



Product Used

Spaceloft™ 6251

Fabrication Partner

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Tractor Oil Tank Protected by Aerogel Heat Shield in Tight Space

Insulation maintains high performance even in exposed environment

Challenges

- Develop heat shield for the PE rotomolded oil tank of a tractor.
- The oil tank was located near the tractor exhaust, with the air outtake pointed at the tank.
- There was a high risk of deformation and failure of the oil tank.
- Traditional solutions such as glass or rock fiber were too thick given the space constraint.
- The temperature was 200°C (392°F) at the exhaust outtake and 120°C (248°F) at the tank surface (30 mm away).
- To maintain low tank temperature, exceptional thermal performance in a limited space was required.

Aerogel Solution

- Carpenter designed a solution of two layers of **Spaceloft™ 6251** encapsulated in aluminum.
- The total thickness was only 16 mm.
- The encapsulated aerogel solution was glued on the tank with a viscoelastic mastic.

Benefits

- Spaceloft 6251 maintained its performance over time, reducing the surface temperature of the tank to 85°C (185°F) after 1 hour 15 minutes and stabilizing it at 95°C (203°F) after 2 hours 20 minutes.
- The encapsulated aerogel solution was unaffected by the outside environment including high pressure washing of the engine.



Carpenter designed a solution of two layers of Spaceloft™ 6251 encapsulated in aluminum (shown above), with a total thickness of only 16 mm. The encapsulated aerogel solution was glued on the tank with a viscoelastic mastic (below).

