

Conductive Gap Fillers

Limitless Shieldings conductive gap fillers are a range of electrically conductive materials comprising of silicone elastomer and conductive particles. They are designed to be applied to panel joints, seams and the small clearances around sheet metal enclosures and other applications. They cure at room temperature to form a highly conductive flexible joint that has good adhesion to most metals and substrates. When cured they help prevent water ingress and improve the EMI shielding performance of panel joints / overlaps.

Conductive gap fillers have excellent high temperature resistance and long-term ageing characteristics. The fillers used in these materials provide a reliable low impedance connection between surfaces. The different fillers help to ensure good galvanic compatibility with different alloys in wet or humid environments.

Applications

- ⚡ Vibration and/or shock resistant sealant/adhesive for electronic assemblies
- ⚡ Environmental Sealing (IP68 Possible)
- ⚡ ESD control/grounding
- ⚡ Electrical connection/bonding of materials with dissimilar thermal expansion coefficients i.e. mounting shielded windows EMI shielding with environmental sealing (IP68 possible)

	Nickel Plated Graphite	Silver Plated Aluminium	Silver Plated Copper
Material Code	GF-NC	GF-SA	GF-SC
Colour	Dark Grey	Light Tan	Tan
Cure Time	12 Hours	12 Hours	12 Hours
Density	2 gcm	2 gcm	2.7 gcm
Hardness	60 Shore	60 Shore	60 Shore
Volume Resistivity	<0.01 ohm/cm	<0.01 ohm/cm	<0.01 ohm/cm
Adhesion	>100Ncm	>100Ncm	>100Ncm
Attenuation 100MHz to 10 GHZ	80-115dB	80-115dB	80-115dB
Elongation	100%	100%	100%
Temperature Range	-55 to 150°C	-55 to 150°C	-55 to 125°C



Available Sizes

Our Gap Fillers are available in 10cc, 30cc, 55cc, 71cc, 170cc, 310cc
(Can be manually or pneumatically applied)

Storage

It is recommended that when not in use that the material is stored in a cool dark, dry place. If the facility exists then some form of refrigerated or freezer storage is ideal.

If kept properly sealed and in a suitable location then the material will remain usable for up to 4 months.

Design Considerations

- ⚡ Service conditions
- ⚡ Galvanic compatibility
- ⚡ Compatibility with substrate
- ⚡ Rigid or flexible bond.

Instructions For Use

Surfaces should be clean dry and sound i.e. free from loose material.

It is recommended that areas to be bonded are cleaned using a suitable solvent prior to applying the sealant.

To ensure the highest level of electrical or shielding performance it is essential that the surfaces to be bonded have a low contact resistance.

This means that materials that have a naturally occurring oxide layer such as aluminium alloys may need to be lightly abraded and cleaned directly prior to bonding.

Once the Gap Fillers have been applied to one surface, assemble the parts as soon as possible. Ideally within 5 minutes.

In most cases parts may be handled after 12 hours but avoid stressing the joint until full cure has been achieved. Cure rate may be controlled by means of temperature.

The Gap Fillers will fully cure within 3 hours at 60°C.

If curing at elevated temperatures be careful to avoid excessive Gap Fillers outflow due to the uncured Gap Fillers viscosity reducing during the curing process.

Excess material should be removed by means of a spatula or similar implement.

Smaller traces of the uncured material may be removed by wiping with a lint free cloth damped with methylated spirit, isopropyl alcohol or MEK taking care to observe the safety precautions required in using flammable/harmful solvents of this type.

A priming agent can be used for treating some difficult to bond surfaces.



Ordering Information

<Material Code>-<Size>

(e.g. GF-SA 310 for a 310cc cartridge of silver aluminium Gap Fillers)

Handling

When using this material observe usual standards of hygiene/practice.

Avoid skin and eye contact, and work in a well ventilated area.

For more detailed information refer to the Material Safety Data Sheet.

