

MISSION Ceramic Liner



Time Tested - Field Proven - Globally Accredited

NOV's MISSION™ Ceramic Liner offers longer run times, lower operating costs and reduced risk exposure when compared to operating with chrome iron liners.

Our ceramic sleeve material is manufactured from alumina oxide, known for its wear resistance. Our ceramic sleeves have proven run times up to 16,000 hours in all types of operating conditions, and we manufacture our outer hull material from alloy steel to increase yield strength and aid in fatigue resistance.

Combining these features, more than 40 years of experience in ceramics, and our proprietary pump technology makes for a liner unmatched by any other in the Industry.

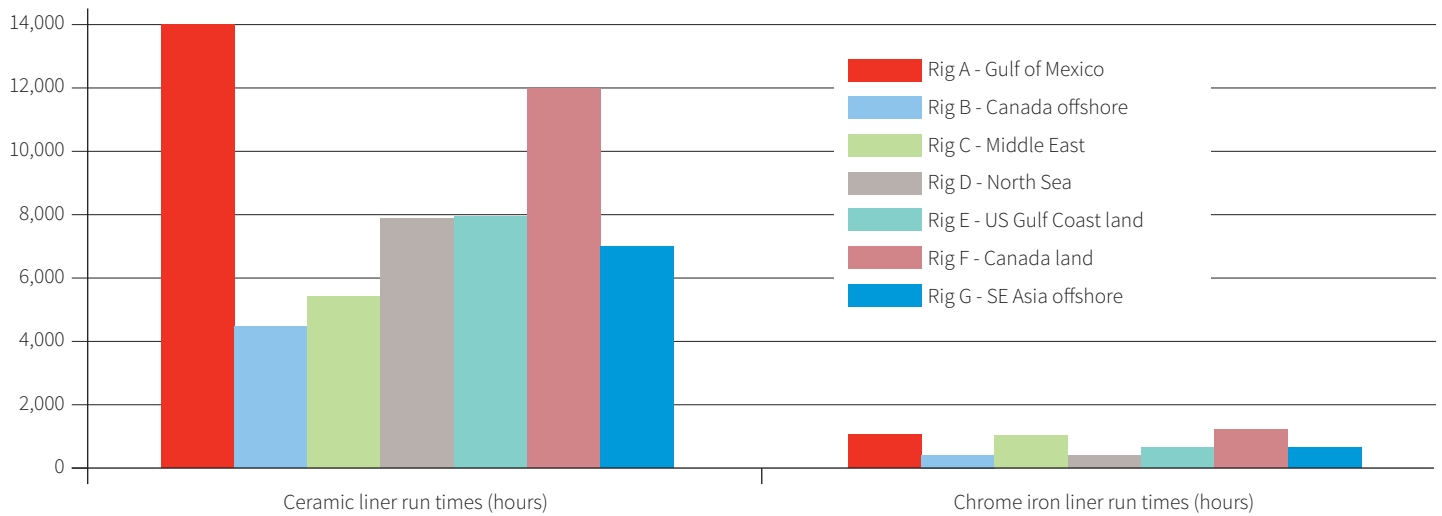
Features and benefits

- Harder wear surface than chrome iron means extended run times
- Smoother surface finish for reduced friction and heat
- Corrosion resistant: Impervious to chemical attack from the drilling fluid
- Alloy steel hull material for increased strength and fatigue resistance
- Alumina oxide ceramic is one of the hardest known ceramic materials
- Improved safety through reduced risk exposure

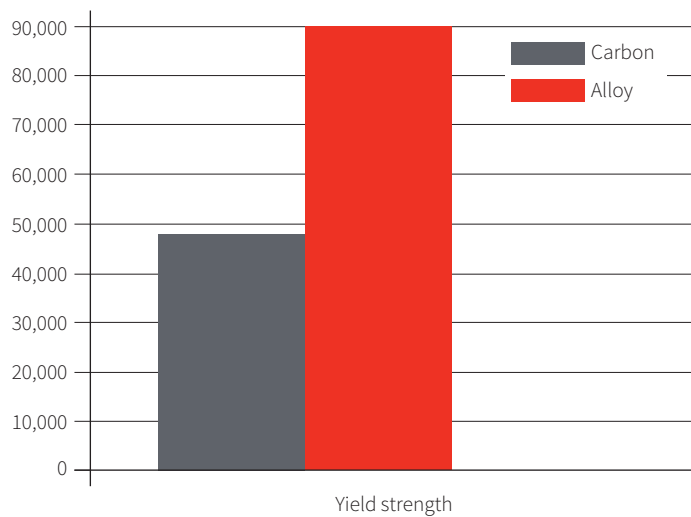
For additional information about MISSION Ceramic Liners, please contact your NOV representative today.

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Ceramic Liner Run Times - Operating Hours



Outer Hull Properties

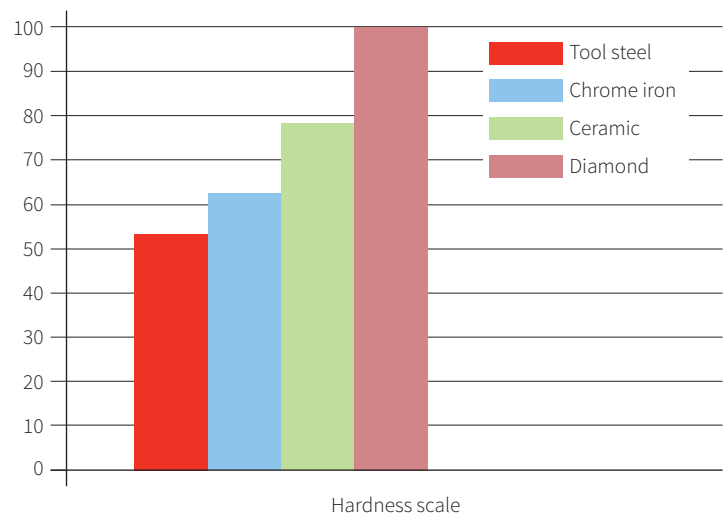


Outer hull properties chart

The outer hull properties chart depicts the yield strength of carbon steel hull material versus the alloy steel hull material.

The alloy steel material possesses a stronger yield value, thereby increasing the strength and fatigue resistance of the liner assembly.

Hardness Values



Hardness values chart

This chart shows typical hardness values for various materials.

Note: Mission also offers Zirconia Ceramic Sleeves, upon customer request