

# Silicone Rubber for Rail Interiors - EN 45545



# Silicone Rubber for Rail Interiors

Public transport connects people across the world and with an increasing demand for high speed travel, rail transportation has grown to become one of the most popular and busiest modes of transport, especially in highly populated, urban areas.

Silicone Engineering's specialised silicone materials provide high performance within rail interior and exterior applications.

Approved and specified to rail industry standards such as EN 45545-2, BS 6853 Category 1 and NF F-16-101 I2 F0, they are formulated and designed to withstand temperature and environment stresses whilst improving passenger safety by meeting fire and smoke safety approvals.



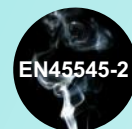
## Material Solutions

**kSil™ V-0** is a closed cell, lightweight silicone sponge that has been specially formulated for the rail industry.

Approved and compliant to European fire safety specifications, it is the complete silicone material for sealing and vibration dampening within rail carriages.

## kSil™ V-0 Silicone Sponge

- ✓ **EN45545-2 Compliant:** Low smoke/toxicity
- ✓ **UL94V-0 Approved:** Flame resistant
- ✓ **Extreme Temperature Resistance:** -60°C to +230°C (-76°F to 446°F)
- ✓ **Low Compression Set:** Maintains excellent seal integrity
- ✓ **Closed Cell Sponge:** Prevents water, dust and moisture ingress to IP66
- ✓ **Wide Range of Thickness:** 1.5mm - 25mm (1/16 - 1")
- ✓ **Wide Range of Densities:** 150kg/m<sup>3</sup> to 450kg/m<sup>3</sup>
- ✓ **Available in extrusions:** **expansil™ V-0**
- ✓ **Available in solid silicone:** **kSil™ LCH-EN**



# kSil™ V-0 Physical Performance

Property	Units	Typical Value	Test Standard
Density:	kg/m <sup>3</sup> (lb/ft <sup>3</sup> )	300 (19)	ASTM D1056
Compression Force Deflection @ 25% :	kPa (psi)	37 (5.4)	ASTM D1056
Compression Force Deflection @ 40%	kPa (psi)	80 (11.6)	BS EN ISO 3386
Tensile Strength	kPa (psi)	304 (44)	ASTM D412
Elongation	%	90	ASTM D412
Compression Set 50% compression 24hrs recovery			
22hrs @ 70°C (158°F)	%	< 1	BS EN ISO 1856
22hrs @ 100°C (212°F)	%	3	ASTM D1056
Water Absorption	%	< 1	D1056
Flame Resistance		UL94V-0	UL94
Oxygen Index	%	43.9	BS EN ISO 4589
Width	mm (inches)	1000	-
Thickness	mm (inches)	1.5 - 30	-
Colour	-	Black, Grey & Riox	-

\*This information is given in good faith but without warranty. It is the users' responsibility to check kSil™ is suitable for a specific application or purpose. Please refer to full technical datasheet for complete test results and standards.

## EN 45545-2 Classifications

	kSil™ V-0
<b>EN 45545-2</b>	
R1 - Interior surfaces Window frames Display screens	<b>HL2</b> (2 - 25mm)
R2 - Interiors Limited Surfaces	<b>HL3</b> (2 - 25mm)
R3 - Interiors Strips	<b>HL3</b> (2 - 25mm)
R6 - Passenger Seat Shell	<b>HL2</b> (2 - 25mm)
R7 - Walls of External Body Shell	<b>HL2</b> (2 - 25mm)
R17 - External Surfaces	<b>HL2</b> (2 - 25mm)
R22 - Interior Seals	<b>HL3</b> (2 - 25mm)
R23 - Exterior Seals	<b>HL3</b> (2 - 25mm)
R24 - Printed Circuit Boards	<b>HL3</b> (2 - 25mm)

# Interior Applications

**kSil™ V-0** has many uses within rail interiors due to its unique formulation and physical properties. It is the ideal material to withstand high performance demand whilst improving passenger safety.

## Door Seals

kSil™V-0 provides the sealing protection needed for rail carriage door seals. With its low compression set and dimensional stability, kSil™V-0 ensures excellent sealing performance lasting throughout the train's lifespan.



## HVAC Seals & Gaskets

HVAC systems within rail carriages are designed to withstand heat fluctuations and varying degrees of vibration. kSil™V-0 has been specially formulated to withstand extreme temperatures from -60°C to 230°C, whilst sealing to IP66.

## LED Lighting Gaskets

LED lighting enclosures need to be protected from a range of elements from water, dust and moisture to high temperatures, which is why kSil™V-0 is formulated to protect from all of them. Its closed cell structure prevents water, dust and moisture ingress to IP66.



## Vibration & Acoustic Dampening

kSil™V-0 provides excellent vibration, shock and acoustic dampening properties for rail flooring. Due to its compact, closed cell structure, kSil™V-0 effectively absorbs vibration and provides protection to train flooring systems.

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