



estec

European Space Research
and Technology Centre
Keplerlaan 1
2201 AZ Noordwijk
The Netherlands
T +31 (0)71 565 6565
F +31 (0)71 565 6040
www.esa.int

A&P Lithos
att. G Gourlaouen
20 Rue Joliot Curie
35220 Châteaubourg
France

Our ref. **ESA-TECMSP-LE-022241**

Noordwijk, 05/03/2021

VISA: S. Heltzel, T Rohr (TEC-MSP)

Subject: Initial qualification A&P Lithos sculptured flex PCB's

Dear Mr Gourlaouen,

A&P Lithos (APL) submitted a qualification for sculptured flex PCB's. The test plans and test results from 4 PCB designs are documented in 4 APL qualification reports (with references V14079, V16352, V14453 and V11836), as well as annexes A, B, C, D, E, G and H.

APL also submitted samples to ESA for evaluation in Nov 2019. The evaluation results are reported in ESA-TECMSP-TR-016720 and ESA TECMSP-HO-020851. Infiltration of SnPb underneath the coverlay is observed after the standard rework simulation test using 10 heat cycles to 350°C from clause 9.5.4 of ECSS-Q-ST-70-60. Additional investigation showed that this nonconformance is not observed when reducing the stress to 3 heat cycles to 330°C. This modified test method has been approved for outgoing inspection. The test method and the modification of table 10-66 from ECSS-Q-ST-70-60 are documented by APL in "plan de contrôle ECSS Q ST 70 60C ind1" and "Fiche technique ref. DT/I/08/FT/143 ind16".

An audit has been performed at APL in Jan 2020 as minuted in ESA-TECMSP-MIN-016988. The close out of all actions was confirmed on 24 Feb 2021. ESA, CNES and APL's main customers have jointly conducted the audit and approved the action closure, the qualification reports, the modified rework test and the PID.

A&P Lithos is considered qualified in accordance with ECSS-Q-ST-70-60C for the manufacture of Printed Circuit Boards as follows:

- Sculptured flex PCB's as per the PID version 05.4 (dated 17/02/2021) **until 1 March 2023**

Best regards,

Jussi Hokka
Materials & Processes Section