology ensures unparalleled consistency in product quality. From the initial raw material to the final product, every process is meticulously streamlined and optimized. This not only ensures every product meets the product performance benchmark but also significantly boosts manufacturing efficiency.

SANHE's new plant represents a significant leap forward in manufacturing capability, reflecting our commitment to innovation and excellence. With this facility, we are poised to deliver superior products that meet the highest standards of performance and reliability, more efficiently than ever before.





Q&T Advantage

A standout feature of SANHE's KD and HS sucker rods are their superior manufacturing process. Unlike most other similar products on the market, which are normalized and tempered, KD & HS undergo a quenching and tempering process.

This process results in an interlocking martensitic grain structure. Compared to the pearlite or ferrite grain structures produced by the normalized and tempered heat treatment process, SANHE's quenched and tempered sucker rod products offers significantly better fatigue resistance, especially in corrosive environment.

The quenching and tempering (Q&T) process produces superior products, but it requires meticulous control to ensure optimal results. With over 20 years of experience in Q&T, we have perfected this manufacturing process. Our KD product has consistently proven to excel in the most challenging well conditions.

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