

# roofing spec

\$2.00

National Roofing Contractors Association

November 1982



## The Roofing Spec Index 1968-1982

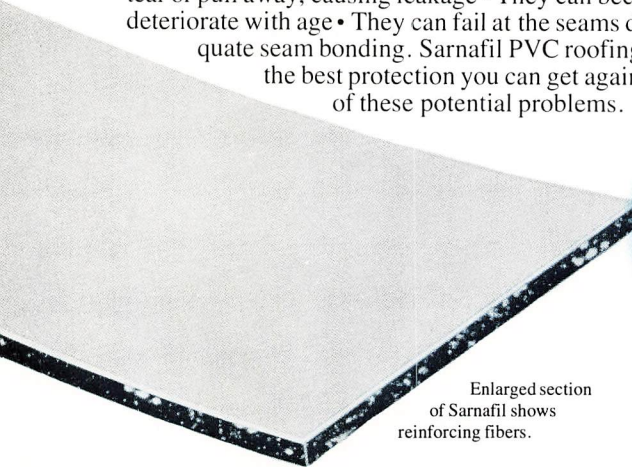
# Sarnafil® Single-Ply Roofing

## NO SHRINKAGE NO EMBRITTLEMENT

# NO PROBLEMS

Outside of accidental damage and improper design or installation, there are only about three things that can happen to single-ply roofing membranes • They can shrink and as a result tear or pull away, causing leakage • They can become brittle or deteriorate with age • They can fail at the seams due to inadequate seam bonding. Sarnafil PVC roofing membrane is the best protection you can get against any of these potential problems.

**It Won't Get Brittle or Deteriorate with Age.** The only way any manufacturer can make this claim is to have actual installations in place for many years in all climatic conditions. Sarnafil PVC membranes retain their plasticizer even after years of service. Samples taken from early installations retain their original pliability, and can be folded or even creased without surface cracking. The excellent aging properties of Sarnafil membranes allow the fusion of new material to membranes that have been in service for many years.



Enlarged section of Sarnafil shows reinforcing fibers.



Unretouched photo of 14 year old Sarnafil.

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**Its Seams Don't Depend on Adhesives, Chemicals or Sealants.** Hot-air-welding fuses overlapping sheets of Sarnafil into a continuous leakproof roof. There are no adhesive or chemically bonded seams to fail, and no additional costs for chemical or adhesive seam bonding materials. Manufacturers of other roofing membranes recommend hot-air-welding as a means of correcting gaps in adhesive and solvent-welded seams. Sarnafil gets it right the first time!

Get complete details on Sarnafil Single-Ply Roofing. Circle the readers service number or write today for our illustrated brochure. **Sarnafil (U.S.) Inc., Canton Commerce Center, P.O. Box 380, Canton, MA 02021**

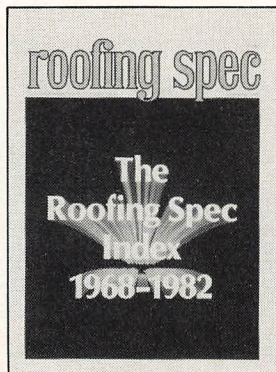


**Sarnafil® Reinforced Membranes**  
*"Living up to the promise of single-ply roofing"*

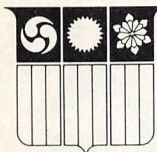


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Happy Birthday to us!  
Thirteen years young and  
a wealth of stories to tell.



## NATIONAL ROOFING CONTRACTORS ASSOCIATION

8600 Bryn Mawr Avenue  
Chicago, Illinois 60631  
(312) 693-0700

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Second-class postage paid at Chicago, Ill., with additional entry filed in New Richmond, Wis. Annual subscription rate for NRCA members is \$15, included in Annual Membership Dues. Additional Subscriptions for member firms are \$10 annually. Non-member subscriptions are \$15 per year.

POSTMASTER: Send address changes to THE ROOFING SPEC, 8600 Bryn Mawr Ave., Chicago, Ill. 60631. (USPS 942-900)

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# Comment

## Bold New Steps

During the Spanish Civil War, the following communique was issued: "The advance was continued all day without any ground being lost."

We suspect that a lot of NRCA members could include a similar message in the forewords to their 1982 annual reports. And indeed, for the entire roofing industry, 1982 has been a year of constant speculation, evaluation and tribulation. A brighter 1983 is at last on the horizon, but its rewards are, apparently, several months away.

It is therefore tempting for NRCA to follow the paths taken by other industry associations: cut budgets, cut programs, cut services, stick out the recession and then rebuild. Your NRCA leaders, we're happy to report, have taken the other approach: Develop new aggressive and exciting programs and services to ensure that NRCA members view their association as a business necessity.

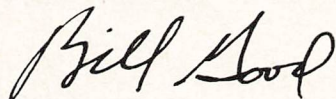
Two of those programs were recently adopted by your Executive Committee, following conceptual approval of your Board of Directors, and they are worthy of your attention.

The first is a program that will recognize roofing contracting firms that have made an ongoing commitment to continuing education. The program will become known as the NRCA Accredited Roofing Contractor program, and it will be formally launched at the San Antonio convention. It is a giant leap for education in our industry, and it will demand that new educational programs and materials be developed and brought to the field. It will lend credibility to our industry by letting the rest of the building community know that we are serious about putting our own house in order. And it comes at a time when the need for education has never been greater.

The second program is similarly timely. NRCA will begin, in early 1983, to publish a reference guide of all roofing membrane manufacturers and their products. The guide will be published three times a year, and will be made available to contractors, owners, designers, manufacturers and others on a subscription basis.

Product listings will include test results, supplied by the manufacturer and randomly verified by NRCA. Those results will be shown in relation to the best state-of-the-art industry consensus standards: NBS's Preliminary Performance Criteria for built-up roofing; the Canadian General Standards Board consensus standards for PVC, modified bitumen and elastomeric sheet materials. For the first time ever, buyers of roofing materials will have factual documentation and comparisons in a single source, to help them make intelligent decisions.

To say that these programs are overdue is to understate their importance. In its own way, each will have an enormous impact on the way we do business. These are bold new steps, and they come at a time when bold new steps are surely needed.



## PROTECT and UTILIZE! Roofs and Roof Decks...

Now can be so well protected they can even be utilized as service or recreational areas. Thanks to new

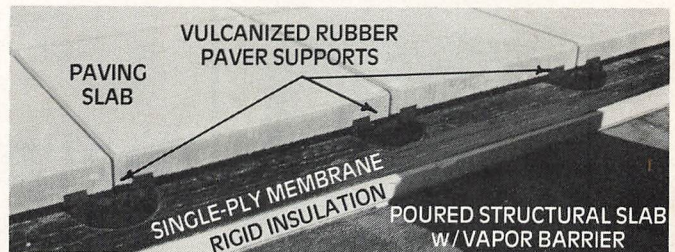
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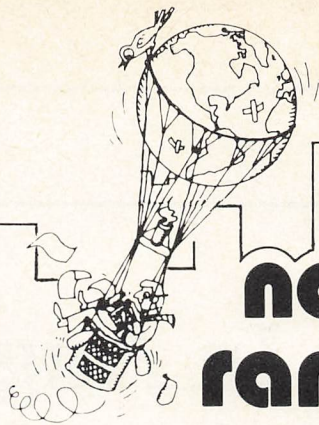
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# Ideas, notes and random thoughts

**Again, *Roofing Spec*** offers its readers another valuable resource — the *Roofing Spec* Index. As with the NRCA Single-Ply Listing (June) and the *Roofing Spec*/Solar Age Rooftop Solar Equipment Index, this latest service should prove to be a valuable reference tool for all roofing professionals. NRCA has a limited quantity of back issues from the past two years, and can provide all interested parties with reprints of any article listed in the Index upon request. A slight fee will be charged to cover the cost of printing and handling.

m.b.

**Another brief reminder** is due regarding the rapidly approaching NRCA Roofing Systems Conferences scheduled for December. The conference sites and dates include New Orleans, Dec. 2, and Dallas, Dec. 9. NRCA Director of Education Alan Grayson said the conferences this year will again stress critical design and performance considerations for industrial and commercial roofing. The conferences are intense, all-day learning experiences ideal for architects, engineers, specification writers, general contractors, building owners and roofing contractors. For more information contact NRCA immediately at 312/693-0700.

**NRCA offers more** in the way of educational opportunities. Roofing contractors can increase company profits by increasing the roofing knowledge of key field employees. This is easily accomplished by having your firm represented at the 25th Annual NRCA Foreman and Superintendent's Conference. The

focus of this year's program is "Organizing For Productivity," to be conducted in Chicago, Jan. 7-8, San Diego, Jan. 14-15 and Atlanta, Jan. 28-29. The information-filled two day seminar is designed to better equip foremen and superintendents with critical management skills to get the best out of field employees. Registration is an affordable \$195 for NRCA members; \$210 for nonmembers. For more information and a free brochure, contact NRCA, 8600 W. Bryn Mawr Ave., Chicago, Ill. 60631

## National Roofing Foundation Update

The National Roofing Foundation is pleased to welcome the support of its newest Friend:

W.J. Woodruff Rfg.  
Contractors Inc.  
Watson B. Woodruff  
Fond du Lac, Wis.

Thanks to the support of its Friends, The Foundation is able to provide educational materials for the betterment of the roofing industry. The Foundation's most recent development is "Introduction to Commercial and Industrial Roofing Technology" - a college-level course to be offered to undergraduate architectural and engineering students.

For more information, please write National Roofing Foundation, 8600 Bryn Mawr Avenue, Chicago, Ill. 60631.

**A quick reminder** to all NRCA members and others interested in attending the exciting 96th Annual NRCA Convention & Exhibit in San Antonio, Feb. 22-25: Registration packets have already been sent to all members. Nonmembers can request information by contacting NRCA. All interested persons are urged to register well in advance as hotel space is rapidly filling for the largest gathering of the roofing industry each year.

**Some mixed news** from the Commerce Department as Secretary Baldrige reports that he expects "real" GNP to grow at a two percent annual rate or lower in the final quarter of 1982 and three to four percent next year. In addition, the economy expanded at an annual rate of 0.8 percent in the third quarter. That differs, however, from the 1.5 percent rate projected earlier by the Commerce Department. Baldrige said the economy is still stuck between recession and recovery.

**OPEC prices may drop** following a deep split between the rich Arab oil producers of the Persian Gulf and other oil-cartel members. Because of the depressed worldwide oil market and the current oil glut, leaders from oil-rich nations like Saudi Arabia, the United Arab Emirates and Kuwait warned reduced oil prices are inevitable if other OPEC members keep making hidden discounts and continue violating other OPEC agreements.

**"The quality** of a person's life is in direct proportion to their commitment to excellence, regardless of their chosen field of endeavor."

Vincent T. Lombardi

# NATIONAL NEWS

## Dodge Reports Rise In August Construction Contracts

The seasonally adjusted Dodge Index of construction contract value rose 14 percent in August to 112 from July's 98, according to the F.W. Dodge Division of McGraw-Hill Information Systems Company. The Dodge Index uses 1977 as its 100 base.

The latest month's \$13.9 billion of newly started construction was 17 percent above the total for the same month of 1981, with all three major categories of construction participating in the advance.

"August's contract value was swelled by the inclusion of two sizable electric power plants (in Florida and Louisiana), which added a billion dollars to the month's total," noted George A. Christie, vice president and chief economist for F.W. Dodge. "Nevertheless, without these large projects, August's data would still have shown a solid five percent improvement over July's rate of contracting.

"It's still early to use the word 'recovery' for the depressed construction industry," Christie cautioned. "But it's becoming clearer with each month's results that there's been a change for the better since April. Beginning with May, the Dodge Index — after adjustment for very large projects, to reflect better the current state of the market — has shown four consecutive monthly gains, for a cumulative advance of 12 percent.

"As the recent decline of short-term interest rates is gradually transmitted to mortgages over the months ahead, lower rates should support further improvement in building activity."

Nonresidential building contracts totaled \$5.3 billion in August, a seven percent gain, after adjustment for seasonality, from July's value. According to the construction authority, the latest month's gain was confined to commercial and indus-

trial building declined.

"Several more large office projects were started in August, extending the boom in this type of construction for another month," Christie said. "As before, August's office starts were concentrated in the Southwest."

Contracts for residential building totaled \$5.4 billion in August, a seasonally adjusted gain of six percent over the July level, and also 15 percent above the year-ago August value.

In contrast to the sharp rise and fall of housing starts reported by the Department of Commerce during July and August, Dodge construction statistics showed a steadier volume of building over the past two months. Both sources indicate an average rate of close to 1.1 million housing starts for the two-month period, but differ in the timing of reporting a recent spurt of government-subsidized apartment projects.

Nonbuilding construction contracting in August showed a sharp, 46 percent advance in seasonally adjusted terms, largely due to the strength of two new \$500 million electric utility projects started during the month.

At the end of eight months, the cumulative value of all new construction started in 1982 was \$98 billion, a decline of seven percent from the comparable year-ago total.

Following is a summary of the latest month's Dodge construction statistics. These contract-award statistics, prepared and issued by the F.W. Dodge Division of McGraw-Hill Information Systems Co., measure the value of newly started construction that will be brought to completion over the months ahead. They indicate the amount and direction of future expenditures of this major sector of the economy.

### MONTHLY SUMMARY OF CONSTRUCTION CONTRACT VALUE

Prepared by F.W. Dodge Division  
McGraw-Hill Information Systems Company

	August 1982 Construction Contract Value (000,000)	Seasonally Adjusted Percent Change From Previous Month	
Nonresidential Building	\$ 5,250.4	+ 7	
Residential Building	5,413.7	+ 6	
Nonbuilding Construction	3,232.2	+ 46	
Total Construction	\$13,896.3	+ 14	
	<b>8 Mos. 1982 (000,000)</b>	<b>8 Mos. 1981 (000,000)</b>	<b>Cumulative Percent Change</b>
Nonresidential Building	\$38,060.9	\$ 40,018.3	- 5
Residential Building	36,403.8	43,219.1	- 16
Nonbuilding Construction	23,514.5	22,041.8	+ 7
Total Construction	\$97,979.2	\$105,279.2	- 7

### DODGE INDEX

(1977 = 100, SEASONALLY ADJUSTED)

June 1982	111
July 1982	98
August 1982	112

# National Roofing Industry Pension Plan Announces No Withdrawal Liability

The March 1982 issue of the *Roofing Spec* contained an article entitled "Be Aware of ERISA Withdrawal Liability." This is one of many articles, speeches and other forms of communications designed to make construction industry employers aware of possible liabilities that may be incurred because of the enactment of the Multi-Employer Pension Plan Amendments Act of 1980 (MPPAA). It is not the purpose of this writing to reiterate all of the adverse aspects of MPPAA — so much has already been written. It is only intended to ease the concerns and needless fears of some 1,200 to 1,500 roofing contractors who now make pension contributions on behalf of their employees to the National Roofing Industry Pension Plan (NRIPP).

NRIPP, a jointly administered Trust Fund, was established in 1966, through the efforts of the United Union of Roofers, Waterproofers & Allied Workers (formerly United Slate, Tile and Composition Roofers, Damp & Waterproof Workers Association) and the National Roofing Contractors Association. There are presently 90 participating local unions and, as mentioned above, 1,200 to 1,500 contractors employing approximately 20,000 roofers. As of the most recent actuarial valuation of the Plan, the assets in the Fund were approximately three times the amount of the value of vested benefits. A *withdrawal liability does not exist for any contractor participating in the NRIPP.*

The actuarial soundness exemplified by NRIPP does not occur by accident. It is the result of prudence, diligence and a conservative approach on the part of the Board of Trustees and the professionals employed by the Trustees. As important as it is for the participating contractor

not to be concerned with a liability, it is equally important for him to know that each and every contribution he makes is going directly to the benefit of his employees for their security in retirement years.

In summary we hope that this article will carry out its purpose in providing roofing contractors participating in the NRIPP with a sense of security and that they will look upon their participation as an asset rather than a liability.

