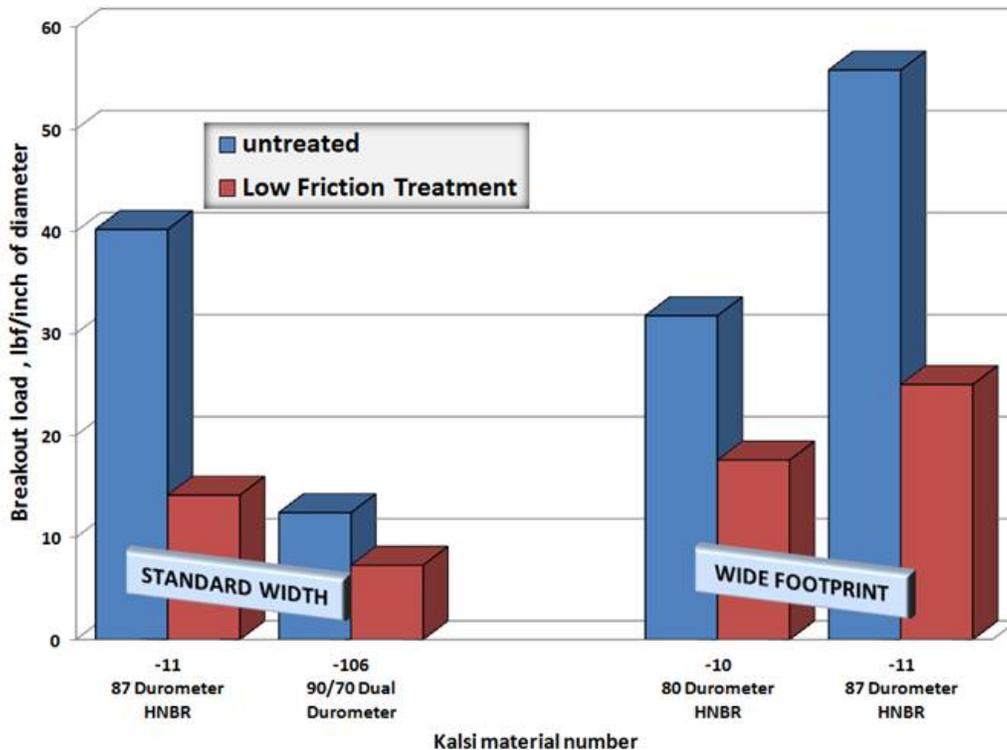


# Low Friction Kalsi Seal Treatment



## Introduction

Although Kalsi Seals<sup>1</sup> have relatively low running torque due to hydroplaning, breakout torque can be relatively high due to the direct compression configuration of the seals. A low friction treatment is available that significantly reduces the breakout torque of HNBR-based seals by penetrating and chemically altering the surface of the seal. The figure above provides a breakout torque comparison for treated and untreated Kalsi Seals in zero differential pressure conditions using a low viscosity seal installation lubricant. No increase in breakout torque or compression set was observed after prolonged rotary operation.

The low friction treatment helps to make Kalsi Seals more compatible with applications that are sensitive to breakout torque, such as battery-powered underwater vehicles, oilfield rotary steerable tools, and rotary control devices.

Lower viscosity lubricants and harder elastomer compounds typically cause higher breakout torque. The low friction treatment is particularly relevant now that wider Kalsi Seals have been developed that can use low viscosity lubricants with harder, more extrusion resistant elastomers in high differential pressure applications.

## Impact on seal slippage

Our testing indicates that the low friction treatment reduces the tendency for seals to slip circumferentially within the gland.

## How to obtain treated seals

The low friction treatment can be applied to any HNBR Kalsi Seal as a special-order item, if appropriate lead time is available. Add the designator “-LF” to the seal part number to specify an all-over low friction treatment. Contact our sales personnel for pricing and lead time. Minimum order quantities may apply.

<sup>1</sup> “Kalsi Seal” and “Kalsi Seals” are trademarks of Kalsi Engineering, Inc. The seals in this brochure are offered under the general terms and conditions provided in the “Offer of Sale” that is included in the current revision of the **Kalsi Seals Handbook™**.