

SUCKER ROD

The LL KD (API Special D) rod is extremely dependable and is designed for medium to heavy-load service.

These rods are manufactured with an AISI 3130 nickel-chrome-moly alloy SBQ steel, providing them with the capability of handling heavy stresses.

This alloy provides greater corrosion resistance than that of the API standard grade D rod.

The LL KD rods (API Special D) are manufactured to the current API dimensional and mechanical specifications.

PROCESS

Rods are straightened and subjected to eddy current testing prior to any further operations. Any rods that do not meet Liberty Lift's specifications are removed from further processing. The rods are forged per size. The rods are brought to normalizing temperature to relieve previously induced stress, and then water quenched. All rods will be brought to a temper temperature which will produce the desired mechanical properties and then air cooled. The rods are shot-peened for enhanced fatigue resistance.

Random samples are subjected to Yield and Tensile testing. In addition, stringent hardness and Charpy Impact tests are conducted for further verification of the desired mechanical properties, these tests are above API requirements. The pin ends are precision machined and threads are cold rolled, adding additional strength to the sucker rod pin connection.

CHEMISTRY

CARBON	MANGANESE	PHOSPHORUS	SULPHUR	SILICON	COPPER	NICKEL	CHROMIUM	MOLYBDENUM
0.22-0.29	0.71-1.00	< 0.025	< 0.035	0.15-0.35	<0.35	0.70-1.00	0.41-0.65	0.01-0.06

MECHANICAL PROPERTIES

MINIMUM YIELD	TENSILE STRENGTH	ELONGATION (% IN 8IN)	REDUCTION OF AREA %	ROCKWELL HARDNESS C
115,000 PSI	125,000-140,000 PSI	12Mn	55Mn	25 to 30

APPLICATIONS

Heavy load applications in effectively inhibited corrosive wells.

MAXIMUM OPERATING STRESS

$$S_a = (T/4 + 0.5625 S_{min}) SF$$