



**WESTERN FALCON**  
THERMOPLASTIC LINERS FOR PIPE



## Our Patented Thermoplastic Liner Technology

**Increases Tubular Runlife.  
Reduces Costly Workovers.**

Since 1992, Western Falcon thermoplastic liners have enabled operators to drastically reduce operating costs associated with rod on tubing wear and tubing corrosion failures in down hole applications.

Our liner material incorporates proprietary lubricants that solve wear and corrosion failures in all types of artificial lift. They are extremely smooth, leading to decreased pressure drops, electrical cost savings, increased velocity/siphon flow, and increased production due to fundamental hydraulic benefits. Our liners are proven resistant to wire line, acid and chemical damage.

Western Falcon uses a unique mechanical bond, making reuse of used and lower-quality tubing possible, saving on steel costs. Due to our bonding procedure, liners can be used in pipe with surface imperfections, damage and used internal plastic coatings without the additional cost of removal.

We have proven effective in highly deviated, dog-legged, and horizontally drilled wells with extremely high side loads, without the additional costs of rod guides or tubing rotators. Western Falcon liners have been equally successful in controlling tubular corrosion in other artificially lifted and disposal wells, and our connection system is the most reliable and easiest to install in the OCTG corrosion control industry.

Western Falcon's family of thermoplastic liners are designed for specific well environments. There are many co-dependent variables when considering the proper thermoplastic liner for your specific well. "One size does not fit all." We want to partner with you to understand your needs and well environments, and find the right liner solution for YOU.

For more information, or to specifically discuss your well conditions and environments, please contact us toll-free at 866-461-9181.

# PRODUCT LINE

## ***Eliminate Rod on Tubing Wear and Corrosion Failures***

### **Falcon Polycore High Density Polyethylene Liner**

Falcon Polycore™ is a High Density Polyethylene (HDPE) liner as specified by the Plastic Pipe Institute's specifications. This product is highly abrasion resistant, which accounts for its success in the mitigation of rod on tubing wear, as well as wire line, mechanical and handling damage. HDPE is chemically inert to corrosive materials enhancing its use as a corrosion barrier. The mechanically bonded, seamless thermoplastic tube is tolerant to minor surface imperfections in pipe, and/or voids, as in adhesive or thermally bonded liners and coatings. Maximum temperature is 160° F (71° C) Oil, 180° F (82° C) Aqueous.

### **Falcon Polycore Modified High Density Polyethylene Liner**

Falcon Modified Polycore™ is a High Density Polyethylene (HDPE) liner that has the same characteristics as Polycore (above), with a collapse strength double that of our standard HDPE liner. Maximum temperature is 160° F (71° C) Oil, 180° F (82° C) Aqueous.

### **Falcon Enertube Polyolefin Liner**

Falcon Enertube™ is a liner manufactured from a specially formulated blend of polyolefins. This liner is similar in mechanical properties to the field-proven Falcon Polycore™ liner, with a moderate increase in tensile strength and temperature resistance. This second generation of Falcon liners is specifically designed to operate in wells too hot for Polycore™, and is a seamless, mechanically bonded liner, providing a smooth tubing surface. Maximum temperature is 210° F (99° C) in all services.

### **Falcon Ultratube Engineering Thermoplastic Liner**

Falcon Ultratube™ is a high performance liner manufactured from a proprietary blended polyphenylene sulfide thermoplastic resin specially formulated for use in downhole oil and gas production environments. This third generation liner has a significant increase in temperature stability, tensile strength, abrasion and chemical resistance over the other proven liners. The innovative polymers in this liner offer the broadest range of resistance to solvents, steam, strong bases, fuel, and acids. The new polymers are specifically designed to limit—not prevent—the permeability of acid gases such as CO<sub>2</sub> and H<sub>2</sub>S. Maximum temperature is 350° F (175° C) in all services.

### **Falcon Extremetube Engineering Thermoplastic Liner for Extreme Conditions**

Falcon Extremetube™ is a high performance liner for the most extreme operating conditions. This unique liner is made from PEEK™ polymer, and is the highest tensile strength, and highest temperature liner available. Extremetube™ is an excellent alternative to corrosion resistant alloy (CRA) tubulars, and offers protection against corrosion and wear problems under the most severe environmental conditions. Maximum temperature is 500° F (260° C).


Contact us today to find a solution for you! 866-461-9181

# PRODUCT DETAILS AND SPECIFICATIONS



**100% RECYCLABLE LINERS**



	Polycore™ 	Modified Polycore™ 	Enertube™ 	Ultratube™ 	Extremetube™ 
<b>Applications</b>					
Beam Pumped Wells	✓	✓	✓	✓	✓
PC Pumped Wells	✓	✓	✓	✓	✓
Submersible Pumped Wells	✓	✓	✓	✓	✓
Water Injection	✓	✓	✓	✓	✓
Disposal	✓	✓	✓	✓	✓
Water Source	✓	✓	✓	✓	✓
High Temperature Wells				✓	✓
Acid Gas Injection		✓	✓	✓	✓
Gas Lift Wells			✓	✓	✓
Plunger Lift Wells	✓	✓	✓	✓	✓
Solution Mining	✓	✓	✓	✓	✓
CO <sub>2</sub> Injection (WAG) Wells				✓	✓
Cool Bed Methane			✓	✓	✓
Steam Flood				✓	✓
Flow Lines	✓	✓	✓	✓	✓

## Specifications

- Coated couplings to protect the J-area against corrosion-eliminating inserts and barrier seals
- Minimum API torque recommended during tubing make-up
- No special position make-up required
- *\*Extended length couplings available if torque is required that exceeds minimum API*
- Contact representative when considering use in elevated pressure/concentrations of CO<sub>2</sub>

## Product Benefits

- Mitigates rod on tubing wear in all environments, including those with side loads exceeding 1000 lbs
- Corrosion control solution
- Extends tubing and rod runlife
- Minimizes corrosion inhibitor volumes
- Reduces well servicing frequency and cost
- Reduces tubing and rod replacement
- Reduces corrosion inhibitor requirements
- Reduces friction and peak polished rod loads
- Eliminates need for rod guides
- Reutilizes current inventory by lining surplus tubing
- Apply over used coatings
- Decreases pressure drop in high velocity flow
- Environmental benefits include power savings and recyclability

Go to [westernfalcon.com](http://westernfalcon.com) to find your local sales rep.

# THE WESTERN FALCON DIFFERENCE

## Unmatched Experience

Western Falcon has run more than 70 MILLION FEET (21 million meters) of thermoplastic liners throughout the world. We have the knowledge and expertise to provide a tubular solution for ANY well environment.

## Unbeatable Thermoplastic Liners

Western Falcon's technologically advanced thermoplastic liners are more robust, flexible, and are less expensive than the alternative thermoset coating. This type of liner technology is suitable for all types of well environments, regardless of temperature, depth or well type.

## Unlimited Well Type Applications

Our patented liner technology has been designed to solve wear and corrosion issues in both water and in producing well bores. The design is so flexible that you can run one string for multiple uses. This is an ideal solution for a conversion well. This versatility directly translates to less changeover and speaks to its longevity.

## Unconventional Results

Industry leaders in major producing regions around the world are running our technologically advanced liners to reap cost savings, reduce workover downtimes and increase revenue. Our liners can do the same for you.

## ALL WELL ENVIRONMENTS ARE UNIQUE

Western Falcon has a wide breadth of success in over 80,000 wells worldwide — we look forward to discussing a solution for you.

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5810 Wilson Rd. Suite 250, Humble, Texas 77396

Toll-Free: 866-461-9181