



Building Codes vs. Quality Control Standards

By George E. Wolfson, AIA

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The Building Standards Institute is a non-profit organization established for the purpose of providing consumer education in the field of residential construction. The mission of the Building Standards Institute is to provide timely, unbiased information to the consumer on issues such as building performance standards, code changes, maintenance suggestions and new product information.

www.BuildingStandardsInstitute.org

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Making buildings safe and durable is an ancient goal, pre-dating the first known written codes that appeared over 2700 years ago. For years the knowledge and skills needed were passed on verbally from generation to generation. Modern developments in science and engineering have unalterably changed these early methods. Written codes began to re-appear in the 17th and 18th centuries.

With changes in procedures and materials have come major expansions in written codes and guidelines. In the U.S., the 1859 Baltimore City Code was the first at just a few pages in length. The most recent International Code Council Model Codes exceed 700 pages. Are the latest codes, with their voluminous contents and instructions, sufficient to ensure effective quality control? Professional builders know that they are not; the general public assumes they are. Professional builders develop and improve systems to ensure the delivery of quality products.

In general, the public is mostly unaware of the distance that divides code requirements from effective quality control

objectives. *"The Building Department signed off on my project; why weren't these mistakes caught?"* is a common refrain from distressed owners of new and remodeled homes. The public should be informed about quality assurance in construction, as well as the existence of organizational resources available for support. In addition, it would be appropriate if Building and Planning Departments participated in an educational mission, by publishing handouts that advise individual applicants of the realities of quality control.

"The building code is the lowest common denominator of the way you can build" is a mantra expressed by continuing education instructors, meaning, you can't legally fall below requirements of the code. Adopting effective quality control programs is the best way you can build. Pay attention to both, and a better result will follow.



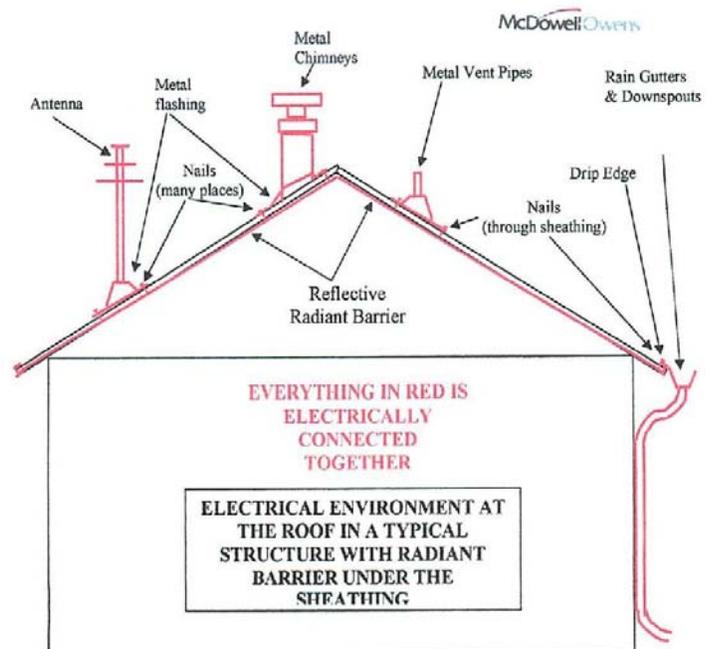
Fire In The Hole? (No, The Attic)

No good deed goes unpunished, and this time it is radiant barriers in attics. While radiant barriers serve a beneficial energy saving purpose by reflecting heat from the attic in the summer and retaining heat in the winter, they can pose a fire hazard in areas of the country that are prone to lightning strikes.

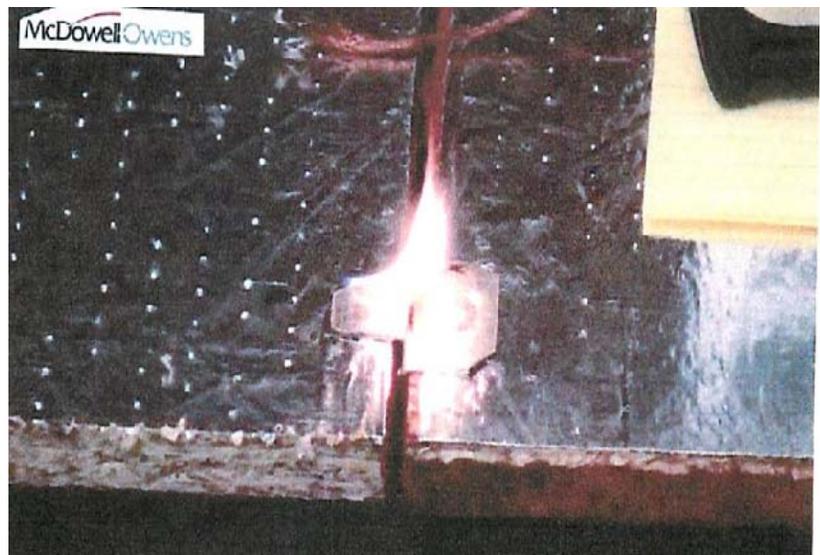
The national forensic engineering firm, McDowell-Owens, performed extensive tests on radiant barriers and concluded “The physical and electrical properties of these materials are such that they introduce new and very serious dangers of ignition and fire.” Aluminum is an excellent conductor of electricity. By placing aluminum-skinned panels on the roof that make contact with other metal housing components such as flues, vents, gutters and downspouts, and satellite antennas, a giant electrical grid is created from eave to gable. The metal clips joining the panels further complete the circuit. Should lightning strike any part of roof components, the entire roof could become energized and catch fire.