We welcome requests for any specific information that any contractor

may desire concerning NRIPP. You may send your inquiry to: National Roofing Industry Pension Plan, c/o Mr. Ronald P. Faas, P.O. Box 560695, Miami (Kendall), Florida 33156.

## Labor Renews Pledge For Roofing Jobsite Safety

Labor leaders gathering in Atlantic City, N.J. pledged a renewed commitment to ensuring "a safe and

continued on following page



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# NATIONAL NEWS

continued

healthy workplace" for roofing mechanics.

A Single-Ply Seminar, sponsored by the United Union of Roofers, Waterproofers and Allied Workers and the New Jersey State District Council of Roofers, gave participants a chance to exchange ideas for safety and health procedures.

"We will cooperate with industry

to install single-ply materials, but also work to provide a safe and healthy work place," said Roy E. Johnson, president of the United Roofers, Waterproofers and Allied Workers.

It was recommended that users and installers of single-ply systems should be alert to product warning labels, wear protective clothing and maintain stringent personal hygiene standards.

The following safety guidelines are just common sense measures, yet such advice is often overlooked and can possibly lead to safety or health

mishaps.

Roofing applicators should avoid open fire or flame, keep foam fire extinguishers handy, use glasses when working with solvents, have water available and eyewash nearby, make sure the working area has good ventilation, do not ingest alcohol, wash hands before eating and do not use a grill starter.

Dr. Robert Boesch from the Mount Sinai Medical Center Environmental Sciences laboratory also pointed out the possible long-term effects of hazards that are not easily observed. Continued exposure to certain substances with products used in single-ply systems could increase the possibility of developing health problems such as bronchitis, emphysema and skin problems. Workers should watch for dizziness, loss of balance, headaches and drowsiness — signs that noxious fumes have been inhaled. Boesch suggested monitoring the blood, liver and kidneys if exposure is evident.

"No one knows what the problems might be 15 to 20 years from now," said Robert Linck, former NRCA President.

## Correction

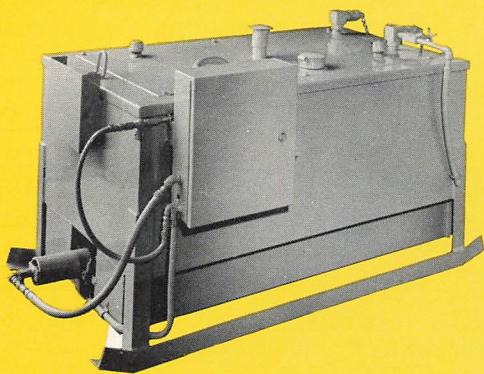
The correct address for Duro-Last Roofing, Inc., a manufacturer of a single-ply membrane, is 525 Morley Dr., Saginaw, Michigan 48601, and the firm's tollfree telephone number is 800/248-0280.

The information printed in the June issue of *Roofing Spec* was incorrect due to an editing error. ❁❁❁

## New cold process unit

### Eliminates scorching and overheating

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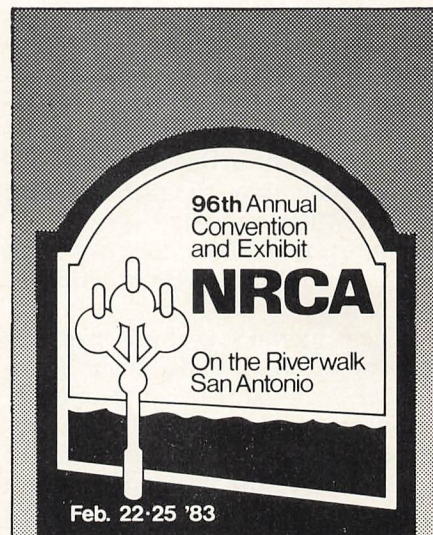
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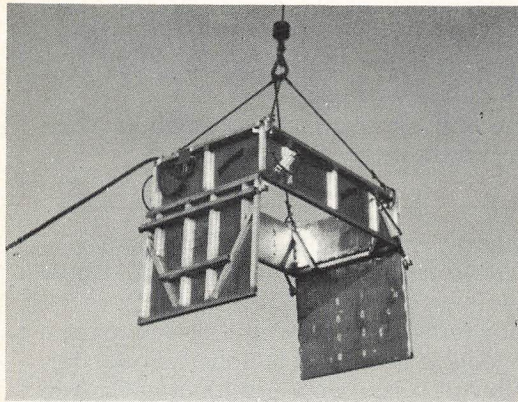


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# Associate News

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## New Project Manager Named For Koppers

John D. Kavanagh has been named project manager, building panels for the Building Materials Division of Koppers Co., Inc., Pittsburgh, Pa.

Kavanagh is now responsible for the market development of all types of building panels produced with Koppers phenolic foam, including residential sheathing for new and retrofit uses.

The project manager joined Koppers Co. in 1971 following service as an officer in the U.S. Navy. He was graduated from Marquette University in 1967 with a B.S. degree in civil engineering and earned a Master of Business Administration degree from the University of Pittsburgh in 1979.

Koppers, a manufacturing, engineering and construction firm, provides such products as chemicals, coatings, and environmental control systems, in addition to offering engineering and construction services.

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## Evans Okay After Fire

An early morning warehouse fire September 25 caused an estimated \$500,000 damage to an Evans Products Company's Permaglas Division warehouse filled with roofing materials.

"Luckily there was no damage to Permaglas' manufacturing facility," said Vice President and General Manager James M. Compton. "Our fifty percent shift increase will allow us to replenish inventory as quickly as possible. Any delays in shipping to our customers should be brief."

Evans Permaglas, roofing division of Evans Products Co., manufactures and supplies a full range of glass fiber built-up roofing products.

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## Carlisle Splits

Carlisle Tire & Rubber Co. is separating into two operating companies.

Effective September 1982, the Construction Materials Division is now called Carlisle SynTec Systems, a division of Carlisle Corp.

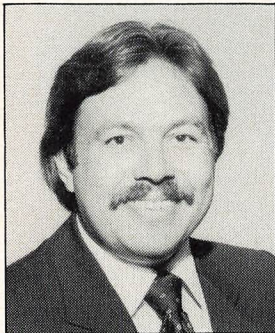
The creation of a separate company reflects the growth of the company's roofing, waterproofing and lining business, according to Robert Brown, former president of Carlisle Tire & Rubber Co. and now president of Carlisle SynTec Systems.

By forming a separate company to manufacture and market single-ply roofing systems, Brown believes the customers of both groups will benefit. Carlisle Tire & Rubber Co. will now focus exclusively on the marketing of tires, tubes and hose products.

"The creation of Carlisle SynTec Systems recognizes the special needs of the roofing market, and we'll be able to respond to these changing needs quickly and efficiently," Brown said.

---

## Roofmaster Names New Marketing Manager



Gregory C. Clements

Gregory C. Clements has been named Marketing Manager for Roofmaster Products Co., Los Angeles, Calif.

He will coordinate Roofmaster's activities relating to domestic sales, advertising, trade shows, new product research and will be liaison for its nationwide network of distributors and jobbers.

Roofmaster Products Co., founded in 1953, is both manufacturer and distributor of equipment, supplies and tools.

For additional information, contact Roofmaster President Deryl Yundt at 213/261-5122 or write Roofmaster Products Co., P.O. Box 63309, Los Angeles, Calif. 90063.

# The U.S. Army has a tough new roof.

## The Corps of Engineers recruited a single-ply.

The U.S. Army has a long, proud tradition for keeping trim and fit. That goes for its people—and that goes for its *property*, too. So when the built-up roof on this old Army warehouse and repair facility developed major problems, the Corps of Engineers put out the specs for a new *single-ply* roof. As a result, the contractor selected a *Carlisle* single-ply system—and got the best of everything.

Carlisle helped pioneer single-ply; our first roof installed over twenty years ago is still going strong. And Carlisle provides the complete system: EPDM membrane produced in extra-wide widths at our two American plants.

EPS insulation. Flashing. Edging. Pre-fab pipe seals. And application materials. We even train and approve single-ply applicators at our school in Carlisle.

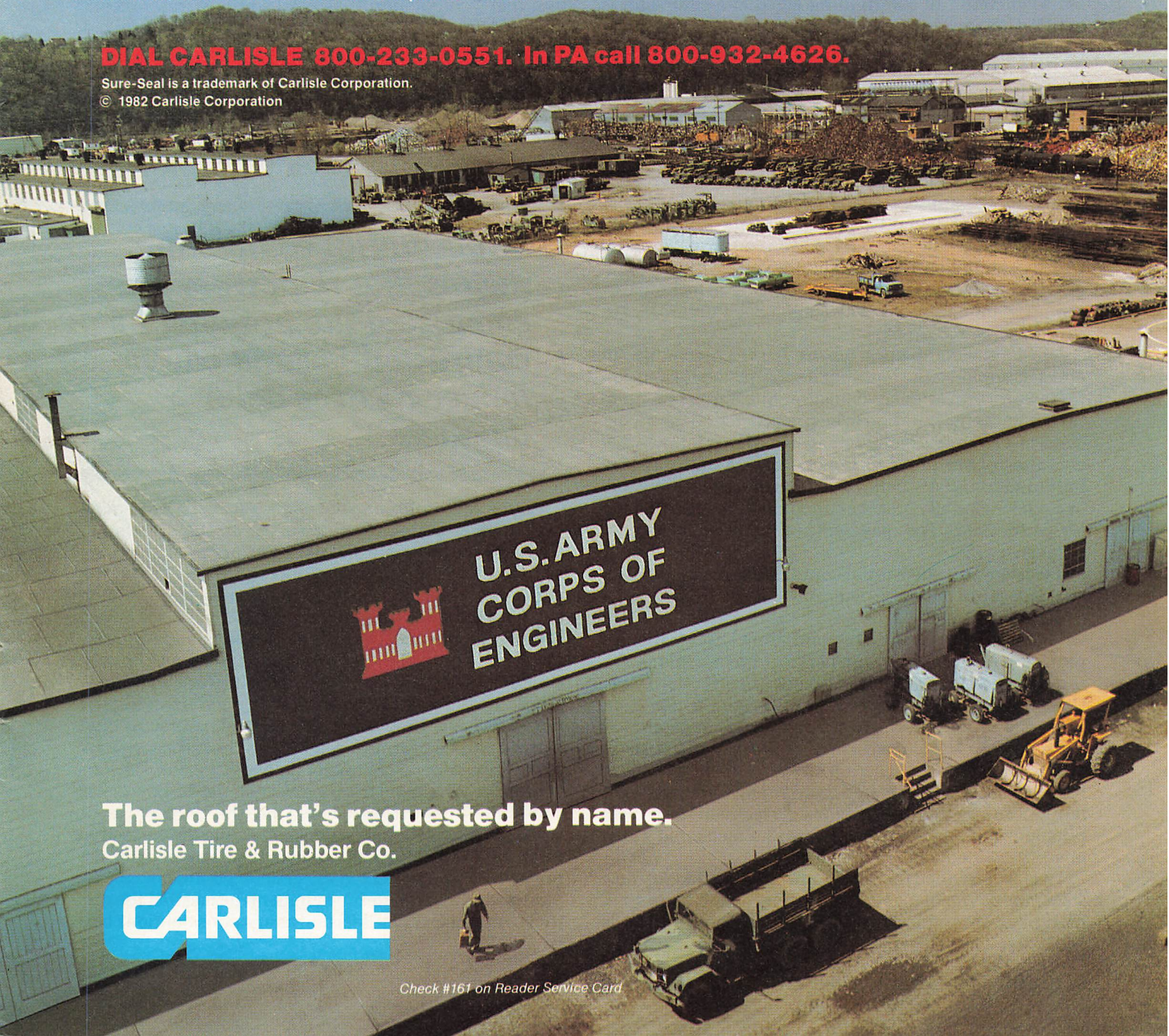
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This monthly column presents information of legal matters of general interest. The text is necessarily generalized, and you are advised to consult with a professional legal advisor before taking any action.

## Substantial Completion: When Does It Occur and What Does It Mean To You?

While some courts apply the term "substantial completion" in determining whether a contractor is entitled to payment under the contract, many more courts discuss the doctrine of "substantial performance" in determining whether the contractor completed its work. It would appear that in many jurisdictions the court uses these terms rather interchangeably, although under certain circumstances they may not be necessarily the same.

"Substantial performance exists where there has been no willful departure from the terms of the contract, and no omission in essential points, and the contract has been honestly and faithfully performed in its material and substantial particulars, and the only variance from the strict and literal performance consists of technical or unimportant omissions or defects." See *Cassino v. Yacovich*, 27 N.Y.S.2d 95.

Substantial completion means that the owner has, in effect, completed the building he contracted for and can no longer recover delay damages. Substantial completion requires the building to be constructed so the owner can use it as he originally intended and so it follows that a contractor who fails to provide such a building also fails to substantially perform. It is basic contract law that one who materially breaches a contract excuses the counter performance (i.e. payment) of the other party (i.e. owner).

Exactly when substantial completion occurs is basically an issue of fact to be determined in each case. "As a general proposition, however, it may be said that work which is an integral part of a continuing effort to finish a project in conformance with contract specifications . . . is not insubstantial," *Hensel Phelps Construction Co. v. General Signal Corp.*, 460 F. 2d 109 (10th Cir. 1972). In *Hensel*, a supplier furnished materials to a subcontractor for use in the construction of a sewage treatment plant. The supplier never received payment and, after the subcontractor declared bankruptcy, the supplier brought suit against the general contractor of the project pursuant to Colorado's public works mechanic's lien law.

The law provided that an action asserting liability on a statutory payment bond "shall be brought within six months after completion of the work and not afterwards.

The Court agreed with the general contractor's contention that "completion," as used in the statute, meant "substantial completion" and the issue to be resolved was whether work on the sewage treatment plant was substantially completed more than six months prior to the commencement of the supplier's action. The significance of this case is that "substantial completion" will also be determined in statute of limitation actions concerning mechanic's liens and, undoubtedly, bond actions as well.

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***"Substantial completion means that the owner has completed the building he contracted for and can no longer recover delay damages."***

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Courts refrain from using any set formula or percentage in determining whether substantial completion or performance has occurred. In *United States Ex Rel Riley v. Swan Company*, 597 F. 2d 446 (5th Cir. 1979), the general contractor appealed a district court which awarded the subcontractor the full contract price minus certain adjustments because he had substantially completed his contract to perform masonry work. The subcontractor was paid for 70 percent of its work but was replaced by the general contractor after certain defects in the work were discovered. The general contractor then had the work performed by another subcontractor. In its appeal, the general contractor defended against the subcontractor's claim on the premise that the work was not substantially completed based on the **percentage** of work done arrived from the cost of having the corrective work performed in comparison to the total contract price. The Court rejected the general contractor's comparison as "meaningless" in light of the fact that the district court reached its decision after a conscientious bal-



ancing of all the relevant circumstances. See also *Venman v. Scott Square Realty Corporation*, 24 N.Y.S.2d 189 where the court held that a contractor's completion of 95 percent did not constitute substantial performance.

As has been indicated by the various cases construing substantial completion, the touchstone is not necessarily the amount of money approved, the dollar value of equipment installed, or the quantity of bricks and mortar in place. The real determining factor is **whether the building can be used for the purpose for which it was intended**; and, if it is a subcontractor's work in contention, whether the subcontractor performed the work to the extent that only minor corrective work remains and also whether the work can be used as contemplated by the subcontract between the parties.

Ordinarily, the burden of proving substantial performance is on the plaintiff-contractor (see *Cawley v. Weiner*, 236 N.Y. 357). There cannot be substantial performance of a contract where the failure to perform is willful or intentional. *Jacob & Youngs v. Kent*, 230 N.Y. 239.

Courts have determined that building contracts have not been substantially completed when the incorrect windows were furnished, when the wrong piping was installed, or where a watertight cellar was not furnished, etc.

Where the contract documents provide that certain conditions must be met before the owner must pay for the building, such as the performance of specified tests on various equipment, then the passing of such tests will be deemed proof of performance and the failure to pass such tests will defeat recovery. *McIntosh Ready Mix Concrete Corporation v. R.D. Battaglini Corporation*, 317 N.Y.S.2d 692.

