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## Improved Reinforcement for Openings in Difficult Fabrics

Openings in fabrics such as lightweight nylon chiffon or open-weave stretch material can be easily and inexpensively reinforced by a novel technique. A plastic film, typically a heat-sealable urethane, is applied to each side of the fabric; the two films are then fused together with conventional heat-sealing equipment. The inner area of the fabric is then cut away, leaving a flexible, yet sturdy band of material around the opening with no raw edges.

The melting point of the films must be lower than that of the fabrics. For compressible fabrics the cutting die's edge must have a radius for prevention of burn edges or tear lines.

For nylon chiffon, needed to feel soft and comfortable on the skin, 2-mil films of urethane were used. With a stretch fabric, 6-mil films of urethane maintained the structural integrity of the fabric with only slight loss in comfort.

The same technique provides strong and stable bases for the mounting of snap fasteners on open-weave stretch fabrics; 8-mil films are applied to round areas slightly greater in diameter than the fasteners.

Other applications of similar films are now being investigated. Continuous narrow strips of film along

the edges of fabrics lock the edges without causing rigidity. Applications of film to certain areas of stretch fabrics "lock" the areas for novel or complex stretch patterns. Pockets, buttons, and straps can be directly sealed to the fabric. Local applications of film can resist abrasion or prevent permeability. Printable films can serve as labels.

### Note:

No additional documentation is available. Specific questions, however, may be directed to:

Technology Utilization Officer  
Manned Spacecraft Center, Code BM7  
Houston, Texas 77058  
Reference: B70-10489

### Patent status:

No patent action is contemplated by NASA.

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