While McDowell-Owens performed tests with numerous electrical variables (excluding lightning itself) they found that the aluminum skin readily ignited with current loads found in typical home electrical systems.

Can aluminum skinned radiant barriers be installed in lightning prone areas to eliminate this conductivity/fire problem? Probably not. Even if the roofing components were separated by non-conductive materials and plastic panel clips, lightning is powerful enough to arc between conductive surfaces. The safest bet may be to forego the radiant barrier and opt for a greater insulation package.



Cross Section of Interconnected Grid



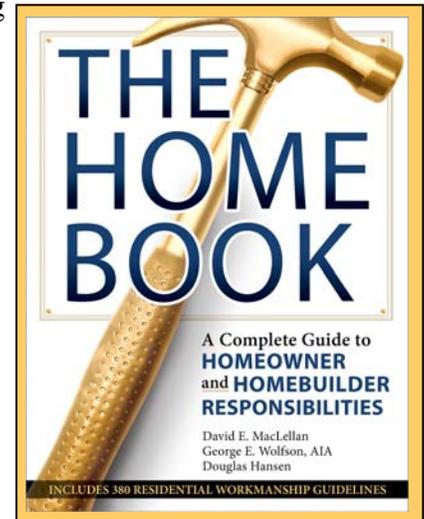
Roof Sheathing Burning at Panel Clip

Just Published! The Home Book

After three years of extensive research into national and regional building standards, a book featuring homeowner and homebuilder responsibilities, home maintenance and green home construction has been published. It is titled *The Home Book*.

The Home Book is written in a format similar to the highly successful California Performance Guidelines Manual, with easy-to-read non-technical explanations and descriptions. The fountain of information put forth in *The Home Book* is applicable in all 50 states and features:

- 380 Residential Workmanship Guidelines
- Important Home Maintenance Items
- Information on Green Home Construction
- 10 Most Common Mistakes That Homeowners Make
- State-by-State Consumer Contact Information



As Mike Cortney, former President of Standard Pacific Homes, an NYSE national homebuilder, says “*Whether you own a home, are thinking about buying a home, or are considering remodeling your present home, this is the book for you.*”

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Featured Director: George E. Wolfson, AIA



George Wolfson is a licensed architect, general building contractor, and real estate broker whose professional career spans more than three decades. Mr. Wolfson holds both bachelor’s and master’s degrees in architecture from the University of Houston and Columbia University respectively. His professional interest area within The American Institute of Architects includes Codes and Practices. As a principal in the consulting firm Building Performance Network, Mr. Wolfson has engaged in over 300 operations including field investigations, destructive testing, providing remedial architectural drawings, and mediating disputes between owners and builders. He is a co-author of the recently published *The Home Book* as well as several other homebuilding industry publications. Contact George at wolf100@sbcglobal.net.



To Photograph or not to Photograph?

The decision or policy to photograph out of compliance conditions (departures from approved plans, code violations, work site hazards, etc.) has been debated for years by inspectors, superintendents, homebuilder management, legal counsel and insurance carriers. The policy to take pictures as part of a routine third party inspection varies from company to company, and even from division to division.

Many builders have said “If you are going to take pictures of something bad, then you should take an equal number of assemblies that are good”. The fallacy of this argument is that in the litigation process, a builder does not get credit for doing something right; he only gets pe-

nalized for doing something wrong. In states that have strict liability laws, as most states now do, if an assembly is not functioning per its intended purpose, and if the cause ties back to original construction (as opposed to the owner’s failure to maintain) the builder is likely to be liable for the repair, regardless of whether the assembly meets code and complies with the plans.

Here are some guidelines to formulate a policy on the use of photographs:

- If the builder, owner or general contractor wants photos taken, take as few as possible;
- By using job walks with the

inspector, superintendent, and key subcontractor foremen, the message of corrective expectations can be conveyed without the use of photographs;

- If deficient assemblies are persistent and not being corrected, and management is not being responsive to order the corrections, photograph the bad work;
- Don’t take photos of correct assemblies, unless the builder wants to create a Power Point presentation for training purposes;

If the project becomes “the job from hell”, consider (with the consent of the inspector’s client) preparing a separate photo journal of significant deficiencies.

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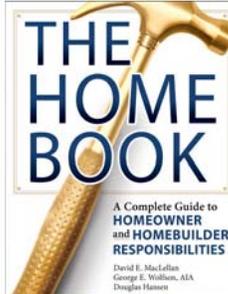
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