

**AUGUST
2003**

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Thought For Today:
You can't solve a problem with the same mind that created it

NEWS

President's Message



By Bill Lippy, Fi-Foil Company

Congratulations RIMA – the Silver Anniversary! 25 years is a great milestone. The membership is growing nationally and internationally because the technology's acceptance is growing. That says more than we could ever advertise or say in a column. Through the internet the general public, architects, specifiers,

and the building community have become more aware and educated about the benefits of reflective insulation and radiant barriers. This organization has been shaped by many dedicated members and is certainly a reflection (no pun intended) of all the years of hard work. Our committees have done a great job this year, especially the chairs Alisa Hoffee, Bob Wadsworth, and Ron Rado. They have put in a lot of time in between and at the meeting to make RIMA a better organization. Take a moment to thank them and the other committee members who contributed to the many accomplishments.

On top of this, our Executive Director Mary Edmondson continues to mold our organization to a higher plateau. We have grown leaps and bounds because of her guidance and organization.

As I come to the end of my term as the RIMA president I see an industry growing and carving out more niches in the marketplace. I also see the RIMA organization progressing including some key building blocks for future prosperity. This is my last column as RIMA President and I want to say thank you to the many members who have supported the ideas for the organization's growth. I hope that in some way the organization and the marketplace has seen some fruit from the effort. Thank you to all for your guidance, dedication, hard work and support. It has been an honor being the RIMA President. I am looking forward to seeing all of you at the meeting in Tampa!

Special Thanks

With all the work that RIMA has been doing on behalf of the industry this year, we've run into some occasions where we've had to reach out to our members to contribute to special assessments. We would like to take this opportunity to not only recognize those companies but thank them for making the additional research and representation possible not only to help grow the industry but to benefit and protect each and every member company.

- Astro-Foil/Innovative Energy
- Covertech
- Engineering Svcs. & Prods. Co.
- ESP/Low-E
- Fi-Foil Company
- Ideal Tape
- Insulation Solutions
- Pactiv Building Products
- Poly-Tech Radiant
- Reflectix, Inc.
- TVM Building Products

There's still time to get involved so contact RIMA for details. Thank you!

Tampa Hosts 25th Anniversary Meet-

RIMA will be celebrating their 25th anniversary of incorporation at their fall meeting being held at the Tampa Marriott Waterside, October 18-19, 2003, in Tampa, Florida. The meeting is also being held in conjunction with the ASTM C16 Committee meetings beginning directly thereafter.

Some special events are being coordinated at this time including golfing, a possible group fishing charter and a group dinner on Saturday evening where retiring board members will be recognized and many memories will be exchanged. Members are invited to bring spouses along to this meeting and have them join in the fun.

Because of the added events, the Saturday committee meetings have been moved to the morning begin-

ning at 8 a.m. All committees will meet concurrently at that time with the various extracurricular activities taking place Saturday afternoon and evening.

The full membership meeting for Sunday the 19th will remain the same beginning at 8 a.m. (breakfast opens at 7:30). Agendas for these meetings are being finalized at this time and will be forwarded to attendees shortly. If you have not yet RSVP'd to attend these meetings and events, please do so promptly as all meeting details will soon be finalized. Guests interested in learning more about RIMA are welcome to attend and should contact the RIMA office at 800/279-4123 for attendance information.

ASTM has blocked rooms until September 18th with a \$135 single/

\$155 double room rate. You can make your reservation by calling the hotel direct at 813/221-4900.

Since RIMA only meets twice a year—and since we will be celebrating RIMA's silver anniversary—it is of vital importance that all members participate in these meetings. Many important decisions are made regarding the direction of this association—decisions which affect your business. We have a very full agenda for this October event including an election of new officers to the board and the budget for 2004, so make your travel plans now and we'll look forward to seeing you there.



Industry News

Requirements for Selling Product in California

If your product is sold in the state of California, you are required to be licensed as an Insulation Manufacturer with the Bureau of Home Furnishings & Thermal Insulation. The cost of the license is \$2,000 annually. You may also be listed in the Directory of Certified Insulation Material at an additional \$50 per product fee. You can get more information on this issue by contacting Marlene Deputy at the Bureau at 916/574-2041.

