API normalized and tempered rods

API Coupled Sucker Rods

A complete line of API grade sucker rods is available from Weatherford. Each rod is manufactured from special quality (SBQ) bar stock and is held to the same stringent quality-control measures and careful handling as our high-strength rods.

API Pony Rods

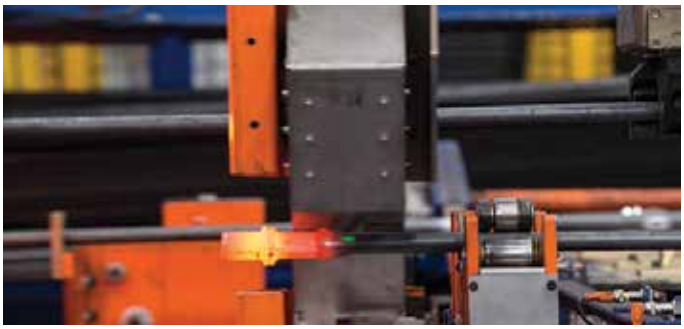
- Conform to appropriate API classifications
- Manufactured under strict quality standards and from the same alloy steels as sucker rods

Certified Strength and Structure

Weatherford API sucker rods are manufactured to API 11B specifications in our ISO 9001/API Q1 certified Greenville plant, one of the most modern facilities of its type in the industry. These rods feature fully rolled, cold-formed threads designed to provide a precise, smooth, reinforced thread structure unattained by normal machine-cut threads. Metal is displaced, rather than removed, and the resultant cold working strengthens the thread root. Weatherford rods are cleaned by shot-blasting to remove any scale and oxidation. They are then liberally coated with rust inhibitors and carefully palletized in bundles for safe transport and handling.

Applications

Rod	Recommended Application	Composition
Grade C	Light- to medium-load applications in noncorrosive or inhibited wells	AISI 1536 carbon-manganese alloy steel
Grade K	Medium- to heavy-load applications in noncorrosive or inhibited wells	AISI 4623 nickel-molybdenum alloy steel
Grade MD	Medium- to heavy-load applications in noncorrosive or inhibited wells	AISI 1541 carbon-manganese alloy steel
Grade D	Medium to heavy-load applications in noncorrosive or effectively inhibited corrosive wells	AISI 4142 chromium-molybdenum alloy steel
Grade KD (API Grade D Service)	Medium- to heavy-load applications in effectively inhibited corrosive wells	AISI 4720 nickel-chromiumium-molybdenum alloy steel



COROD® continuous sucker rods

Extended Tubing Life and Production

Weatherford manufactures COROD continuous sucker rods for distinct production enhancement and cost-saving advantages in various rod-string applications. Unlike conventional sucker rods, which are coupled every 25 or 30 feet, continuous sucker rods require couplings only at the top and bottom of the rod string, regardless of well depth. With fewer joints, this solid length of steel is lighter and enhances tubing life because contact between the tubing and sucker rod is uniform. It also addresses many premature tubing-wear challenges, especially in directional and horizontal wells.

Special Applications

Special applications, such as highly deviated wells and heavy, high-viscosity oil production, are prime opportunities for the high-strength, high-torque capabilities of the COROD system. COROD sucker rods are especially well suited to both reciprocating and rotary-pumping applications.

Recommended maximum weight indicator pull

Rod Type	Size (in.)	Load	
		(lb)	(DaN)
MD	5/8	23,400	10,400
	3/4	33,800	15,000
	7/8	45,900	20,400
	1	60,000	26,600
D	5/8	27,600	12,200
	3/4	39,700	17,600
	7/8	54,100	24,000
	1	70,600	31,400
	1-1/8	89,400	39,700
KD	3/4	37,700	16,800
	7/8	51,400	22,800
	1	67,100	29,800
	1-1/8	84,900	37,700
Grade HD T66/XD	3/4	45,700	20,300
	7/8	62,200	27,600
	1	81,200	36,100
	1-1/8	102,800	45,700
S67 67D	3/4	43,700	19,400
	7/8	59,500	26,400
	1	77,700	34,500
	1-1/8	98,400	43,700
S87	3/4	45,700	20,300
	7/8	62,200	27,600
	1	81,200	36,100
S88	3/4	51,600	22,900
	7/8	70,300	31,200
	1	91,800	40,800
	1-1/8	116,200	51,700
EL rod	5/8	35,900	15,900
	3/4	51,600	22,900
	7/8	70,300	31,200
	1	91,800	40,800
	1-1/8	116,200	51,700

Size (in.)	Weight	
	(lb/ft)	(kg/m)
5/8	1.114	1.657
3/4	1.634	2.432
7/8	2.224	3.310
1	2.904	4.322
1-1/8	3.676	5.471

Tabulated here is the maximum weight indicator pull (load) that can be applied to a stuck sucker-rod string. The ratings are based on 90 percent of the minimum yield strength for a sucker-rod string in “like new” condition. The maximum pull should be reached with a steady pull and not with a shock load. For a tapered string, calculate the weight of the sucker rod above the smallest and lowest section, and add the calculated weight to the value tabulated here for the type and size of the lower section. For a single-taper sucker-rod string, the values tabulated here are the maximum pull.

Progressing cavity pumping torque limits

Grade	Rod Size[a] (in.)	Yield Strength (ksi, MPa)	Specified Torque Limit[b] (ft-lb, N•m)
MD	3/4	85 586	430 583
	7/8		675 915
	1		1,000 1,356
D	3/4	100 689	460 624
	7/8		735 997
	1		1,100 1,491
	1 × 7/8		1,100[c] 1,491
	1-1/8		1,570 2,129
S67 67D	7/8	110 758	780 1,058
	1		1,165 1,580
	1-1/8		1,660 2,251
KD	3/4	95 655	440 597
	7/8		750 1,017
	1		1,110 1,505
	1 × 7/8		1,110[c] 1,505
	1-1/8		1,500 2,034
	1-1/4 × 1		1,680[c] 2,278
S87	7/8	115 793	815 1,105
	1		1,220 1,654
	1-1/8		1,740 2,359

[a]Not all sucker rod sizes are listed in this table. For information about additional sizes, contact your authorized Weatherford representative.
[b]Weatherford requires that a 0.8 service factor be applied to all specified torque limits.
[c]Hi-T coupling and special makeup procedures required.
[d]Hi-T 5-in. couplings are required for all 1 1/4 × 1 1/8 and 1 1/2 × 1 1/8-in. torque rods.

Grade	Rod Size[a] (in.)	Yield Strength (ksi, MPa)	Specified Torque Limit[b] (ft-lb, N•m)
Special Alloy T66/XD	3/4	115 793	500 678
	7/8		800 1,085
	1		1,200 1,627
	1 × 7/8		1,200[c] 1,627
	1-1/8		1,700 2,305
	1-1/4 × 1		2,000[c] 2,712
	1-1/4 × 1-1/8[d]		3,125[c] 4,237
	1-1/2 × 1-1/8[d]		3,750[c] 5,084
HD	3/4	115 793	500 678
	7/8		800 1,085
	1		1,200 1,627
	1 × 7/8		1,200[c] 1,627
	1-1/8		1,700 2,305
	1-1/4 × 1		2,000[c] 2,712
	1-1/4 × 1-1/8[d]		3,125[c] 4,237
	1-1/2 × 1-1/8[d]		3,750[c] 5,084
S88	7/8	130 896	920 1,247
	1		1,380 1,871
	1-1/8		1,965 2,664
EL rod	7/8	—	1,250[c] 1,695
	1		2,000[c] 2,712
	1-1/8		3,125[c] 4,596