

TO: R.Bossert, S.Delchamps, W.Koska, J.Strait, M.Winters
From: Mas Wake
Subject: KAPTON adhesive

Adhesive thickness of Kapton tape is not negligible when we talk about shimming of a few mil. The question arises when we measure the thickness of KAPTON tape by using electric micrometer with a ball point tip. It gave smaller value than we use a usual micrometer. Where does adhesive go when it is pressed? Does it stay there?

An attempt to measure the KAPTON thickness as a function of pressure was made but the results was reported as unreasonable as finding iron is softer than KAPTON.

Attached is the results of the re-measurement using 10 layers of 1-mil KAPTON tapes. The deflection of the measurement device is still too large to get an accurate result, but at least the compression of KAPTON is visible.

The difference in the compression behavior between KAPTONS with and without adhesive is very small. There is no symptom of pushing adhesives away up to 2000 psi. It may be a flow problem in a very narrow channel. What is necessary for the flow of adhesive is localized pressure gradient which is easily given by a ball point tip but difficult for a equal pressurization.

Further investigation will be continued by Mike Winters with thicker Kaptons and the accurate results will come out.