Ron Blank & Associates Wins AIA/CES 2003 Award for Excellence

The AIA/CES 2003 Award for Excellence honors Continuing Education System providers and recognizes their commitment to an overall system of quality continuing education programming. Strong continuing-education programs add to the bottom line as firm culture and skills from basic to advanced are shared and institutionally saved. We are pleased to announce Ron Blank & Associates as the stakeholder winner for this year.

New RIMA Membership Perk Available

We've already announced it, but just in case you missed it or have already forgotten, we thought we'd remind you of the new membership perk recently secured with ICC Business Products. The company provides a wide variety of office supplies and promotional apparel; and RIMA members can now save a whopping 40% off the regular purchase price. This is a great savings that we hope you will take full advantage of. Whether you need copier paper, toner, embroidered or silk-screened items, awards, etc., ICC has it all through their 37 warehouses throughout the US. Their commitment to product quality, service and pricing is incomparable so be sure to provide this information to your office supply and premium product coordinator(s) and allow your RIMA membership to work for you.

Committee Reports

Technical Committee

The first draft of the Technical Bulletin for "Reflective Insulations Used in Duct Applications" was discussed at the April 2003 Meeting. A detailed search of published information on duct applications has been conducted and an extensive review is underway so that applicable information can be referenced in the new Technical Bulletin. In addition, drawings are being developed for inclusion in the Technical Bulletin. The Technical Committee is expected to hold conference calls to review the next draft prior to the October 2003 Meeting.

On July 15, 2003 the Federal Trade Commission published a notice of proposed rulemaking which contains amendments to the Trade Regulation Rule concerning "Labeling and Advertising of Home Insulation" (Federal Register 16 CFR, Part 460). The proposed rule provides an overview of the present labeling and advertising requirements and summarizes feedback on the "R-value Rule" resulting from the FTC's 1999 request for comments. One of the proposed amendments relates to the testing requirements for reflective insulations and radiant barriers. In the past, testing of reflective insulations was required to be in accordance with ASTM C 236 or ASTM C 976. The FTC is proposing an amendment to require testing of both reflective insulations and radiant barriers (not previously regulated) in accordance with ASTM C 1363-97, which contains test methodology taken from both ASTM C 236 and C 976 (discontinued by ASTM). In September 2003, the International Code Council will hold hearings on proposed code changes to the 2003 International Codes. Two particular code change proposals to the International Mechanical Code relate to testing of duct materials (M63 and M74) describe new requirements for mounting of duct materials when testing in accordance with ASTM E 84 (Surface Burning of Materials). Anyone interested in commenting on the proposed code changes should plan on attending the September Hearings in Nashville, TN. The International Mechanical Code proposed changes will be addressed on September 5 beginning at 8:00 AM.

The ASTM C 16 Committee Meetings will be held on October 18 - 22, in Tampa, FL. RIMA members are encouraged to participate in the standards development activities.

Membership Committee

The committee recently held a conference call where it was reported that there are currently four new member prospects -- two that have indicated they will join by the October meeting and two others that indicated they will attend the meeting to evaluate for their companies. Committee members agree that the best member growth potential lies with the distributor category, but there is reluctance on the part of active members to sponsor their customers.

One of the ways identified for increasing membership was to establish some member perks that would further enhance the current member benefits offered. RIMA recently announced a relationship with ICC Business Product (as identified in the "New RIMA Membership Perk Available" article above). Another perk is in the works with a firm that would be interested in developing a freight savings program for members. This firm is currently working with a number of large companies and have been able to save them substantial dollars. The first step is to provide them with a survey of individual RIMA members' freight patterns and costs. The committee will be provided the RIMA office with a questionnaire shortly to distribute to each RIMA member. Members are to fill it out and send it directly to the firm who will maintain complete confidentiality of the information provided. **The firm is confident they can save every member -- large or small -- on their freight costs, so this is an exciting new benefit we hope to make available soon. *To help speed the process along, be sure to complete and return your questionnaire forms promptly!***

PR Committee

With the Metalcon Show quickly approaching, a lot of focus has been given to this issue. RIMA will be hosting one of the putt-putt golf holes in the booth driving traffic to the booth as well as providing some excellent pre-show promotion. A press release was also recently distributed on the RIMA workshop also noting the booth. Invitations to the workshop will be prepared and handed out to booth visitors. TVM is working on booth signage and Polyair will be loaning us their 10 x 10 booth to use at the show. We are also working to get a copy of the RIMA website on disk to hand out at the show along with the handbook and tri-fold brochure. New this year is the opportunity to submit printed materials to ExpoDisk who will make these documents available for Metalcon attendees to select and burn their own custom disks at the show. This is designed to help limit the amount of literature people have to cart home from the show as well as the amount of waste by exhibitors who bring too much literature to an event then toss it at the close.

