DATE: March 2002
FOR IMMEDIATE RELEASE
CONTACT: MARY A. EDMONDSON
800/279-4123

# TEST APPARATUS SPECIFIC TO MECHANICAL DUCT INSULATION COMPLETE

The Reflective Insulation Manufacturers Association (RIMA) recently announced the completion of a duct insulation test apparatus and summary report they have sponsored in their ongoing effort to ensure quality product testing and code compliance.

**TEST DESCRIPTION:**

The duct insulation test apparatus conforms to the principles of the pipe insulation standard ASTM C 335, and R-values are obtained from steady-state data for temperatures and heat flow across the insulation.

Duct insulation test material is installed on a seven-foot-long test section in accordance with the manufacturer's instructions. Electrical strip heaters and fans heat and mix the air inside the duct. Thermocouples on the inside surface of the duct, on the outside surface of the insulation system, and in the air surrounding the insulated duct provide temperature data over a 24-hour-long test period. Averages of the temperature data over the final eight hours of the test period are used to calculate the thermal resistance of the duct insulation. The steady-state temperature of the air inside the duct is controlled by the amount of electrical power fed to the heaters inside the duct. Results are routinely collected for duct-air temperatures in the range 100 to 200 ºF and reported at selected temperatures.

The thermal data provide thermal resistances (R-values) for the duct insulation alone or for a system that extends from the surface of the duct to the surrounding air. The latter R-value can include the effect of the low-emittance exterior surface if it is part of a duct-insulation system.

Measured R-values for a bubble pack reflective insulation product installed around the test apparatus without spacers were in the range 2-3 $ft^2 \cdot hr \cdot ºF/Btu$. Measured R-values with a 0.625-inch air gap between the outside duct wall and the insulation were in the range 4-5 $ft^2 \cdot hr \cdot ºF/Btu$. In both cases, the effect of the effect of the outside low-emittance surface is included in the reported R-values.

RIMA is committed to quality; and the completion of this project brings the industry one step closer to ensuring proper product testing. RIMA developed this apparatus with the help of R & D Services, Inc. In addition to the various types of reflective insulation types of products that can be tested, other types of insulation can also be tested using the apparatus.

*The Reflective Insulation Manufacturer's Association (RIMA) is a group of insulation manufacturers and industry professionals who are working to gain acceptance of reflective insulations, radiant barriers and interior radiation control coatings. Over the years, RIMA has been the major force in establishing fair ASTM standards for testing and installation procedures. RIMA welcomes all who are interested in promoting and directing the growth of the industry. For more information about membership or the industry, please contact Executive Director Mary Edmondson at the number shown above.*