

Parco

1933-70 Fluorosilicone Seals

Want the best M25988/1 O-rings?

1933-70 Meets Your Needs

1. Exceeds the MIL-DTL-25988 Type 1, Class 1, Grade 70 Specification

Seals made from Parco's 70-durometer fluorosilicone compound 1933-70 greatly exceed the tensile strength, elongation, and low temperature requirements of MIL-DTL-25988 (see test report on reverse side). Parco supplies seals to 28 military and aerospace specifications, and we supply Qualified Products List (QPL) rubber seals. Our quality system is certified to ISO 9001, ISO/TS 16949, AC7115, and AS9100. So when you specify 1933-70, rest assured that you've made the right choice.

2. Excellent Performance at Low Temperatures

Our 1933-70 seals can be used in static applications with continuous service temperatures as low as -90°F. The excellent low-temperature properties of 1933-70 seals enable them to resist cracking in low-temperature applications (see Figure 1).

3. Outstanding Resistance to Compression Set

To perform properly, most seals must resist taking a set from compression after being installed. When a seal takes a set, it no longer exerts force on the mating surfaces, resulting in leakage. A compound with low compression set, like 1933-70,

better maintains its elastomeric properties and original thickness, preserving seal integrity. After testing 1933-70 for 22 hours at 347°F, it had compression set of only nine percent.

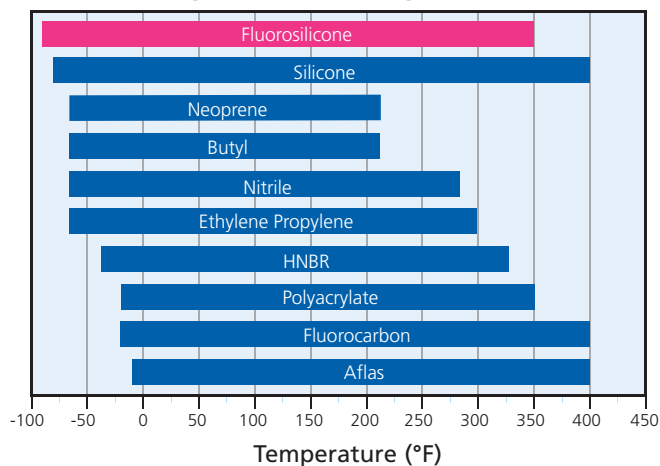
Applications

Parco's 70-durometer fluorosilicone compound 1933-70 is ideal for aircraft and automotive fuel seals. 1933-70 resists common aircraft fuels, oils, and lubricants (see chemical resistance chart on reverse side). 1933-70 was specifically tested in jet fuel and di-ester polyols. Seals made from 1933-70 are recommended for static applications and should not be used in high pressure dynamic applications.

Order as: Parco 1933-70 size AS568-XXX
(reference Parco O-ring Size Chart for AS568 sizes)

Fig. 1:

Service Temperatures of Popular Elastomers¹



¹Compounding affects performance at both high and low temperatures. Not all compounds of a given elastomer have the same temperature range. The bars above show the temperature range of the compounds in each elastomer.

Key Features

- **Exceeds military and aerospace requirements:**
Parco 1933-70 seals exceed the requirements of the MIL-DTL-25988 Type 1, Class 1, Grade 70 specification.
- **Excellent performance at low temperatures:**
Parco 1933-70 seals can be used in static applications with continuous service temperatures as low as -90°F.
- **Outstanding resistance to compression set:**
Parco 1933-70 seals have a compression set of only 9 percent after 22 hours at 347°F.
- **Wide range of service temperatures:**
Parco 1933-70 seals are suitable for applications ranging from -90 to +350°F.
- **Color:**
Parco 1933-70 seals are blue.

Chemical Resistance

| USE WITH | DO NOT USE WITH |
|--|--------------------------|
| Automatic Transmission Fluid Gasoline Military Aircraft Hydraulic Fluid Silicone Oil Toluene | Acetone Ethyl Acetate |

Typical Values for Compound 1933-70

70-durometer fluorosilicone for MIL-DTL-25988 Type 1, Class 1, Grade 70

| Section of Spec. | Physical Property | Requirement ¹ | Typical Value | ASTM ² Test Method |
|------------------|--|--------------------------|---------------|-------------------------------|
| Z1 | Original Properties | | | |
| | Hardness, Shore A | 70 ± 5 | 74 | D2240 |
| | Tensile strength, MPa (psi), min. | 6(870) | 7(1010) | D412 |
| | Ultimate elongation, pct., min. | 150 | 168 | D412 |
| Z2 | Modulus at 100 pct., elongation, psi, min. | Report | 680 | D412 |
| Z3 | Specific gravity | Report | 1.58 | D297 |
| Basic | Compression Set 22 hours at 175°C (347°F) | | | D395 Method B |
| | Pct. of original deflection, max. | 50 | 9 | |
| A19 | Heat Aging 70 hours at 225°C (437°F) | | | |
| | Hardness change, pts., Shore A, max. | 15 | 0 | D573 |
| | Tensile strength change, pct., max. | -45 | -37 | |
| | Ultimate elongation change, pct., max. | -45 | -15 | |
| | | | | |
| EF31 | Fluid Aging, ASTM Reference Fuel C 70 hours at 23°C (73°F) | | | |
| | Hardness change, pts., Shore A | -15 to 0 | -12 | D471 |
| | Tensile strength change, pct., max. | -60 | -19 | |
| | Ultimate elongation change, pct., max. | -50 | -21 | |
| | Volume change, pct. | 0 to 25 | 22 | |
| | | | | |
| EO36 | Fluid Aging, IRM³ 903 Oil 70 hours at 150°C (302°F) | | | |
| | Hardness change, pts., Shore A | -10 to 0 | -5 | D471 |
| | Tensile strength change, pct., max. | -35 | -12 | |
| | Ultimate elongation change, pct., max. | -30 | -2 | |
| | Volume change, pct. | 0 to 10 | 4 | |
| | | | | |
| Z4 | Low Temperature Properties TR-10 °C (°F) | Report | -61(-77) | D1329 |

¹Compound 1933-70 meets the requirements shown above for ASTM D2000 M2FK606 A19 EF31 EO36 Z1 Z2 Z3 Z4. Compound 1933-70 also meets the requirements for Aerospace Material Specification MIL-DTL-25988 Type 1, Class 1, Grade 70, *Rubber, Fluorosilicone Elastomer, Oil and Fuel-Resistant, Sheets, Strips, Molded Parts, and Extruded Shapes*. ²ASTM is the acronym for the American Society for Testing and Materials. ³IRM is the acronym for Industry Reference Material.

Source: Parco Test Report 9318.

⚠ 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.

Parco

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