aspen aerogels™

NANOTECHNOLOGY AT WORK™

CASE STUDY

Solar Panel

Aerogel Insulation Ideal for Slim Solar Panels

Product Used

Spaceloft™ 9251

Fabrication and Installation Partners

Polyformes
(www.polyformes.co.uk)

Solar Century
(www.solarcentury.com)

Challenges

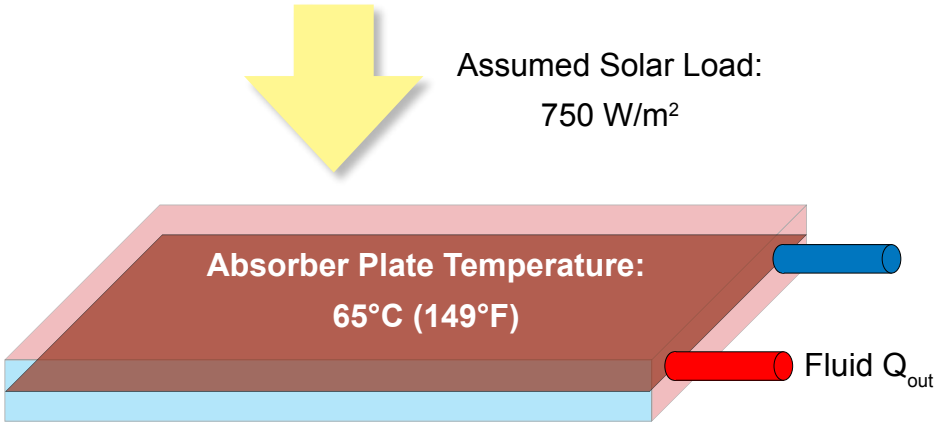
- Collector pipes insulation for new solar thermal panel developed by Solar Century.
- The panel was required to be super slim (25 mm) to replace existing roofing tiles.
- This meant the insulation needed to be about 9 mm. (Typical panels use 50 mm of mineral wool.)
- The temperature range at the collector pipes is 65°–200°C (149°–392°F) depending on operation cycle.

Aerogel Solution

- Aspen Aerogels designed a solution of 9 mm of flexible, durable **Spaceloft™ 9251**, which meets the thermal performance of 50 mm of mineral wool.
- The parts are water jet cut by Polyformes and installed by Solar Century.

Benefits

- The aerogel solution provided the required thermal performance while minimizing insulation thickness, meeting the key criteria.
- The very low conductive heat generated savings over conventional insulating materials during night hours.
- Spaceloft™ 9251 generates no negative VOCs through the operating temperature range of 65°–200°C (149°–392°F).



Heat loss through 9 mm **Spaceloft™ 9251** 56 W/m² =
7.4% of Solar Heating Load

Heat loss through 50 mm of Mineral Fibre 31 W/m² =
4.1% of Solar Heating Load

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