

Update to Method 2017, Internal visual (hybrid)

Presented by John Puckett



Jet Propulsion Laboratory
California Institute of Technology

- Back ground;

During an FA of several open cavity hybrids last year, JPL encountered conductive epoxy anomalies which didn't appear to be well defined in the current TM2017 of MIL-STD-883. Discussions with the manufacturer and DLA resulted in the anomalies being defined as indicated on the pages to follow.

The purpose of this presentation is to submit these anomalies with clear definition, to DLA for inclusion in the next revision of the applicable test method.

Existing figure in MIL-STD-883 TM2017 depicting a discrete component attached with conductive epoxy

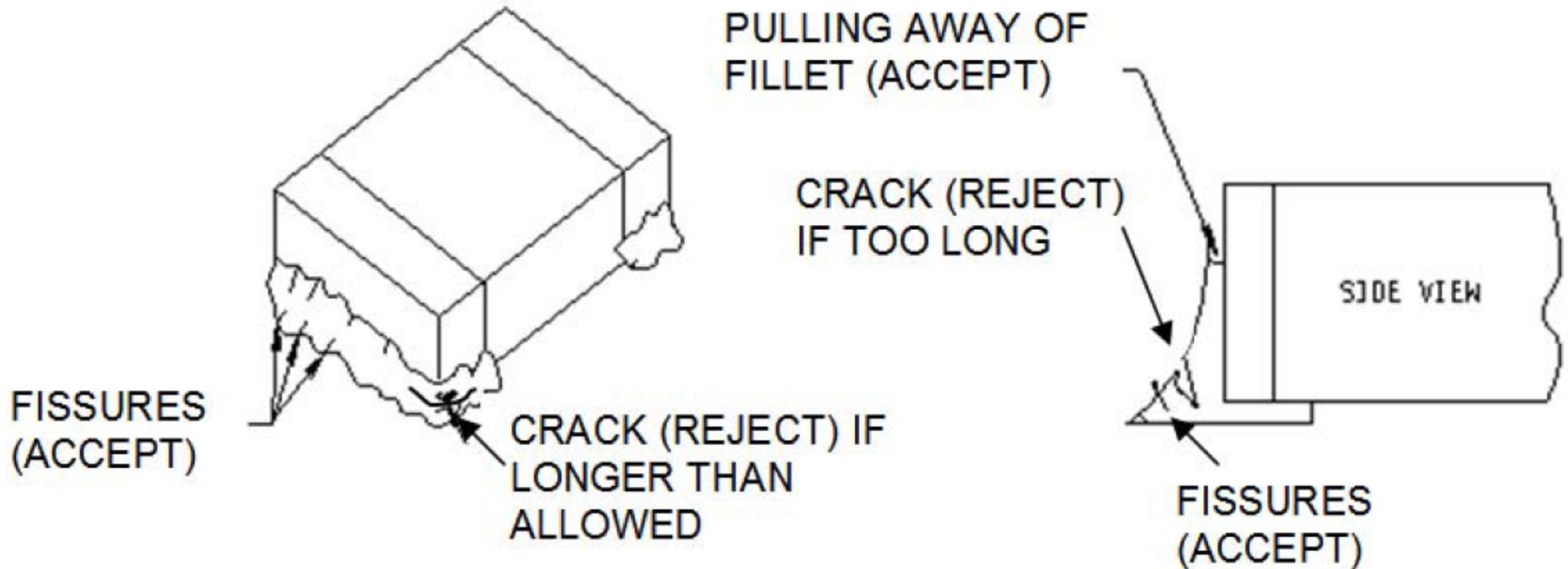
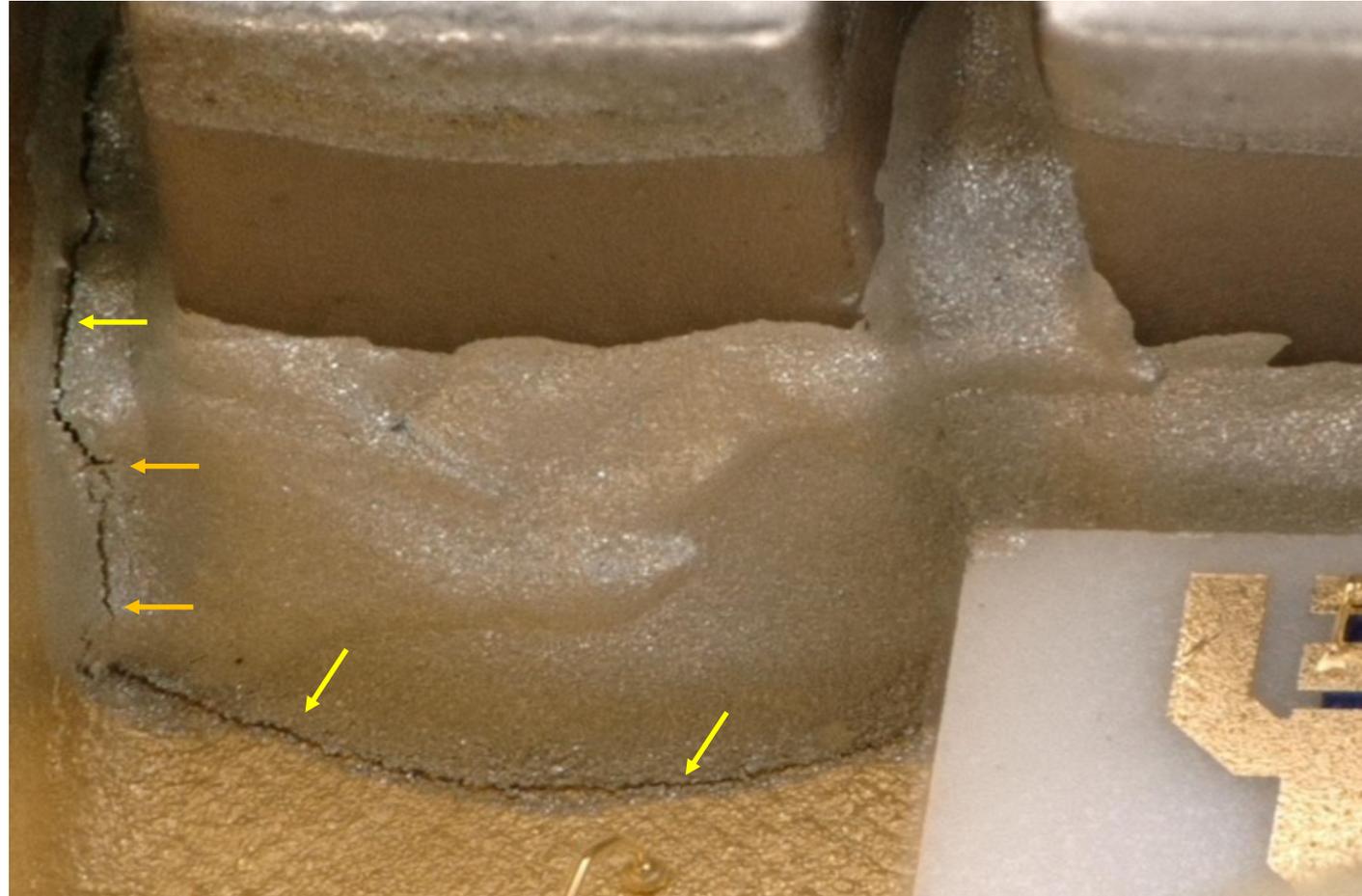


