



**CUSTOM THERMAL**  
PROTECTION

## Custom Thermal Protection Replacement

### PROBLEM:

A manufacturing company needed to find a replacement for the heat shields originally supplied with their machines, which were no longer available. These machines operated at high temperatures for extended periods, and over time, the original heat shields had become damaged, posing a potential safety risk.

### REQUIREMENTS:

The Engineering team outlined the operating conditions of the machines as 1,800 Degrees Fahrenheit, 24 hours a day, 7 days a week, year round. The solution had to be flexible enough to fit around their machine while also maintaining the slots and holes needed for the machine to operate.

### SOLUTION:

**Custom Ceramin Fiber Heat-Shielding with an exterior aluminized layer.**

Zippertubing engineers determined that the optimal solution for this application was a combination of Zippertubing's Ceramic Fiber Blanket, sandwiched between layers of our Amorphous Silica Cloth Fabric. This combination of materials offers exceptional temperature resistance while effectively minimizing heat transfer over extended periods. To prevent the Ceramic Fiber Blanket from shifting due to gravity and creating hotspots, the materials were quilted. Additionally, a layer of ALS-5 was added to the exterior to provide an aluminized finish. The part was constructed as panels, and then sewn together to create the necessary box shape.

### CONCLUSION:

The customer was pleased with both the material selections and build quality provided by Zippertubing. The parts fit their machines perfectly, and they have since ordered additional parts in a range of other geometries & sizes using the same high-quality materials.

