



**VIA FEDERAL EXPRESS**

March 16, 2007

Office of the Chief Information Officer  
Attention: DOE Quality Guidelines  
U.S. Department of Energy,  
Forrestal Building -- Room 811-089  
1000 Independence Avenue N.W.  
Washington, D.C. 20585  
(Sent by e-mail and fax)

Chief, Management and Organization Division  
National Institute of Standards and Technology  
100 Bureau Drive, Mail Stop 3220  
Gaithersburg, MD 20899-3220  
(Sent by postal mail and e-mail, [info.quality@nist.gov](mailto:info.quality@nist.gov))

**Request for Correction of Information not Subject to Public Comment**

No DOE-CIO keywords apply

The Portland Cement Association (PCA) is requesting that a statement be issued formally withdrawing the report titled, "Investigation of the Impact of Commercial Building Envelope Airtightness on HVAC Energy Use," NISTIR 7238, authored by Steven J. Emmerich, Timothy P. McDowell, and Wagdy Anis. In addition, we request that dissemination of the report in any form to the public be discontinued until such time that the technical deficiencies in the content of the report enumerated below are properly addressed.

This request is made in accordance with Section 515 Public Law 106-554, Information Quality Act, the NIST Guidelines, "Information Quality Standards, And Administrative Mechanism,"<sup>1</sup> and the DOE Guidelines titled "Final Report to the Office of Management and Budget on Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Department of Energy"<sup>2</sup>.

There are two fundamental reasons for PCA making this request. They are:

1. The methodology within the Report contains a fundamental error.
2. The conclusions within the report are based on air leakage from an erroneous set of building stock.

---

<sup>1</sup>[http://www.nist.gov/director/quality\\_standards.htm](http://www.nist.gov/director/quality_standards.htm), accessed August 28, 2006.

<sup>2</sup><http://cio.doe.gov/informationquality/finalinfoqualityguidelines.pdf>, October 1, 2002, accessed August 28, 2006.

Regarding the first reason, the report outlines the simulation of the energy losses of three different buildings types in five different cities both with and without tighter building envelopes. In particular, it attempts to explain the effect on air tightness of the envelope by applying an elastomeric coating to the interior surface of a masonry wall building, taping the sheathing joints of frame buildings with a durable adhesive tape material, or changing the exterior wrap material for a frame building from a residential weather/ air infiltration grade to a commercial grade wrap. The authors only examined the effect each of the air barrier systems would have on the air tightness on one component of the building, the opaque wall material. To determine the most cost effective combination of reducing air leakage, it is essential to also compare the effectiveness of sealing other components of the building (e.g. windows, doors, other penetrations and joints). The procedure actually used leads to an over emphasis on the opaque walls, and therefore not necessarily the most cost effective solution.

The second reason is based on the building stock which was used to evaluate the improvements for air leakage. It has been pointed out to the authors that most of the buildings included in the data base were constructed prior to the availability of the latest energy code requirements (including air leakage requirements). But these older buildings and their air leakage rates are being used as the benchmark for improvements using air barrier systems. These older buildings may have air leakage rates that are significantly greater than buildings built to present day code requirements. DOE even recognized this flaw in their evaluation of the NIST study and issued a public statement suggesting that a newer comprehensive study of buildings constructed to present energy codes be performed. DOE reasoned that such a study is necessary to validate the suggested air leakage of buildings in order to determine how much improvement can be expected from more stringent requirements such as mandated air barrier systems. A copy of the public statement issued by DOE at the June 2006 meeting of ASHRAE in Quebec City, Canada is attached for reference.

Based on these reasons PCA feels that DOE and NIST are doing a disservice to the building community by maintaining the NIST study in the public domain with the flaws it contains. This study is being used to wrongfully support changes to energy conversation codes and standards that would impose mandatory air barrier system requirements on building envelopes without adequate technical or economic justification.

Sincerely,



George Barney  
Senior Vice President  
Market Development and Technical Services

Attachment

## DOE Continuous Air-Barrier Statement

The Department has carefully listened to the debate concerning the proposed addition of continuous air barriers requirements to ASHRAE Standard 90.1-2004 (as proposed in addenda z). The NIST report (Emmerich et al) analyzes the added benefits of an air barrier in commercial construction practices. The NIST report is a well written document that has substantial validity and technical merit. However, the NIST report is based on baseline data collected from buildings that cannot be construed to represent "new building stock". While DOE has not seen evidence that newer buildings are better (or worse) than old buildings in terms of air leakage, it is the strong belief of the Department that a baseline data set must be developed which contains buildings built to recent versions of Standard 90.1 in order to achieve consensus on the air barrier requirements. This baseline must then be compared to the provisions of proposed addenda z in order to unequivocally determine both the energy savings and cost justification for adding a continuous air barrier.

DOE will be funding an air barrier research project in the very near future at the Oak Ridge National Laboratory with the intent of proving the importance of continuous air barriers. This project will be under the guidance of Marc LaFrance of DOE. Results from this project should be available in time for inclusion in ASHRAE Standard 90.1-2010. While this data is being gathered and researched, DOE suggests that addenda z go forward through the ASHRAE approval process to be considered as an option to the current air sealing requirements. While the fact that DOE is still looking into continuous air barriers will be used as evidence that addenda z is "not ready", the fact of the matter is that DOE does believe that there are considerable benefits to air sealing and DOE does believe that addenda z is headed in the right direction.