LL DS KD SUCKER ROD

SUCKER ROD PRODUCT LINE

The Liberty Lift DS KD (API D Special Alloy) quenched and tempered sucker rod is designed for use in medium to heavily loaded, effectively inhibited corrosive wells. Manufactured from our specially selected grade of steel and subjected to a tailored heat treatment, this rod stands out as one of our most corrosion-tolerant options.

ABOUT LL DS KD SUCKER RODS

The DS KD sucker rod is manufactured using AISI 3130M nickel-chromium-molybdenum SBQ (Special Bar Quality) steel for exceptional strength and impact resistance in demanding applications. Liberty Lift DS KD rods are engineered to exceed API standards for the D “Special” Sucker Rod.

PROCESS

Liberty Lift Rods undergo thorough straightening and inspection using advanced eddy current technology. The rods are forged to precise dimensions, and all forged ends are examined for discontinuities through magnetic particle inspection. The rods are then heated above their critical temperature and quenched to achieve a uniform martensitic grain structure, then tempered to enhance toughness and achieve the desired mechanical properties. To further enhance fatigue resistance, the quenched and tempered rods (Q&T) are shot-peened.

Our quality team oversees every stage of manufacturing and performs tensile testing on three samples from each heat treatment batch to ensure mechanical properties meet specifications. Finally, the pin ends are precision machined, and the threads are cold rolled to add strength to the sucker rod pin connection.

CHEMISTRY

CARBON
0.22-0.29

MANGANESE
0.71-1.00

PHOSPHORUS
< 0.025

SULPHUR
< 0.020

SILICON
0.15-0.35

COPPER
<0.35

NICKEL
0.70-1.00

CHROMIUM
0.41-0.65

MOLYBDENUM
0.01-0.06

MECHANICAL PROPERTIES

MINIMUM YIELD
115,000

TENSILE STRENGTH
125,000-140,000 PSI

ELONGATION (% IN 8IN)
10Mn

REDUCTION OF AREA %
40Mn

ROCKWELL HARDNESS C
25 to 30

APPLICATION

Heavy load applications in effectively inhibited corrosive wells.

MAXIMUM OPERATING STRESS

Sa=(T/2.8+0.375 Smin) SF