



U. S. Steel Tubular Products

USS-EAGLE TC™

Threaded and Coupled Premium Connection

A High-Integrity Solution with Exceptional Torque Capacity

Patented wedge thread form

- Exceptional operating torque capacity supports installation of extended length production casing strings
- Proven high-pressure, gas-tight sealability with approved thread running compounds
- Reliable and quick make-up that retains initial torque
- Pin and coupling threads optimized for long fatigue life to accommodate extended rotating intervals and speeds

Reliable metal seal to maximize gas-tight internal pressure capacity

- Rated 100% in tension and compression efficiency relative to full pipe body strength
- Gas-tight seal capability validated by combined load testing including internal gas pressure up to the connection performance envelope
- Robust design that builds upon proven field history of USS-EAGLE SFH®

Coupling options to maximize clearance

- Connection designed to accommodate standard coupling OD, per API 5CT, as well as Reduced Diameter (RD) special clearance couplings depending on the operating objectives
- Low hoop stress levels in the coupling reduces the potential of environmental cracking, improving product performance in sour service environments

- Full scale testing program validated fatigue life, FRAC cycling performance and operational torque capabilities typical for production casing applications in high temperature, horizontal shale gas wells with extended lateral lengths, including casing rotation during installation and while cementing
- Qualified to API TR 5SF protocol with liquid and gas up to 100% of pipe body capacity
- Analyzed and optimized using finite element analysis (FEA)

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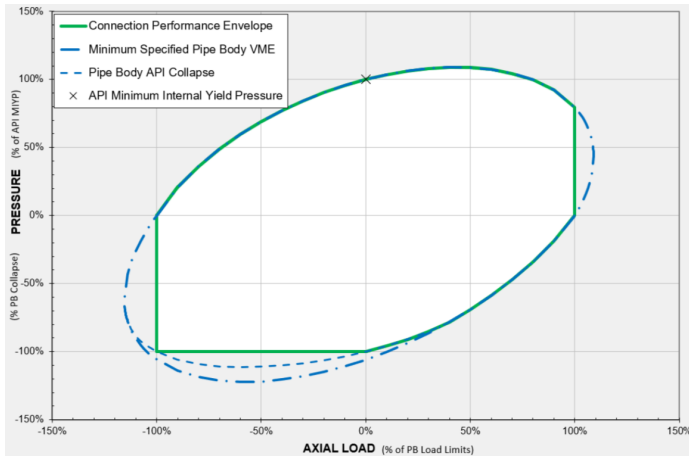


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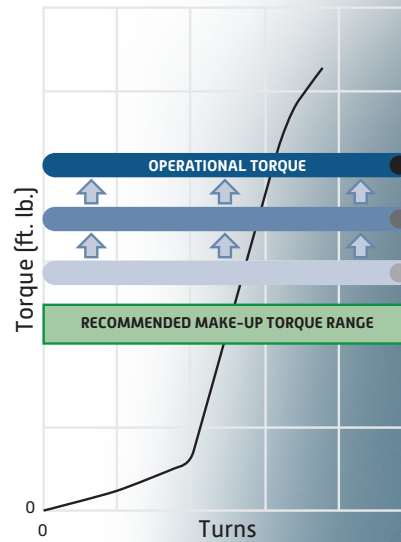
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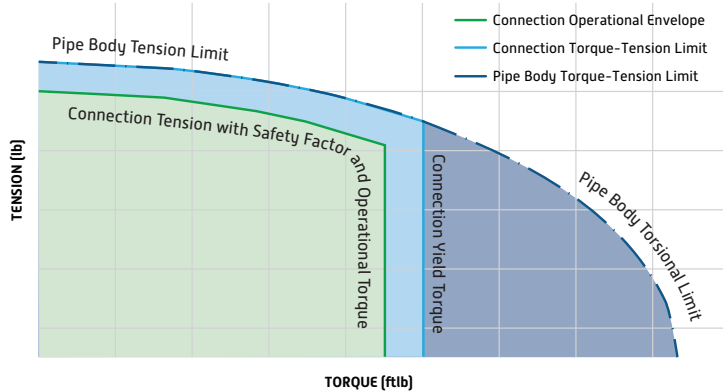
USS-EAGLE TC™ Connection Performance Envelope



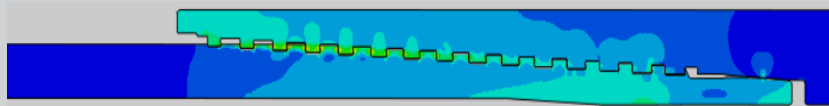
Torque vs Turn Graph



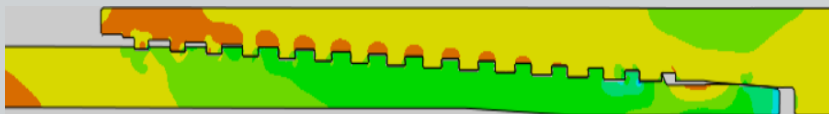
USS-EAGLE TC™ Operational Torque-Tension Envelope



Finite Element Analysis



Stresses at Recommended Make-up Torque



Stresses Under Capped-End Internal Pressure



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