

## Type HA

Specifically formulated for deep, medium to heavily loaded, noncorrosive or effectively inhibited wells.

The type HA high strength sucker rod is manufactured from modified AISI A-4138-M chromium-molybdenum alloy steel. Our normalized and tempered heat treatment is specially selected to maximize impact properties while increasing fatigue life. Specifically formulated for deep, heavily loaded, effectively inhibited wells. The DS rod is suited for reciprocating lift and PCP (progressing cavity pump) applications. All rods are shot peened per US Rod's unique standards, improving corrosion and fatigue resistance.

## Made in America

US Rod Manufacturing is the only privately owned and operated domestic Sucker Rod Manufacturing plant in the USA. All our products are sourced and manufactured domestically, and our advanced manufacturing plant ensures the highest quality possible. Our automated system continually monitors the manufacturing process and ensures the quality is consistent from start to the finish. Throughout the entire manufacturing process our quality control is unmatched in the industry. We offer more experience than any other Sucker Rod Provider and offer unparalleled solutions for your rod lift applications. US Rod will help you meet and exceed your goals, and can offer expert help with predictive designs, correct product selection, accurate failure analysis, training and more. Put our experience to work for you and reduce your failure rates and improve your bottom line.



US Rod Manufacturing is the only privately owned and operated Sucker Rod manufacturing plant in the USA.



[www.USRodCo.com](http://www.USRodCo.com)

Office Headquarters  
PO Box 152  
Nappanee, IN 46550

Manufacturing Plant  
502 South Oakland Ave  
Nappanee, IN 46550  
(574) 227-1288

# SUCKER ROD - TYPE HA - SPECIFICATIONS

## MECHANICAL SPECIFICATIONS

Type	Color Code	Yield Strength (1,000 psi)	Tensile Strength (1,000 psi)	Elongation (% in 8-in)	Reduction of Area (%)	Heat Treatment
C	White	60	90/115	13Mn	45Mn	Normalized and Tempered
K	Blue	60Mn	90/115	16Mn	55Mn	Normalized and Tempered
DA	Yellow	95Mn	120/140	10Mn	45Mn	Normalized and Tempered
DS	Orange	85Mn	115/140	10Mn	45Mn	Normalized and Tempered
DXS	-	100Mn	125/140	-	-	Normalized and Tempered
HA	Green	115Mn	140/150	10Mn	40Mn	Normalized and tempered
HS	Purple	115Mn	140/150	10Mn	40Mn	Normalized and Tempered

## CHEMICAL SPECIFICATIONS

Type	Steel Type	% Carbon	% Manganese	% Phosphorus	% Sulphur	% Silicon	% Nickel	% Chromium	% Molybdenum	% other
API Grade C-Carbon Steel										
C	1536M	0.34 to 0.39	1.15 to 1.35	0.040Mx	0.040Mx	0.15 to 0.35	0.25Mx	0.2Mx	0.05Mx	0.05 to 0.07 V, 0.35Mx Cu
API Grade K-Nickel Moly Alloy										
K	4320M	0.18 to 0.24	0.80 to 1.00	0.025Mx	0.03 Mx	0.15 to 0.35	1.15 to 1.35	0.80 to 1.05	0.20 to 0.30	0.05 to 0.07 V, 0.35Mx Cu
API Grade D-Alloy Steel										
DA	4142M	0.34 to 0.39	0.75 to 1.05	0.03 Mx	0.03 Mx	0.20 to 0.35	0.30 Mx	0.90 to 1.10	0.15 to 0.25	0.03 to 0.05 V, 0.35Mx Cu
API Grade D-Special Alloy										
DS	4320M	0.18 to 0.24	0.80 to 1.00	0.025Mx	0.03 Mx	0.15 to 0.35	1.15 to 1.35	0.80 to 1.05	0.20 to 0.30	0.04 to 0.07 V, 0.35Mx Cu
DXS	4330M	0.30 to 0.34	0.80 to 1.00	0.03Mx	0.03 Mx	0.15 to 0.35	1.65 to 1.85	0.90 to 1.10	0.20 to 0.30	0.04 to 0.07 V, 0.35Mx Cu
API Grade HA Alloy High Strength										
HA	4138M	0.36 to 0.43	1.10 to 1.40	0.025Mx	0.025Mx	0.20 to 0.40	0.30Mx	0.50 to 0.90	0.25 to 0.50	0.04 to 0.07 V, 0.25Mx Cu
API Grade HS Special High Strength										
HS	4330M	0.30 to 0.34	0.80 to 1.00	0.03Mx	0.03 Mx	0.15 to 0.35	1.65 to 1.85	0.90 to 1.10	0.20 to 0.30	0.04 to 0.07 V, 0.35Mx Cu