



(12) **United States Patent**
Bellavia

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(54) **LIGHT WEIGHT MOLDED ROOF TILE WITH INTEGRATED SOLAR CAPABILITIES**

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(52) **U.S. Cl.**

CPC . **E04D 1/22** (2013.01); **E04B 1/941** (2013.01);
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(58) **Field of Classification Search**

None
See application file for complete search history.

(Continued)

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(57) **ABSTRACT**

An improved building roof tile for a sloping roof including a polyurethane foam tile that includes outer coating layers that are made of a uniquely fire resistant or retardant layered system that includes a first outer fire resistant layer of 100% solid aliphatic polyurea material and a second inner layer of an 100% solid intumescent non-halogenated phosphate material, said inner layer forming a fire blocking partition and said outer layer offering UV protection, featherweight, category 5 hurricane proof, yields a high R-value, offer low thermal transference into attic space, will retrofit any sloped roof without structural build-up, can be molded into single or triple units, cannot break under foot or when extreme pressures are applied, can produce upgradable solar energy, is easy to transport and install and can molded to look like slate, wood, flat roll tile or most other historical tiles.

11 Claims, 19 Drawing Sheets

