FLEX SOLUTIONS AVANT-GARDE

**Technology variants**

<table>
<thead>
<tr>
<th>PURE.flex</th>
<th>SLIM.flex</th>
<th>STRETCH.flex</th>
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</thead>
<tbody>
<tr>
<td>PURE.flex 2F</td>
<td>SLIM flex AF - in Any layer microvia technology</td>
<td>STRETCH flex (S-Ri)</td>
</tr>
<tr>
<td>PURE.flex 2F - Rich functionality</td>
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</tbody>
</table>

- Very thin flex film polyamide
- Up to two copper layers
- Partially reinforced by "stiffen"er
- Moisture and solder mask or cover foil (Polyamide Careaul)
- Delivered in roll, spool, or as panel array

Number of copper layers: 1 to 2
Number of copper layers: 3 to 8
Number of copper layers: 1 to 2

**Design Chain**

Projects with Flex solutions: Interdisciplinary collaboration during development is essential!

**MECHANICS**

- Always provide large contour radii (inner and outer radii) in the flex areas (design suitable for plastics)
- If necessary, provide registration holes for bonding reinforcements or heatshrink
- Arrange flex extensions to save space, combine several extensions if possible, use folding technology

**Standard Stackups**

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<td>(shown on an FR4 Stiffener)</td>
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**Combination with other technologies**

It is possible to combine flex solutions with other technologies, for example with:
- High Density Interconnect (HDI)
- Device embedding
- Printed Polymer
- Heatshrink

Adaptation of the individual design rules is usually necessary for this purpose.

**ORDER HAND SAMPLE FREE OF CHARGE**

**SLIM flex**

Hand Sample WE.scope
https://www.we-online.com/wescope

**STRETCH flex**

Hand Sample WE.band
https://www.we-online.com/weband

**HOTLINE TO OUR „FLEXPERTS“**

Phone +49 7940 946-FLEX (3539)
flex@we-online.com
stretch@we-online.com

**PCB Design**

**Design Rules**

Our Design Rules cover all the important parameters you need to make your project successful. Basically, the rules for conductor widths, distances, and pad sizes as well as for the solder mask apply, which you can find in our BASIC Design Rules.

Based on this, the sectional design rules apply for:
- SLIM flex [https://www.we-online.com/designruleslimflex_en](https://www.we-online.com/designruleslimflex_en)
- Stretch flex [https://www.we-online.com/designrulesstretchflex_en](https://www.we-online.com/designrulesstretchflex_en)

**SLIM flex – Any layer microvia technology**

Example: SLIM flex 6F

- Alternated stackup 0.60 mm thick
- Plus sectional picture final product

**STRETCH flex – Stretchable PCB Substrate**

Meander - Structure

Different meander structures lead to extreme flexibility of the printed circuit board. A combination of meander structure and layout allows dynamic stretchability between 5 – 20%.

- Meander Structure
- Horseshoe Structure
- Rectangle Structure
- Wave Structure
- Meander Structure (shown on an FR4 Stiffener)

**Dynamic stretch and FR4 Stiffener**

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**STRETCH flex**
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