Steel Framing the Thermal

By David W. Yarbrough, PhD, PE
President, R & D Services, Inc.



The use of steel framing for residential and commercial buildings presents a challenge to the insulation community because of the high thermal conductivity of steel in comparison with wood. Wood studs and steel studs both act as "thermal bridges" in a wall, floor, or roof structure. Steel studs have a much smaller area for heat transfer than typical wood studs but this size advantage is overwhelmed by steel's thermal conductivity of 324 Btu-in./sq.ft-h-°F. The thermal conductivity of wood is about 1 Btu-in./sq.ft-h-°F. The product of the thermal conductivity (k) and the area for heat flow (A) is an important parameter for determining heat flow. The following values for k times A are offered as an example.

Quantity	Wood	Steel	
k	1.0	324	Btu-in./ft ² -h-°F
A	0.125	0.003583	ft.
kA	0.125	1.1609	Btu/h-(°F/in.)

The heat flow path through the steel will have 9.3 times the heat flow through the wood for the same temperature difference.

The significance of this difference in kA between the two materials can be illustrated using composite R values for a 3.625 in. wall with R 11 cavity insulation, 0.5 inch gypsum on the interior, and 0.5 inch plywood as exterior sheathing. The value for the wood framing on 24 in. centers was calculated using data from the ASHRAE Handbook of Fundamentals while the value for the steel-studded wall was measured using a calibrated hot box (ASTM C 976).

Wood Wall	Steel Wall
10.95	7.40 (ft ² -h-°F/Btu)

There are several approaches for determining the insulation that must be added to a steel-frame structure to break the thermal bridge and achieve acceptable composite wall R values. The following numbers are based on the NAHB Research Center R Value Chart for steel framed walls. The wall has steel framing on 24-in. centers with mass insulation in the cavity and 0.5 inch gypsum interior.

R Cavity Insulation	R Sheathing	R Composite Wall
11	1	6.8
11	2.5	10
11	5	13
13	1	7.2
13	2.5	10.3
13	5	13.8

The data that are available for evaluating steel frame walls has not been extended to include reflective insulations. In the case of reflective insulations, the radiative transfer between the warm and cold surfaces and the exposed sides of the steel framing must be taken into account. The magnitude of this effect for wood framing is illustrated below. The cavity R values labeled "1-D" are for heat transfer between infinite parallel planes (no correction for framing) while the R values labeled "2-D" are corrected for nominal 2x4 wood framing on 24 inch

centers. The heat flow is horizontal with "delta-T" equal to 30 °F and "T mean" equal to 75 °F.

Thickness (in.)	R (1-D)	R (2-D)
0.75	2.86	2.73
1.00	2.84	2.67
1.25	2.74	2.54
1.50	2.68	2.44
2.00	2.63	2.33
3.00	2.64	2.22

The correction to the cavity R value for the increased heat flow in the framing increases from about 5% for the 0.75 in. cavity to about 19% for the 3 inch cavity.

What does this have to do with reflective insulations?

The "kA" for wood in the above discussion is 0.125. The "kA" increases by a factor of about 9 when the framing is changed to steel (1.1609/0.1250 = 9.29). We are faced with the following situation. An "open" reflective system results in radiative transfer directly to the sides of a highly conductive material in the case of steel framing. Correction factors have not been developed for steel framing, but logic suggests that they will be larger than the factors for wood. The opening discussion about steel framing illustrates the magnitude of the effect for mass insulations. This discussion applies to commercial buildings with heat flow down as well as heat flow across vertical walls.

Can the problem be solved?

More than likely you have figured out what to do about 20 lines up. Design a product that has a reflective barrier along the sides of the cavity that doesn't directly connect the hot and cold sides. (We don't want to build another thermal bridge.) You will also observe that the 2-D penalty is much smaller for narrow air gaps. Two 1.5 inch reflective air spaces will significantly out-perform one 3 inch air gap including less reduction in R because of the 2-D effect.

The down side of this discussion is that R value measurements for wood-frame structures are not directly applicable to steel-frame structures.

