

PRODUCT FORM

Profile extrusions, sheeting, cord, joined rings, punched forms and self adhesive backed.

APPLICATIONS

Cellular silicone rubber is suitable where a soft, easily deformed rubber is required, for example, for high temperature seals and gaskets. The sheets and punched parts are all available with self-adhesive backing to ease assembly.

THERMAL PROPERTIES

The range is suitable for continuous use at temperatures up to +200°C. It has even been found that at temperatures as high as +300°C useful lives of up to 10 hours can be achieved. They are also suitable for use at temperatures as low as -60°C.

CHEMICAL COMPOSITION

This range of polydimethylsiloxane have been "free-blown" with a chemical blowing agent and crosslinked with an organic peroxide. The cellular structure is produced without the use of CFC's thus making less damaging to the environment.

FLAMMABILITY CHARACTERISTICS

SIL16FR has a Limiting Oxygen Index (LOI) of 28%, the other products have an LOI of 23.2% (BS2782 Part 1) and comply with the following flammability specifications:

FAR 25.853 (a)(1)(iv) and (a)(1)(v) horizontal flammability tests.

CAA specification 8 issue 2 (2.2)(c) and (d) horizontal flammability tests.

MOISTURE ABSORPTION

The range has a very low degree of moisture absorption. Mechanical properties shows little change even after long periods of immersion.

PIGMENTABILITY

The product range is available in off-white as standard. Other colours, such as red oxide, are available, we can colour match to most customer requirements.

ENVIRONMENTAL RESISTANCE

Silicone rubber has excellent resistance to ozone, oxidation, ultraviolet light, corona discharge, cosmic radiation, ionising radiation and weathering in general. Typical radiation resistance is greater than 10 grays (greater than 10 rads).

GRADE		SIL 10		SIL 16		SIL 24		SIL 33		
Property	UNITS	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	TEST METHOD
*Apparent Density	Kg.m ³	200 ± 40	195	250 ± 40	256	400 ± 40	400	530 ± 40	550	BSENISO 845
**Hardness	Shore OO	35 ± 5	35	45 ± 5	45	65 ± 5	64	80 ± 5	82	ASTM D2240
***Compression Stress 40% strain	#Shore A kPa	50 ± 40	50	90 ± 40	90	160 ± 40	160	30 ± 10	584	BSENISO 3386 part 1, 2
Tensile Strength	N.mm ⁻²	0.5 min	0.9		1.2		1.6		3.2	BSENISO 1798
		75 min	120	0.75 min	200	1.0 min	150	1.5 min	190	BSENISO 1798
Elongation at break	%	20 max	16	100 min	10	75 min	10	100 min	10	BSENISO 1856 Type A
Compression Set 22 hrs @70°C	%			15 max		15 max		15 max		

* Density measured on 25mm diameter cord sample. The density of samples of different sizes will be different from that stated here.

** Hardness measured 10mm thick samples. At less than 10mm the measured hardness will increase with density.

*** Compression set measured on 25mm thick sample. The compressive stress of the material increases with the density as the sample thickness is reduced.

It is not possible to perform a Shore A hardness test on sponge material. These values are provided as a guideline for comparison to solid materials and as such are not designed for use in specifications.

For further information about physical properties of other sample sizes, please contact the technical department.

MECHANICAL PROPERTIES

GRADE	UNITS	SIL16 FR		SIL24 FR		TEST METHOD
		SPEC. LIMITS	TYPICAL VALUE	SPEC. LIMITS	TYPICAL VALUE	
Density	Kg.m ⁻³	250 ± 100	250	400 ± 100	400	BSENISO 845
Compression Stress 25% Strain	Kpa	90 ± 40	6.15	160 ± 40	160	BSENISO 3386 Part 1,2
Compression Set (%) 24 hours @ 70°C	%	20 max	20	15 max	10	BSENISO 1856 Type A

* Other information regarding the physical properties of these materials is available on request.

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