It has been held by various courts that no partial recovery of damages can be obtained by a breaching contractor. For example, in *Pines of Islip, Inc. v. Island Concrete Corp.*, 196 N.Y.S.2d 252, a contractor agreed to provide labor, materials and equipment for leasing, grading, excavation, and concrete work and to supply "fill" in connection with the construction of more than two hundred homes. The court found that the contractor's "careless, slovenly way of conducting business or more accurately

speaking 'not conducting it' made it virtually impossible to continue the operation. . . ." and amounted to a breach of contract which justified the plaintiff in terminating him and in hiring another contractor to complete his work. Moreover, the court rejected the contractor's counterclaim for damages, holding that there can be no partial recovery by a breaching contractor for the reasonable value of his work unless it amounts to substantial performance of the entire contract.

The issue of substantial completion is very significant in relationship to a contractor's claim for payment. As a general rule, except when there is a waiver or excuse, if you have payment due upon the completion of a contract, payment cannot be recovered if it has been determined that substantial performance was not met. However, even under these circumstances, a contractor **can** recover for the reasonable value of his work, labor and services, provided he acted in good faith and the owner retained the benefit of the partial performance. Although all is not necessarily lost even if it has been determined that substantial completion was not met, the contractor surely cannot rely on the terms of the contract to recover for the faulty or incomplete work furnished to the project.

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***"The issue of substantial completion is very significant in relationship to a contractor's claim for payment."***

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**Editor's note:** This article, reprinted with permission from the August 1982 issue of *Builder & Contractor*, was written by Peter Goetz, senior partner in the New York City law firm of Goetz and Fitzpatrick, specialists in construction contract law. Questions and comments may be addressed to Mr. Goetz, One Pennsylvania Plaza, New York, N.Y. 10001.



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# Roofing Material Standards: Where Do We Stand?

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by William C. Cullen,  
NRCA Research Associate

**I**n order to provide the user of the *NRCA Roofing Materials Reference and Guide* with a common basis for interpreting the various property values given for a myriad of generic roofing products, appropriate ASTM and Canadian General Standards Board (CGSB) were adopted as reference documents. The standards which were selected are considered to be the better ones available in the U.S. for the purposes of the program. In the case of the single-ply membrane materials, the CGSB standards are the only consensus standards available in North America to describe the majority of products currently being marketed.

The CGSB standards selected include: NO. 37-GP-56M, for Modified Bituminous Membranes; NO. 37-GP-54M, for Poly-vinyl Chloride Membranes; and NO. 37-GP-52M for Elastomeric or rubberlike Membranes. Each of these standards offer a set of requirements for the described products which are a combination of both prescriptive and performance attributes. In these documents ASTM standard test methods are used to measure various properties. However, in many cases when ASTM test procedures are not available, ad hoc test procedures developed for the most part by the National Research Council of Canada are prescribed. These procedures have been accepted by the appropriate Standards Committee and are described in detail in the respective standard.

In the case of the multi-ply bituminous membrane products, the reference documents fall into two categories. First, ASTM material standards for the bituminous saturated

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*As new consensus standards evolve, they will be used to update the NRCA "Guide" to ensure compliance with the most recent standards.*

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continued, page 17

# NRCA Set To Unveil New Roofing Material Product Listing Guide

*The "Guide" will be the most extensive and current single-source document on roofing membrane products, manufacturers and suppliers.*

by Norman Bullock

**"R**oofing technology has advanced more in the last 15 years than it has in the whole history of multi-ply roofing," said William Cullen, NRCA research associate and noted roofing technology expert.

The reasons for this technological leap are many and complex, but certainly a major force has been the need for better performing and more efficient roofing systems. Another important reason is the manufacturers of products previously unrelated to roofing have looked to the roofing market for new business opportunities. They are investing heavily to develop a profitable share of the roofing market.

Traditional bituminous roofing manufacturers have responded by developing materials and systems which offer improved performance within the conventional multi-ply bituminous category.

Whatever the reasons may be, the "roofing revolution" goes on. The roof waterproofing options now available will continue to multiply in the future as manufacturers bring to market new products now in development.

Because of the large number of waterproofing membrane products being sold today (hundreds of BUR specifications and at least 125 Elasto/Plastic sheet applied membranes identified in the most recent listing compiled by NRCA) it is extremely difficult for an individual architect, specifier, building owner, or roofing contractor to keep informed on all available products, manufacturers and suppliers.

In response to this need for better and more current information, NRCA is announcing a product listing program to provide comprehensive technical data and other pertinent information on all BUR and Elasto/Plastic sheet-applied roofing membrane products marketed in the United States today.

The program is scheduled to begin immediately. All manufacturers and suppliers of roofing membrane products are invited to participate in this effort. Program details, report formats and operating procedures have been mailed to all manufacturers and suppliers. (Manufactur-

continued on following page

# NRCA Product Guide

continued

ers who have yet to receive material may do so by contacting NRCA.)

As technical data (test results) and other information on products are received from manufacturers they will be organized by generic classifications and entered into a computer "data base." From this "data base" an *NRCA Roofing Materials and Reference Guide* will be prepared, printed and offered to the industry.

To ensure for timeliness and accuracy, the *Guide* will be updated on a continuing basis. It will constitute the



Bill Cullen, NRCA Research Associate (left) discusses the new *NRCA Roofing Materials and Reference Guide* with Norman Bullock, director of the National Roofing Listing Service, and *Guide* coordinator.

most extensive and current single-source informational document on roofing membrane products, manufacturers and suppliers.

The *Guide* will be of particular value to architects, specifiers, manufacturers, material sales representatives, roofing contractors, general contractors, building owners, roofing consultants, government agencies, code groups, and other organizations concerned with the design, manufacture, testing, application and use of roofing materials.

The *Guide* is organized to make comparisons between various products a simple exercise because all information (including reported test results) will be shown for each product in a standard format.

Another advantage of the NRCA Listing program is that manufacturers will provide test data on physical properties based on uniform test procedures. Currently, it is often impossible to make direct product comparisons because manufacturers and suppliers use a variety of test procedures for reporting physical property test results.

Another important feature of the *Guide* is that property values and test results, which are often given in metric

units, are expressed in customary English units. Again, this is done to facilitate the use of the *Guide* by overcoming the need of having to make complicated conversions to a common units base.

An important feature of the *Guide* is the inclusion of information relating to the origin and use of products in the field and profile information on the manufacturers

## *New manufacturers are looking to the roofing market for business opportunities.*

and suppliers of these products, such as "Place of Manufacture," "Number of Squares Installed," "Licensed Applicator Agreement," "Warranties," "Years Commercial Use," "Method of Distribution," etc.

While the *Guide* cannot insure the proper selection of membrane materials or provide assurance of the in-service performance of listed products, the correct use of the *Guide* product information will be helpful in identifying those materials that have physical properties best suited to meet design specifications.

It is important to note that NRCA is not a standards development organization and has not developed or written standards or criteria specifically for this program. The program does, however, reference existing standards and criteria developed by ASTM, National Bureau of Standards and the Canadian General Standards Board (See accompanying article by Cullen regarding standards and criteria.)

The NRCA listing program is voluntary. All manufacturers and suppliers of membrane products are encouraged to participate. A product will be listed in the *Guide* upon receipt of the manufacturer's product information with supporting documentation indicating that test data were secured in conformance with the referenced test procedures.

NRCA will perform, through designated commercial laboratories, validation testing of products which are listed in the *Guide*. This testing will be performed on an annual basis. The test values achieved in the validation tests will also be shown in the *Guide* and will serve as confirmation of the data supplied by the manufacturer.

In addition to meeting the informational needs of roofing contractors, architects, specifiers, and building owners, the *Guide* will serve manufacturers and suppliers as an effective marketing and sales vehicle.

The *Guide* will be published three times per year. This schedule will permit manufacturers to provide new product information to the entire industry every four months.

The first issue of the *NRCA Roofing Materials Reference and Guide* will be published February 1983. The annual subscription cost for three issues is \$85.

If you are a manufacturer or supplier and did not receive program details and listing forms by November 15, please write or call Norman Bullock, NRCA, 8600 Bryn Mawr Ave., Chicago, Ill., 60631; phone 312/693-0700.



# Standards

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(impregnated) reinforcing felts and fabrics used in the construction of the membrane are cited. These materials comprise the structural element of a bituminous membrane and are defined in the standards in prescriptive terms. Since these are well recognized standards in the roofing industry, it is intended that the materials will be listed as to whether (pass-fail basis) they meet the requirements of the appropriate ASTM standard. Next, the composite membrane constructed from various felts

**Canadian standards are the only ones currently available for single-ply membranes... it is fortunate that consensus standards developed by ASTM and CGSB are available.**

and fabrics will be described in terms of such performance parameters as tensile strength, thermal movement and thermal shock. Since there are no consensus standards available in the U.S. for bituminous roofing membranes, the Preliminary Performance Criteria for Bituminous Membrane Roofing described in the National Bureau of Standards Building Science series; NBS BSS NO. 55 (1974) was selected to provide a basis for interpreting the measured values supplied for each membrane listed. Although these criteria have not gained the status of a standard, they have been generally accepted as valid criteria by most segments of the roofing industry during the past decade.

For the most part, it is indeed fortunate that consensus standards de-

veloped and promulgated by recognized standard generating bodies such as ASTM and CGSB under strict consensus procedures by balanced technical committees are available for reference documents for use in the *NRCA Roofing Materials Reference and Guide*. These standards are subject to a mandatory, periodic (usually 5 years) review to ensure that they keep abreast of new technological developments. In the case of the preliminary performance criteria

for bituminous multi-ply membrane roofing, efforts are under way in ASTM to develop a consensus standard. Hopefully such a standard will become a reality in the future.

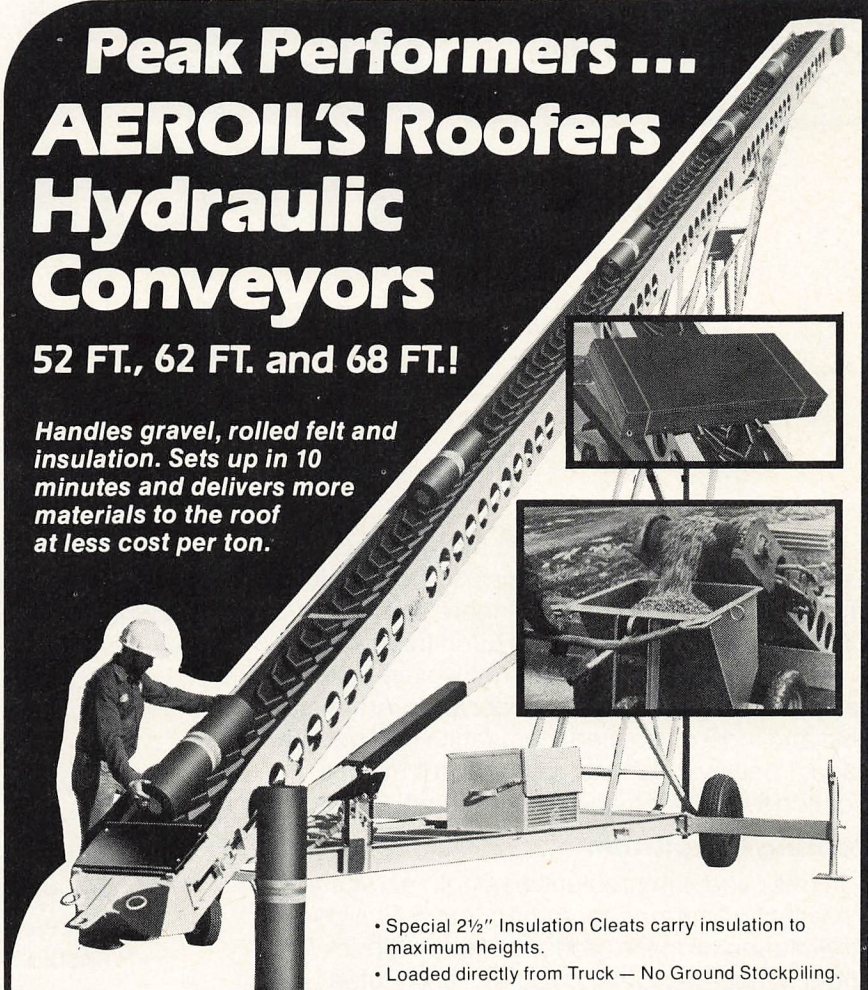
As new consensus standards are developed and as revisions are made to the respective standards, the referenced documents in the *NRCA Roofing Materials Reference and Guide* will be updated to keep abreast of the state-of-the-art of roofing standards development activities.



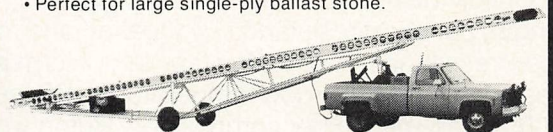
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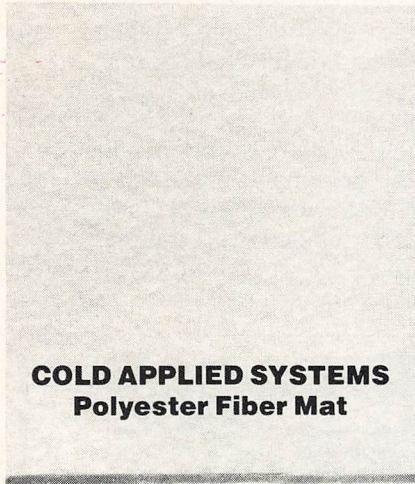
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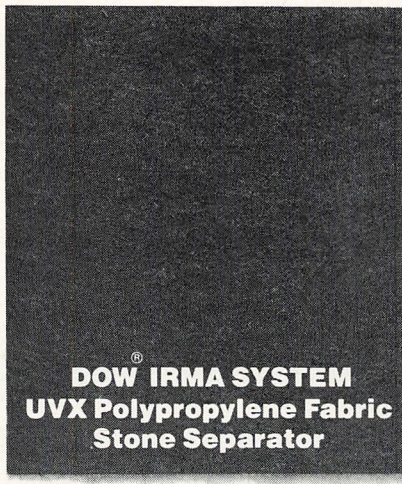
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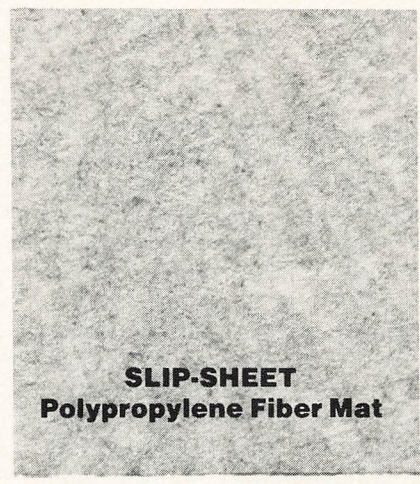
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## Phone Day

# Membership Team Enlists New Recruits

**T**hey came from Florida, South Carolina, Georgia and several cities in Illinois, converging at NRCA headquarters in Chicago.

Then from sunrise to sunset, a team of seven sat side-by-side in a conference room where phones were provided for each man and a table laden with gifts was in view. With their pencils poised, notepads at hand and the phone receiver to their ears, they went to work.

And what did these efforts provide? Seventy-five new members, drawing closer than ever to the lucrative 3,000 mark for NRCA membership.

October 13 was membership Phone Day at NRCA headquarters, and the enthusiasm was contagious.

"I got in at 7:25 and they were already here," said NRCA Program Manager Anna Leonhardt, about the team of anxious recruiters.

Phone Day participants included veterans: John Carruth, Carruth Roofing Co., Inc., Miami, Fla. and Rich Marubio, Raincoat Systems, Inc., Broadview, Ill; newcomers: Dick Zimmerman, Hoge-Warren-Zimmerman Co., Rolling Meadows, Ill; George Gaines, Greenville Roofing, Co., Greenville, S.C., and Bennett Hutchison III, Tip Top Roofers, Inc., Atlanta, Ga.

