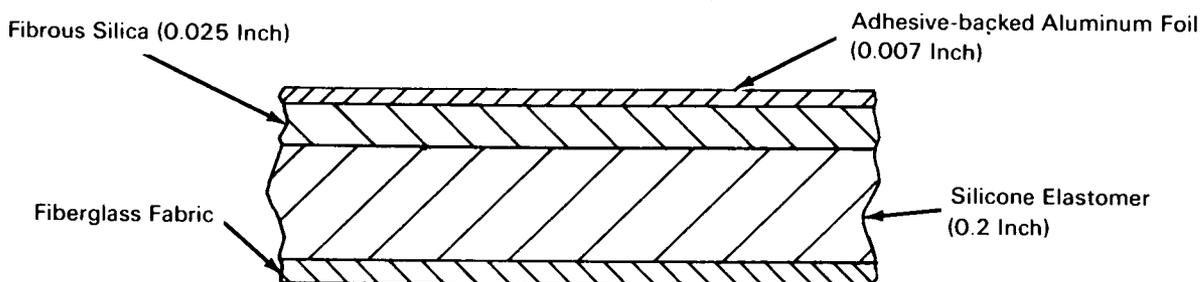


NASA TECH BRIEF



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Flexible Curtain Shields Equipment from Intense Heat Fluxes



CURTAIN CROSS-SECTION

The problem: Shielding equipment from intense heat fluxes radiated by the exhaust from large rocket engines undergoing tests at proving grounds. A flexible, high strength curtain capable of providing protection against heat fluxes of up to 40 Btu/sq ft/sec for approximately 2-minute intervals was required.

The solution: A curtain made of fiberglass-silicone elastomer laminate.

How it's done: Panels of greige-grade, two-ply silicone-calendered (imbedded) fiberglass fabric are coated with silicone primer, followed by coating with a silicone elastomer compound plus catalyst. The panels are then treated in an oven at approximately 350°F to cure the elastomer. The panels are sewn together with fiberglass thread. The curtain is next covered with a 0.025-inch blanket of a commercially available fibrous silica and finally with an outer wrapping of 0.007-inch adhesive-backed aluminum foil. Metal snap fasteners are used to keep the curtain in place.

The curtain is strong, flexible, peel-resistant, wrinkle-free, lightweight, and only about 0.25 inch thick.

Notes:

1. Applications of this curtain are suggested for thermal shielding in areas which need not be permanently enclosed by bulkier walls.
2. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer
Marshall Space Flight Center
Huntsville, Alabama, 35812
Reference: B65-10044

Patent status: NASA encourages commercial use of this innovation. No patent action is contemplated.

Source: Arrowhead Products under contract to Marshall Space Flight Center (M-FS-48)

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