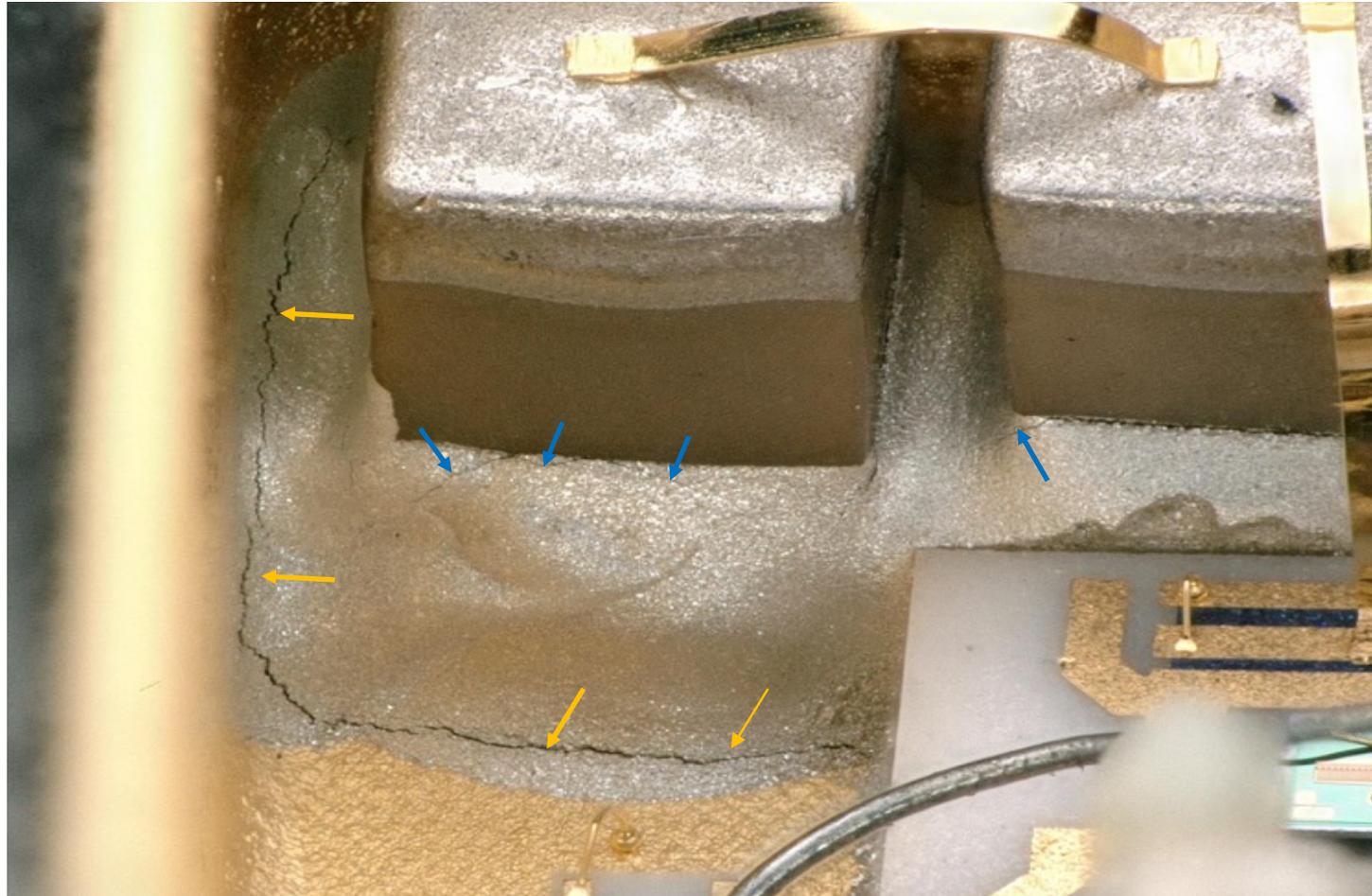
Figure 2017-11a.

Identification of anomalies for MIL-STD-883 TM2017 (internal Visual)



