

Parco

2285-80 HNBR Seals



Our Seals Extend the Life of Your Drill Bits

Seals used in drill bits are subject to highly abrasive conditions and severe compressive loads at high temperatures. The enhanced properties of Parco's 2285-80 compound make it ideal for dynamic applications that require excellent abrasion resistance. Parco also recommends 2285-80 seals for use in conventional and synthetic greases and high-pressure applications.

2285-80 Meets Your Needs

1. Superior Resistance to Abrasion

Abrasion resistance is a measure of the amount of wear a seal can withstand when its surface is constantly scraped or rubbed. The abrasion resistance of Parco's 2285-80 compound significantly outperforms other general-purpose HNBR compounds. Parco performed an industry-standard Taber abrasion test in its R & D laboratory. After 5,000 revolutions under a 1,000 g wheel, the 2285-80 seals had a weight loss of only 0.0792 mg per revolution (see Figure 1).

2. Very Good Resistance to Compression Set

When installed, most seals must resist fluid under pressure to seal properly. When a seal takes a set from compression, it no longer exerts force on the mating surfaces, resulting in leakage. A compound with low compression set better maintains its elastic properties and original thickness, preserving seal integrity. Parco's 2285-80 compound provides excellent resistance to compression set at higher

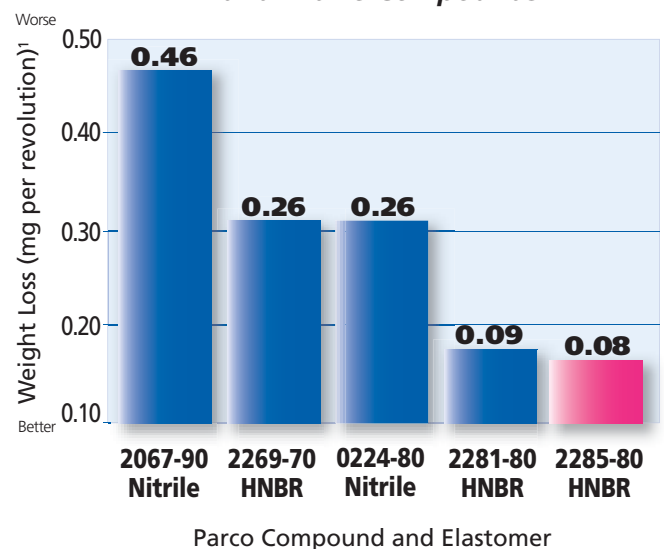
temperatures. After testing 2285-80 for 22 hours at 302°F, it had compression set of only 17 percent.

3. Excellent Performance in Synthetic Greases

Conventional greases are more susceptible to oxidation and chemical degradation which reduce lubricant performance. Synthetic greases have more uniform properties which allow better lubricant performance at high temperatures, while offering extended grease life. Parco's 2285-80 seals perform extremely well in both conventional and synthetic greases. Our seals had volume swell of less than 5 percent after prolonged exposure to either type of lubricant.

Fig. 1:

Abrasion Resistance of Typical HNBR and Nitrile Compounds



¹Weight loss taken from industry standard Taber abrasion test. Test calls for exposing test slabs to 5,000 revolutions under a 1,000 g wheel.
Source: Parco Test Report 7892A.

Key Features

Parco's 2285-80 HNBR seals are ideal for use in highly abrasive applications. Key features include:

- **Superior resistance to abrasion:**
After 5,000 revolutions under a 1,000 g wheel, Parco 2285-80 seals had a weight loss of only 0.0792 mg per revolution.
- **Outstanding resistance to compression set:**
Parco 2285-80 seals had a compression set of only 17 percent after 22 hours at 302°F.
- **Excellent performance in synthetic greases:**
Parco 2285-80 seals had volume swell of less than 5 percent after prolonged exposure to conventional or synthetic greases.
- **Wide range of service temperatures:**
Parco 2285-80 seals are suitable for applications ranging from -25 to +325°F.

Chemical Resistance

USE WITH	DO NOT USE WITH
Automatic Transmission Fluid DC 200 Lubricant (Dow Corning) Freon 12 Ultraviolet Light	Automotive Brake Fluid Ethyl Acetate Gasoline

Typical Values for Compound 2285-80 80-durometer HNBR

Section of Spec.	Physical Property	Requirement ¹	Typical Value	ASTM ² Test Method
	Original Properties			
	Hardness, Shore A	80 ± 5	80	D2240
	Tensile strength, MPa (psi), min.	20(2900)	25.5(3696)	D412
	Ultimate elongation, pct., min.	150	194	D412
A26	Heat Aging 70 hours at 150°C (302°F)			D865
	Hardness change, pts., Shore A, max.	10	4	
	Tensile strength change, pct., max.	-25	-2	
	Ultimate elongation change, pct., max.	-30	5	
B16	Compression Set, Solid pct. of original deflection, max. 22 hours at 150°C (302°F)	30	17	D395 Method B
EO16	Fluid Aging, ASTM Oil No. 1 70 hours at 150°C (302°F)			D471
	Hardness change, pts., Shore A	-5 to 10	0	
	Tensile strength change, pct., max.	-20	4	
	Ultimate elongation change, pct., max.	-30	5	
	Volume change, pct.	±5	1	
EO36	Fluid Aging, IRM³ 903 Oil 70 hours at 150°C (302°F)			D471
	Hardness change, pts., Shore A, max.	-15	-9	
	Tensile strength change, pct., max.	-30	-1	
	Ultimate elongation change, pct., max.	-30	13	
	Volume change, pct., max.	25	14	
F13	Low Temperature Property Nonbrittle after 3 minutes at -10°C	Pass	Pass	D2137

¹Compound 2285-80 meets the requirements shown above for ASTM D2000 M3DH820 A26 B16 EO16 EO36 F13. ²ASTM is the acronym for the American Society for Testing and Materials. ³IRM is the acronym for Industry Reference Material.

Source: Parco Test Report 7695E.

△ This brochure is intended as a guideline and reference. Appropriate testing and validation by users having technical expertise is necessary for proper use of Parco products.

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