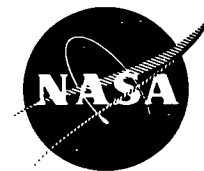


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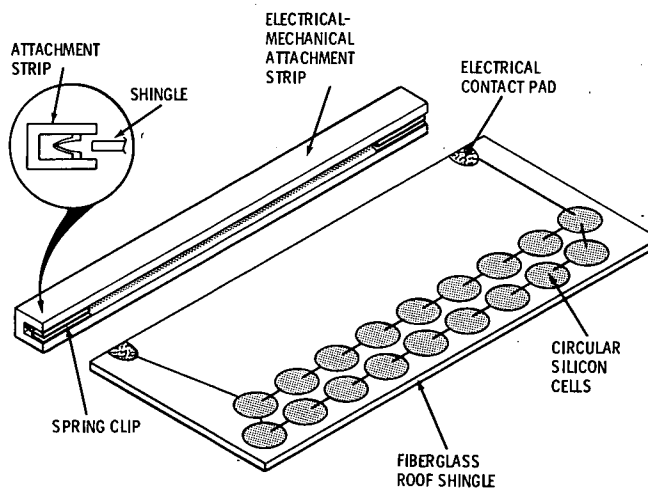
NASA TECH BRIEF

Lewis Research Center



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Solar Power Roof Shingle



Solar cell shingle showing attachment strip with electrical-mechanical spring clips.

A recently designed silicon solar cell module does double duty. It is designed as a roof shingle for residences and similar structures, and provides both the all-weather protection of a shingle as well as the electrical power of a solar cell module. The module consists of an array of circular silicon solar cells bonded to a fiberglass substrate roof shingle with a fluorinated ethylene propylene (FEP) encapsulant (see figure).

These solar power shingles are easily installed. An attachment strip is nailed to the roof. This strip has a U-shaped cross-section containing spring-loaded electrical connectors. As the shingles are pressed into the slots in the attachment strip, both electrical and mechanical attachments are obtained simultaneously. The attachment strip acts as an electrical bus and can be designed so that the attached shingles are connected in either series or parallel circuits. The shingles containing the solar cells can be interspersed with blank shingles to accommodate electrical load requirements less than the equivalent of full roof coverage.

Note:

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

Technology Utilization Officer
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21000 Brookpark Road
Cleveland, Ohio 44135
Reference: B75-10289

Patent Status:

Inquiries concerning rights for the commercial use of this invention should be addressed to:

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