



TO: All Atlas Customers

NUMBER: 01-02

FROM:
Richard Roe, Director, Technical Services,
Commercial Roofing Products

DATE: April 5, 2002

SUBJECT:
Effective Dates for Conversion to LTTR

Long-Term Thermal Resistance (LTTR)

A new method (CAN/ULC-S770) for determining R-values of certain foam plastic insulations has emerged from Canada and is intended to bring consistency to specification language and clarity to the marketplace. It provides a long-needed definition of “aged” R-value, predicting both a 5-year aged value and a 15-year time-weighted thermal design value.

Since foam plastic insulations manufactured with blowing agents other than air experience “aging” (slow changes in R-value over time), the need for standardized sample conditioning before testing for R-value became apparent over 20 years ago. As a result, the polyiso, polyurethane, and extruded polystyrene foam insulation industries adopted a six-month conditioning procedure required before R-values are measured, a practice known in the polyiso industry as PIMA 101. This conditioning method helped to establish a consistent, more level playing field for manufacturers, specifiers, and purchasers of foam plastic insulation products.

Improving on that conditioning procedure, CAN/ULC-S770, “Standard Test Method for Determination of Long-Term Thermal Resistance of Closed-Cell Thermal Insulating Foams,” based on ASTM C 1303-95, accelerates aging by a method called “slicing and scaling.” Thin slices of foam [1/4 to 1/2 in. (6 mm to 12 mm)] age very quickly and are used to determine the number of days required before testing to predict the R-value of thicker materials. This slicing and scaling method is the only consensus test method recognized in both the U.S. and Canada for predicting long-term R-values for certain foam plastic insulation products.

In December 2000, CAN/ULC-S770-00 was adopted as a national standard for determining R-value in Canada. This method applies to polyurethane, permeably faced polyiso, and extruded polystyrene, all of which “age.” In May 2001, it was also included in the national standard for faced polyiso insulation in Canada, CAN/ULC-S704-01, “Standard for Thermal Insulation, Polyurethane and Polyisocyanurate, Boards, Faced.” These new standards, especially CAN/ULC-S770, are already appearing in specifications in Canada and some northern areas of the United States. ASTM C 1289-02 was revised and approved as of April 16, 2002, to include a mandatory annex requiring LTTR testing based on CAN/ULC- S770.

Atlas is proud to have participated in the development of the new Canadian standard and in PIMA’s decision to promote the new method in the U.S. As a result of this effort, Atlas and other polyiso manufacturers in Canada have already published new standardized R-values; and, by the end of this year, polyiso manufacturers in the U.S. are expected to publish these same LTTR values, allowing for the first time a standard, consistent long-term R-value for North America.

The following dates are effective for quoting Atlas insulation products based on LTTR values instead of PIMA 101 values. After these dates, Atlas will not refer to R-values based on the PIMA 101 method.

- 🕒 **Canada: Immediately for all roof insulation products shipping after 6/30/02.**
- 🕒 **U.S.: Immediately for all roof insulation products shipping after 12/31/02.**