Membership Committee Chairman Mike Promen, Clark Roofing Co., Broadview, Ill., volunteered at the 11th hour when the team turned up short two recruiters. Phone Day Chairman is Stanley Gerson, L.E. Schwartz & Son, Inc., Macon, Ga.

Visitors frequently clustered outside the buzzing phone room, amazed at the competitive nature of the recruiters.

Numerous prizes kept the energy level high. With the first successful "sell," red, white and blue NRCA caps were given. With four prospectives, brass business card holders were presented; with eight members, digital desk clocks with the NRCA logo were awarded and with 12 members, business portfolios with electronic calculators were awarded.

The recruiter having secured the most new members with membership dues returned to NRCA by mid-November will receive a handsome leather briefcase and an engraved plaque.



Stanley Gerson, L.E. Schwartz & Son, Inc., records a successful call made by John Carruth, Carruth Roofing Co. Inc., at a recent NRCA Phone Day. The calls are made by NRCA volunteers to enlist new members.

A 25-year-old bottle of Scotch whiskey was included as an extra incentive. A "mystery prospect," known only to Leonhardt and Gerson, was instructed to refuse the recruiter's overtures at least three times before accepting NRCA membership.

Unfortunately, the mystery prospect was not sold during the October 13 Phone Day. The Scotch will have a chance to age a little more before the next session.

Every 30 minutes throughout the day, Gerson put the total of new members recruited on a board in the hallway so that the entire NRCA office staff was aware of the growing numbers. In addition, bells rang every time a name was added to the roster of new members.

At noon, 40 members were recruited. Only about half of the team broke for lunch and those who did stopped just long enough to discuss strategies over a quick sandwich before going back to the phones.

continued on following page

# Phone Day

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"They're an excellent staff, very diligent, dedicated men," Gerson said. All of the men took a day off from work at their companies to promote NRCA. Hutchison thinks that Phone Day is an "excellent idea."

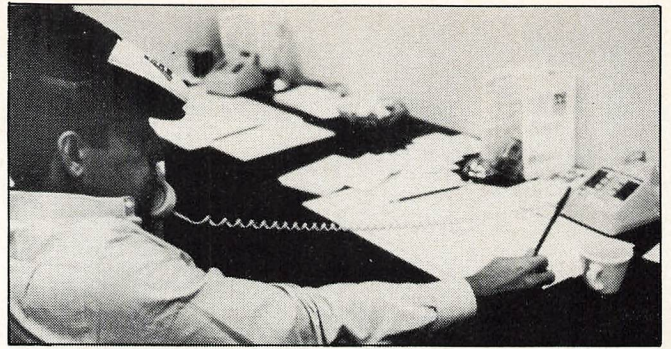
He said that the economy's effect on business was cited as a frequent concern of companies reluctant to join NRCA. Undaunted, Hutchison had no problem responding to the lament with, "one repair job could cover dues for a year."

Joining NRCA allows members access to a network of services that include the latest in technical developments, numerous publications, conventions, meetings and staff assistance at a price that can't be beat, according to Leonhardt.

"NRCA dues are an investment in the improvement and development of a member company," Leonhardt said.

The next Phone Day is November 17. The top four sellers of the October and November dates qualify for the February 1 Phone Day and a chance to win a trip to Puerto Vallarta, Mexico.

Leonhardt thinks that the concentrated efforts of the Phone Day pay off and statistics back her optimism. In



Mike Promen, Clark Roofing Co., places a call to a perspective NRCA member. Promen was one of six volunteers who participated in the Phone Day.

1981, 450 new members joined the nation's oldest trade association in the construction industry.

Leonhardt was pleased by the October results and believes that the aggressive recruiters will reach the magic 3,000 number.

"The Membership Committee is dedicated to reaching the goal by Spring of 1983, and I think they will do it," she said.

The short term results of the Phone Days are a clock, briefcase and a Mexican holiday for the recruiters. The long-term results signal a stronger voice in the roofing industry for a modern association with nearly 100 years of tradition.



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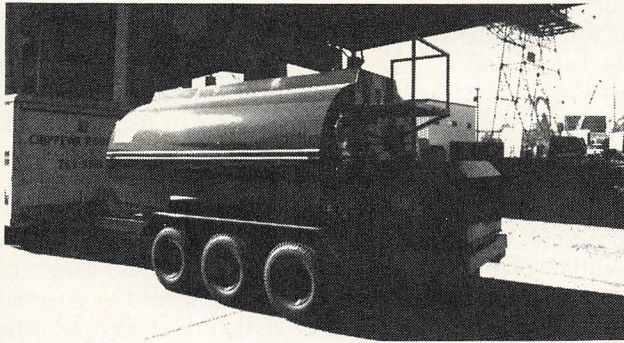
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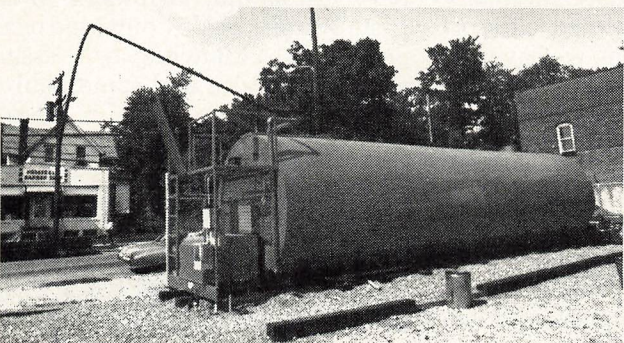
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by John A. McKinney  
Chairman and President  
Manville Corp.

Manville customers need not be concerned about the continued on-time delivery of the high quality products and services they expect. Manville's commitment to the roofing industry is as strong as ever. When our subsidiaries filed for Chapter XI protection, those involved in roofing immediately requested Bankruptcy Court authorization to honor all warranties and guarantees affecting Manville's products and roof systems, regardless of when the products were sold or when the systems were applied. The Court approved our request because it recognized the need for Manville to continue to back its products in this manner if it is to carry on its "ordinary course of business" which is the requirement of corporate entities operating under Chapter XI.

Note that we made this request. We did it because we know Manville's leadership reputation within the roofing industry is significantly impacted by our customer service. Since we fully intend to maintain this leadership position, our customers can count on Manville delivering high quality products backed by warranties and guarantees that are meaningful and worthwhile. As in the past, we will take all steps necessary to insure that product claims are handled in the most fair and equitable manner.


Throughout our 124 year history in the roofing industry, we have initiated and sponsored numerous training and research programs to serve the industry's needs. The best example of this dedication is the establishment of the Built-Up Roofing Systems Institute, which today stands as a hallmark for quality roofing education. Since the inception of NRCA, Manville has continually supported and participated in the organization. In addition, we have fully supported the Roofing Industry Educational Institute.

Manville's filing for Chapter XI is, by any definition, unique. Present and projected liabilities in connection with asbestos-related diseases had become an extraordinary encumbrance which required a solution other than the haphazard litigation

process. We felt compelled to address this issue head-on, while at the same time continuing to manage our businesses and provide our consistently high-quality products to the roofing industry and all our other businesses.

Certain indicies of the uniqueness of our action are apparent. For example, Manville's domestic assets are virtually unencumbered — on a consolidated basis, our corporation has over \$1.4 billion in net book value of unmortgaged property, plant and equipment. Additionally, approximately \$600 million in net book value of other consolidated assets are virtually unencumbered.

Reorganization under Chapter XI of the Bankruptcy Code provides the time needed to find a fairer, faster manner to compensate people disabled by asbestos-related diseases. By filing such petitions, Manville entities have been relieved of the burden imposed in spending 20 years of contending with an unprecedented number of lawsuits and the prospect of carrying this burden, unabated, into the future. Reorganization pursuant to Chapter XI offers the best opportunity of seeing that all Manville creditors and claimants — including those individuals who suffer from asbestos-related diseases — will receive the fairest treatment.

Manville's desire is to see Chapter XI of the Bankruptcy Code used to resolve this massive public health problem in a professional and reasonable manner. Our roofing business will continue to operate as before the filings of these petitions. All Manville people will insure that customer service be handled appropriately and be given the highest priority — just as they have done in the past. By order of the Court (and by its dedication), Manville will assure customer service and stand behind its products. 

## Manville



EPS (expanded polystyrene) insulation is combustible and should not be exposed to flame or other ignition source.

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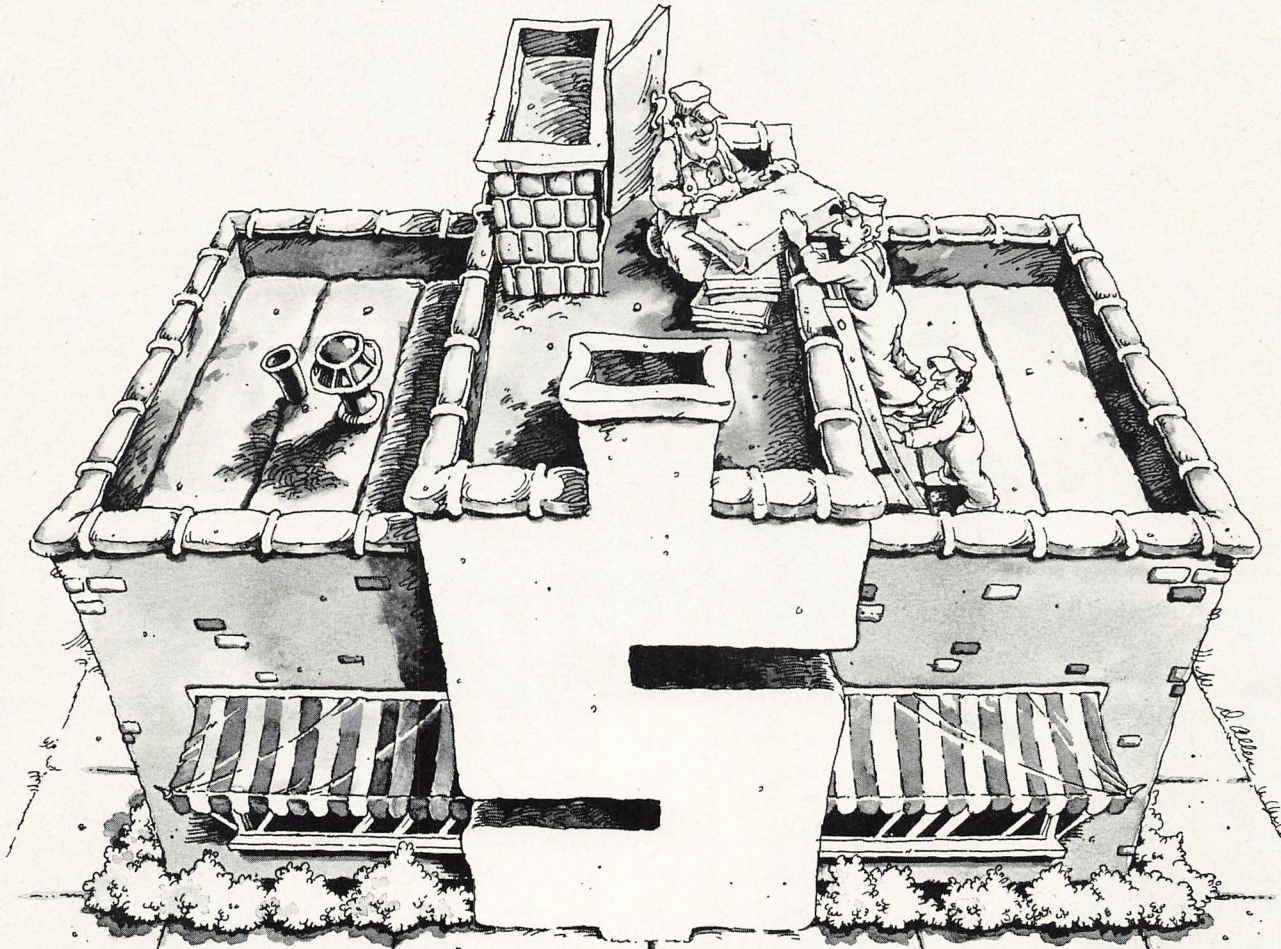
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## Coming Events

### December 2

NRCA Roofing Systems  
Conference  
New Orleans, La.

### December 9

NRCA Roofing Systems  
Conference  
Dallas, Tex.

### January 7-8

NRCA Foremen & Superintendents  
Conference (Organizing for  
Productivity)  
Chicago, Ill.

### January 11-14

RIEI Seminar (Four-Day Basic)  
San Francisco, Calif.

### January 14-15

NRCA Foremen & Superintendents  
Conference (Organizing for  
Productivity)  
San Diego, Calif.

### January 16-21

Urethane Foam Contractors  
Association Convention  
New Orleans, La.

### January 24-25

NRCA Legislative Conference  
Washington, D.C.

### January 28-29

NRCA Foremen & Superintendents  
Conference (Organizing for  
Productivity)  
Atlanta, Ga.

### February 22-25

NRCA's 96th Annual Convention  
San Antonio, Tex.

### March 24

NRCA Roofing Systems  
Conference  
Charlotte, S.C.

### March 12

NRCA Management Conference  
(Contractor Operations)  
Los Angeles, Calif.

### March 19

NRCA Management Conference  
(Contractor Operations)  
Hartford, Conn.

# Roofing Spec Celebrates 13th Year of Service To The Industry

There comes a time in the history of any organization when the need to effectively communicate begins to outstrip all available means. Thirteen years ago, the National Roofing Contractors Association was faced with this very problem.

As increases in membership were beginning to swell NRCA's rolls, and changes were starting to sweep across the American roofing landscape, NRCA's leadership was confronted with having to keep its burgeoning membership (and an always interested construction industry) regularly informed of the latest in technical, industry and association news.

NRCA Executive Vice President Fred Good, then NRCA's executive manager, recalled recently the problem then confronting the association.

"The Executive Committee and the Board of Directors decided it was time again to adopt a magazine format for what was then the *Roofing Spec* newsletter," Good said. "We were finding that we just couldn't provide members with enough infor-

mation in our small four-page newsletter."

Good said the board was still somewhat skeptical of re-entering the publishing business because of problems that occurred during earlier attempts to provide the industry with a magazine. "But those problems were overwhelmed by the need to provide members and the industry with official NRCA positions and information," he said.

Through the ensuing years *Roofing Spec* grew and grew, always providing its readership with dependable, qualified NRCA and roofing industry news and information. As a publication produced by a national trade association, *Roofing Spec* is highly regarded throughout the construction trades industry, according to Good.

"*Roofing Spec* is thought of as an outstanding publication by other construction industry association executives in so far as fulfilling its function as an official association publication," Good said, adding certain pitfalls are always inevitable when publishing a magazine read by a national audience of roofing con-

tractors, architects, designers and construction industry executives.

"Through the years you will engage people by printing opinions that are not popular or by distributing information that particular interests don't want distributed," he said. "But over a period of time there is no question that it is always beneficial to the industry to disseminate any reputable opinions and all qualified information."

The following index of all *Roofing Spec* articles published since 1968 is offered as a resource for all interested roofing professionals. The list is segmented into four distinct areas: **Technical Information, Roofing News, Legal & Insurance and Association (NRCA) News.** In some instances, there is an overlapping of articles into more than one category. Every effort has been made to identify all sources and authors, but occasionally this was not possible.

Comments and criticisms are welcome concerning the *Roofing Spec* index. It is our intention to update the article listing on a regular basis.

— Mike Beightol

## Technical Information

"**Airborne Asbestos - Test Results:**" July '73; by Johns-Manville and NRCA.

