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Minutes of the State Appeals Board
Appeal #05-02
Thursday October 6, 2005

I. **Call to order:**

- Chairman Tom Downs called the meeting to order at 1:40 PM.
- Appeals Board members included Dave Scherbel, Building Official for the city of Arden Hills; Roger Larson, an architect with BWBR; Thomas Downs Jr., a structural engineer with BKBM Engineers; Jim Lambeth, a general contractor with Woodside Communities; Doug Siers, a structural engineer with Opus Architects & Engineers; Ex-officio member Scott McLellan, with the State's Building Codes & Standards Division.
- Those present in the audience were Don Sivigny, Energy Code Specialist for the division; Larry Farris, Assistant Building Official for the city of Plymouth; Paul Ellringer, an engineer with Air Tamarack, Inc.

II. **Introduction of the Appeal:**

- The appeal was to permit a design where fiberglass insulation is protected by a kraft-faced insulation possessing a maximum perm rating of 1 and to modify the existing drywall system in order to satisfy the code for the air barrier. This appeal is occurring as a result of an order issued by the city of Plymouth that the work did not comply with the Minnesota Energy Code. The order came after a Plymouth building inspector noticed that the existing poly vapor barrier had been cut out of the stud cavities on a home where a permit had been issued to remove damaged stucco, sheathing, and insulation
- Tom Downs opened the hearing by permitting Paul Ellringer of Tamarack, Inc to provide a presentation on the basis of his appeal. Mr. Ellringer discussed his position papers on the reason for the failure of masonry-clad homes. In short, he believes the main reason for these failures is due to sealed polyethylene being installed behind the gypsum wallboard. During the summer cooling season, warm moist vapor pressure from the exterior tends to migrate to the cooler surfaces on the inside of the building when it is stopped at the poly. This is where the moisture condenses into water and wets the building materials. Therefore, Mr. Ellringer's design included eliminating the poly.

III. **Discussion:**

- Mr. Ellringer stated that the design the contractor was implementing included removing the poly and creating the vapor retarder at the gypsum wallboard by sealing all penetrations at the wallboard including receptacles, plates and studs.
- Larry Farris stated that it was standard procedure for the city of Plymouth to issue stucco repair permits over-the-counter without the submittal of plans and

specifications or a corresponding plan review by code staff. [Therefore, no plan review was performed on this application]

- Mr. Farris expressed concern as to how a proper vapor retarder could be created from the exterior side of the wall. He stated that because most of the stucco repairs they see in Plymouth include removing all the wallboard from the inside face of the walls, properly installing a gypsum board vapor retarder is less of a concern.
- Don Sivigny explained how manufactured structures and modular buildings are typically constructed from the inside out, creating the air barrier from the backside.
- There was additional discussion about exactly how the air barrier would be created from the exterior side. Some diagramming was done on the board to illustrate. Mr. Ellringer described in greater detail how this would be accomplished.
- Mr. Farris stated that this home has since been insulated, sealed, and sheathed without being inspected and approved by the city of Plymouth.
- Tom Downs reiterated the purpose of this appeal.
- It was moved and seconded at 2:50 PM to close the public discussion.

IV. **Board only Discussion:**

- Scott McLellan clarified that the purpose of this appeal hearing was to determine whether the energy code requires the insulation to be protected with a continuously sealed vapor barrier and if not, whether the vapor retarder can occur at the gypsum wallboard. The appeals board is not determining whether a vapor retarder can be accomplished from the exterior side of the stud cavity or how it would be done.
- Each board member expressed some comment and opinion. One sentiment was that this engineer gave adequate consideration to the relevant issues. Another expressed concern about the fact that the building permit application submittal was inadequate and that the city did not require plan review. Another expressed concern over how an after-the-fact vapor retarder can be accomplished.
- It was moved and seconded at 3:15 PM to close board discussion.

V. **Deliberation:**

A motion was made by Dave Scherbel to say (1) “the Minnesota Energy Code does not require the required vapor barrier to be continuously sealed and that (2) the required air barrier can occur at the gypsum wallboard provided it is continuously sealed to resist the passage of air and airborne moisture as stated in the code. Roger Larson seconded the motion.

- The motion carried unanimously.
- [This means that the kraft-faced stud wall friction-fit insulation assembly satisfies the energy code for a vapor barrier and that the gypsum wallboard assembly can qualify as the air barrier as permitted by the energy code. How the gypsum wallboard assembly may qualify as an air barrier must be determined by the city of Plymouth]
- The meeting adjourned at 3:25 PM.

Respectfully submitted,

Scott McLellan