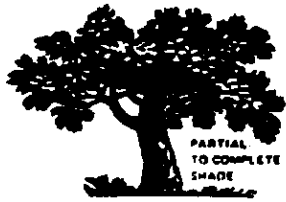


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CONTEXT
CONSULTANTS TO THE TUFTED TEXTILE INDUSTRY
113 South Cedarbrook Drive, Auburn, Alabama 36830

MEMORANDUM REPORT

LAB TEST REPORT FOR ENDURO SHADE



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|-------------------------------------|--|
| 1. Burst Strength | 8. Mildew |
| 2. Tear Resistance | 9. Grommet Tear* |
| 3. Tensile Strength and Elongations | 10. Seam Strength |
| 4. Electrical Conductivity | 11. Solubility (resistance) in solvents (included as part of 7). |
| 5. Abrasions | 12. Softening Temperature |
| 6. Cold Flex | 13. Oxygen Index (flammability) |
| 7a. Auto Solvent Resistance | |
| b. Household Solvent Resistance | |
| c. Industrial Solvent Resistance | |

A discussion of the results of these analyses follows:

DISCUSSION

1. Bursting Strength

The fabric was tested for bursting strength by ASTM Method D231. The bursting strength of the shade cloth exceeded the measuring ability of the Mullens Burst Test apparatus. The results would indicate that the fabric would fail in the bursting mode only after the breaking strength of the component threads had been exceeded. Therefore, it is doubtful that a bursting failure would occur prior to total destruction of the fabric by exceeding its tensile strength.

2. Tear Resistance

The tear resistance of the material was tested according to ASTM Method D1424 using an Elmendorf instrument. As with the burst test, the tear resistance of the fabric exceeded the instrument's ability to measure. The fabric was also subjected to a "Grab Break" method, employing the Instron Tensile Test apparatus, (ASTM D2261), in an effort to determine its tearing propensity. Even this technique was unable to measure a definite "tearing" in the fabric.

* Including several reinforcement variations.

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ASTM Method D1056. The material passed each test indicating that the material maintains its flexibility at the temperatures employed.

7. Solvent Resistance

The material was tested using the usual solvents found in the automotive, household and industrial environments, according to ASTM Methods D1056 and D471. The material is immersed in these fluids for 24 to 48 hours and the effects noted. The results are:

<u>Automotive</u>	<u>Typical Use</u>	<u>Results</u>
SAE 30 Motor Oil	N/A	No Effect (Some stiffness)
Regular Gasoline	N/A	No Effect
Diesel Fuel	N/A	No Effect
<u>Household</u>		
Ethyl Acetate	Polish Remover	Slightly softens, swells
Ethyl Alcohol	100 Proof Whiskey	No Effect
Carbon Tetrachloride	Spot Remover	No Effect
Methanol (Wood Alcohol)	Paint Thinner	No Effect
Naptha	Charcoal Lighter	No Effect
<u>Industrial</u>		
Perchloroethylene	Dry Cleaning	No Effect
Acetone	Plastics Solvent	(Moderate) Swells, softens
Methyl Ethyl Ketone	Plastics Solvent	(Severe) Swells, softens

The results indicate that long immersion times in the more common solvents and/or reagents found in the automotive and home environments have little or no effect on the fabric. Some stiffening of the fabric occurs but this was probably due to a leaching out of the placticizer. These tests are to be considered the most severe since total immersion for the long periods tested are not likely to occur. Even for industrial solvents such as MEK and Acetone,