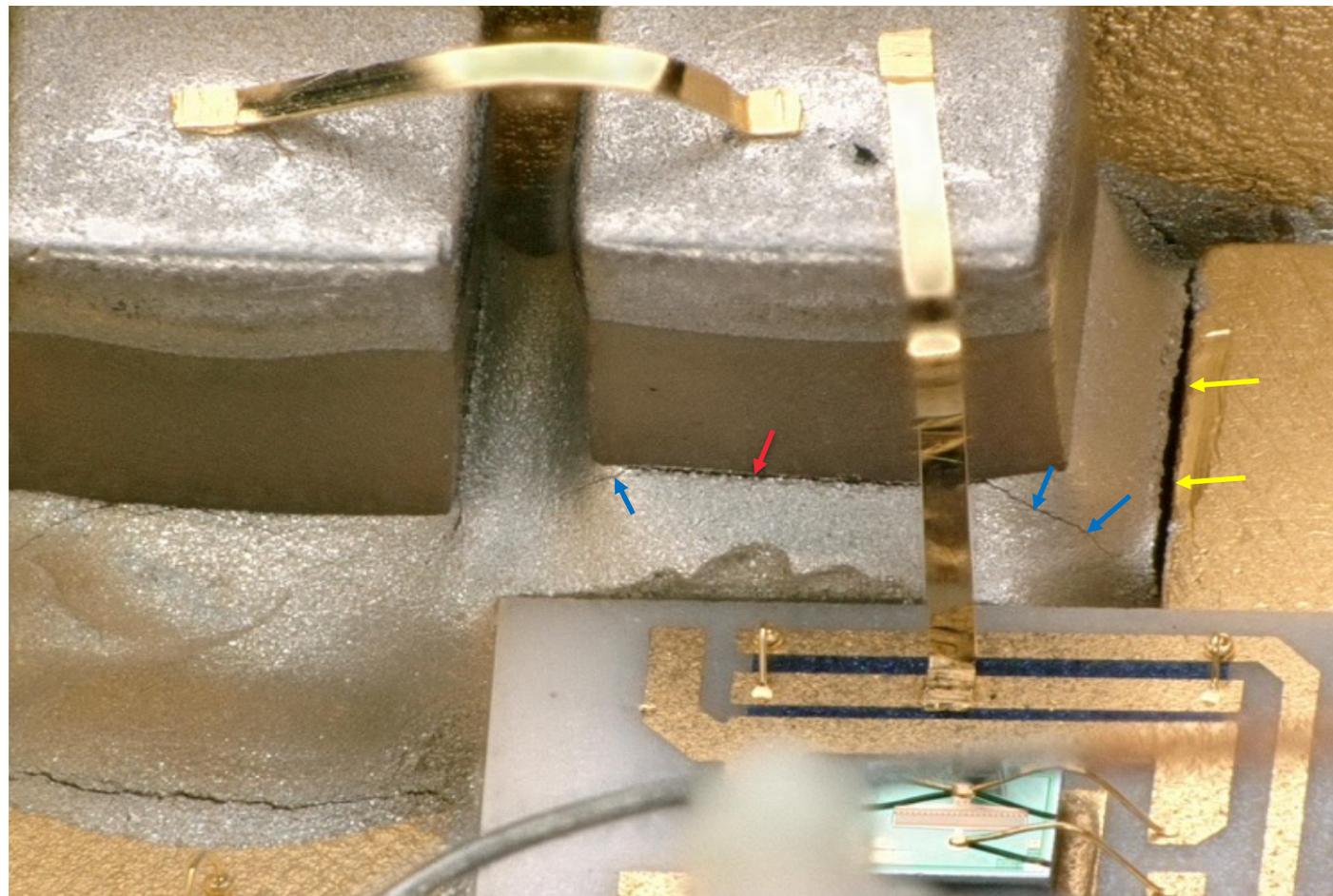
The anomalies identified with yellow arrows look to be pull-backs which are technically not a cause for rejection, but the excessive length (total width of the epoxy) makes this very concerning. The two orange arrows are cracks because sufficient epoxy is visible on both sides of the crack indicating that it is not pulling back from another material (e.g. substrate or element).

Identification of anomalies for MIL-STD-883 TM2017 (internal Visual)



Orange arrows are Cracks because, again, there is epoxy on both sides of the crack. Each individual crack changes in width, meaning that it meets the TM2017 definition of a crack. **Blue** arrows are fissures and not considered rejectable.

Identification of anomalies for MIL-STD-883 TM2017 (internal Visual)



Blue arrows are fissures and not considered rejectable. The Red arrow is an example of pull-back. The Yellow arrows show a large pull-back area. Perhaps additional DLA guidance should be added to the criteria text to properly categorize anomalies of this type.