

EL[®] High-Strength Sucker Rod

Increased uptime in heavy-load applications and harsh environments

Applications

- Super high-load capacity in mild or sweet, corrosive environments¹
- Reciprocating rod lift systems
- PCP systems

Features and Benefits

- High-yield and high-tensile-strength properties provide greater length capabilities for uncompromised well depths
- Light-weight strength allows for reduced pumping-unit size and energy savings with no reduction in production rates
- Outer surface is permanently prestressed up to 120 ksi (827 MPa) for greater reliability and endurance
- Reduced diameter allows for smaller, more-economic tubing sizes

Tool Description

Weatherford EL high-strength sucker rods are manufactured with proprietary, HY grade alloy steel to provide an ultrahigh-load rating and fatigue resistance for sweet, mildly corrosive environments that are properly inhibited. EL sucker rods feature an exclusive induction, case-hardening process that gives them the superior performance within the most aggressive pumping environments. EL sucker rods feature a compression layer on the surface of each rod that retains its high constitution under severe compression as well as with normal operating tensile loads. This added tensile-stress surface protection greatly reduces the chance of fatigue cracks.



Weatherford EL high-strength sucker rods provide superior strength and long-lasting durability in corrosive environments.



EL[®] High-Strength Sucker Rod

Specifications

	Description	in. (mm)			
ID	Nominal size				
D _R	Rod body diameter	0.750 (19.05)	0.875 (22.23)*	1.000 (25.40)	1.125 (28.58)
D _S	Pin shoulder OD	1.500 (38.10)	1.625 (41.28)	2.000 (50.80)	2.250 (57.15)
D _T	Nominal thread diameter	1.063 (26.99)	1.187 (30.16)	1.375 (34.93)	1.562 (39.69)
L _i	Pin length	1.430 (36.51)	1.620 (41.28)	1.870 (47.63)	2.125 (53.98)
W _S	Wrench square width	1.000 (25.40)		1.313 (33.34)	1.500 (38.10)
L _{WS}	Wrench square length	1.250 (31.75)			1.63 (41.28)
D _B	Bead diameter	1.400 (35.72)	1.500 (38.1)	1.900 (48.42)	2.187 (55.63)
D _I	Stress relief diameter	0.915 (23.24)	1.040 (26.42)	1.220 (31.17)	1.414 (35.92)
L _R	Sucker rod length	25 and 30 ft (7.62 and 9.144 m)			
L _P	Pony rod length	2, 4, 6, 8, 10 ft (0.6, 1.2, 1.8, 2.4, 3 m)			
L _C	Coupling OD, SH	4.00 ft (101.6 m)			
C _{OD}	Coupling OD, SH	1.500 (38.10)	1.625 (41.30)	2.000 (80.80)	2.250 (53.0)
C _{OD}	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 %	Cr %	Ni %	Mo %	Other %
- Proprietary -									

Mechanical Properties²

API Grade	Yield Strength ksi (MPa)	Tensile Strength ksi (MPa)	Elongation % (8-in.) in.	Reduction %	Heat Treatment
- Proprietary -					

Specified Torque Limit

Rod Size in. (mm)	0.750 (19.05)	0.875 (22.23)	1.000 (25.40)	1.125 (28.58)
ft-lbs (Nm)	865 (1,173)	1,375 (1,864)	2,050 (2,779)	3,125 (4,596)

Maximum Allowed Stress Calculation

$$(55,000 \text{ psi} + 0.2143 S_{MIN}) * SF$$

¹ Provided satisfactory corrosion-inhibiting practices are followed.

² Weatherford recommends 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.

* 7/8 EL Sucker rod comes with a 1-1/8 in. wrench square

