



Automotive EV Case Study: EV charger gasket

Electric vehicles are changing automotive travel for the better, providing cleaner, more efficient travel across the globe.

With advances in cells, modules and packs, battery technology is now producing; longer ranging, faster charging, and more efficient powerful batteries, which require protection from heat and environmental stresses such as rain, salt spray, UV and Ozone.

Silicone closed cell sponge is the ideal material to provide the protection needed to improve lifespan and efficiency and reduce electrical failure.

The Opportunity & Challenge

A forward-looking EV charging manufacturer contacted Silicone Engineering for an effective sealing solution for commercial and home mounted prototype charging boxes.

The task was to provide a gasket for an electric vehicle charging port that would act as a protective seal against water ingress and dust whilst compressed inside the EV charging connector. Additionally, the gasket would have the capability to provide additional flame protection in an electrical fire whilst compressed within the application.





The Solution: **expanSil™ V-0 Medium Cord**

Our material technologist recommended our expanSil™ V-0 Medium cord to act as a gasket due to the materials excellent compression set and its ability to maintain the stability of performance in temperatures ranging from -60°C to 230°C (-76°F to 450°F).

Tested and approved to flame standard UL 94 V-0, the closed-cell silicone sponge gasket provides extra flame protection, offering a comprehensive sealing solution to the customer designing team. We sent the customer various cord samples ranging from soft through to a medium density to find the correct material compression for the application.

After receiving and testing the different expanSil™ V-0 samples, the customer verified that the Medium density achieved the greatest sealing performance and water resistance achieving an IP67 rating.

The customer selected the V-0 Medium silicone sponge cord due to its sealing performance inside the rapid charging electrical enclosure. Customer feedback also noted the fast sample dispatch as a contributing factor.

