Attic and Crawlspace Task Force
Fire Test Protocol Update

Mac Sheldon
Demilec (USA) LLC
Unvented attics have been used successfully for hundreds of years.
Stack Effect causes warmer air to rise and if there are air leaks in the ceiling the warm moist air from the house can condense on the roofdeck.
Air Leaks Through Air Permeable Insulation Are Inevitable
Unvented Attics Work

- R-30 Fiberglass Batts
- R-20 Sealection™ 500 Spray Foam
In 1986, when we first considered changing our building method, we were told that we’d surely melt the shingles right off the roof.
Measurement of Attic Temperatures and Cooling Energy Use
In Vented and Sealed Attics In Las Vegas, Nevada

Armin F. Rudd, Joseph W. Lstiburek and Neil A. Moyer
Roof Service Temperatures were well under the manufacturers’ required 180 °F (82.2 °C)
TO: PROONENTS OF EVALUATION REPORTS ON FOAM PLASTIC INSULATION, TESTING LABORATORIES AND OTHER INTERESTED PARTIES

SUBJECT: Recognition of Use of Foam Plastic Insulation in Attics and Crawl Spaces, Subject MISC1-R2-0300 (MBRKR) (Previously MISC2-0299)

Dear Madam or Sir:

The purpose of this letter is to inform interested parties regarding requirements for ICBO ES evaluation reports on foam plastic insulation when the insulation is installed on the interior or exterior face of exterior walls of attics and crawl spaces without a thermal barrier or without one of the covering materials specified in Exception 4 of Section 2602.4 of the 1997 Uniform Building Code™ (UBC).

At the July 9, 1999, hearing, the Evaluation Committee agreed with the proposal to permit recognition, in ICBO ES evaluation reports, of foam plastic insulation without an interior covering on exterior walls of attics and crawl spaces under Section 6.7.5 of the ICBO ES Acceptance Criteria for Foam Plastic Insulation (AC12), based on successful completion of one of the following three tests:

1. Comparative crawl space tests where the performance of the foam plastic is compared with that of 3/4-inch thick kraft-faced fiberglass batt insulation. The time to flash over and the time to burn through the wood-framed floor/ceiling must be less for the foam plastic assembly than for the assembly with fiberglass insulations.

2. Tests conducted in accordance with UBC Standard 26-3. The tests must be conducted with the foam plastic installed over the gypsum wallboard or glass reinforced cement board as described in the standard.

3. Comparative room corner fire test conducted in accordance with the test procedures of UBC Standard 26-3. The control test assembly shall consist of 3/4-inch thick interior CDX grade plywood applied to the interior face of wood framing (plywood is permitted by Section 2602.4, Exception 4, of the code as a
Perhaps Hundreds of Thousands of Unvented Attics Have Been Successfully Sprayed With Foam
ICC-ES admonished our industry to find a solution or they would change the protocol themselves.
PIMA and XPSA (Board Stock Industry associations) proposed a fire test protocol for AC-12 and imposed it on AC-377.
SPFA Attic & Crawlspace Task Force

- Codes Committee
- Building Envelope Committee
- Technical Committee
- Attic and Crawlspace Task Force
“Base Camp” website

Project overview & activity

This is the member-only home of the SPFA Attic & Crawlspace Fire Test Protocol TF effort to review, prepare and develop materials associated with the project. Various documents for review and messages can be posted here (using the relevant tabs just above this message). It is intended to provide one central location for communications and documents, and to alleviate the challenge of managing comments and docs by email.

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Do not provide anyone with your username or password. All antitrust provisions covered in the SPFA Meeting Guidelines are also in effect for this forum. Do not post any information that is considered sensitive, proprietary or in any way violates antitrust laws. If you have a question related to appropriateness of material, or observe any questionable material or comments, please direct inquiries to Kurt Riesenber – kurt@sprayfoam.org.

TUESDAY, 22 DECEMBER 2008

Test Data Summary.xlsx

Uploaded by Richard D.

Re: Updated Data Sheet

Posted by Richard D.