"**Air Pollution Facts - Test Results:**" Sept. '73; pg. 20. *The NRCA Air Pollution Committee presents its air pollution test results.*

"**Air Pollution Perspective:**" Nov. '71, pg. 32; by Bill Kugler. *Pollution figures from Aeroil Products Company.*

"**All Rigid Urethane Insulations Are Created Equal or Are They:**" Jan. '82, pg. 24; by Toby Nadel. *Recommendations are given for future selection of urethane based rigid insulation.*

"**AMPAC Probes Problems:**" May '71, pg. 4. *Series of comments made on roofing felt manufacturing.*

"**AMPAC Studies Coated Felt Situation:**" May '70, pg. 85. *Products, storage, handling and application of*

*coated felt is reviewed.*

"**Analysis of Asphalt Testing:**" May '73, pg. 18; by B.F. Stafford. *Results of tests made on 100 samples.*

"**Application of Roof Design Principles:**" July '68, pg. 17; by G.O. Handegord and M.C. Baker. *An analysis of the conventional, above-deck insulated membrane roof system.*

"**Application Techniques for Glass Fiber Roofing Felts:**" Nov. '80, pg. 22; by Richard Baxter. *Differences in application techniques are discussed.*

"**Asbestos Roofing Felts:**" Jan. '75, pg. 24; by David E. Richards, Owens Corning Fiberglas. *Part V of Know Your Materials.*

"**Asphalt: Another Viewpoint:**" Sept. '74, pg. 19; by G.L. Oliensis. *Oliensis responds to Dr. Mertz's article on asphalt.*

"**Asphalt and Coal Tar Pitch Emissions:**" Oct. '81, pg. 18; by Dr. Jerome Thomas *The University of California-Berkeley*

*professor explains the law and his preliminary findings.*

"**Asphalt, Coal Tar Pitch Emissions Tests Underway:**" Jan. '80, pg. 10. *Tests conducted by the NRCA Health Advisory Council with the cooperation of the Association's Health and Environment Committee seek to measure the amount and composition of emissions released during the application of bituminous roofing materials.*

"**Asphalt or Coal Tar Pitch - Roofing Expert Calls it a Toss Up:**" May '82, pg. 25; by Bill Cullen. *Discussion of the adequacy of asphalt as an alternative to coal tar pitch.*

"**Asphalt Heating:**" March '73, pg. 5; by Bill Kugler. *The heating, quality of and mopping grade of asphalt.*

"**Asphalt Heating - Rooftop Equipment - Convention:**" Jan. '74, pg. 36; by Dr. Edwin Mertz. *Technical report on asphalt heating, rooftop equipment*

**"(An NRCA Study of) Asphalt Impregnated Glass Mats:"** May '82, pg. 31; by Bill Cullen and Bob LaCrosse. *Results of test program on samples of Type VI glass fiber roofing mat.*

**"Asphalt - The Kettle, The Roof and 20 Years:"** Nov. '73, pg. 16; by Dr. Edwin Mertz. *GAF, Johns-Manville and Trumbull relax maximum heating limits.*

**"Asphalt Packaging:"** Sept. '71, pg. 5. *Discussion of resolution passed regarding packaging.*

**"Asphalt Roofing Manufacturers Issue Recommendations for Built-Up Roofing Contractors:"** March '82, pg. 28. *Recommended procedures for helping to ensure a good and safe job in cold weather.*

**"Asphalt Saturated Felt - A New Look:"** Nov. '79, pg. 29; by D.C. Portfolio. *An article on the research being done on the relationship between moisture absorption and asphalt saturation.*

**"Asphalt Specifications:"** July '72, pg. 25; by Dr. Edwin Mertz. *Asphalt, pollution and coated sheet survey updates.*

**"Asphalt Specifications and Industry Cooperation:"** May '72, pg. 4; by Dr. Edwin Mertz. *Discussion of the existing situation regarding asphalt suppliers.*

**"Asphalt - Understanding Asphalt:"** May '74, pg. 20; by Dr. Edwin Mertz. *Part I of Know Your Materials; discussion of materials used in built-up roofing systems.*

**"ASTM Adopts Tentative Recommended Practice:"** July '69, pg. 10. *History and factual information concerning the sampling and analysis of built-up roofs.*

**"ASTM Meetings Generate Important Decisions for Roofing Contractors:"** Feb. '82, pg. 82; by Bob LaCrosse. *Gravel, inspections, glass felt, single ply, and maintenance were discussed at the ASTM meetings.*

**"ASTM Report for June 1971:"** Jan. '72, pg. 30; by Milton Olson. *Report on June '71 meetings — specifications for membrane roofing and waterproofing.*

**"ASTM Report for December 1971:"** March '72, pg. 16; by Milton Olson. *Report on December '71 meetings — fabrics for bituminous roofing and waterproofing.*

**"ASTM Report for June 1972:"** Sept. '72, pg. 18; by Milton Olson. *Report on June '72 meetings — wind-resistant shingles, surfacing and bituminous materials.*

**"ASTM Report for December 1972:"** May '73, pg. 16; by Milton Olson. *Report on December '72 meetings — wind-*

*resistant shingles, cutback coatings, surfacing and bituminous materials.*

**"ASTM Report for June 1973:"** Nov. '73, pg. 22; by Milton Olson. *Report on June 1973 meetings — fabrics, cutback coatings and non-structured roofs.*

**"ASTM Report for December 1973:"** July '74, pg. 30; by Milton Olson. *Report on the December 1973 meetings — prepared roofing, surfacing. . .*

**"ASTM Report for June 1974:"** Jan. '75, pg. 38; by Milton Olson. *Report on June '74 meetings — prepared roofing, surfacing and fabrics.*

**"ASTM Report for December 1974:"** July '75, pg. 28; by Milton Olson. *Report on December '74 meetings.*

**"Bitumen at the Job Site:"** July '68, pg. 4; by Bob Marquis. *The handling and heating of bitumen.*

**"Blast-Cleaning Spark Plugs can Ruin Engines:"** April '69, pg. 18. *Abrasive grit wears parts rapidly.*

**"Blisters Over Urethane:"** May '80, pg. 18. *Convention coverage of the session on urethane blisters.*

**"Buckle Shell Revolution-Fabricated Flat Slab Roofing:"** Jan. '69, pg. 15. *A new type of weatherproofing roof with built-in insulation.*

**"Built-up Roofing Education: A Giant Step Towards Consensus:"** Sept. '80, pg. 50; by Jack Williams. *Unified education is creating a consensus about built-up roofing among the experts.*

**"Bulletin 2A: Clarification of Bulletin 2 (12/15/77), Equiviscous Temperature (EVT):"** Sept. '81, pg. 49. *A clarification of the EVT concept; a reprint.*

**"BUR Failures Exaggerated:"** July '81, pg. 35. *A first in a series with roofing experts on the key issues facing built-up roofing today.*

**"BUR Today:"** Sept. '81, pg. 30. *A report on built-up roofing by experts in the field.*

**"Care & Maintenance of Hoisting Equipment:"** April '69, pg. 14; by P.M. Timmins. *Tips on keeping hoisting equipment in good shape.*

**"Cast-In-Place and Precast-Prestressed Concrete Roof Decks:"** Jan. '77, pg. 34. *An article detailing this type of roof deck.*

**"Cellular Glass Roof Insulation:"** May '77, pg. 12; by Carol Olm. *The advantages of cellular glass as an insulation.*

**"Check Behind Manufacturers - Claims and Warranties:"** Oct. '81, pg. 30. *A brief discussion of guarantees of work*

*expressed and implied in construction contracts.*

**"Coated Sheet Survey Data Supplemental Reports:"** Sept. '72, pg. 21. *Additional data on the construction methods of individual problem jobs.*

**"Cold Process: Is It Misused:"** Sept. '80, pg. 35; by Burton Karp and the staff of Eagle Moisture Protection Corp. *Some insights on cold process.*

**"Composite Board Roof Insulation:"** Sept. '78, pg. 16; by Paul E. Burgess, Jr., of Jim Walter Research Corp. *The final article on composite board roof insulation.*

**"Condensation & Felts:"** Jan. '68, pg. 14; by Marshall Roy. *Possible effect of Interstitial Condensation on Roofing Felts.*

**"Contact Incompatibilities Between Bitumens and Polymers:"** July '77, pg. 20; by G.L. Oliensis. *Results of a study on bitumen and polymers.*

**"Criteria for NRCA Roof Curb Approval & List of Approved Curbs as of March 15, 1974:"** March '74, pg. 22.

**"A Critique:"** Jan '82, pg. 41; by John D. Van Wagoner. *Wagoner critiques MRCA's document on PVC single-ply roof membrane.*

**"Cullen Reviews Single-Ply 'State-of-the-Art':"** April '81, pg. 21. *A nationally known roofing expert reports on elasto/plastic roofing materials.*

**"Curb your Air Conditioner or How About the Hole in My Roof:"** March '74, pg. 31; by Dr. Edwin Mertz. *Too many holes in the roof from the air conditioning system could cause problems.*

**"Designing for Solar Collectors:"** Nov. '80, pg. 29. *Avoid roof problems when designing solar collectors.*

**"Development of Laboratory Performance Tests of Built-Up Roofing:"** July '81, pg. 39; by Ed Rissmiller of Jim Walter Research Corporation. *An excerpted article from a paper on BUR presented by Ed Rissmiller.*

**"Early Tests Show 'Certified' Felts Not Meeting ASTM Specifications:"** May '79, pg. 23. *Results of early testing done on roofing felts.*

**"Effect of Insulation on the Surface Temperature of Roof Membranes:"** May '76, pg. 28. *Technical information on the effects of insulation.*

Roofing Spec Index continued, page 28

## Technical Information

continued

**"Employment of Non-Conventional Membranes in Thermally Efficient Roofing Systems:"** May '79, pg. 47. *This article discusses the achievement of thermally efficient roof insulation using non-conventional membranes.*

**"Engine Information . . . Check-up:"** Nov. '70, pg. 25. *Facts on engine maintenance.*

**"Engine Maintenance (schedule):"** Oct. '69, pg. 14. *Action to be taken for engine upkeep.*

**"Ethylene Propylene Diene Monomer:"** May '81, pg. 47; by Hugh Kenney, vice-president of marketing, Construction Materials Division, Carlisle Tire & Rubber Company. *An article on the generic elasto-plastic materials.*

**"Evaluating Design of Roof Systems:"** June '82, pg. 30; by Burton J. Karp. ("How to select roofing systems:") Evaluation of Alternative Reroofing Systems. Nov. '80, pg. 38. *A systematic approach is offered by the Corps of Engineer's Construction Research Engineering Laboratory.*

**"EVT - A Sticky Subject:"** Jan. '77, pg. 50. *The technical behavior of roofing asphalts.*

**"Experimental Evaluation of Thermal Transmission Coefficients of Roofing Materials:"** Sept. '71, pg. 22; by B.P.L.M. (Australia). *The hotplate method to obtain thermal transmission coefficient.*

**"Exposure of Some Roofing Systems:"** Jan. '71, pg. 5; by B.F. Stafford. *Results of an outdoor exposure program.*

**"Factory Mutual Updates Loss Prevention Data Sheets:"** April '82, pg. 54; by Bob LaCrosse. *Highlights of Work completed by the Task Force with Factory Mutual on Loss Prevention Data Sheets.*

**"Fibrous Glass Felt:"** May '75, pg. 24; by David E. Richards, Div. Engineer, Owens Corning Fiberglass. *Part V of Know Your Materials.*

**"Fibrous Glass Roof Insulation:"** March '77, pg. 14; by Edward Mirra, Jr. *An account of fiber glass and its use in roofing.*

**"FM Firewalls Requirement:"** Sept. '71, pg. 7. *Specifications for firewalls.*

**"Gypsum Concrete Roof Decks:"** Jan. '76, pg. 32. *An article outlining this type of deck.*

**"Hail Resistance of Roofing:"** Oct. '69, pg. 28; by NBS, S.H. Greenfeld. *New testing seeks to reduce hail damage.*

**"Heating Asphalt - Technical Report:"** Sept. '74, pg. 22; by Dr. Edwin Mertz. *Rooftop research program.*

**"How to Calculate for Drainage Design:"** May '80, pg. 46; by Walter K. Hesse, P.E., District Engineer, Building Systems Marketing Division, Johns-Manville. *A means of water removal after a storm is essential to good roof design.*

**"How Long Does it Last - Technical Report:"** March '75, pg. 36; by Dr. Edwin Mertz. *Measuring durability of asphalt panels.*

**"How UL Rating System Works:"** Jan. '81, pg. 59; by R.A. LaCrosse. *NRCA's technical services manager explains how Underwriters Laboratories determines its ratings for BUR roof coverings.*

**"If you're Confused in Buying Engine Oil . . . Join the Crowd:"** Jan. '70, pg. 30; by Melvin E. Long. *How to choose the best engine oil.*

**"Insulation Tests Show Urethane 'Foaming':"** Nov. '79, pg. 11. *Independent tests show that "significant and substantial foaming" at the point of mopping occurs over urethane insulation.*

**"International Technical Symposium Brighton England:"** Nov. '74, pg. 30; by Dr. Edwin Mertz. *First international conference on roofing.*

**"Is Asbestos Dangerous - Johns-Manville Fights Back:"** Oct. '80, pg. 35; by Bill Good, Executive Director, NRCA. *Johns-Manville disputes the government's findings on asbestos.*

**"Keep Kettles Klean:"** Jan. '72, pg. 10; by Don Ollesheimer. *Ollesheimer's "Klean Kettle" presentation.*

**"Modified Bitumens: What to Look For:"** June '82, pg. 22; by Dr. Jean Meynard. *A description of the types of bitumen materials available and a discussion of bitumen modification.*

**"Moisture Transport In a Metal Building Roof Insulation System:"** Nov./Dec. '81, pg. 36; by D.S. Musgrave, Owens-Corning Fiberglass. *Metal building roof insulation - an industry expert reveals the "right way."*

**"More on Gypsum:"** May '76, pg. 12. *Follow-up questions on the gypsum roof deck article that appeared in the Jan. '76 Roofing Spec.*

**"Motor Oils - Synthetic or Minerals:"** March '75, pg. 28. *Environmental Oil Corp. responds to an article in "Action Information".*

**"MRCA Outlines PVC Performance Criteria:"** June '82, pg. 40. *Midwest Roofing Contractors Assn. compiled a document that sets intended levels of performance for PVC single-ply roof membrane systems.*

**"New Findings in Asphalt Durability:"** Nov. '80, pg. 46; by Robert LaCrosse, NRCA Technical Services Manager. *A report on a five-year project on asphalt durability.*

**"NRCA/ARMA Undertakes Ambitious, Yearlong Asphalt Sampling Testing Program:"** March '82, pg. 42; by Bob LaCrosse. *Results of a questionnaire on the varying quality of asphalt used in built-up roofing assemblies.*

**"NRCA-NBS Technical Conference Summary:"** July '69, pg. 4; by William Cullen.

**"NRCA's Single-Ply Expedition:"** Sept. '81, pg. 45; by Bill Cullen. *NRCA visits Canada to investigate that country's standards program for elasto/plastic roofing materials..*

**"NRCA Ventures into New Territory - Building Codes:"** May '82, pg. 42; by Bob LaCrosse. *State building codes are rapidly replacing county and city building codes.*

**"Organic Felt:"** Nov. '74, pg. 11; by J.J. Klimas GAF Corp. *Part III of Know Your Materials.*

**"Perlite Asphalt Thermal Setting Insulation:"** Sept. '76, pg. 18; by Donald G. McNamara. *An analysis of thermal setting insulation.*

**"Perlitic Roof Insulation:"** Jan. '78, pg. 37; by A.E. Bernardi. *Perlite and its use as an insulation.*

**"Pinpoint Finds Urethane Problems:"** May '80, pg. 28. *An article on why problems increase for plastic insulation.*

**"Pitches and Tars from Coal:"** July '74, pg. 10; by James P. Weideman, Technical Director, Koppers Co. *Part II of Know Your Materials.*

**"Pollution Progress Reports on Committee Progress:"** July '71, pg. 4. *Solution to kettle air pollution.*

**"Pollution - Where Do We Stand:"** July 1973.

**"Preventing Damage from Ice Dams:"** Jan. '80, pg. 42. *This report offers hope for solving a nagging problem from ice dams.*

