Fuel & Oil Application Silicone Hoses

For more information or data, please visit **www.silflex.com** or contact us by phone: **+44 (0) 1443 238 464** or email: **hosesolutions@silflex.com**

Silflex has two build options available for silicone hoses that are likely to either come into contact with oil or diesel and hoses needed for the constant transportation of more aggressive fuels. Profuel® is a fluoroelastomer lined silicone hose designed for the latter and is perfect for use with petrol, bio-fuels and the more aggressive bio-diesels. Standard fluorosilicone lined hoses work with diesel fuel and oil mist applications, both provide a barrier to stop the silicone degrading and are a cost effective alternative to complete Fluorosilicone and Fluorocarbon hoses. Please contact us with any queries due to the safety implications involved with transporting flammable liquids.

Silflex Profuel®

The Silflex Profuel® hose is specially developed fluoroelastomer lined silicone hose for use where greater fuel/oil resistance is required than can be achieved with conventional fluorosilicone.
One of the principal driving forces behind the development of the fluoroelastomers was improved fuel resistance compared to any of the previously available elastomers, and it is still the best conventional elastomeric material available for fuel applications.
The high fluorine content elastomer used in the Silflex Profuel® material is recommended as having the best resistance to automotive grade fuels, of any of the fluoroelastomers, together with good compression set for excellent sealing characteristics, a critical feature in fuel hose applications to minimise evaporation losses at joints. This plus its excellent high temperature resistance, means that in conjunction with silicones excellent high temperature properties the Profuel® hose is ideal for high temperature under bonnet applications.
The Profuel® lining has very low permeability and is inherently self extinguishing in the case of fire.

Product Life

The grade of fluoroelastomer used for the Profuel® liner was chosen based on its having very low permeation figures of critical significance in prolonging the life of the Profuel® product. However only the special green liner of a Profuel® product hose is fuel/oil resistant and consequently the hose in not suitable for use in applications where the hose will be immersed in fuel.
In some applications a further Fluorosilicone liner is added to the outside of the hose. A blended Fluorosilicone is also available for applications such as filler hoses, oil/air mist intercooler hoses etc.

Fluorosilicone Lined Hoses

Generally used in applications where the medium flowing through the hose is likely to degrade the standard silicone. Designed to work with less aggressive fuels such as oil and diesel, the fluorosilicone lined hose is perfect for protecting the otherwise permeable silicone from oil/diesel. This comes in the form of a lining of Black Fluorosilicone, covered with Plies of silicone, reinforced with a choice of reinforcing fabric dependant on the working pressure and temperature.

Production Volumes

As a result of our unique manufacturing process we are extremely flexible with production volumes. Silflex has a very diverse range of customers and we understand that each requires individual silicone hose solutions. Many specialist customers require low run and prototype orders however others need high volume mass produced parts. We are a self contained unit capable of offering what other companies cannot, a personally tailored service designed to meet our customers needs.

Engineering Options

Wire Reinforcement - A wire helix between the plies helps to prevent collapse in negative pressure conditions.

Anti Abrasion Sleeves - Anti Abrasion Sleeves to protect against localised abrasion.

Part Marking - Part marking with Silflex or customer logos and part numbers assists with product identification and traceability.

Location Marking - Marks can be added to the hose to specify where components are to be placed such as clips helping speed up installation.

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Materials
Silicone Rubber Compound

Colour	-	Various
Hardness	-	65 ± 5
Specific Gravity	(g/cm3)	1.18 ± 0.05
Tensile Strength	(Mpa)	8.6
Elongation at Break	(%)	308
Tear Strength	-	13

The above physical properties refer to a test sheet press cured for 5mins at 115°C, and post cured for 4 hrs @ 200°C. Tested to the relevant BS903 standard. Fluid resistance figures can be supplied

Materials
Fluorosilicone Rubber Compound

Colour	-	Black
Hardness	-	65 ± 5
Specific Gravity	(g/cm3)	1.59 ± 0.05
Tensile Strength	(Mpa)	5
Elongation at Break	(%)	210
Tear Strength	(KN/m)	23

The above physical properties refer to a test sheet press cured for 5mins at 115°C, and post cured for 4 hrs @ 200°C. Tested to the relevant BS903 standard. Fluid resistance figures can be supplied on request.

Materials
ProFuel® Rubber Compound

Colour	-	Green
Hardness	-	62 ± 3
Specific Gravity	(g/cm3)	2.05 ± 0.02
Tensile Strength	(Mpa)	14.5
Elongation at Break	(%)	250

The above physical properties refer to a test sheet press cured for 5mins at 115°C, and post cured for 4 hrs @ 200°C. Tested to the relevant BS903 standard.

Materials
ProFuel® Rubber Compound

Immersion Medium	Temp	Resistance
ASTM No1 Oil	150ºC	Excellent
ASTM No3 Oil	150ºC	Excellent
ASTM Fuel B	40ºC	Excellent

TheThe values above have been arrived at through the use of immersion tests. Service conditions, however, are usually less severe than immersion tests, as the rubber may only be splashed or partly exposed to the particular medium.

Specifications

-50ºC to +180ºC (Standard)

Build Options

Standard (Polyester Reinforced)

Fluorosilicone Lined (Oil & Diesel Resistant)

ProFuel™ Lined (Permanent Fuel Use)