PRIEST & ASSOCIATES
CONSULTING, LLC

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FIRESIDE

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FROM OUR VIEW

We are very happy to present this, the first edition of our FIRESIDE Newsletter. We hope you find it useful and informative. Priest & Associates is two years old now, and we have generated this newsletter with the idea of giving a little back to the industry that supports us. As always, we stand ready to receive comments and suggestions of ways we might improve its content. We have included a short Meet Our Staff section on this initial edition, but will stick to industry issues in the future, unless introducing additional staff members.

MEET OUR STAFF


Deg Priest


Javier Trevino


Howard Stacy


Jerry Quayle

There are four of us now, all well-experienced experts in various areas of fire performance of building products, materials and systems. Deg, Javier and Howard are active in North American issues and Jerry is our UK representative, familiar with codes and standards used in Europe, Middle East and Asia. For complete descriptions of each of us, please visit our web page and click on "About Us."

Industry Alerts!

Water Resistive Barriers - According to the 2012 IBC, exterior walls that are Type I, II, III or IV that contain combustible WRB shall be tested to NFPA 285. See discussion in The Code Corner, below.

Photovoltaic Panel Systems – The 2012 IBC and IRC now include specific language requiring rooftop mounted- and building integrated- photovoltaic panel systems to be consistent with the fire classification requirements for roof covering materials. This has presented new challenges to the solar industry, and is discussed further in The Code Corner.

CE Marking soon to become mandatory for building products – See discussion in the Across the Ponds section, below.

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THE CODE CORNER

The ICC ES Evaluation Committee meeting held in Los Angeles in June included hearings on several proposed new and revised acceptance criteria concerning fire testing requirements of building products regulated by ICC codes. Criteria were updated to the 2012 codes, and highlights of approved revisions include the following:

- AC07**,** Special Roofing Systems – requirements were established for interlocking tile products consisting of an expanded polystyrene core and fiberglass scrim encapsulated in a cementiteous coating.

- AC12, Foam Plastic Insulation **-**
  - NFPA 275 was added to the criteria as an acceptable method for evaluation of alternatives to the thermal barrier requirements used over foam plastics.
  - Wording was revised to clarify that application of uncovered foam plastic in unvented crawl spaces is limited to products that have been qualified by testing in accordance with NFPA 286 or UL1715.

- AC14, Prefabricated Wood I-Joists – Specific fire testing requirements were added to Appendix A providing for the establishment of equivalent fire performance to the materials described in Exception 4 to Section R501.3 of the 2012 IRC.

- AC66, Fire-Retardant-Treated Wood – The approved changes included significant changes to the previous version of AC66. Of note is a new requirement for the evaluation of fire-resistance-rated assemblies using FRT lumber and plywood. A proposal to include ASTM E2768-11, "*Standard Test for Extended Duration Surface Burning Characteristics of Building Materials"* as an alternate to ASTM E84 extended for 30-minute duration was rejected due to questions regarding single-sided FR-protected products and the definition of "significant progressive combustion".

ICC Code Development - Proposed changes were heard on the International Building Code in Dallas, TX on April 29th – May 6th. A summary of the actions including descriptions of modifications and the full *Report of the Public Hearings* are posted in the code development section of the ICC website at www.iccsafe.org. Public comments to the hearing actions on the proposed code changes are due August 1. A public comment form can be downloaded at www.iccsafe.org. The Final Action Hearings for the IBC proposed changes will be held October 24th – 28th at the Oregon Convention Center in Portland, OR.

The 2012 IBC, section 1403.5 states that **exterior wall constructions** that are Type I, II, III, IV that contain combustible **Water-Restive Barriers** shall be tested to NFPA 285. This is not a small matter for several reasons:

1) Cost – The NFPA 285 test alone (ignoring materials, shipping, fabrication etc.) is an expensive test – typically over $15,000. It is a 2/3 scale exterior wall fire test. A typical specimen wall measures 14 ft. wide x 18 ft. tall.

2) Large array of construction variables. One cannot simply test a WRB in accordance with NFPA 285 and get certified or listed. The test is a system test and the result is applicable only to the wall detail tested resulting in a design listing or limited use test report. The test will merely prove that in the specific wall detail tested, the WRB did or did not contribute to a failure.

Call us for possible solutions to this issue. It is our understanding that building officials are now watching for compliance more closely. In the past, this code issue was implied but not specific to WRB's. Codes used to state that wall systems containing combustible components shall meet NFPA 285. It was vague what this meant so the industry chose to focus on combustible insulations. It is now clear that some WRB's can cause failures so the code responded with an industry specific requirement.

