



Kalrez[®] perfluoroelastomer parts

From DuPont Performance Elastomers

Kalrez[®] V-Rings for Oil Production Six-Year Service Record

The outstanding service record for Kalrez[®] parts in oil production applications is best shown by the results of testing V-rings recovered after six years' service in a producing well. As shown in *Table 1* and *Figures 1–3*, except for slight drop in hardness, the aged V-rings were indistinguishable in physical properties and appearance from the unaged control.

We know of no other product that performs as well in service conditions this severe.

Figure 1. This Kalrez[®] V-ring was essentially unaffected by six years downhole.



**Table 1
Kalrez[®] V-Rings: Six-Year Service Record**

Conditions	Production	
Depth, 4,602 m (15,100 ft)	3,000 BBL/Day Oil	
Temperature, 149°C (300°F)	125 BBL/Day Water	
Pressure, 46.2 MPa (6,700 psi)	Gas/Oil Ratio—1.3	
Physical Property Comparisons (Kalrez [®] 3065)		
	New V-Rings	Six-Year Downhole V-Rings
Tensile at Break ¹ , MPa (psi)	24.10 (3,495)	21.50 (3,120)
Elongation ¹ , %	30	30
Hardness ² , Shore A	90	85

¹ ASTM D412, 500 mm/min (20 µm/min)

² ASTM D2240

Figure 2. Tubing-to-packer seal after six years downhole.

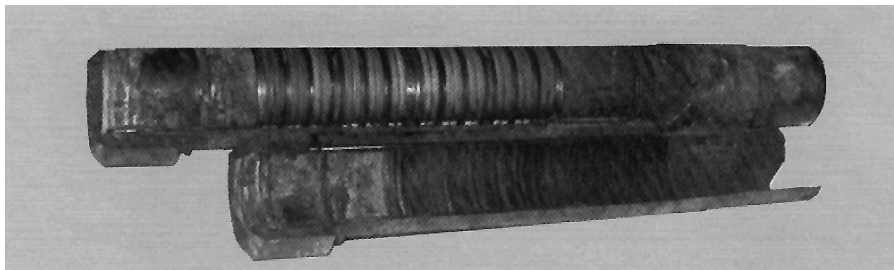
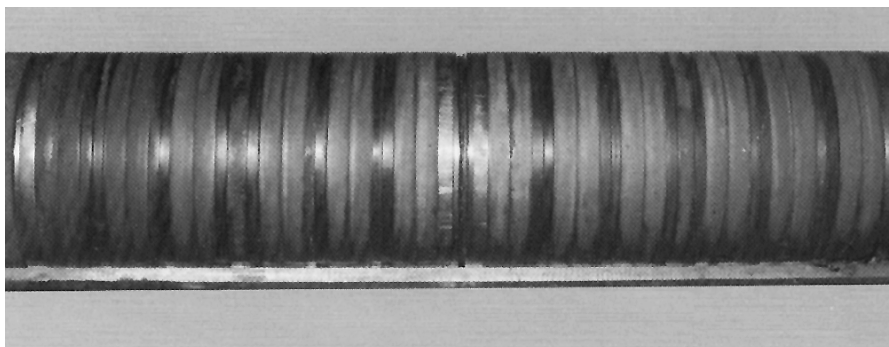


Figure 3. Close-up of Figure 2.



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