E-FAB
A TPC COMPANY

# Bonding

Durability through bonding is crucial when it comes to part reliability. One of E-Fab's promises is to deliver accurate metal parts to exacting specifications and tight tolerances. That promise is significant for flex, electronic, and thin metal circuits in high-technology applications.

E-Fab utilizes Thermocompression Bonding — a combination of heat and pressure from a hydraulic press — to compress and bond lamination layers, joining metals to different substrates. Multilayer laminations add mechanical strength, design possibilities, and flexibility.

## E-Fab's Precision Bonding Processes and Advantages

Bonding is a crucial manufacturing process when creating parts for telecommunications, technology, and defense customers.

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| **Conductivity** | Bonding does not impede the flow of electricity. |
| **Electrical Insulation** | Circuit boards and electrical equipment have excellent electrical insulation. |
| **Mechanical Strength** | Thermocompression bonding delivers stronger parts that are reliable and durable. |
| **Environmental Benefits** | The result of the bonding process creates little to no waste and is environmentally friendly. |
| **Power Distribution** | Increases the power distribution area, enhancing part performance. |
| **Superior TCE Match** | Parts have a better TCE match with silicon after thermocompression bonding. |

## Bonding Expertise at E-Fab

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| **Typical Parts** | Antenna Substrates, Microwave Components, MRI Machine Parts, Multilayer Busbars, RF Shields, EMI Shields, Control Circuits, OEM Products, Flex Cable Batteries, Semiconductors, Hybrid Semiconductors, Flex Circuits, Sensors, and Flex Heaters |
| **Materials** | Kapton |
| **Metals** | Aluminum, Copper, Stainless Steel, Steel, and more |
| **Industries Served** | Aerospace, Military, Defense, Energy, Fuel Cells, Medical, Microwave, Semiconductor, Telecommunications, Colleges, Secondary Schools, Federal Agencies, State Government, Agriculture, Automotive/Transportation/ Mobility, Electronics, Instrumentation & Control Systems, Manufacturing, Technology |

## Our Certifications

ISO 9001:2015

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We are E-FAB A TPC COMPANY

We are an expert team of engineers, manufacturers, and quality assurance specialists that deliver precision parts with ultimate accuracy. We serve technology companies, defense contractors, medical equipment manufacturers, and innovators from our Santa Clara, California headquarters.


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