



Silicone Gaskets and Defense Spending

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Defense spending is increasing, but where are the opportunities for gasket fabricators? During Q4 2022, U.S. Department of Defense (DoD) outlays on research and development rose by 11%. For FY23, there's a 13% increase in funding for Research, Development, Test, and Evaluation (RDT&E), a major part of the DoD budget that covers new and improved warfighting capabilities. To put these percentages in perspective, they're greater than the 10% increase in FY 2023 defense spending overall.

There are many types of RDT&E projects, but military grade silicones are needed for gaskets that provide EMI/RFI shielding, or that resist fuels, fire, chemicals, salt spray, outgassing, or high and low temperatures. From terrestrial radios to aircraft fuel doors, and from naval ships to satellite communications, military grade silicones are used across the U.S. military's warfighting domains. For gasket fabricators, it's important to partner with a silicone supplier that provides specification grade materials.

Military Silicones for DoD Projects

For example, Specialty Silicone Products (SSP) of Ballston Spa, New York (USA) provides gasket fabricators with EMI/RFI silicones that meet the DoD's MIL-DTL-83528 standard for electrically-conductive elastomeric gaskets. These products are available with different fill materials and meet specific lettered sections of the MIL-DTL-83528 standard. Third-party shielding reports, technical data sheets, and DoD qualified product listings (QPLs) are all available for download.

SSP also supplies fluorosilicones that meet the requirements of MIL-DTL-25988, a military specification that covers oil- and fuel-resistant elastomers for aeronautical and aerospace applications. Gasket fabricators can buy these and other military elastomers in low minimum order quantities (MOQs) and with short lead times. That's important for RDT&E and other defense-related projects that require prototypes, iterations, and low-volume initial quantities.

More Specification Grade Silicones

There are also other types of specification grade silicones that gasket fabricators may need for some military projects. That's why SSP offers a MIL-DTL-83528 EMI shielding silicone that also passes the ASTM B117 salt spray test for galvanic corrosion, a problem in marine environments. This material, SSP2529, can also be used in satellite applications that require proven compliance with ASTM E 595, an outgassing standard that originated with NASA and applies to the low-vacuum environment of space.

Gasket fabricators may also need AA 59588 silicones that meet SAE's Aerospace Material Requirements (AMS). Several SSP materials pass the DeMattia Flex Resistance Test, a dynamic test that measures crack growth in inches over thousands of flexural cycles. Flex-fatigue resistance can be an important requirement for military aviation, and high temperatures, harsh environments, and excessive cycling can all contribute to elastomeric fatigue.

Silicone Specifications and the Importance of Compliance

Military and aerospace silicones aren't commodity elastomers; however, too many compounders now treat them like they are. That's a risk for die cutters, molders, extruders, and gasket fabricators who assume a level of compliance that may no longer exist. If a compounder changes a formula to use lower-cost ingredients, how will you know if you're getting a true specification grade silicone?

When you buy silicones for military or aerospace projects, make sure you know what you're really getting. At SSP, for example, we can supply you with a Certificate of Analysis (COA) that reports the specific test results for that batch. You can also get a Certificate of Conformance (COC) if you need it. By sourcing proven materials, gasket fabricators can take advantage of new defense spending opportunities.