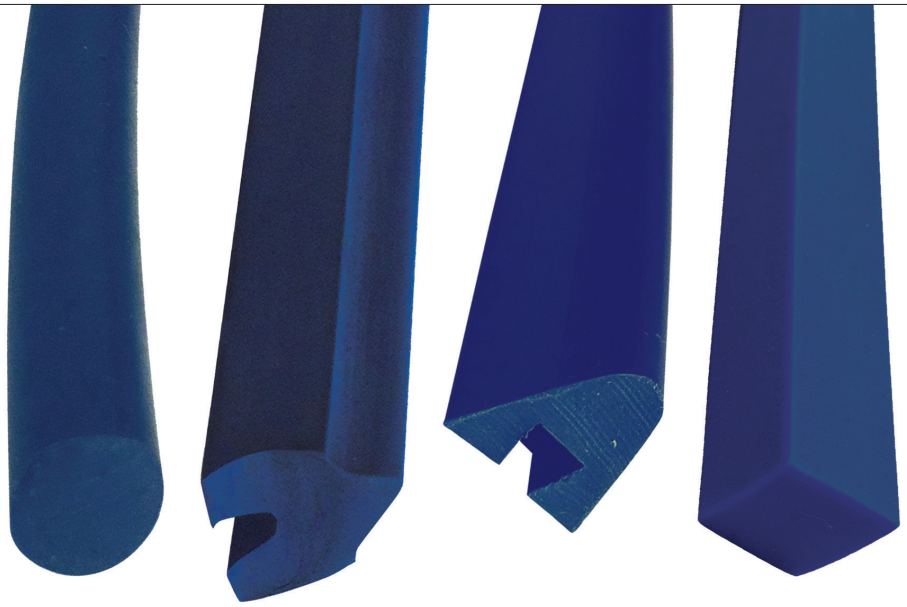
Product Specification Sheet

Silicone Material | PR2ES*



Silicone Material

Metal detectable silicone rubber sheeting, mouldings and extrusions are designed to be detected as a contaminant during the food manufacturing process, addressing the concerns of rubber sealing particles from machinery contaminating food production lines. Our metal detectable silicone is tested to and complies with the requirements of the US Food and Drug Administration (FDA) regulation 21 CFR 177.2600 for rubber articles in repeated contact with food, and EC 1935/2004 & 2023/2006 on materials and articles intended to come into contact with food. Metal detectable silicone is suitable for temperatures ranging from -60°C to 200°C, and is typically used for seals, gaskets, blades, fingers, curtains etc. Subject to correct calibration and testing of metal detection systems, a 5mm section of our detectable silicone should be sufficient to trigger a detection and rejection process.

Metal detectable silicone is highly resistant to degradation from chemical and environmental factors, and is suitable for use in a range of demanding environments. It is also resistant to ozone, oxidation, UV light, corona discharges, cosmic radiation, ionising radiation and general weathering. Typical applications for this product range include o-rings, gaskets, lid seals, door/hatch seals, as well as bespoke applications within food processing plant / machinery. BST keep stock of popular extrusion profiles, with almost any bespoke profile available upon request subject to a small part tooling charge.

Silicone Material Advantages

- ✓ Detectable by in-line metal detection systems
- ✓ Highly visible blue colour for easy visual identification
- ✓ Compliant with FDA and EU food contact legislation
- ✓ Wide operating temperature range
- ✓ Excellent overall weathering resistance
- ✓ Can be used as part of HACCP and BRC procedures
- ✓ Displays due diligence in the prevention of foreign body contamination

Silicone Sheet Product and Packaging Information

PR8SS015EMB	**Thickness**	1.5mm	**Dimensions**	1.2 x 1.0m	**Weight**	2.30kg/m
PR8SS020EMB	**Thickness**	2.0mm	**Dimensions**	1.2 x 1.0m	**Weight**	3.70kg/m
PR8SS030EMB	**Thickness**	3.0mm	**Dimensions**	1.2 x 1.0m	**Weight**	4.60kg/m
PR8SS040EMB	**Thickness**	4.0mm	**Dimensions**	1.2 x 1.0m	**Weight**	5.80kg/m
PR8SS050EMB	**Thickness**	5.0mm	**Dimensions**	1.2 x 1.0m	**Weight**	7.0kg/m

Pack Size	1.2 x 1.0m	**Grade**	67 Shore A
Colour	Blue	**Detectability**	Metal Detectable
Temperature Range	-60°C ~ 230°C	**Commodity Code**	40082190

Round Silicone Extrusion Product and Packaging Information

PR2ES3MMB	**Diameter**	3mm	**Length**	25m	**Weight**	0.34kg
PR2ES4MMB	**Diameter**	4mm	**Length**	25m	**Weight**	0.45kg
PR2ES5MMB	**Diameter**	5mm	**Length**	25m	**Weight**	0.75kg
PR2ES6MMB	**Diameter**	6mm	**Length**	25m	**Weight**	1.0kg
PR2ES6MMB	**Diameter**	8mm	**Length**	25m	**Weight**	1.85kg
PR2ES10MMB	**Diameter**	10mm	**Length**	25m	**Weight**	2.30kg

