September 1966

Brief 66-10427

NASA TECH BRIEF

Electrical Cabling Withstands Severe Environmental Conditions

The problem:

An electrical cable that can withstand temperatures from $-150^{\circ}F$ to $400^{\circ}F$ for long periods, or $1500^{\circ}F$ for short periods, without losing circuit integrity. The cable would also have to perform in severe environmental conditions of vibration and water, and remain flexible and abrasion resistant.

The solution:

Develop multiconductor electrical cables that are heat, vibration, and water resistant.

How it's done:

The cable consists of nickel plated copper conductors; extruded silicone primary insulation for electrical integrity; glass braid to hold the primary construction together during a fire; and nickel plated copper shield and glass braid to add jacket strength and prevent protrusion of the shield through the jacket. The jacket is a high strength silicone extrusion which provides the moisture protection and resistance to mechanical abuse.

Note:

Inquiries concerning this invention may be directed to:

Technology Utilization Officer
Marshall Space Flight Center
Huntsville, Alabama 35812
Reference: B66-10427

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

Source: J. D. Hathaway of
North American Aviation, Inc.,
under contract to
Marshall Space Flight Center
(M-FS-1585)

Category 01