References

1. Thermal Design Guide for Exterior Walls, RG-9405, The American Iron and Steel Institute.
2. ASHRAE Handbook of Fundamentals.
3. Leon R. Glicksman, "Two-Dimensional Heat Transfer Effects on Vacuum and Reflective Insulations", J. of Thermal Insulation 14 281-294 (1991).
4. A.O. Desjarlais and David W. Yarbrough, "Prediction of the Thermal Performance of Single and Multi-air-space Reflective Insulation Material, ASTM STP 1116 (1991) pp. 24-43, Edited by R.S. Graves and D.C. Wysocki.

Committee Reports Continued . . .

We recently changed website hosts and are working to add a 'Join RIMA' section to the site, which should be up and running by the time you read this update. The committee has also contacted *Construction Specifier* magazine regarding submitting an article for their December issue which focuses on insulation. Lisa Coverdale of Reflectix has kindly volunteered to develop this article on RIMA's behalf and may be contacting some of the members who have volunteered to be interviewed to help develop this article. She is also asking member's for topic ideas so if you have any suggestions that will help Lisa, you can contact her at 800/879-3645 or via e-mail at lisa.coverdale@reflectixinc.com. We do have to submit an outline for the article immediately for consideration so your prompt assistance is appreciated. We also approached the *Journal of Light Construction* regarding providing them with an article for their December issue which focuses on energy efficiency; however, they do not accept articles but rather develop them in-house. We have given them names of volunteers to contact for an interview if they do elect to prepare an article on our industry. We will continue to stay on top of this in hopes they will choose to use us for an article. An article was also submitted to *MetalMag* for their October Metalcon issue.

The industry statistical survey has been finalized for this year and copies of the survey results will be distributed at the fall RIMA meeting. There is work yet to be done developing our contact list so that we can provide an accurate picture of the market. This is a task the PR Committee will be addressing in the months ahead.

RIMA Board Of Direc-

Executive Committee:

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Bill Lippy
Fi-Foil Company

Vice-President

Monty Millspaugh
Reflectix, Inc.

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Bob Wadsworth
Astro-Foil/Innovative Energy

Directors:

Jack Lubker
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Tom Miller
ESP/Low-E

Michael Boulding
TVM Building Products

Code Update

Ron Graves attended the International Code Council Evaluation Service (ICC-ES) meeting on Thursday, June 26, 2003 in Chicago, IL. Since the three regional codes combined to form the ICC, there has also been an effort to organize the evaluation services for the ICC. ICBO-ES and ICC-ES both met in June and both committees will meet again in October 2003 in Birmingham, AL. The acceptance criteria developed by ICBO-ES over the years are temporary AC for ICC-ES while ICC-ES works through the criteria and approves each one for use by ICC-ES. Six criteria were discussed during the June 26 committee meeting.

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|---------|----------------------------------|--------------------------|
| - AC10 | Quality Control Manuals | Approved (June 26 date). |
| - AC85 | Test Reports | Approved (June 26 date). |
| - AC202 | Wood Based Studs | Hold for further study. |
| - AC75 | Membrane Roof Covering Systems | Hold for further study. |
| - AC214 | Sandwich Panels with Metal Skins | Approved (June 26 date). |
| -AC219 | EIFS Systems | Hold for further study. |

Since AC10, AC85 and AC214 were approved these criteria can now be used to evaluate for ICBO and ICC codes. A session was held after the regular meeting to discuss the evolving ICC-ES committee and answer questions from the participants.

The acceptance criteria for reflective insulation, AC02, can presently be used for evaluation of products to the Uniform Building Code but it is not approved for evaluation to the International Building Codes. AC02 will follow the same path as other acceptance criteria and will need approval from ICC-ES in a future meeting.

The proposed changes to the ICC codes are many and Ron Graves is currently reviewing all these changes. The code hearing will be held on September 5-14, 2003 in Nashville, TN. He plans to attend the code hearings on days when items of interest will be discussed.

Committe es

Technical

Alisa Hoffee
Monty Millspaugh
Tom Miller
Michael Boulding
Gary Agansky
Ron Graves
Dave Yarbrough
Wes Hall
Don Meyer
Larry Zupon
Kelly Myers

Nominations

Monty Millspaugh
Bob Wadsworth
Dan Russell

Public Relations

Ron Rado
Greg Brooker
John Starr
Jim Taylor
Jack Lubker
Bill Lippy
Bob Wadsworth
Lisa Coverdale
Mike Scardina

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Jim Taylor
Dan Russell