



Xyshield® XY400 Datasheet

Silver Plated Aluminium

DESCRIPTION

In its uncured state XY400 is a thixotropic paste comprising of an RTV silicone filled with electrically conductive silver plated aluminium particles, which on exposure to air, cures to form an elastomeric gasket material. It is primarily intended to be applied to a conductive substrate in the form of thin strips or beads where it will cure to form a reusable electrically conductive gasket that is suitable for EMI shielding applications.

APPLICATION

The material is dispensed onto parts using precision CNC equipment. The gasket section as applied takes the form of a 'D'. The substrate onto which the gasket is dispensed must be electrically conductive and free from dust, grease or any other form of surface contamination.

FEATURES

- Cures at room temperature.
- No corrosive by-products evolved on curing.
- Good galvanic compatibility with aluminium alloy substrates / components – limits gasket joint corrosion that can occur in wet or humid environments.
- Resistant to thermal stress and temperature extremes.
- Low resistance contact with low surface conductivity substrates e.g. heavily chromated aluminium alloys or chromate passivated galvanising.

MATERIAL PROPERTIES

Colour:

Beige/Cream.

Uncured consistency:

Viscous thixotropic paste.

Cure time:

24 hours for a 0.65mm x 0.75mm gasket cross-section at standard room temperature and humidity (23°C / 50 RH).

Maximum cross-sectional / bond width should not exceed 5mm.

The component may be handled or moved directly after the gasket is applied, however the gasket itself should not be touched until it is cured.

Curing conditions:

Material cures by reacting with water vapour (humidity) in air.

Increasing humidity and temperature reduces cure cycle.

Maximum cure temperature must not exceed 40°C.

Shelf life:

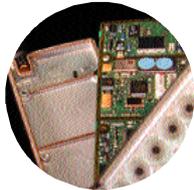
3 months stored at -20°C in original 1 litre aluminium canister.

Density:

2.1 gcm³ (when cured).

Hardness:

50 IRHD (Shore A).





Adhesion:

3 N/cm minimum for a 0.75mm wide gasket sheared laterally from its substrate (RFI WI 27). Gasket adhesion will be affected by factors such as surface texture, substrate material type and condition i.e. conductive paint or metallisation.

Volume resistivity:

0.010 cm maximum measured under 25% compression (RFI WI 128).

Gasket resistance:

1.0 cm² maximum - typically 50 – 500 m cm² on most types of conductive substrate (RFI WI 29). Resistance is measured vertically down through the cross-section into the substrate over a 1cm length of gasket.

Temperature range:

Full properties retained from -40°C to +85°C.
Can tolerate temperatures exceeding 150°C.
Whilst XY400 is very resistant to ageing and thermal effects, substrates with the potential for surface degradation will cause an increase in the contact resistance of the gasket.

Compression range:

10 - 50%.
For optimum performance a compression of 25% is advised. Over compression reduces the reusability of the gasket, therefore some form of compression limitation is strongly recommended.

Force / deflection:

Gasket compression (%)	Force / cm (N)
10	2.2
25	5.9
33.3	9.5
50	17.7

These figures are typical values for a gasket section that is approximately 0.65mm high and 0.75mm wide. They are intended as a guide to enable the overall closure force for a gasket to be calculated. Different gasket heights or cross-sections will alter the closure force required i.e. by increasing the width of a gasket bead with the same height, a higher closure force will be required.

Note: In practice, lower levels of compression will be needed between fastener locations. This is due to the calculated overall closure force for a gasket being somewhat higher than is actually found or measured. This effect is due to the moulding or housing flexing.

PACKAGING / SUPPLY

RFI offers a full service from design to supply of the component complete with Xyshield® XY400 gasket.

If gaskets are to be dispensed at the customer's premises then XY400 can be supplied in 1-litre aluminium canisters. Alternative packaging formats are available such as 10, 30 and 55cc syringe barrels but these will limit the storage life of the material.

STORAGE

It is recommended that the material is stored in its original packaging at -20°C (should not be stored with foodstuffs). This ensures consistent processing characteristics throughout the specified shelf life. Partially used canisters should be returned to cold storage.

HANDLING

A Comprehensive Material Safety datasheet is available upon request.

