

“Fractal Fasten”

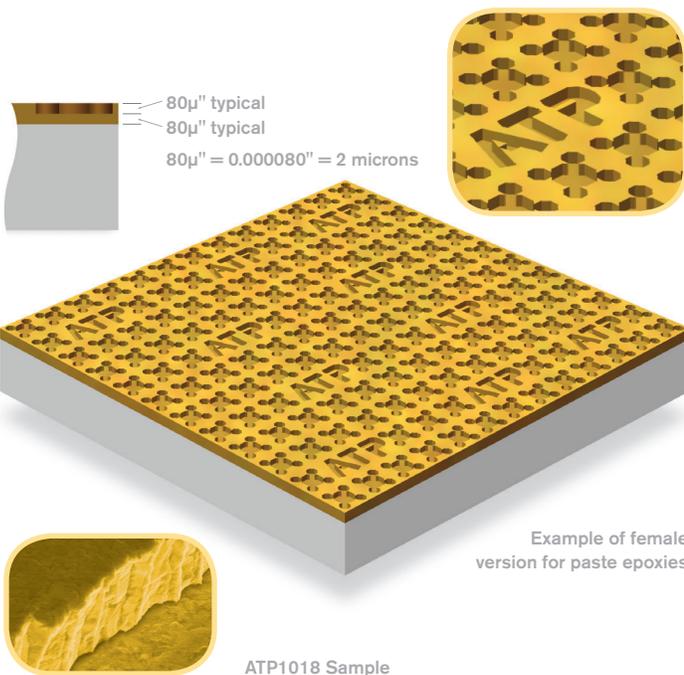
Paste Epoxies

Recommended: For all conductive paste epoxies

Apply liberal amounts of 84-1 paste epoxy to a plastic or rubber squeegee of proportionate size to the substrate that will be attached. Squeegee the epoxy onto the back surface of the **female** “Fractal Fasten” substrate with even pressure, forcing the epoxy into the fractal cavities until even and full coverage is achieved, making sure all cavities have been filled. Use Isopropanol to clean and remove excess epoxy on the sides of the substrates to mitigate any potential shorting from the bottom to top side. Immediately apply epoxy to the surface of the housing or carrier you wish to attach the substrate to, making sure you have ample coverage for good fill, but not too much, so that you will not have excessive epoxy that may cause shorting from bottom to top sides. Apply moderate pressure with a slight scrub to allow the two epoxies to meld together and sit flush on the attached surface. Inspect carefully for any shorting of epoxy. Repeat these steps as necessary until substrate chain is complete. Cure the epoxy per the manufacturer’s recommendations. This and additional information can be found on the application notes from the epoxy manufacturer or on their website.

Disclaimer: The results are based on our individual experiments to achieve optimum die shears. Results may vary or adjustments may be needed to achieve optimum results for individual applications. Proper cleaning must be done to each surface to achieve maximum bonding strength. Please refer to the application notes of the epoxy manufacturer.

Example of Backside Metalizations



Example of female version for paste epoxies

ATP1018 Sample

The following information is provided by Ablestik and can be found on their application notes or website when purchasing their products.

Ablefilm 5025E is used for bonding all types of circuit board materials to metal backplanes and heat sinks. High frequency fluoropolymer and ceramic circuits bonded to copper, brass, Kovar and aluminum are typically application substrates. In most cases, these metals are typically protected with a gold plate finish. The high electrical and thermal conductivity of 5025E ensures a reliable RF ground plane. High manufacturing yields require excellent electrical continuity and mechanical performance. 5025E offers void free electrical continuity and uniform bond line adhesion.

5025E has a work life of three months at room temperature. Useful life can be extended with refrigeration.

Once the film adhesive is removed from frozen or cold temperature storage, the product is ready to use when it has reached ambient room temperature. While cleaning of substrates is not mandatory, an organic solvent (i.e. Isopropanol) wipe is recommended to remove any oils that might interfere with the bonding process or electrical interface.

Films need applied pressure during cure to promote proper wetting of substrate surfaces. Common industry practices include the use of spring clamps, lamination presses, dead weights and vacuum bagging. The technique to apply pressure will vary by application and customer preference. However, the recommended cure pressure for 5025E is between 5 to 60 psi. For large surface area applications, a rubberized silicone pad is recommended between one of the pressure plates and the bonding part in order to equalize the applied pressure over the entire area.

After fixturing, the parts are then cured at an elevated temperature. The specified temperatures and times refer to the bondline values. It should be noted that large mass assemblies will take longer time to achieve bondline temperature.

Storage and Handling

The storage life of 5025E is 6 months at 5°C. For best results, store in original, tightly covered containers in clean, dry areas. Usable shelf life may vary depending on method of application and storage conditions. 5025E becomes brittle below -5°C. If material goes below this temperature, it should be handled gently and entire package should be warmed to room temperature before opening. This will eliminate the possibility of breaking it in the brittle state or allowing condensation to collect on the product.