



RG250

SILICONE SPONGE

EN45545-2 R22/R23

HIGH-PERFORMANCE SILICONE SPONGE
ENGINEERED FOR RAIL AND MASS TRANSIT
APPLICATIONS.

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FIRE SAFETY IN RAIL APPLICATIONS

EN45545

The rail and mass transit industry demands materials that provide both reliable performance and high levels of passenger safety. EN45545 is the European fire safety standard for railway vehicles, defining how materials must behave in the event of fire. Materials used in trains must meet strict requirements for flame spread, smoke density and toxicity.

Requirement Sets for Sealing Materials

Sealing materials used within railway vehicles are typically tested under:

- R22 - Interior seals and gaskets
- R23 - Exterior seals and components

PREMSIL RG250 silicone sponge is compliant with EN45545-2 R22 and R23 requirements to HL2, making it suitable for a wide range of rail sealing applications.

EN45545 HAZARD LEVELS

Hazard Levels reflect the severity of fire performance required for a given application. The level specified depends on factors such as passenger density, vehicle type, operating environment and system level fire protection measures. Correct specification is about understanding risk and location, not simply choosing the highest classification.

Hazard Level	Risk Level	Typical Location Characteristics	Common Applications
HL1	Low	Areas with very low fire load, minimal passenger exposure, or significant separation from occupied spaces	Isolated or enclosed technical areas, low risk external or auxiliary components
HL2	Medium	Enclosed or semi-enclosed areas where fire risk is mitigated by design, housing, or limited material volume	Door seals, equipment enclosures, HVAC seals, lighting gaskets, panel seals, non escape-critical glazing
HL3	High	Areas with high passenger density, direct passenger exposure, or escape-critical function	Passenger saloons, escape routes, high risk interior zones

Using the appropriate hazard level helps OEMs and operators achieve compliance while managing weight, cost and material performance over the vehicle lifecycle.



PREMSIL RG250 SILICONE SPONGE

KEY MATERIAL FEATURES

- Flame retardant**
Supports EN45545 fire compliance
- Halogen free**
Reduced toxic gas emissions in fire conditions
- Low smoke**
Improves visibility during evacuation
- Low toxicity**
Minimise harmful fumes
- 50°C to +200°C**
Reliable across extreme temperatures
- UV, Ozone & weather resistant**
Maintains performance in exterior environments
- Closed cell**
Excellent water and air sealing
- Low compression set**
Maintains sealing force over long service periods
- Lightweight material**
Reduces overall component weight
- Full in-house control**
Consistent quality and reliable supply

PREMSIL RG250 is a lightweight, closed-cell silicone sponge material designed for the rail and mass transit industries. It combines excellent temperature resistance with low smoke and toxicity characteristics, while maintaining reliable long-term sealing performance in demanding environments. With a very low compression set and excellent durability, RG250 provides a dependable solution for a wide range of industry applications. Silicone sponge materials are known for their outstanding longevity, helping to reduce maintenance requirements and downtime when compared with many conventional elastomer materials.

Property	Value	Test
Appearance	Black	-
Density	300kg/m ³ (±60)	ASTM D 1056
Compression force deflection @ 25% strain	45 kPa	ASTM D 1056
Compression force deflection @ 40% strain	100 kPa	BSENISO 3386 Pt. 1, 2
Compression set @ 100°C, 22 hrs	<5%	ASTM D 1056
Water Absorption	<5%	ASTM D 1056
LOI	31.5%	ISO 4589-2
Smoke Toxicity CIT _{NLP}	0.05	NF X 70-100
Smoke Density Ds (Max)	89	ISO 5659-2
Temperature range	-50°C min +220°C max	-

