

# MEDIUM STRENGTH 4318M NM GRADE

## ENDLESS ROD

### GAIN DEPTH AND COMBAT CORROSION

Lifting Solutions' team of technical application specialists assess a client's well application and then design a tailored solution to address the challenges. We found that our clients needed a medium grade rod that delivers both durability and corrosion resistance as a solution to some deep, corrosive well applications. This comprehensive solution is found in the Lifting Solutions Medium Strength 4318 NM Endless Rod (ER 4318 NM) series. The ER 4318 NM Grade is made of the same chemical composition as NS and ND ER grades, a Ni-Cr-Mo alloy, and is available in both bare and coated rod.

The ER 4318 NM's unique balance of mechanical resistance is measured by hardness (tensile strength) and its resistance to corrosion. The ER NM is a superior alternative to competitor products such as sucker rod grades KD and KDP.

### ENDLESS ROD BENEFITS

Lifting Solutions is the industry-leading provider of continuous rod products and services. From research and development to design, and quality and precision manufacturing; our Endless Rod products outperform the market.

- The Endless Rod has only two couplings which eliminates common coupling and tubing wear failures.
- Endless Rod is 8 to 12% lighter than competitor products, reducing stress at the well's surface resulting in lower energy consumption.
- Clients can pump at lower depths without increasing surface pumping unit size with the Endless Rod.
- Lifting Solutions heat treats the Endless Rod with a quench and temper method producing a favorable microstructure to maximize fatigue life, intended for deep well applications.
- Largest range of sizes and grades available all designed to extend run-life.

### MECHANICAL PROPERTIES

Mechanical properties lie between the existing NS and ND ER grades:

| Grade | Material Grade | Tensile Strength (ksi) | Yield Strength (ksi) | Average Hardness (HRC) | Torque Range (ft*lb) |
|-------|----------------|------------------------|----------------------|------------------------|----------------------|
| ND    | 4318           | 115 (min)              | 90 (min)             | 30 (max)               | 430 - 1,730          |
| NM    | 4318           | 125 (min)              | 110 (min)            | 32 (max)               | 500 - 1,700          |
| NS    | 4318           | 140 (min)              | 115 (min)            | 36 (max)               | 550 - 2,220          |

### SIZES | GRADE NM

|    |      |    |
|----|------|----|
| NM | 7/8" | 1" |
|----|------|----|

### SIZES | GRADE PIN END

|    |            |        |          |
|----|------------|--------|----------|
| NM | 7/8 x 7/8" | 1 x 1" | 1 x 7/8" |
|----|------------|--------|----------|



Endless Rod loaded onto shipping truck for shipment.