NASA TECH BRIEF

Improved Method of Edge Coating Flat Ribbon Wire

The problem:

In the coating of flat ribbon wire, the coating enamels tend to thin out at the edges, which is caused by the flow properties and surface tension of the enamel. Attempts to coat the edge of the wire with enamels suitable for round wire coating are generally unsuccessful.

The solution:

Coat the edges of the flat ribbon wire with an enamel having modified flow properties.

How it's done:

The commercially available enamel is modified by the addition of 2% to 4% by weight of a commercially available silicone preparation. With this mixture, a 0.1- to 0.2-mil thick coating (after curing) can be deposited per coating pass. This is built up to about a 1-mil thick bead after additional passes. A conventionally applied coating precedes the edge coating to minimize oxidation during the edge coating procedure. Additional conventional coats are applied after edge coating to build up a coating thickness on the flat surfaces of the wire.

Notes:

1. Information on a related method and apparatus for preparing multiconductor cable with flat conductors is also available. This method describes the preparation of a flat electrical cable in which the individual conductors are arranged in a planar configuration in a relatively high density pattern. The individual conductors are embedded within the surface of an adhesive bonding film and a substrate, conductors, and cover film are then laminated to the individual conductors to form the multiconductor cable.
2. Descriptions of the wire coating procedure and details for preparing the multiconductor cable with flat conductors may be obtained from:

   Technology Utilization Officer
   Marshall Space Flight Center
   Huntsville, Alabama 35812
   Reference: B66-10684

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: G. T. Schjeldahl Co.
under contract to
Marshall Space Flight Center
(M-FS-902)

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