Available formats



Sheets
2-25mm thickness



O-rings
Produced in our in-house jointing facility



Bespoke profiles, cord & strips
From 2mm to 75mm



Gaskets
Die cut in house from sheet



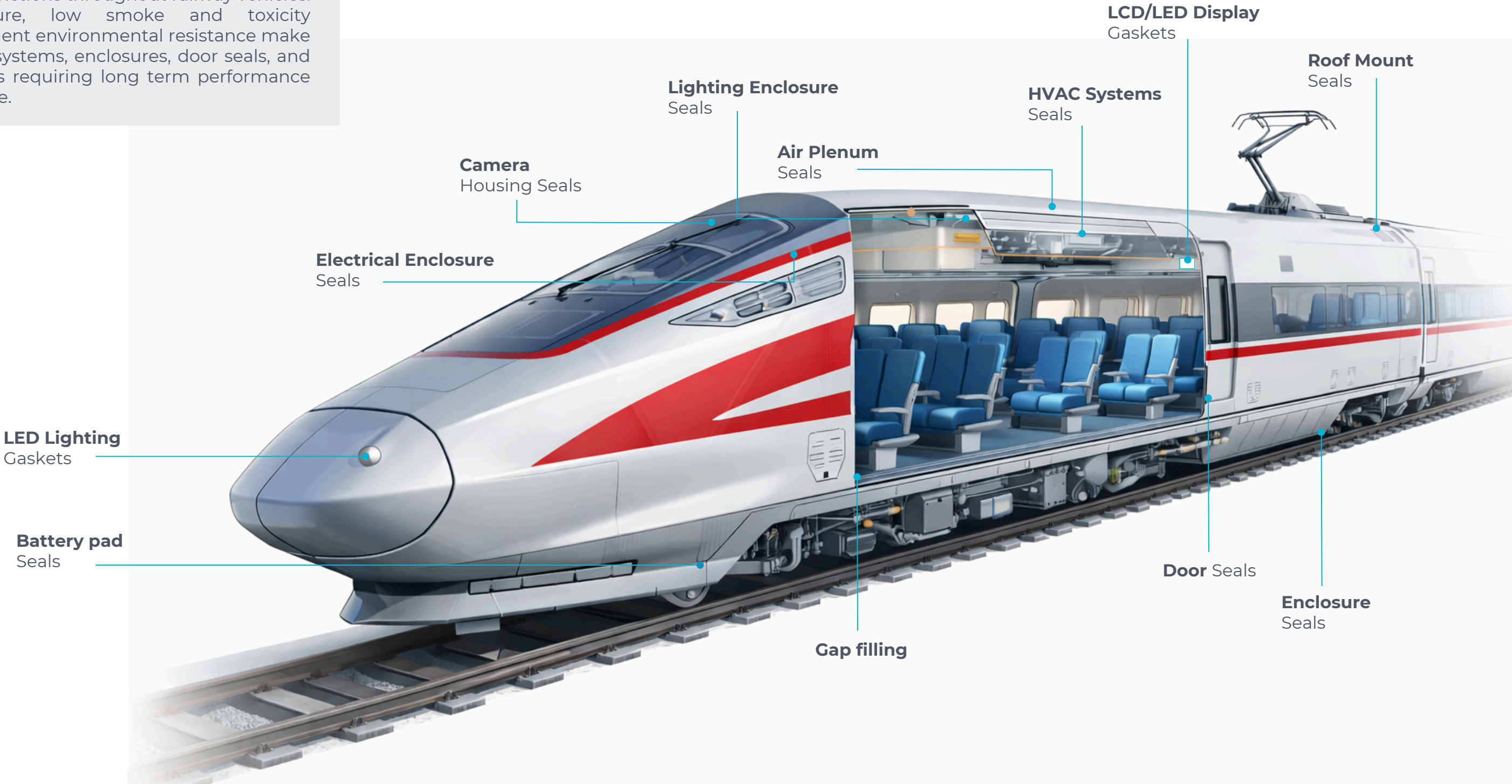
Tubes
OD range up to 70mm



PSA backing
Available on all sheets and strips + various profiles.

APPLICATION GUIDE

PREMSIL RG250 silicone sponge is suitable for multiple sealing and protection functions throughout railway vehicles. Its closed-cell structure, low smoke and toxicity characteristics, and excellent environmental resistance make it ideal for use in HVAC systems, enclosures, door seals, and other critical applications requiring long term performance and fire safety compliance.



CONTACT DETAILS

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