Application of the AZ-709 adhesive

Characteristics and application

AZ–709 is a polyurethane two component adhesive which is characterised by its water resistance, anti–humidity, anti–fungus and high insulation resistance. In addition to curing at room temperature

The operating temperature for this adhesive is:

– –30℃ up to +60℃

AZ–709 is suitable for TJ series underwater strain gauges and suitable for the protection of other strain gauges against humidity.

Storage

ZEMIC's AZ–709 adhesive is composed of 2 components, A and B. Make sure that, before usage, the components are taken out of the refrigerator and are given 1 to 2 hours to get to room temperature. The next step is to mix components A and B in a A:B = 45:55 ratio. And for protection the ratio should be A:B = 48:52. To mix the components, component A should be poured in an empty bottle, then component B should be added. Screw on the cap of the bottle and sway the bottle very lightly for 2 minutes and then set the mixture aside for 1 hour. Check if no bubbles are visible in the adhesive.

The AZ–709 adhesive has a storage life of 12 months under a temperature of 24℃ Please note not to freeze the adhesive. After mixing, the adhesive can be kept for 4–8 hours under a temperature of 24℃ and 2–4 days when kept in 2℃ to 6℃ .

Method of application

1. The surface where the gauge will be attached should be sand–blasted or polished and cleaned well with acetone and butanone.
2. Use anhydrous ethyl alcohol to clean the tools, Teflon film and the strain gauge which will be bonded.
3. Coat the area where the strain gauge is going to be attached with AZ–709 adhesive and let it dry for 20 minutes
4. Now apply AZ–709 to the gauge and bond the gauge in the right position, cover it with Teflon film and squeeze out the bubbles or spare adhesive from under the gauge. This is done in the axial direction of the gauge.
5. Cover the Teflon film with a rubber and a metal plate as soon as possible and apply a pressure of 0.05– 0.1 MPa.
6. After 24 hours put the element in the oven and heat up the oven to 80℃ at a speed of 2℃ /minute. Keep the gauge in the oven for two hours. After cooling the element and gauges to room temperature take off the clamp, metal plate, rubber and Teflon film.
7. When the AZ–709 is used for protection only, it should be applied on a wider area than the gauges are placed on and the same sequence should be followed but after the 24 hours of room temperature curing no further actions have to be taken.

Bonding adhesive

Caution

1. Make sure to take the AZ–709 adhesive out of the refrigerator 2 hours prior to using it and try using it only when the liquids temperature is the same as the environmental temperature
2. When mixing the components, make sure to mix all of the component B with all of the component A. When this is not done, it will cause a disproportional mixture and this could influence the adherent force of the adhesive. In addition make sure the two components are mixed well so a homogenous adherent force will occur.
3. During usage, the adhesives bottle should be as far away from heat and light sources. This is due to the adhesive solvent reacting with higher temperature and light to volatize faster.
4. When done using the adhesive it is advised to screw the bottle cap on as soon as possible. This way volatizing of the solvent and the curing agent separating out will be avoided. When this is not done, the separating of the curing agent might cause very fine particles to arise in the adhesive which will affect the adhesive for next use.
5. Clean the tools used after bonding the gauges. This way contamination and impurities by external factors can be avoided at next use.