Continuing concern about polyiso

by **Mark S. Graham**

In May 1999, NRCA's Technical Operations Committee issued a letter to NRCA's membership about the use of polyisocyanurate insulation in low-slope roof assemblies. And in "Issues regarding polyiso insulation," August 1999 issue, page 53, other concerns regarding polyisocyanurate insulation are raised.

Since the technical letter was mailed and article published, additional information about polyisocyanurate insulation has been made available. Following is an update.

Blowing agents

During the North American Conference on Roofing Technology in September 1999, John B. Letts, technical director of insulation for Firestone Building Products Co., Carmel, Ind., presented a paper titled "Transition to Third-Generation Polyisocyanurate Boards: A Systematic Approach." In the paper, Letts concludes that two replacements for the current hydrochlorofluorocarbon blowing agent, HCFC-141b, appear promising: pentanes and possibly HFC-245fa combined with pentanes.

To date, Atlas Roofing Corp., Meridian, Miss., is the only U.S. manufacturer of polyisocyanurate insulation who publicly has acknowledged the implementation of a blowing-agent replacement for HCFC-141b. Atlas uses a proprietary pentane blowing agent in its LaGrange, Ga., and Etobicoke, Ontario, Canada, manufacturing plants.

Firestone recently announced it is constructing a new polyisocyanurate insulation manufacturing plant in De Forest, Wis. This plant reportedly will be capable of producing polyisocyanurate insulation using conventional HCFC-141b or replacement blowing agents.

At this time, it remains to be seen what specific blowing agent(s) other polyisocyanurate insulation manufacturers will use.

Materials standards

In September 1999, NRCA met with representatives of the Polyisocyanurate Insulation Manufacturers Association to discuss NRCA's concerns related to polyisocyanurate insulation. NRCA recommends changes be made to ASTM C 1289-98, "Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board."

In October 1999, NRCA participated in a meeting of American Society for Testing and Materials (ASTM) Task Group C 1289, which is responsible for maintaining ASTM C 1289-98. The task group considered NRCA's recommendations for revising ASTM C 1289-98 and a recommendation from Firestone to incorporate the rolling-load emulator test method described in Letts' paper as a means to determine polyisocyanurate insulation's resistance to facer-sheet delamination.

The meeting concluded with the task group taking no official action on either recommendation. It is anticipated these issues will be primary agenda items for the task group's next meeting, which will be held April 9-12 in Toronto.

Similarly, in Canada, the Canadian standard for polyisocyanurate insulation, CGSB-51.26-M86, "Thermal Insulation Urethane and Isocyanurate, Boards, Faced," is being reviewed. Polyisocyanurate insulation's compliance with this standard is a requirement of the *National Building Code of Canada*, 1995 edition.

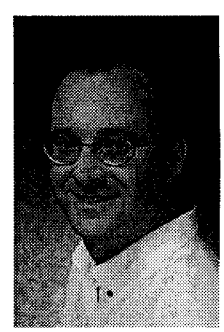
CGSB-51.26-M86 is noticeably more stringent than ASTM C 1289-98 regarding minimum compressive strength. The standard requires a compressive strength of 20 psi (140 kPa) or 25 psi (170 kPa), depending on specific polyisocyanurate insulation type, compared with 16 psi (110 kPa) required in ASTM C 1289-98. Also, in some instances, CGSB-51.26-M86 requires more stringent dimensional stability values—1.5 percent and 2 percent—than ASTM C 1289-98's 4 percent.

Several U.S. polyisocyanurate insulation manufacturers distribute their products in Canada and comply with applicable Canadian codes. Apparently, these manufacturers produce polyisocyanurate insulation with more stringent physical properties for the Canadian market than for the U.S. market.

Closing thoughts

During the past several months, there has been considerable discussion regarding several polyisocyanurate insulation issues. NRCA hopes those manufacturers who have been actively participating in the discussion continue to do so.

However, a number of polyisocyanurate insulation manufacturers have not participated. NRCA encourages these manufacturers to work constructively to bring about the necessary changes to ASTM C 1289-98.



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