The requirements of the 2012 IBC 1509.7.2 state that the fire classification of **Photovoltaic** systems (which include the PV module and its mounting system) must match the fire classification of the roof assembly over which they are mounted. Presently there is no fire classification consensus standard for systems that include the PV array and the roof assembly. To address this issue an ANSI/UL 1703 Standards Technical Panel (STP) working group is at work developing a new test methodology.

Contact us for more details on this issue, as well as for updates on the status of proposed code revisions going forward to the ICC Final Action Hearings in October.

THE STANDARDS BOX

NFPA 285 Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components: Several drawings in NFPA 285-12 contain errors. One such error is the placement of thermocouple #2. The older version is correct. The 2012 version is incorrect. The chairman of the NFPA Fire Standards committee – Bill Fitch, has been alerted to this and agrees that it is incorrect and is initiating ballots to remedy the problem. Thanks to Matt Freeborn of ATI for discovering this and alerting NFPA.

ISO Fire Standards Update

The ISO TC92/Subcommittee 2 (on Fire Containment) working groups are developing new fire tests on:

- Above Ground Liquified Gas Fuel Tanks: This standard will utilize the newly developed Jet Fire Test
- Lift Landing (Elevator) Doors: This is a joint working group with the ISO Technical Committee on elevators to develop a fire test for elevator doors unique from that of normal fire rated door assemblies.
- Tests of bulkhead specimens less than 3m x 3m: This test will measure the fire resistance of bulkhead assemblies used in light, high speed watercraft.
- Fire resistance tests of protective coatings for structural steel. This standard will be part of the ISO 834 series and will be in two parts: test methods; and, analysis of results.
- ISO 22899 *Determination of the fire resistance to jet fires of passive fire protection – Part 2: Classification and implementation methods* has been accepted by ballot and will soon be published.

ACROSS THE PONDS

EUROPE/MIDDLE EAST/ASIA (EMEA)

What does the CPR mean to you?

*Much has been written regarding the **Construction Products Directive (CPD)** and the new Construction Products Regulation (CPR). Below are our views of the rules and regulations governing the supply of building components into the European Economic Area.*

For several years exports to the European Union have been required to carry the CE Mark. This all started with toys years ago and during the last 30 years has included construction products – especially fire resistant and fire reactive products and systems. This series of EU Directives has always been aimed at safety in use. For construction products this has been extended to include performance measurements and statements regarding fitness for purpose.

So what is this CE Mark all about and how does it affect you?

The initial legislation was the Construction Product Directive (CPD) which came into effect in 1991 with limited affect. Limited because few product stand-

ards had been developed and therefore it had little impact on manufacturers of fire and life safety products. Gradually, the coverage of the CPD has increased with the issuance of Product Standards (Euro Norms – EN standards which are harmonized test and assessment standards for specific product types; e.g. EN 1935 –Door hinges, EN 1154 – door closers & EN 12209 – Mortise locksets). The CPD now covers over 476 product standards and is expected to exceed 600 in the next 12 - 24 months.

The CPD has had an equalization effect on the supply of a range of construction products into the EU Member States. As of July 1st , 2013 the effect will be become mandatory under the CPR (Construction Products Regulation) and what's more, the Regulation will have teeth with all member states appointing 'Police Forces' to patrol the sector looking for fraud, misuse and other breaches of the Regulation, as the CPR is EU law adopted by all states. This is termed Market Surveillance and the policing units will be termed Enforcement Authorities (or EA's). Their power will include prohibiting the supply/manufacture, restricting the use of the products or withdrawal of products completely in cases of breaches or non-compliances with the requirements of the CPR and the harmonized product standards.

In addition to performance characteristics, the revised procedures will, for the first time, look at the issue of Sustainability. The CPR will request the publication by each manufacturer of information about durability, how recyclable and environmentally friendly the item and materials used in the product are and we believe that these states will become the subject of legal consideration within the next five years, so claims must be accurate.

New rules on 'passing the buck' also come into force by making distributors liable for the claims of manufacturers. Simply passing forward the claims of manufacturers is no longer sufficient and the agents and distributors will need to be able to show due diligence has been undertaken prior to placing the products on the market.

HOW IT WORKS – The Cone Calorimeter

The cone calorimeter is based on the fact that materials that contain carbon release the same amount of heat per unit amount of oxygen consumed when they burn. So the cone calorimeter is designed to measure the amount of oxygen consumed (which is why the technique is often called Oxygen Consumption Calorimetry) as the material burns under a very specific and well-known set of conditions. Our expert in this method, Javier Trevino, has written a white paper on the subject, which explains how the device functions. To have a copy of this paper sent to you, click on Calorimetry@priestassociates.com.