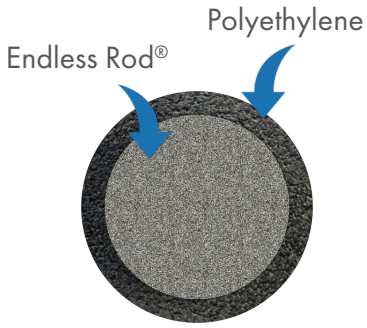
ENDLESS ROD ETHYFLEX

ENHANCE ROD AND TUBING LIFE



CORROSION AND WEAR PROTECTION SOLUTIONS

Barrier coatings protect sucker rod from corrosion which is a major contributor to fatigue failures that are common in rod strings used in Progressing Cavity Pump (PCP) and Reciprocating Rod Pump (RRP) applications. Corrosion damage results in stress risers on the rod surface that can lead to cracks which when exposed to cyclic load over time propogate across the rod body eventually leading to failure (as shown below in Figure 1).

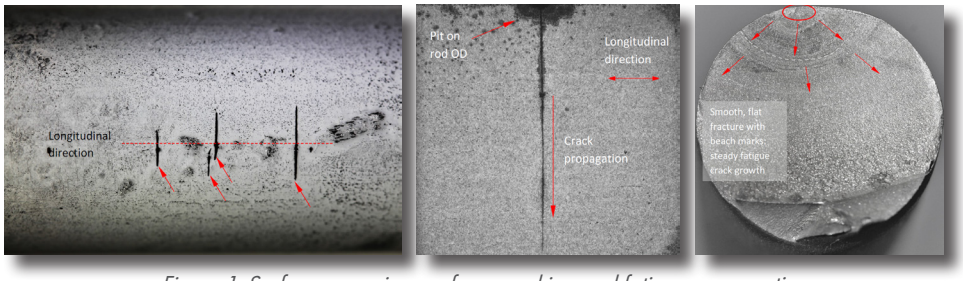


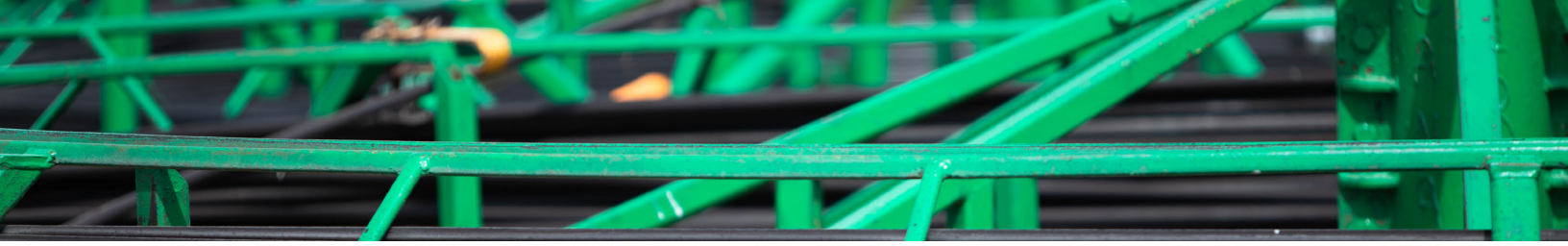
Figure 1, Surface corrosion, surface cracking and fatigue propogation

Certain coatings reduce the rod/tubing contact friction resulting in lower torque in PCP applications and lower axial loads in RRP applications. Reduced friction also has the potential to decrease tubing wear particularly in more agressive environments.

ENDLESS ROD® (ER) ETHYFLEX (POLYETHYLENE UNBONDED)

Lifting Solutions patented EthyFlex technology is the first widely deployed barrier coating for continuous sucker rod with initial installations going back to 2011 and over 5 million feet (1.5 million meters) installed in Canadian PCP applications. This product in enabled by our fleet of standalone rig and gripper unit service equipment along with specialized processes including welding and coating repair.

The EthyFlex coating is an engineered high-density polyethylene material that provides the durability required for servicing, fluid resistance in low to moderate API gravity and temperature environments, and a low coefficient of friction. It is available in all Lifting Solutions Endless Rod® sizes and grades and deployed in a thick 3.18mm (0.125in) coating that provides longevity even under aggressive wear conditions. EthyFlex is engineered to deliver the quality performance that our clients expect to experience when they work with the Lifting Solutions team.



ENDLESS ROD® ETHYFLEX SPECIFICATIONS

Bare Rod Diameter in (mm)	Coated Rod Diameter in (mm)	Coated Rod Weight lbs/ft (kg/m)	Maximum Rod Weight lbs (kg) *	Maximum Vertical Depth ft (m) *
0.875 (22.2)	1.125 (28.6)	2.22 (3.30)	10000 (4545)	4512 (1375)
1.000 (25.4)	1.250 (31.6)	2.86 (4.26)	10000 (4545)	3492 (1064)
1.125 (28.6)	1.375 (34.9)	3.60 (5.35)	10000 (4545)	2782 (848)

*Max pulling weights and associated vertical depths are referenced at 25°C (77°F) and may need to be reduced at elevated temperatures.

ETHYFLEX APPLICATION GUIDE

Attribute	Recommendation
Artificial Lift Type	Progressing Cavity Pump (PCP)
Wellbore Profile	Vertical, slant and directional with curvature up to 15 degree/30m (100ft)
Oil Resistance	Up to 35 API
Gas Resistance	Very Good resistance to CO_2 and CH_4 Moderate resistance to H_2S
Solids Resistance	Excellent resistance to sand and abrasives
Chemical Resistance	Very Good resistance to Acids, Corrosion Inhibitors and Parrifin Treatment - Consult Lifting Solutions Technical Support for additional compatability testing and recommendations
Downhole Temperature	Up to 40°C (104°F)
Field Strippable?	Yes, EthyFlex can be stripped and the bare rod redeployed into non corrosive applications.

ENDLESS ROD PRODUCT LINE COMPATABILITY

Rod Grade	Material	Corrosion Resistance	Minimum Tensile Strength (ksi)	Minimum Yield Strength (ksi)	Max. Average Hardness (HRC)
D	C-Mn	Poor	115	85	28
DS	C-Mn	Poor	140	115	36
CD	Cr-Mo	Good	115	90	28
CS	Cr-Mo	Good	140	115	36
ND	Ni-Cr-Mo	Good	115	90	28
NS	Ni-Cr-Mo	Good	140	115	36
ALL	Multi-layered composite thermoplastic coating	Excellent	EthyFlex coating can be applied to any of the individual rod grades		