Pack Size	25m Roll	**Grade**	70 Shore A
Colour	Blue	**Detectability**	Metal Detectable
Temperature Range	-60°C ~ 200°C	**Commodity Code**	40082190

Square Silicone Extrusion Product and Packaging Information

PR2ES4MMB60	**Diameter**	4mm	**Length**	25m	**Weight**	0.50kg
PR2ES5MMB60	**Diameter**	5mm	**Length**	25m	**Weight**	0.80kg
PR2ES6MMB60	**Diameter**	6mm	**Length**	25m	**Weight**	1.10kg

Pack Size	25m Roll	**Grade**	60 Shore A
Colour	Blue	**Detectability**	Metal Detectable
Temperature Range	-60°C ~ 200°C	**Commodity Code**	40082190

Box Section Silicone Extrusion Product and Packaging Information

PR2ES2MB	**Diameter**	Bespoke	**Length**	25m	**Weight**

Pack Size	25m Roll	**Grade**	70 Shore A
Colour	Blue	**Detectability**	Metal Detectable
Temperature Range	-60°C ~ 200°C	**Commodity Code**	40082190

A Section Silicone Extrusion Product and Packaging Information

PR2ES1MB	**Diameter**	Bespoke	**Length**	25m	**Weight**

Pack Size	25m Roll	**Grade**	70 Shore A
Colour	Blue	**Detectability**	Metal Detectable
Temperature Range	-60°C ~ 200°C	**Commodity Code**	40082190

Safety Certificates / Approvals

FDA Approved	BRC Compliant	ISO 9001:2015	Made In Britain
EU Compliant			

Food Contact Status (FDA)

The silicone polymer, pigments and curative used in the manufacture of this sheeting are all suitable for food applications, and will meet the FDA Section 21 CFR 177.2600 covering “rubber articles intended for repeated use”. A low percentage of non-hazardous metal detectable additive is then fully mixed/interlocked to this base polymer to make it detectable.

Food Contact Status (EU)

This material also conforms to certain EU Regulations that allow them to comply with the applicable requirements of Article 3, and Articles 15 and 17 of the Regulation (EC) 1935/2004 and the GMP requirements of Regulation EC 2023/2006. EU Directive - EU 10/2011 does not apply to silicone. These products meet the flammability requirements of FAR 25/JAR 25/CS 25 Appendix F, part 1, (a)(1)(iv) and (a)(1)(v) horizontal flammability tests and Automotive Standard PART 571FMVSS302.

Phthalates and TSE / BSE Compliance

Phthalates are not present in any detectable silicone extrusions supplied by BST Detectable Products.
We confirm that this silicone rubber is not derived from animal origin and for the manufacture of the above mentioned products no intermediates and / or auxiliary agents of animal origin are used.

Mechanical Properties

Property	Value	Test Method
Density	>1.2 g/cm3	DIN 53479
Tensile Strength	>17 N/mm3	DIN 53455
Shore D Hardness (15s)	68 Skala D	DIN 53505
Ultimate Tensile Strength	40 N/mm3	DIN 53455
Elongation at break	>200%	DIN ISO / R527
Modulus of elasticity	1000 N/mm2	DIN 53457
Notched impact strength (Sharpy)	<100 KJ/m2	DIN 53453
Abrasion	120%	Sand Slurry
Coefficient of friction	<0.2µ	

Thermal Properties

Property	Value	Test Method
Dimensional stability under heat	47ºC	DIN 53461
Vicat softening temperature	79ºC	DIN 53460
Crystalline melting range	130 - 135ºC	DTA
Thermal conductivity at 23ºC	0.42 W / (K * m)	DIN 52612
Coefficient of linear expansion at 23ºC	20x10-5 (1/k)	DIN 53752
Fire behaviour	HB	UL94
Min Application temperature	-200ºC	
Constant Application Temperature	80ºC	
Moisture Absorption	0.01%	

Electrical Properties

Property	Value	Test Method
Specific volume resistance	10^{13} Ω * cm	DIN 53482
Surface resistance	10^{12} Ω	DIN 53482
Dielectric strength	45 kV/mm	DIN 53481

Metal Detectability

Metal detectable silicone sheeting contains an evenly dispersed food safe ferromagnetic additive, designed to offer good levels of metal detection whilst not compromising the performance properties of the material. The metal detectability of this product will vary based on, but not limited to:

- Calibration Levels
- Product Type (E.g. Wet, Dry, Frozen, Liquid)
- Aperture Dimensions
- Orientation

Orientation is a highly influential factor for the metal detectability of a contaminant that is non spherical, i.e. it will be easier to detect the contaminant when passing in one orientation compared to another - this is known as the orientation effect.

For this reason BST recommend that all our products be thoroughly tested on your metal detection systems by a trained and certified professional. It may be the case that your equipment needs to be re-calibrated in order to reliably detect this product. Such a professional should be available by contacting the manufacturer of your metal detection system.