Polyiso update

by **Mark S. Graham**

Polyisocyanurate roof insulation enjoys widespread acceptance and use in the U.S. roofing industry. According to NRCA's 2001-02 market survey, polyisocyanurate insulation accounts for about 56 percent of all rigid board insulation used in low-slope roof assemblies.

Because of polyisocyanurate insulation's widespread use, you should be aware of a number of changes regarding it.

ASTM C1289-01

In June 2000, an updated edition of the U.S. material standard for polyisocyanurate insulation, ASTM C1289-01, "Standard Specification for Faced Rigid Cellular Polyisocyanurate Insulation Board," was published. ASTM C1289-01 contains significant revisions from previous editions of the standard that should be useful to users of polyisocyanurate insulation. (For more information about the standard, refer to "ASTM polyiso standard updated," November 2001 issue, page 53.)

To date, I am unaware of any polyisocyanurate insulation manufacturer that has chosen to incorporate ASTM C1289-01 into its marketing efforts, product literature or package labeling. In the coming months, you should ask for and begin to see implementation of ASTM C1289-01.

Blowing agents

As the Dec. 31 federally mandated deadline for stopping production of HCFC-141b draws near, a lack of information available from some polyisocyanurate insulation manufacturers regarding their third-generation products is of concern. (For additional information about this issue, see "Issues regarding polyisocyanurate insulation," August 1999 issue, page 53.)

To date, only Atlas Roofing Corp., Meridian, Miss., and Firestone Building Products Co., Carmel, Ind., publicly have acknowledged their conversions to using third-generation blowing agents in several of their plants.

It remains to be seen what specific blowing agent(s) other polyisocyanurate insulation manufacturers will use; whether all manufacturers will choose the same blowing agent; and when third-generation products will enter the marketplace.

At this point, it appears possible that some manufacturers' plants may not be converted to use third-generation blowing agents by the end of this year. The effects this may have on the availability of polyisocyanurate insulation in regions served by these manufacturers' plants is unknown and of concern.

Long-term R-value

In October 2001, the Polyisocyanurate Insulation Manufacturers Association (PIMA) proposed that a new test method be incorporated into ASTM C1289-01 for determining and reporting the long-term thermal resistance (LTTR) of polyisocyanurate insulation. This new test method, based largely on Canadian test method CAN/ULC-S770, "Standard Test Method for Determination of Long-term Thermal Resistance of Closed Cell Thermal Insulating Foams," provides R-value data based on a 15-year time-weighted average. (For more information about LTTR, see "Thermal resistance and polyisocyanurate insulation," February issue, page 38.)

At this year's NRCA convention, PIMA presented preliminary LTTR data for Canadian-manufactured polyisocyanurate insulation using a hydrocarbon blowing agent. Preliminary average LTTR values are 6.0, 9.0 and 12.1 for 1-, 1½- and 2-inch- (25-, 38- and 50-mm-) thick products, respectively.

NRCA is encouraged by PIMA's proposal. This possibly is an answer to NRCA's longstanding concern regarding appropriate R-value data for polyisocyanurate insulation for design purposes.

Closing thoughts

Although polyisocyanurate insulation enjoys widespread acceptance in the United States, significant changes are taking place that may affect its use.

I encourage roofing contractors, roof system designers, roof assembly component manufacturers, and roofing material suppliers and distributors to contact the polyisocyanurate insulation manufacturers with which they do business and become knowledgeable of manufacturer-specific information about these issues.

NRCA will continue to monitor implementation of ASTM C1289-01, third-generation blowing agents, LTTR and other issues relating to polyisocyanurate roof insulation. It looks as if it will be an interesting year for polyisocyanurate insulation.

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