SUNDAY, 20 DECEMBER 2008

MD density foam

 Posted by Mary B.
Proposed Test Protocol

- Based on NFPA 286
- Pass/Fail threshold of flashover at ?? minutes and seconds
  - To be determined by the comparison to one of the prescribed ignition barriers in the current code.
- No restriction to any type or thickness of foam or coating
- Far more affordable for future testing of new products than a comparative test for every desired foam, thickness and coating
Standard NFPA-286 Test Module
8’ Wide X 8’ High X 12’ Deep
2 X 12 Ceiling Framing - 2’ Centers
2 X 8 Wall Framing – 2’ Centers
Standard 2’-6” X 6’-8” Door Opening
Spraying Medium Density Foam
Beautiful Job!
Heat Flux Mapping

Graph showing temperature (°F) vs. distance from burner (in), with different heat flux levels and materials.
Standard Burner (Ignition Source) and ¼” Plywood Covering Spray Foam
Burner in the Medium Density Foam Chamber
Flame On!
### Task Schedule

<table>
<thead>
<tr>
<th>ID</th>
<th>Task Name</th>
<th>Start</th>
<th>Finish</th>
<th>Duration</th>
<th>Resource Names</th>
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### On Budget.... Mostly

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<td><strong>TOTAL PROJECT INCOME</strong></td>
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<< Estimates for Consultant are conservatively high
<< Can increase to $162k if all 14 Tier 1 and all 4 Tier 2 sponsors
The Team

SPFA
Richard Duncan
Kurt Riesenberb
Lisa Smith

Aldo Products
Bob Brenk
Chuck Johnson

American Coatings
Frank Hughes

BASF
Eric Banks
Bruce Schenke

Bayer MS / BaySystems
Michael Blaszkiewicz
Derek Lambert

BioBased Insulation
Chris Porter

Certainteed
CertaSpray
Tom Ponder
Kevin Gallagher
Mark Harner

Corbond Corp.
Neal Ganser

Deer Ridge Consulting
Roger Morrison

Demilec USA, LLC
Mac Shelden
Charles Waggoner
Dave Lall

Dow
Joann Surma
Steve Crain

Flame Control Coatings
Joe Scaries
Bob Zielinski

Gaco Western
Tom Sojak
Peter Davis

Honeywell
Mary Bogdan
Xuaco Pascual

Houlden Contracting
Brad Houlden

Hughes Associates
(NON-Member) - Consultant
Jesse Beitel

Huntsman
Monica N. Karamagi
Josh Ackerman
Tony Abisaleh

ICynene
Paul Warren
Gabe Farkas

IRC Roofing
Sean Stumler (SPFA Board President)

LaPolla
Steve Williams
Doug Kramer

NCFI
Jason Hoelter
Don Schumacher
Steve Loftis

Preferred Solutions
John Stahl

Resin Tech / Henry Co.
Will Lorenz

Seward Sales
Ken Schmidt
What’s Next?

- **February 19, 2009**
  - Criteria proposals must be forwarded to staff
- **March 26, 2009**
  - Staff must have the criteria draft prepared for internal review
- **April 29, 2009**
  - Staff mails notice of committee meeting to public
- **April 30, 2009**
  - Staff posts criteria on web site for public review
- **May 19, 2009**
  - Public comments due to ICC-ES
- **May 29, 2009**
  - Staff posts memos to Evaluation Committee on web site
The Final ICC-ES Committee Hearing

- June 3 – 5, 2009
  DoubleTree Hotel, Birmingham, Alabama
Hot News!!!
Yesterday’s Fire Tests.....
January 12th SWRI
Phase III
Fire Testing
SOUTHWEST RESEARCH INSTITUTE

12 JAN 2009
SPFA
LOW DENSITY SPF INSULATION
WITH 1/4-INCH PLYWOOD

Module AAA
SOUTHWEST RESEARCH INSTITUTE
12 JAN 2009
SPFA
LOW DENSITY SPF INSULATION
WITH 1/4-" INCH PLYWOOD
Module AAA
SOUTHWEST RESEARCH INSTITUTE
12 JANUARY 2009
SPFA
HIGH DENSITY SPF INSULATION
WITH 1/4 INCH PLYWOOD