

## QX30™ Sucker Rod

Extreme toughness and fatigue resistance in rod lift and PCP systems

### Applications

- Reciprocating rod lift systems
- PCP systems
- Deep, highly loaded wells in mildly corrosive applications<sup>1</sup>

### Features and Benefits

- Extreme toughness for severe and demanding applications
- Finer grain structure provides enhanced fatigue resistance

### Tool Description

The Weatherford QX30 sucker rods are manufacturing with 30CrMoA chrome-moly, API grade HA alloy steel and designed for highly loaded applications within inhibited, moderately to severely corrosive wells. They are part of the Weatherford high-strength series rods and undergo a quench and tempered process that is shown to improve fatigue-crack resistance compared to conventional treatments.

QX30 sucker rods provide a Charpy impact value that is 7X greater than normalized and tempered HS-grade rods. These rods feature fully rolled, cold-formed threads designed to provide a precise, smooth, reinforced thread structure unattained by normal machine-cut threads.



Weatherford QX30 sucker rods are quenched and tempered rod yields a tougher, more uniform tempered martensite microstructure which results in better fatigue life.



# QX30™ Sucker Rod

## Specifications

	Description	in. (mm)			
ID	Nominal size				
D <sub>R</sub>	Rod body diameter	0.750 (19.05)	0.875 (22.23)	1.000 (25.40)	1.125 (28.58)
D <sub>S</sub>	Pin shoulder OD	1.500 (38.10)	1.625 (41.28)	2.000 (50.80)	2.250 (57.15)
D <sub>T</sub>	Nominal thread diameter	1.063 (26.99)	1.187 (30.16)	1.375 (34.93)	1.562 (39.69)
L <sub>i</sub>	Pin length	1.43 (36.51)	1.62 (41.28)	1.87 (47.63)	2.125 (53.98)
W <sub>S</sub>	Wrench square width	1.00 (25.40)		1.313 (33.34)	1.500 (38.10)
L <sub>WS</sub>	Wrench square length	1.25 (31.75)			1.63 (41.28)
D <sub>B</sub>	Bead diameter	1.40 (35.72)	1.50 (38.1)	1.90 (48.42)	2.187 (55.63)
D <sub>I</sub>	Stress relief diameter	0.915 (23.24)	1.04 (26.42)	1.22 (31.17)	1.414 (35.92)
L <sub>R</sub>	Sucker rod length	25 and 30 ft (7.62 and 9.144 m)			
L <sub>P</sub>	Pony rod length	2, 4, 6, 8, 10 ft (0.6, 1.2, 1.8, 2.4, 3 m)			
L <sub>C</sub>	Coupling OD, SH	4.00 ft (101.6 m)			
C <sub>OD</sub>	Coupling OD, SH	1.50 (38.10)	1.625 (41.30)	2.00 (80.80)	2.25 (53.0)
C <sub>OD</sub>	Coupling OD, FH	1.625 (41.30)	1.812 (46.00)	2.187 (55.60)	2.375 (60.30)
~ 25-ft rod weight w/o coupling		38.5 lbs (17.5 kg)	52.0 lbs (23.6 kg)	69.9 lbs (31.7 kg)	88.7 lbs (40.2 kg)
~ 25-ft rod weight w/FH coupling		40.0 lbs (18.1 kg)	53.8 lbs (24.4 kg)	72.5 lbs (32.9 kg)	91.8 lbs (41.6 kg)
~ 25-ft rod weight w/SH coupling		39.8 lbs (18.1 kg)	53.5 lbs (24.3 kg)	71.9 lbs (32.6 kg)	91.17 lbs (41.35 kg)

## Chemical Composition

Material	C %	Mn %	Si %	Ph %	S %	Cu %	Cr %	Ni %	Mo %
30CrMoA	0.26 to 0.33	0.40 to 0.70	0.17 to 0.37	0.025 Max	0.20 Max	0.20 Max	0.80 to 1.10	0.30 Max	0.15 to 0.25

## Mechanical Properties

API Grade	Yield Strength ksi (MPa)	Tensile Strength ksi (MPa)	Elongation % (8-in.) in.	Reduction %	Heat Treatment
HA Alloy	120 (827)	140 to 155 (965 to 1,069)	10 Min	40 Min	Quenched and Tempered

## Specified Torque Limit<sup>2</sup>

Rod Size in. (mm)	0.750 (19.05)	0.875 (22.23)	1.000 (25.40) <sup>3</sup>	1.125 (28.58)
ft-lbs (Nm)	575 (780)	915 (1,241)	1,365 (1,851)	1,945 (2,637)

## Maximum Allowed Stress Calculation

$$(T/2.8 + 0.375 S_{MIN}) * SF$$

<sup>1</sup> Provided satisfactory corrosion-inhibiting practices are followed.

<sup>2</sup> Weatherford recommends Hi-T couplings and applying a service factor to the specified-torque limit based on operating conditions.

Please refer to Weatherford engineering bulletin TB-135 for further guidance on torque limits.

<sup>3</sup> 1.00 QX30 rods also provided with Modified pin, torque rating: 1365 ft-lb/1851 N·M.

