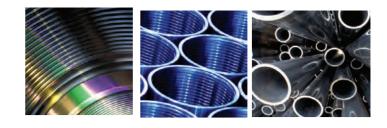
TAR TUN LICAK KUN Advanced Tubular System



System Overview

The JFE Steel Clear-Run™ Advanced Tubular System sets a new benchmark in Oilfield best practice, offering a high value alternative to traditional 'dope-based' OCTG processes. Clear-Run™ delivers greatly improved Operational, Commercial and Safety performance and completely removes key negative Environmental aspects of established industry practices.

Problems Solved

From the very first exploration wells through to the increasingly complex and environmentally sensitive programmes undertaken in the Oil & Gas industry of today, 'Oilfield Tubulars' have been handled using a process with the following inherent problem areas;

Contamination of the Well Bore and Formation with Pipe Dope

Fouling of Down Hole Equipment with Pipe Dope

Costly Onshore and Offshore Thread Cleaning and Preparation

Frequent Incidence of Connection Galling

'Dirty', Unsafe Workspaces Shop/Yard/Rig

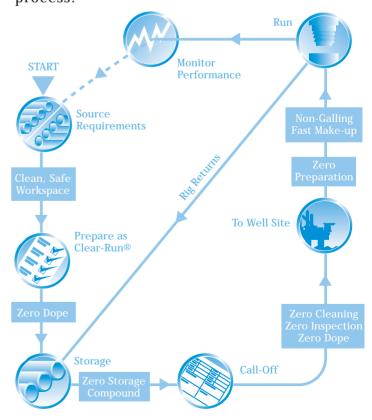
In-Storage Connection Corrosion

High Residual Environmental Impact

The JFE Steel Clear-Run™ Advanced Tubular System removes or reduces all these negative aspects, yielding direct savings in Cost and Time and greatly reducing the Environmental impact of OCTG operations.

In full Commercial application, Clear-Run™ has delivered improved Rig-Time efficiency through the removal of tubular preparation time and the achievement of benchmark safe make-up speed and connection integrity levels. A Pipe Dope is not required at any point in the manufacture, storage or running of OCTG deployed using the Clear-Run™ system. Corrosion inhibition and anti-galling properties are integral Clear-Run™ features and there is no requirement for connection cleaning and preparation on the outward or inward journey, to and from the Well Site.

Key components of the JFE Steel Clear-Run[™] system are recyclable/bio-degradable, adding to the overall reduction in environmental impact achieved by the removal of Dope from the entire process.



greatly reducing the Environmental impact of JFE Steel Clear-Run™Advanced Tubular System

The Clear-Run™ Advanced Tubular System covers the entire OCTG Life Cycle from Mill to Well, through Return and Re-Use in a single integrated process. Features and benefits of Clear-Run[™] at key points in this life cycle include;

At the Mill / Machine Shop

Under the Clear-Run $^{\text{\tiny{M}}}$ system, the need for pipe Dope during connection make-up is removed, creating significantly cleaner, safer workspaces. The Clear-Plate $^{\scriptscriptstyle{\mathsf{TM}}}$ component of the Advanced Tubular System provides anti galling properties to all Clear-Run[™] OCTG from this point in the process.

In the Pipe Yard

Immediately prior storage, the to Run[™]-CG component the Advanced of applied System is connection making all Clear-Run[™] joints corrosion resistant Northern Alberta, Clear-Run[™] Advanced Tubular and ready for offshore need for further cleaning and preparation.

Tubulars returning from the Rig Site require no routine cleaning and corrosion protection treatment prior to re-storage.

Zero cleaning, zero preparation, zero

Dope: Just remove the protectors and run in hole.

Clear- Historical Data

 $^{
m Tubular}$ From the harsh environments of the Middle East threads to the extreme cold running's in Siberia and running without the System has repeated spectacular proven results.

System Components

A significant technological advance in OCTG anti-gall treatment, this component of the Clear-Run™system has been developed by our technological development partners-Hunting and MP (Eastern).

Clear Run®-

High performance friction reduction and corrosion resistance without Dope, enabling faster, cleaner make-up of tubulars at the Well Site. 'Transparent' and biodegrable characteristics facilitate detailed thread inspection without cleaning. Clear Run™ -CG was developed by our technological development partners-Hunting and R.S. Clare.



JFEBEAR™ - A connection for today's Oil and Gas Industry A new breed of premium thread connection that was designed to exceed API class 1 requirements for Compression and Torque, Bending and External Pressure. JFEBEAR™ Clear-Run™has successfully completed a connection load test programme based on ISO13679.

