

Monitoring Systems and Technology Intern Center

Developing the next generation of experts in space-based remote sensing technology

Flex PWB Material Characterization

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Problem Statement:

With the recent increase in Rigid-flex PWB designs across Sandia, the satellite group is working to meet this demand by qualifying Rigid-flex board materials suitable for hi reliability flight applications. The materials involved in the manufacturing of Rigid-Flex PWBs vary depending on the fabrication company and with customer requirements. The goal of this study is to define a Flex material characterization that will define and analyze the important necessary properties for identifying materials suitable for satellite applications. The characterization process will focus on demonstrating the quality of the Rigid-flex boards received from the supplier based on the chosen qualified materials.

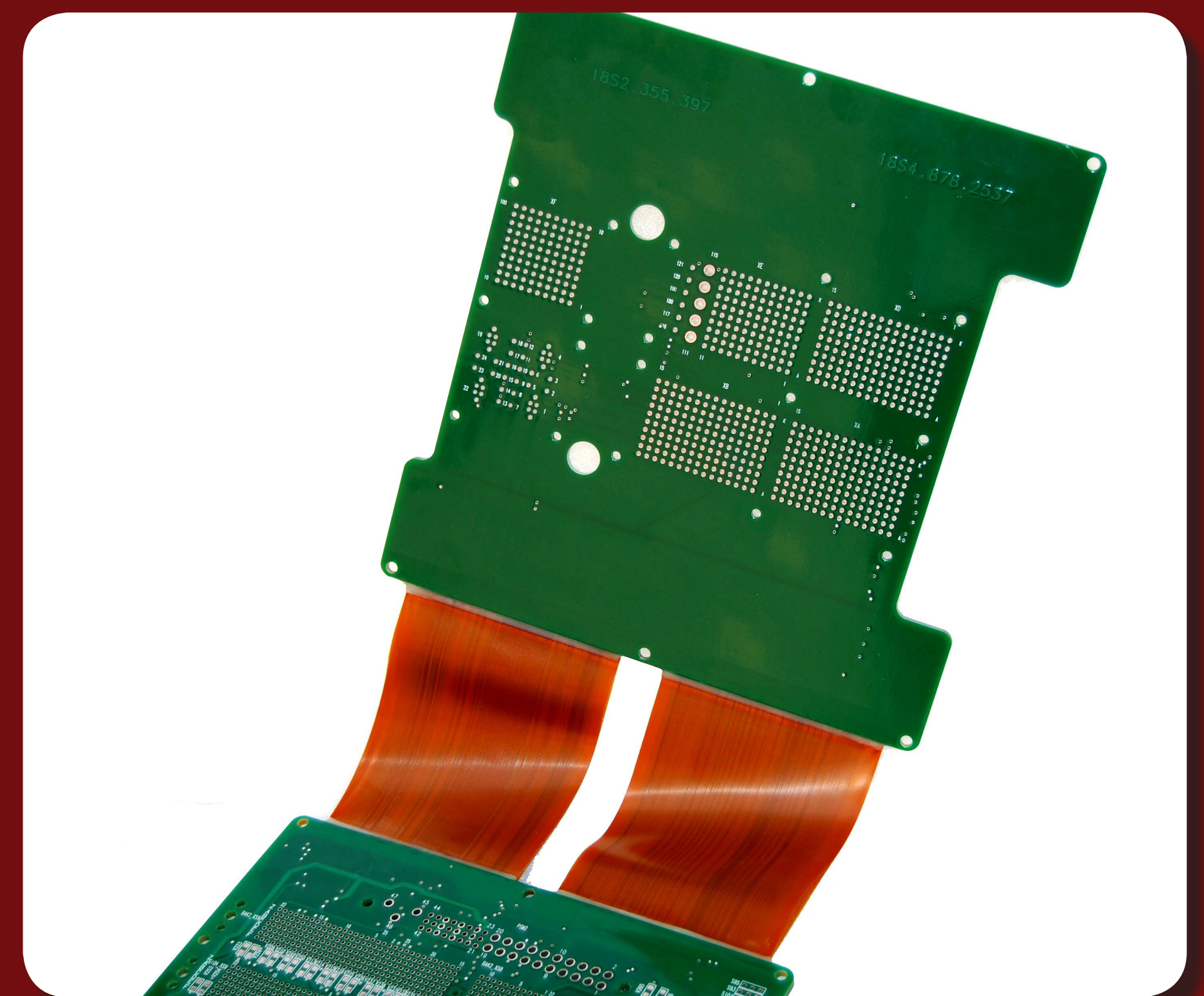
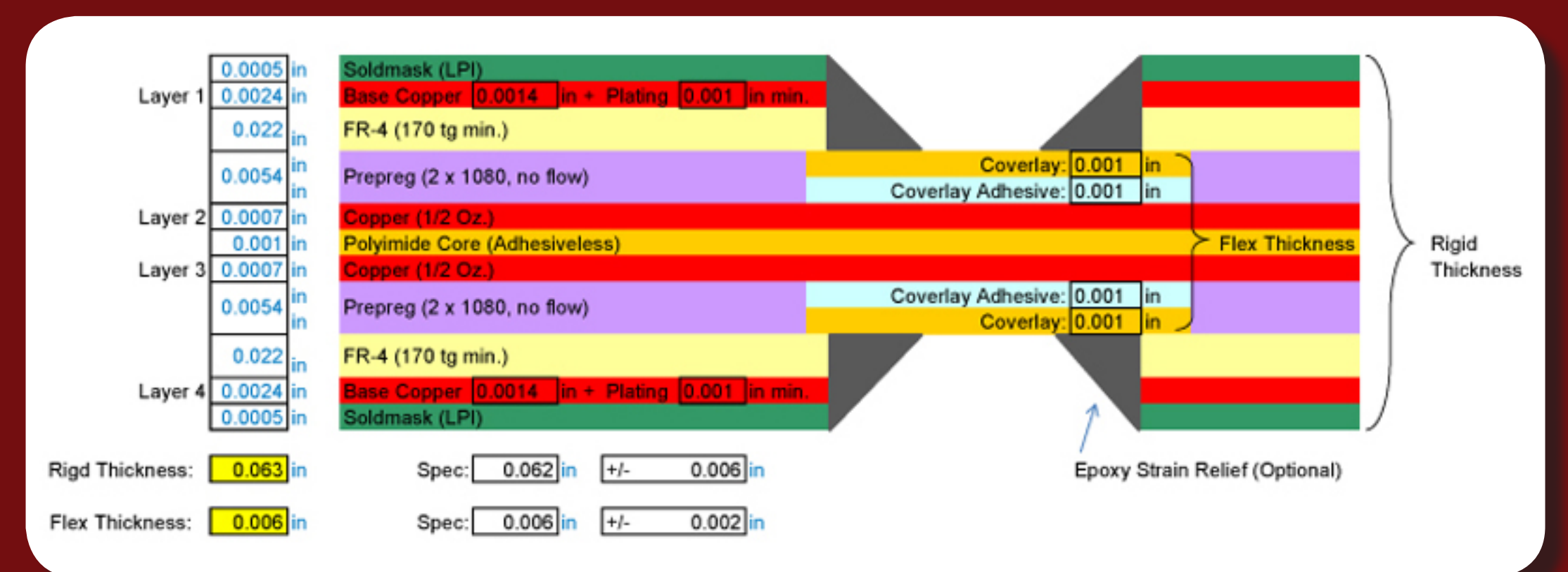
Approach:

Find an optional or suggested practice that is desirable for achieving uniformity or consistency within a system.

- Understand board requirements according to design and application
- Obtain materials list from different manufacturers
- Define characterization process
- Identify approved plan, manual or process from controlling document
- Indicate testing procedures
- Compile list of approved and Non-approved materials for flight

Results:

Defined a starting point for material characterization by creating a list of materials from fabrication companies and IPC Standard. The characterization itself, when completed, will define and analyze the important necessary properties for identifying materials suitable for satellite applications fast and efficiently.



Impact and Benefits:

This will provide a documented and approved method for the selection of Flex materials suitable for flight applications. With this pre-approved list of materials, it offers more efficient and reliable manufacturing and production of Rigid-flex PWB fabrication.