

ARLON® Hose, Duct, and Composite Silicones

Heat Aging Study Results

The performance of a material under high heat for long periods of time is critical to hose, duct, and composite applications in aerospace and defense.

Rogers performed heat aging testing on ARLON® silicone materials to assess long-term performance, durability, stability, quality, safety, and compliance to industry standards.

Two grades of ARLON silicone rubber on fiberglass were tested and evaluated:

ARLON 27 Silicone Rubber meets:

- UL rating at 220°C (428°F)
- MIL-Y-1140H Fiberglass

ARLON 63 Silicone Rubber meets:

- A-A-59588 Class 2A50
- FAR 25.853(a) 12 sec burn
- MIL-Y-1140H Fiberglass



Heat Aging Study

A heat aging study was performed on ARLON 27 and ARLON 63 silicone rubbers on fiberglass at two thicknesses, 0.05 and 0.1 mm (2 and 4 mils), to assess their performance after exposure to 260°C (500°F) for 1,000 hours.

The materials were then visually evaluated for cracking, bubbling, flaking, and delamination.

Heat Aging Results for ARLON 27 & 63 (1,000 hours at 260°C)

Thickness	27 0.05mm (2 mils)	27 0.1 mm (4 mils)	63 0.05 mm (2 mils)	63 0.1 mm (4 mils)
Crackling	Pass	Pass	Pass	Pass
Bubbling	Pass	Pass	Pass	Pass
Flaking	Pass	Pass	Pass	Pass
Delamination	Pass	Pass	Pass	Pass
Ply Adhesion	Pass	Pass	Pass (<700 hrs)	Pass (<700 hrs)

The heat aging results show that both ARLON 27 and 63 at each of the two thicknesses did not exhibit cracking, bubbling, flaking, or delamination after 1000 hours at 260°C (500°F).

Key Results

- ARLON 27 is the material of choice when an elastomer is required to perform up to 1,000 hours at 260°C (500°F) with minimal performance loss
- ARLON 63 is the material of choice for applications requiring compliance to A-A-59588 and FAR.853 as well as performance up to 700 hours at 260°C (500°F)

For more information and to request a material sample, visit solutions@rogerscorp.com