**"Project Pinpoint:"** March '74, pg. 13. *Announcement and outline of roofing information bank.*

**"Project Pinpoint:"** July '75, pg. 12. *Preliminary returns from the Baseline Data forms.*

**"The Big Protection Push:"** Jan. '73, pg. 30; by Dr. Edwin Mertz. *Business and technology are becoming increasingly protection and consumer oriented.*

**"PVC:"** Sept. '81, pg. 34; by Stanley Warshaw, president of Sarnafil. *An expert examines polyvinyl chloride polymers and its role in the roofing industry.*

**"RIC/TIMA Puts Roof Insulation Blistering to the Test:"** Jan. '81, pg. 55. *The Thermal Insulation Manufacturers Association writes about its study of blistering.*

**"Rigid Urethane Foam Roof Insulation:"** Sept. '77, pg. 10. *Uses for rigid urethane foam.*

**"Roof Failures and Estimated Roof Life: Setting the Record Straight:"** July '80, pg. 16. *An article detailing the failure rate for built-up roofs.*

**"On the Roof - Processing Asphalt with EVT,"** July '82, pg. 36; by Dick Baxter. *Understanding that EVT requires some fundamental knowledge of asphalt processing and petroleum fluxes from which roofing asphalt is produced.*

**"Roofing Technology Draws Rave Response:"** July '80, pg. 48. *Roofing technology course at University of Illinois receives great response.*

**"Roofing a Zonolite Roof Deck:"** Sept. '70, pg. 20; by Chris H. Fiedler, Jr. *Answers to contractors' questions about Zonolite.*

**"Roof Insulation - Extruded, Expanded Polystyrene:"** July '78, pg. 27. *Styrofoam as insulation - a detailed account.*

**"Safe Operating Procedures for Tankers:"** Sept. '78, pg. 16; by Melvin D. Stevenson, President, Liquid Asphalt Systems, Inc. *Safety tips for tanker usage.*

**"Saturated Felts Usage Declines:"** July '70, pg. 6. *U.S. Dept of Commerce figures.*

**"Smoking Can Kill You - Technical Report:"** Nov. '72, pg. 24; by Dr. Edwin Mertz. *Pollution is a problem — pay attention to legislation.*

**"Some of Your Important Questions Answered by the NRCA Technical Services Department:"** August '82, pg. 38; by Bob LaCosse. *The difference between elasto/plastic material, pitch pockets, the maximum heating temperature of asphalt and other queries are answered.*

**"Spontaneous Heating of Roofers Mops:"** Jan. '71, pg. 13; by Eastman Kodak Co. *Fiber-glass mops safer than cotton mops.*

**"Steel Roof Deck:"** May '76, pg. 16. *An examination of steel roof decks.*

**"Steel Roof Deck Study Available from ARMA:"** March '77, pg. 35. *A study on the effects of steel roof deck deflections on a roofing assembly made available by the Asphalt Roofing Manufacturers Association.*

**"Structural Cement Fiber Roof Decks:"** Nov. '76, pg. 42; by Jack Torbett. *An analysis of this type of roof deck.*

**"Study Reveals Asphalt Felt Saturation Insufficient:"** Nov./Dec. '81, pg. 20; by Robert A. LaCosse. *NRCA examines asphalt felt saturation.*

**"SWRI Publishes Final 'Blisters' Report:"** Sept. '80, pg. 13. *The final report on the formation of blisters over urethane insulation.*

**"TAP TAP TAP:"** May '70, pg. 19. *The NRCA Technical Assistance Program.*

**"Technical Bulletin #9:"** Oct. '81, MS. *NRCA-RIC/TIMA joint statement on blistering.*

**"Technical Bulletin #10:"** Oct. '81, MS. *NRCA-RIC/TIMA position of aged thermal value of urethane roof insulation.*

**"Technical Bulletin #12:"** August '82, MS. *The NRCA statement on expanded polystyrene Roof insulation.*

**"Technical Bulletin #13:"** August '82, MS. *Discussion of the retention of elasto/plastic roofing products.*

**"Technical Report:"** May '73, pg. 14. *Convention program and Third Technology Conference.*

**"1982 Technical Services Update:"** July '82, pg. 42; by Bob LaCosse. *Looking at the improvements 1982 has brought to the roofing industry.*

**"Technical Update:"** May '80, pg. 27. *NRCA technical activities and programs expand.*

**"Tested Plywood Roof Deck Systems:"** March '76, pg. 22. *Plywood roof decks are examined in this article.*

**"Test Launched for Expanded Polystyrene Roof Insulation:"** June '82, pg. 54; by Bob LaCosse. *A research program of field and laboratory studies is evaluating roofing systems that use expanded polystyrene insulation, (EPS).*

**"Tests Show Urethane Blistering Due to Moisture Release:"** April '80, pg. 10. *Test results indicate that blister formation over urethane insulation might be due to moisture on or within*

*the felt "skins" of the insulation.*

**"Thermal Performance Criteria for Roof Assemblies:"** May '80, pg. 75. *Technical development in thermal performance for insulating roof and roof deck assemblies.*

**"Venting of Built-Up Roofing Systems:"** May '81, pg. 33; by Wayne Tobiasson, Cold Regions Research and Engineering Laboratory. *From a paper presented by Wayne Tobiasson at the Sixth Conference on Roofing Technology.*

**"Wind Chill Index:"** Nov. '70, pg. 27. *Graph depiction of wind-chill index.*

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## Roofing News

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**"Accounting:"** Oct. '81, pg. 32. *A summary from Smith, Adcock and Co. of the American Institute of CPA's new Statement of Position for Contractors Accounting.*

**"AIA Blasts Energy Conservation:"** Sept. '81, pg. 55. *The American Institute of Architects tells the Reagan Administration that federal conservation programs for energy must continue funding research into improving building energy efficiency.*

**"AIA Focuses on Energy Use:"** May '81, pg. 10. *American Institute of Architects president Randall Vosbeck, recommends that general contractors and architects work closely together to meet the challenges of this decade through solar energy to help solve America's energy problem.*

**"AIA Prompts Report:"** Sept. '81, pg. 14. *The American Institute of Architects issues a report calling for new involvement among architects, engineers, owners and codes and standards groups in the design and construction of buildings with large, column-free interior spaces.*

**"All New Line-Up for Senate Committees:"** Jan. '81, pg. 51. *The November '80 election gave Republicans control of the Senate which means all new committee heads — a look at the labor, energy and small business committees.*

**"America's Energy Future:"** April '80, pg. 31. *What lies ahead for America's energy needs. An article on a session held at the 93rd NRCA Convention.*

**"Applying Overhead to Jobs:"** March '71, pg. 7; by Dr. Emol Falls. *Hunches and guesses are no good — use calculations.*

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## Roofing News

continued

**"Apprenticeship: Meeting the Manpower Needs of the 80's:"** March '80, pg. 22; by David Honaker. *Apprenticeship can help alleviate manpower shortages.*

**"Apprenticeship Update:"** July '80, pg. 36. *Recruitment programs for apprentices begins in 1980.*

**"ARCO Reveals EPS-Coal Tar Pitch Guidelines:"** August '82, pg. 10. *ARCO announced recommendations for using insulation board molded of Dylite, expandable polystyrene in retrofitting coal tar pitch roofing.*

**"ARMA Elects Two to Top Positions:"** Oct. '81, pg. 18. *The results of the Asphalt Roofing Manufacturers Association election.*

**"ARMA/OSHA Protection Efforts:"** May '82, pg. 9. *ARMA has endorsed a proposal from OSHA for voluntary protection efforts in plants and businesses.*

**"Asphalt Group Attacks OSHA Cancer Stand:"** July '79, pg. 12. *The Asphalt Institute lashes out at OSHA for issuing publications linking asphalt exposure to various forms of cancer.*

**"Association Promotes Specialty Contractor Interests:"** Jan. '81, pg. 63. *The functions of the Associated Specialty Contractors are outlined in this article.*

**"Back-to-Back Gains in Contracting Reported for July:"** Oct. '80, pg. 11. *The F.W. Dodge Division of McGraw-Hill Information Systems Company reports that contracting for new construction advanced for the second consecutive month in late '80.*

**"Beaver Creek, Nation's Newest World-Class Resort, Fast Taking Shape in Colorado Rockies:"** Oct. '81, pg. 19. *Job profile on the nation's newest ski resort.*

**"Behind the Scenes at RIEI:"** Jan. '81, pg. 66; by Joseph Halperin, Publicity Chairman, RIEI. *Halperin tells about getting ready for a RIEI conference.*

**"Beldon and Promen Tell How They Get More Work:"** April '81, pg. 40. *Two roofing contractors give tips on how to obtain more work when needed.*

**"Bitumen Burns — Minimizing the Pain:"** May '82, pg. 34; by Col. Basil Pruitt, Jr., and Dr. Richard F. Edlich. *On-site care for bitumen burns.*

**"Bottom of Building Decline in View:"** Jan. '82, pg. 8. *October contracts remain depressed but steady.*

**"Branch Operation Requires Teamwork:"** March '81, pg. 40. *Cooperation is essential to operating a successful branch..*

**"Brotherson Gets Appointment to Illinois State Post:"** May '82, pg. 9. *Donald E. Brotherson has been appointed Director for the Small Homes Council — Building Research Council of the University of Illinois.*

**"Built-Up Roofing A Performance Concept:"** Nov./Dec. '81, pg. 44; by R.L. Bonafont, Ruberoid Building Products Ltd., London. *A performance concept from across the Atlantic.*

**"BUR Conference Attracts Overflow Crowds:"** March '79, pg. 25. *A summary of the 1979 BUR conference held in Phoenix and Boston.*

**"Business Aspects of Selecting, Selling, and Applying Single-Ply:"** March '81, pg. 32; by William Steinmetz, chairman of Midland Engineering Co. *Steinmetz advises on getting into single-ply roofing. Included with the article is a checklist.*

**"Business Should Get Better Break:"** May '81, MS; by Robert J. Leggett, NRCA Washington representative. *More than 1,000 contractors who attended the 1981 Construction Industry Legislative Conference conclude that business in the future should get a better break from the government.*

**"Cartoonist Seeks Roofing Humor:"** April '82, pg. 30. *Bill Dwyer brings humor to ROOFING SPEC with cartoons.*

**"The Case for Metrication:"** Sept. '76, pg. 24; by E. Judson Hoops. *An article advocating the metric system.*

**"CCE Speaks Out. . . On CMA Merger Issue:"** Sept. '76, pg. 30. *The Council of Construction Employers and the Contractors Mutual Alliance merger issue.*

**"Celotex Withdraws Inverted Roof System:"** Sept. '79, pg. 14. *The Celotex Corporation has suspended the promotion and use of specifications for its highly-successful Inverted Roof Assembly (IRA).*

**"Check Plans & Specs for Profit Protection:"** Sept. '71, pg. 10; by Bill Rosenblatt. *A checklist on specifications.*

**"Classical Artistry:"** March '77, pg. 24. *Classical sheet metal work was resurrected at the Canadian National Exhibition Restoration Project.*

**"Commission Issues Energy Report:"** April '81, pg. 10. *The President's Commission for a National Agenda for*

the Eighties say there are no "quick fixes" to the energy problem.

**"Computer Use Grows in Roofing Operations:"** March '80, pg. 34; by Gary Van Ryzin. *Computer use in the roofing industry increasing.*

**"Construction Contracts Down, As Double-Dip Recession Worsens:"** July '81, pg. 11. *The F.W. Dodge Division of McGraw-Hill Information Systems Company Reports that contracting for construction declined 6 percent in April 1981.*

**"The Construction Contracts Sag in July to 13.7 Billion:"** Oct. '81, pg. 10. *Contracting for new construction sagged another 10 percent in July 1981 under the weight of high interest rates and public works stretchouts.*

**"Construction Costs Rise 6.2%:"** Sept. '81, pg. 13. *The cost of construction materials and labor increased nationwide 6.2 percent.*

**"Construction Decline Accelerated in April:"** July '80, pg. 10. *The decline of new construction activity accelerated in April as recession began to curtail contracting for commercial and industrial building.*

**"Construction Declined 25% in February:"** May '80, pg. 12. *February '80 contracts for new construction, totalling \$10.4 billion, were down 25 percent from the same month in 1979, according to the F.W. Dodge Division of McGraw-Hill Information Systems Company.*

**"1982 Construction Forecast:"** Nov./Dec. '81 pg. 10. *Economist George Christie looks at the year ahead.*

**"Construction Industry Productivity Improvement Guide Developed:"** Sept. '80, pg. 15. *The National Construction Employers Council announces the development and introduction of a productivity improvement guide designed to give contractors in the construction industry a guide to improve productivity.*

**"Construction Industry to Get Revised Affirmative Action Goals:"** Jan. '80, pg. 53. *The Office of Federal Contract Compliance Programs published revised, proposed affirmative action goals for the construction industry.*

**"Construction Nosedive Continues:"** Feb. '82, pg. 8. *Construction contracts fell another 10 percent in November.*

**"Construction Recovery Stalled in October:"** Jan. '81, pg. 11. *Construction contracting stalled in October '80, as rising interest rates and restraint on public works programs held the value of the month's new projects to 1980 levels.*

**"Construction Strength Seen in Shallow Housing Dip:"** Nov. '79, pg. 17. *In the fall of 1979, construction industry figures show that the industry is doing better than expected in a weak economy.*

**"Contracts Disputes Act of 1978:"** Jan. '79, pg. 48. *What the Contracts Disputes Act of 1978 means to contractors.*

**"Contractor's Income Below Average:"** March '80, pg. 11. *Executive compensation for top management in the construction and contracting industry ranks eleventh in total average compensation among 24 industries.*

**"Contractors Accept Warning Line:"** Oct. '81, pg. 26. *Contractors across the country give insight to this issue.*

**"Copper Replaced Slate on Historical Building:"** April '81, pg. 42. *Job profile detailing the National Blower and Sheet Metal Company's job in Port Townsend, Wash.*

**"Corporate Takeovers Carefully Weighted:"** July '81, pg. 15. *Mergex Inc. reveals transaction average for companies which acquire other companies.*

**"Cost Control/Full Service — Keys to Big Job Profits:"** Sept. '79, pg. 28. *Large residential work projects can mean either big profits or big problems.*

**"The Cost of Using 'Independent Contractors' Who Are Not 'Independents:'"** July '77, pg. 9. *The pros and cons of using independent contractors.*

**"Court Says OSHA Must Obey Rulings that Roofers Do Not Need Safety Belts:"** Jan. '82, pg. 8. *Discussion of recent US Court of Appeals ruling regarding use of safety belts.*

**"A Critique:"** June '82, pg. 41. by John D. Van Wagoner. *Van Wagoner critiques MRCA's document on PVC single-ply roof membrane systems.*

**"CSI Annual Certified Construction Specifier Program:"** Oct. '81, pg. 13. *The Certified Construction Specifier program offers the opportunity to demonstrate expertise in the preparation of written construction documents.*

**"CSI Elects New 81-82 Officers:"** Sept. '81, pg. 58. *Announcement of newly elected Construction Specifications Institute officers.*

**"CSI to Move:"** Sept. '81, pg. 13. *The Construction Specifications Institute located in Washington, D.C., announces plans to move to Alexandria, Va.*

**"Dodge Predicts Improvements in**

**1977:"** March '77, pg. 38. *The F.W. Dodge Division predicts a 15 percent gain in construction for 1977 over the previous year.*

**"Dodge Reports Downturn in Residential Construction:"** April '80, pg. 13. *Construction of new housing units in 1979 declined 11 percent from 1978 says F.W. Dodge Division of McGraw-Hill Information Systems Company.*

**"Dodge/Sweet's Lowers 1981 Construction Rate Outlook:"** Sept. '81, pg. 17. *F.W. Dodge predicts that the construction industry faces another tough period for the remainder of 1981.*

**"Do You Know the Hidden Cost of Overtime:"** Oct. '69, pg. 4; by James Howerton. *Common sense approach to difficult problems.*

