

# **Thermal Resistance of Spray-Applied Insulations Produced with a Foamable Adhesive**

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## **ABSTRACT**

Thermal data for a new type of spray-applied cellulose insulation (SACI) and spray-applied fiberglass insulation (SAFI) have been obtained as a function of density and temperature using ASTM C 518. The spray-applied insulations were produced from loose-fill insulation mixed with a foamable adhesive. The thermal resistivities,  $R^*$ , obtained for the new type of insulation are compared with previously published data for spray-applied insulations and the appropriate loose-fill insulations.

The SACI specimens in this study had densities from 2.88 to 5.14 lb/ft<sup>3</sup> with  $R^*$  at 75°F in the range 3.0 to 3.5 ft<sup>2</sup> h °F/Btu in. The SAFI

specimens had densities from 1.66 to 4.51 lb/ft<sup>3</sup> with R\* at 75°F in the range 3.8 to 4.3. The SACI specimens produced with foamable adhesive were 5 to 10 % lower in R-value than previously reported data for spray-applied cellulose insulation. The SAFI specimens had up to 10% greater R\* values than previously reported values for this type of insulation.

Thermal resistivity data for both SACI and SAFI were made for mean specimen temperatures from 39 to 109 °F. The results for  $dR^*/dT$  are in good agreement with previously reported data and show that R\*-values for both types of insulation decrease about 1.5% for a 10 °F increase in temperature. The thermal data obtained in this research and comparisons with previously published data will be discussed in this presentation.