**"Draft of the New National Safety Standards:"** May '73, MS. *Proposed ANSI safety standards.*

**"Drugs and the Roofing Contractor:"** Nov. '70, pg. 19. *The drug problem and how it relates to contractors.*

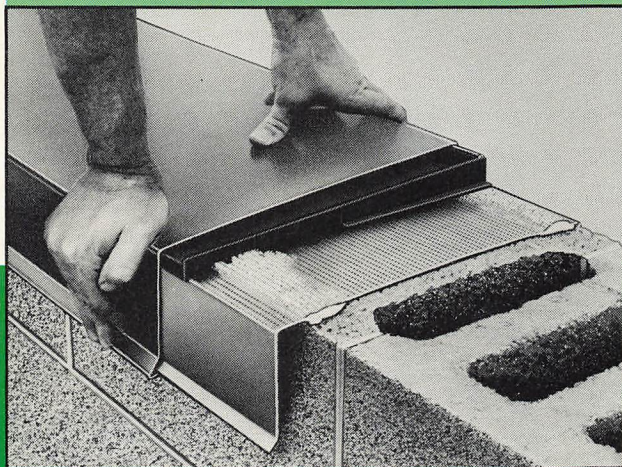
**"Education in Industry: Bringing in the Professionals:"** March '82, pg. 30; by Beth Riley. *Academic education is a bonus to practical experience.*

Roofing Spec Index continued, page 33

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## Roofing News

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**"Emissions and OSHA:"** Jan. '76, pg. 30. *The new emphasis may pose a problem.*

**"Energy: The Catalyst for Change in the '80's:"** April '81, pg. 8. *The soaring cost of energy is the catalyst for sweeping changes in the housing industry according to a survey of home builders.*

**"Energy Conservation and the Roofer:"** Sept. '77, pg. 18; by Max Baker. *The roofing industry's role in energy conservation.*

**"The European Roofing Experience:"** May '81, pg. 25. *Six contractors visit five countries to learn about roofing techniques in Europe.*

**"Evaluating Design of Roof Systems:"** June '82, pg. 30; by Burton J. Karp. *How to Select roofing systems.*

**"EVT: The Right Temperature for Applying Built-Up Roofing Asphalts:"** May '82, pg. 11; by Mike Beightol. *Discussion of the values of the equiviscous temperature concept.*

**"Factory Work on Pre-Fabricated Housing is Held:"** Oct. '69, pg. 8. *Discussion of Solicitor of Labor ruling.*

**"Falls: How Big a Problem:"** Sept. '77, pg. 24. *An analysis of injuries and deaths that have occurred as a result of a fall.*

**"February Construction Contracts at \$10.4 Billion:"** May '81, pg. 9. *F.W. Dodge Division reveals that contracts for new construction of all kinds came to \$10.4 billion in February '81, barely 2 percent above the value of new projects started in the same month of 1980.*

**"Few Women Are in Roofing Now, But . . .:"** July '81, pg. 17. *A former woman roofer and contractor who employ women onsite, talk about women in roofing.*

**"Final Details Make the Difference:"** March '81, pg. 19. *A roofing contractor writes about the details that need to be attended to after the roof has been put on.*

**"Fire Official Survey Indicates Support for Automatic Fire Vents:"** Oct. '81, pg. 11. *A survey of fire officials indicates that fire vents are helpful for fighting blazes in large, one-story building.*

**"Foam Group Reorganizes Roofing Committee:"** Feb. '82, pg. 11. *Roofing Committee reorganized to include a broader range of representation throughout the industry.*

**"Full-Year Construction Value Decline in 1980:"** March '81, pg. 7. *F.W. Dodge Division reports that the December '80 strong rate of contracting for new construction projects, pointed to improved spending for building.*

**"GAF Income Rises in Second Quarter:"** Sept. '81, pg. 14. *GAF reports second quarter earnings up in 1981.*

**"GAF to Shut Down Denver, Kansas City Roofing Plants:"** Oct. '81, pg. 11. *GAF shuts down two roofing plants.*

**"Getting Back to the Fundamentals of Safety:"** Nov. '73, pg. 26; by Joe A. Judge and Charles N. Shaw, Jr. *Highlights of safety reports presented by Judge and Shaw.*

**"Getting Your Business in Shape for the 80's:"** March '80, pg. 16. *Problems are outlined and discussed pertaining to the successful running of a roofing business in the 80s.*

**"\$200,000 Grant to Fund Roofers Training Programs:"** Sept. '79, pg. 12. *The U.S. Department of Labor has awarded a grant of \$200,000 to the United Union of Roofers, Waterproofers and Allied Workers to establish a new apprenticeship program and to assist existing programs in the roofing industry.*

**"Health and Hygiene Recommendations for Roofing Work:"** Jan. '77, pg. 41; by Bruce G. Martin. *Emphasizes health standards for the roofing trade.*

**"Housing to Highlight Roof Planes:"** June '82, pg. 9. *New trends in housing will dramatically alter the design and appearance of homes in the future.*

**"How Do You Spend Your Time:"** March '81, pg. 37. *Two roofing contractors log their time for this article on time management.*

**"How Short are the Shortages:"** March '74, pg. 24. *An NRCA survey of materials.*

**"How to Analyze Roof Problems:"** May '80, pg. 37. *1980 Convention coverage of Jack Williams, Twin City Roofing Company, Wahpeton, N.D., talk on how to analyze roofing problems.*

**"How to Develop a Consumer Relations Program:"** Jan. '74, pg. 30. *Positive program aimed at potential customers.*

**"How to Manage your Stress:"** April '81, pg. 38. *A management consultant discusses ways to handle everyday stress.*

**"Huge Gas Pipeline Project Boosts January Construction:"** April '82, pg. 16. *Contracting for new construction advanced a seasonally adjusted 4 percent in January.*

**"Improving Developing Relations Between Roofing Contractor, Architect:"** March '81, pg. 37; by Jack Gist. *Improving business relationships between contractor and architect.*

**"Insulation and a New Roof Save Energy for Western Area Postal Facility in Topeka:"** Oct. '80, pg. 13. *Job feature on the Western Area Supply Center of the U.S. Postal Service in Topeka, Kansas.*

**"Involved Workers are More Productive:"** July '74, pg. 23; by E.R. Breningmeyer. *List of easy methods to involve your men.*

**"January Surge in New Construction:"** April '80, pg. 12. *McGraw-Hill Information Systems Company, F.W. Dodge Division, reports a surge in non-residential building in January 1980.*

**"Labor-Management Group Proposed:"** July '81, pg. 12. *Mechanical Contractors Association of America, Inc., has recommended that a subcommittee be established to help resolve crucial labor-management problems facing the unionized sector of the construction industry.*

**"Leggett, McCahey Talk Politics at NRCA Convention Business Session:"** April '81, MS. *A discussion on why business should get involved with government.*

**"Manufacturer Offers Certification Program:"** July '81, pg. 11. *Owens-Corning Fiberglas Corporation will institute a Certified Roofing Construction Program in an effort to ensure quality workmanship on commercial roofing projects.*

**"March Construction Contracts Up; Utility Project a Major Factor:"** May '82, pg. 8. *Contracts for new construction advanced a seasonally adjusted eight percent in March.*

**"Material Warehousing . . . Yes or No:"** April '68, pg. 13; by A.G. Van der Boom. *The factors affecting the decision of whether or not to warehouse.*

**"MRCA Outlines PVC Performance Criteria:"** June '82, pg. 40. *Midwest Roofing Contractors Association compiled a document that sets intended levels of performance for PVC single-ply roof membrane systems.*

**"National Survey Shows Growth of Single-Ply:"** March '81, pg. 7. *The Dow Chemical Company reveals survey showing the increase in single-ply roofing.*

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## Roofing News

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**"National Weakening on All Fronts — Construction Drops Again:"** June '82, pg. 8. *Recession deepened in April and things went from bad to worse.*

**"NCEC Supports ERISA Reform Bill:"** May '80, pg. 12. *The National Construction Employers Council (NCEC) supports legislation to modify some of the damaging provisions of the Employee Retirement and Income Security Act.*

**"Newsletter: Low-Cost Alternative for Company Promotion:"** Sept. '78, pg. 43. *How newsletters can boost company promotion at a low cost.*

**"New Construction Rebounds in December:"** 1981 Total Up One Percent from 1980. March '82, pg. 6. *A December rebound from the year-long deterioration in the construction market brought the construction contract value to \$150.2 billion.*

**"New General Counsel Appointed:"** May '82, pg. 10. *Elliot Rose Buckley recently became the General Counsel of the Occupational Safety and Health Review Commission, OSHRC.*

**"New Manual is Important Tool for Saving Costly Energy Dollars:"** April '82, pg. 40; by Chuck Kouri. *Manual enables user to calculate cooling and heating costs and propose cost-effective system based on precise data.*

**"New Products, New People, New Risks: Profile of a Reroofing Contractor:"** Sept. '80, pg. 27; by Diane Guenther. *Rockford, Illinois contractor Kurt Carlson provides a look at the contractor of the future.*

**"The New Tax Laws: What's Ahead for the Roofing Contractor:"** Jan. '82, pg. 12; by Mike Beightol. *Discussion of individual tax changes, cost recovery and investment credits and cuts in estate and gift taxes.*

**"New Training Manual Available:"** Sept. '80, pg. 44; by David Honaker. *The National Apprenticeship produces the first roofing training manual.*

**"New York, New York:"** Nov./Dec. '81, pg. 12. *New York City experiences an increase in construction.*

**"No-Improvement in August Construction:"** Nov./Dec. '81, pg. 8. *August contracts for new construction brought no significant improvement over July's condition.*

**"Non-Residential Construction Contracts Up 6% in December:"** March '80, pg. 12. *A modest gain in construction contracting in December*

*1979 reversed a five-month series of declines, as reported by F.W. Dodge Division of McGraw-Hill Information Systems Company.*

**"NRCA Convention Report — Demographics: A Growing Bottom Line for Roofing Contractors:"** April '82, pg. 44; by Peter Francese. *The effect of demographics on the housing industry.*

**"NRCA Falls Survey:"** Sept. '72, pg. 4. *The greater the slope, the smaller the number of falls.*

**"NRCA Statement of Expanded Polystyrene Roof Insulation:"** August '82, MS. *Technical Bulletin #12.*

**"Nylon Shell Can Cause Serious Burns:"** Jan. '73, pg. 33. *Insulated underwear fabric can be hazardous.*

**"OSHA at Age Three:"** Sept. '74, pg. 13; by OSHRC Chairman Robert D. Moran. *Text of Moran's talk.*

**"OSHA Inspection Without OSHA:"** May '73, pg. 11. *Getting through the regulations maze.*

**"OSHA and the Need for A Formal Company Safety Program:"** Sept. '78, pg. 40. *An article advocating the need for a written safety program by OSHA.*

**"OSHA Revision to Sec. 1926.451 (u)(3):"** Sept. '72, pg. 4; by Bruce Martin. *The July 26 Oral Testimony to House Select Committee on Small Business.*

**"OSHA: On Target:"** Sept. '74, pg. 11. *Interesting evidence on the relationship of accidents and OSHA citations.*

**"OSHA's Target Industry Program - A Challenge:"** May '74, pg. 31; by John H. Stender, Asst. Secretary of Labor for OSHA. *Text of talk presented at NRCA New Orleans convention.*

**"OSHA: Three Years Later:"** March '75, pg. 16; by L.P. Sands, F.S. James & Co. *Sand and James & Co. offer a different look at a continuing problem.*

**"OSHA Update:"** Oct. '80, pg. 26; by Robert McAdam, NRCA Member Services Manager. *Update as of October 1980.*

**"OSHA Victory for Subcontractors:"** July '75, pg. 34. *Decision regarding violations not created by nor the responsibility of subcontractors.*

**"OSHA Will Launch New Safety Inspection Targeting Plan in High-Hazard Industries:"** Nov./Dec. '81, pg. 8. *OSHA employs lost workday injury rates to determine which firms in high-hazard industries warrant comprehensive programmed safety inspections.*

**"Outlook to Improve in '80's for Housing and Mortgages:"** Sept. '81, pg. 13. *William E. Gibson, senior vice-president, economics and financial policy, McGraw-Hill Inc., predicts healthy trend for housing in the '80's.*

**"Periodic Project Logs:"** Nov. '78, pg. 29. *Tips for maintaining a project log on a daily or periodic basis.*

**"Pinpoint Shows Energy Advances:"** May '78, pg. 13. *Data collected on a sampling of all roofing jobs completed during the last half of 1977, show that significant progress is being made in the amount of insulation being used on roofing work: both new and repair.*

**"Planning for Your Company's Growth:"** April '80, pg. 28. *An article on a session held at the 93rd NRCA Convention on managing the growth of a roofing contracting firm.*

**"Point of Controversy: The 'Roofing Technology' Course:"** March '80, pg. 13. *An article that clarifies a misunderstanding regarding the purpose of a "Roofing Technology" course offered at the University of Illinois.*

**"Political Involvement and the 96th Congress:"** July '79, pg. 22; by Beth Kay. *NRCA Washington Representative. The roofing industry can make an impact on the 96th Congress' decision on the Davis-Bacon Repeal and Federalization of Worker's Compensation Standards.*

**"A Study on Pricing:"** Nov. '70, pg. 8. *Results of a pricing study for the Tennessee Association.*

**"Productivity Requires Cooperation:"** July '81, pg. 12. *Survey reveals that failure of the federal government to foster greater cooperation among business, labor, special interest groups and government itself could diminish public support for policies to increase productivity.*

**"A Professional Approach to Residential Reroofing:"** Sept. '80, pg. 21; by Gary Van Ryzin. *The image of residential reroofing is changing.*

**"Profit Illusion:"** Sept. '79, pg. 23. *Despite optimistic reports that 1979 could be a big year for roofing contractors, the year could result in lower profits due to taxes.*

**"Project Pinpoint Data Show Trends:"** May '81, pg. 42. *Four years of data are compared and trends are shown in the roofing industry.*

**"Proposals for Regulatory Reform:"** April '80, pg. 16; by William M. Drohan, Washington Representative. *Overview on how Congress is trying to curb excessive regulations in Washington, D.C.*

**"Prospects for OSHA Reform:"** May '80, pg. 17; by William M. Dorhan, NRCA Washington Representative. A view stating that OSHA has not been successful in its attempt to protect the safety of the workplace.

**"Public Favors Solar Energy Development:"** Jan. '81, pg. 13. Results of a National Environmental Survey confirm the public's overwhelming enthusiasm for solar energy development.

**"Reagan Expects Tax Measures to Result in 'Construction Boom:'"** Oct. '81, pg. 11. President Ronald Reagan predicts that his administration's Economic Recovery Program will trigger a "major investment boom" in construction in the next few years.

**"Record Set on Energy-Saving Roof:"** May '77, pg. 26. The Hal Baker Roofing Company of Minneapolis, Minn., sets new Guinness Book of World Records mark.

**"Recovery of Construction Continued in August, Says F.W. Dodge:"** Nov. '80, pg. 13. August 13. August 1980 contracts for new construction totaled \$15.1 billion, a gain of 6 percent over the year-ago amount, reported the F.W. Dodge Division of McGraw-Hill Information Systems Company.

**"Reindustrialization of the United States Economy:"** Oct. '80, pg. 53; by William M. Drohan, NRCA Washington Representative. Drohan advocates reindustrialization of the U.S. economy.

**"Reroofing the Pantheon:"** Sept. '80, pg. 24; by David Honaker. Description of the job that used lead plates and an elastomeric system.

**"Residential Construction Lags Overall Building at Low Point:"** Sept. '79, pg. 13. Continued weakness in the residential market forces the overall index to its lowest point in 1979, despite an increase in nonresidential construction in June of 1979.

**"Residential Roofing a Good Opportunity:"** May '80, pg. 33. Contractors are investing in the future of residential roofing.

**"Retention of Elasto/Plastic Roofing Products:"** August '82, MS. Technical Bulletin #13.

**"RIC/TIMA Develops Procedure:"** May '81, pg. 10. RIC/TIMA develops a roof insulation specimen conditioning procedure.

**"RIC/TIMA Devises New Test Method:"** April '81, pg. 10. A new test method to measure the long-term thermal properties of roof insulations by RIC/TIMA.

**"RIEI: Draws Raves:"** March '80, pg. 52; by Bill Good. The first week-long seminar for the Roofing Industry Educational Institute held in January '80 is viewed as a success by those who attended.

**"RIEI: A Look Behind the Scenes:"** Jan. '82, pg. 10. A glimpse at the final rehearsal for the Elasto/Plastic Sheet Applied Roofing Seminar in Denver.

**"RIEI: Meeting a Need Through Education:"** March '79, pg. 8. An introduction to the Roofing Industry Educational Institute.

**"RIEI Starts Hall of Fame:"** June '82, pg. 10. Roof Industry Educational Institute plans to raise funds for educational programs.

**"RIEI Taps Cullen and Karp for Board:"** Sept. '81, pg. 55. The Roofing Industry Educational Institute announces the election of William C. Cullen as chairman of the Board of Regents.

**"The Role of the Political Action Committee:"** July '80, pg. 46; by William M. Drohan, NRCA Washington Representative. Why the importance of political action committees has risen.

**"Roof Maintenance:"** Oct. '81, pg. 35. Three experts share their views on the topic of roof care and repair.

**"On the Roof Processing Asphalt with EVT:"** July '82, pg. 36; by Dick Baxter. Understanding that EVT requires some fundamental knowledge of asphalt processing and petroleum fluxes from which roofing asphalt is produced.

**"Roofing for Historic Buildings:"** May '79, pg. 32. Sara Sweetwater, Office of Archeology and Historic Preservation, discusses some renovations.

**"Roofing Practice in Switzerland:"** Jan. '78, pg. 42; by Hans R. Egger, Zurich, Switzerland. A brief report on roofing in Switzerland, primarily on materials and techniques.

**"Roofing Spec/Solar Age Rooftop Solar Equipment Index:"** August '82, ppg. 14-20. Concentrating Collectors, Liquid Flat Plate Collectors, and Roof Mounting Devices are covered in this comprehensive index.

**"The Roofs that Jack Built:"** Nov. '79, pg. 26; by David Honaker. A profile on the roofs that Jack Warfield and Jack's Roofing Company have worked on.

**"RSTC Issues Booklet on Built-Up Symposium:"** May '82, pg. 10. The condensed transcript of its symposium on built-up roofing systems, "The State of the Art," is now available.

**"RSTC Recommends Field Practices on Aggregate Use:"** May '81, pg. 9. The Roofing Systems Technical Committee recommends to industry specifiers and users, a field practice on aggregates for built-up roof surfacing.

**"Safety Bird:"** July '75, pg. 12. A sampling of safety ideas; winners announced.

**"Safety Incentive Program - Well Worth the Cost:"** Sept. '79, pg. 32; by David Honaker. The Empire Roofing Co. in Chicago has reduced accidents and saved insurance dollars with a creative safety program.

**"Safety Legislation Brings Problems - OSHA Passes:"** May '71, pg. 8. What contractors should know.

**"Safety Movie Breakthrough:"** Nov. '79, pg. 21. Easy to use movie viewer can be used on the job site.

**"A Safe Roofer is a Good Roofer - A Good Roofer is a Safe Roofer:"** May '78, pg. 3. Safety on the job can mean better productivity.

**"Safety: Study Results - Adoption of Summary of NIOSH Study:"** July '75, pg. 16. Researcher Kirk Prather looks at roofing accidents from a behavioral viewpoint.

**"Selikoff Report to International Union:"** April '70, pg. 5. Director of Environmental Science addressed the 18th Triennial Convention of the International Union.

**"The Shape of Roof Construction:"** Nov. '79, pg. 38. Trends in the roofing industry are discussed at length.

**"The Single-Ply Makers Form New Group:"** April '82, pg. 8. The Single-Ply Roofing Institute was formed to help guide the materials growth in the roofing industry.

**"Site Selected for International Waterproofing Congress:"** April '82, pg. 8. Strasburg, France, has been chosen as the site for the 1983 Waterproofing Congress, June 1-3.

**"Solar Collectors Put Heat on the Roof:"** August '82, pp. 12-13; Douglass Root, Educational Consultant for the Florida Solar Energy Center. Root discusses installation goals for solar roofing.

**"The Southern Building Code Congress Publishes Roofing Standard:"** May '77, pg. 24. The first standard ever written for the application of roofs and roof coverings.

Roofing Spec Index continued, page 36

## Roofing News

continued

**"Space Center Reroofed:"** July '81, pg. 37. *A job profile on the reroofing of NASA's Vertical Assembly Building (VAE) at Cape Kennedy Space Center Florida.*

**"Specifications Review Committee:"** April '81, MS; by Monte Upshaw, chairman, Specifications Review Committee.

**"Squeezing Cash Flow:"** March '82, pg. 10; by Jerry Jackson. *Tips from successful contractors on how to reduce business costs during difficult economic times.*

**"Study Analyzes Worker Exposure to Hot Bitumen Emission:"** Feb. '82, pg. 43; by Dr. Jerome Thomas. *Report compares the exposure of actual roofing workers with governmental standards.*

**"Study Shows BUR to Retain Majority of Total Roofing Market:"** May '82, pg. 32. *Single-ply will grow, but conventional will retain leadership.*

**"Substitution, No Help:"** May '82, pg. 10; by Thomas J. McGlone. *California law permitting prime contractors on state jobs to substitute deposits for retainages has sparked controversy over N.Y.'s own substitution statute.*

**"Survey Shows Basic Materials Exec Ranked Fifth in Total Competition:"** Nov. '80, pg. 14. *Salary and bonus payments to top management in the basic materials industry increased 9.8 percent in 1979 to an average of \$228,500, according to survey.*

**"Target Industry Program - Safety, OSHA, Roofing:"** July '71, pg. 12. *How to use the OSHA packet of information.*

**"Tax Benefits of Operating as a Pseudo-Corporation:"** July '68, pg. 10. *Explanation of the tax advantages of a pseudo-corporation.*

**"Testimony by Bruce Martin to House Select Subcommittee on Labor:"** Nov. '72, pg. 4. *OSHA Standards are unnecessarily complex and burdensome, said Martin.*

**"Times are Right for Business Progress:"** July '81, pg. 30. *NRCA's lobbyist in Washington is enthusiastic about the current atmosphere in the nation's capitol.*

**"Treating Asphalt Burns:"** July '73; by W.B. Warden, Chemical Engineer.

**"Two Cancer Researchers Report Cancer:"** Sept. '72, pg. 12; by Brian Sullivan, AP Science Writer. *Suspect benzyrene may not be guilty after all.*

**"Two Contractors Relate Their Computer Experiences:"** March '81, pg. 25. *A discussion on the pros and cons of a computer system for business.*

**"Understanding Basic Financial Statements:"** July '75, pg. 10; by Robert F. Fowler, II, Fails & Associates. *Second in a four-part series.*

**"Uniroyal to Expand Royalene EPDM Capacity by 50 Percent:"** Oct. '81, pg. 13. *Uniroyal announces its capacity increase for Royalene EPDM rubber.*

**"University, Industry Sponsor Testing:"** Jan. '81, pg. 13. *The Center for Insulation Studies at Drexel University is established.*

**"Urethane Session Stirs Convention Controversy:"** May '79, pg. 16. *Discussion of the possible connection between the use of urethane insulation and roof blisters - also the announcement of a cooperative testing program to help resolve the matter.*

**"U.S. Chamber Leads Support For Reagan's Budget:"** July '81, pg. 28; by Mike Beightol, Roofing Spec assistant editor. *The Chamber of Commerce of the United States drums up support for President Ronald Reagan's budget.*

**"Warning Line Approved:"** Jan. '81, pg. 11. *The Warning Line System goes into effect.*

**"The Warning Line Behind the Scenes - An Interview with Charlie Jackson:"** Oct. '81, pg. 14. *A look at the Warning Line delays and frustrations with E.L. Hilts' Charlie Jackson.*

**"Warning Line Regulation Signed:"** Sept. '79, pg. 12. *OSHA signs warning line regulation on August 10, 1979.*

**"Warning Line System: Workable Solution:"** April '81, pg. 25. *A manufacturer, contractor and OSHA official analyze the new regulation at the 1981 convention.*

**"Washington Report:"** Sept. '79, pg. 36; by Beth Kay, NRCA Washington Representative. *Advocates review priorities for the 96th Congress among the business community and the construction industry.*

**"What Can a Management Consultant Do for You:"** May '75, pg. 10; by Robert F. Fowler II, Fails & Associates. *First in a four-part series.*

**"What's Ahead for 1981:"** Jan. '81, pg. 41. *Predictions for 1981 are favorable.*

**"Writing Your Congressman can be Effective:"** July '74, pg. 27. *Seven ideas for getting your letter read.*

**"86 Years Young: A Contractor Profile:"** Sept. '81, pg. 25; by Mike Beightol. *A profile on the Young Sales Corporation.*

**"The Year in Review and '82 Outlook:"** Jan. '82, pg. 18; by Robert L. Leggett. *Legislative outlook by NRCA lobbyist.*

## Legal & Insurance

**"Affirmative Action Guidelines:"** March '79, pg. 28. *How affirmative action plans must be structured in order to avoid reverse discrimination charges.*

**"Analysis of Federal Affirmative Action Requirements for Women and Minorities in Construction:"** Sept. '78, pg. 34. *Federal requirements for federal construction contracts.*

**"Anatomy of a Lawsuit:"** April '80, pg. 16. *An article on a session held at the 93rd NRCA Convention.*

**"Authorization for Extra or Changed Work:"** May '78, pg. 22. *The legal requirements for construction contract change.*

**"Avoiding the Gotchas:"** March '79, pg. 13; by Jack Williams. *A commentary on how roofing contractors can avoid some basic legal hassles.*

**"Be Aware of ERISA Withdrawal Liability:"** March '82, pg. 38; by Ronald Sheeley, Acret & Perrochet law firm. *Discussion of a new federal law concerning union employee retirement.*

**"Buying Peace of Mind:"** July '82, MS; by Fred S. James, NRCA/CNA. *Report on the NRCA general business insurance program.*

**"Buy-Sell Agreements:"** May '78, pg. 20. *Buy-sell agreements and estate planning.*

**"Call Manufacturers' Bluff on Warranties:"** July '81, pg. 48. *Liability aspects of project specifications.*

**"Certification of Materials:"** July '81, pg. 48. *An overview on the legal aspects of project specifications.*

**"Changes in Bankruptcy Law Affecting Leases:"** July '79, pg. 31. *Changes in the Bankruptcy Code and Law are discussed.*

**"Collecting Your Money:"** May '78, pg. 20. *Legal aspects of collecting payment are discussed in this article.*

**"Completed Contract Accounting Methods:"** June '82, pg. 17; by Summers, Hendrick, Spanos, Phillips and Grant. *Discussion of the advantages of completed contract accounting methods.*

**"Completed Contract Method of Accounting on the Way Out:"** Nov. '79, pg. 35. *The American Institute of*

*Certified Public Accountants revises its "Audits of Construction Contractors" guide used by independent auditors in their audits of the financial statements of construction companies.*

**"Compliance with Federal Wage and Hour Laws:"** Oct. '80, pg. 40. *A brief on the federal wage and hour laws.*

**"Contractors to be Paid Legal Expenses:"** Feb. '82, pg. 16; Summers, Hendrick, Spanos, Phillips, and Grant. *How the Equal Access to Justice Act affects contractors.*

**"Damages May Be Available to Contractor for Owner Delays in Payments Due Under the Contract:"** Sept. '81, pg. 52. *Examination of consequential damages.*

**"Document Your Travel Entertainment Expenses:"** May '81, pg. 50. *Summary of the Internal Revenue Code that allows deductions for travel and entertainment expenses incurred while away from home in pursuit of trade or business.*

**"Economic Recovery Tax Act of 1981: Estate and Gift Tax Revisions:"** Nov./Dec. '81, pg. 18. *Highlights of the major changes to the Federal Estate and Gift Tax Law.*

**"EEOC Issues Guidelines for Eliminating Sexual Harassment:"** April '81, pg. 46. *An employer's liability for sexual harassment is being increased by the EEOC and by the courts.*

**"Elimination of Subcontract Notification:"** Nov./Dec. '81, pg. 18. *Proposal to the Office of Federal Contract Compliance Programs would eliminate construction subcontract notification.*

**"Employee Discharges and the Law of Privileged Communications:"** July '79, pg. 31. *The legal aspects of revealing why an employee was released from duty — what can and cannot be said by a former employer.*

**"Equitable Adjustments in Unit Price Contracts:"** Nov. '79, pg. 35. *Regulations governing unit price bid contracts.*

**"Federal Laws on Equal Employment:"** May '80, pg. 54. *A comprehensive look on the equal employment laws. Benefit improvements announced by the National Roofing Industry Pension Plan.*

**"Fixed Price Supply Contracts:"** Nov. '74, pg. 22; by McNeill Stokes. *One way to protect yourself from the price-supply squeeze.*

**"Government Contractors—Affirmative Action:"** Sept. '79, pg. 40. *An update on the affirmative action obligations imposed upon government contractors pursuant to Executive Order 11246.*

**"Guideline for Rejecting Minority Job Applicants:"** Nov. '78, pg. 29. *A brief guideline for minority hiring.*

**"The Hazards of Licensed Applicator Agreements:"** March '80, pg. 18. *The pros and cons of licensed applicator agreements are discussed at length by Steven Phillips, an attorney with Stokes & Shapiro, Atlanta.*

**"Health Maintenance - A New Approach to Group Health Insurance:"** July '80, pg. 32; by Walter Derk, NRCA Insurance Advisor. *An outline on Preventive Health Maintenance Plans.*

**"Hidden Liabilities Associated with OSHA Standards:"** Jan. '82, pg. 33. *Alerting contractors to circumstances where they are liable.*

**"Hiring:"** July '81, pg. 51. *The pros and cons of the hiring hall.*

**"Insurance and the Roofing Contractor:"** Nov. '76, pg. 46; by Richard Lietz. *Insurance coverage is discussed.*

**"Insurance and the Roofing Contractor:"** Sept. '76, pg. 12; by Richard J. Lietz. *Commercial insurance, specifically Workmen's Compensation, General Liability and Umbrella Liability are discussed.*

**"Insurance Committee Manages NRCA/CNA Safety Group:"** March '81, MS; by Sam Piper, chairman NRCA Insurance Committee. *An overview of the NRCA Insurance Committee.*

**"Insurance 1979: A Current Overview:"** Jan. '79, pg. 46; by Richard J. Lietz. *A forecast for the insurance market in 1979.*

**"Insurance Outlook for the Roofing Contractor:"** March '80, pg. 32. *What to expect from commercial insurance during the 80's.*

**"Interest on Late Payments By Federal Government Beginning in October '82,"** July '82, pg. 13. *Contractors dealing with the Federal government will be entitled to interest on all payment obligations.*

**"IRS Provides for Higher Limitations on Benefits and Contributions Under Pension Plans:"** Oct. '81, pg. 32. *Under Internal Revenue Code, qualified pension, profit sharing and stock bonus plans are subject to limitations on the maximum permissible annual benefit or contribution made to the plan.*

**"Is That Lawsuit Really Necessary:"** Jan. '68, pg. 10; by Wallace Bryant, American Arbitration Association. *Contract disputes and legal action.*

**"Is Travel Time Compensable Working Time:"** Sept. '79, pg. 40. *An analysis on compensable working time for travel.*

**"Know Your Bond Rights:"** May '75, pg. 22; by McNeill Stokes. *More and more jobs are requiring payment bonds.*

**"Labor Department Issues Proposed Rules:"** Nov./Dec. '81, pg. 9. *Labor Department's Office of Federal Contract Compliance Programs (OFCCP) publishes its proposed affirmative action rules.*

**"Labor Department Proposes New Regulations:"** March '82, pg. 27; by Summers, Hendrick, Spanos, Phillips and Grant. *The Federal Labor Department has announced a proposed exemption from the prohibited transaction provisions of the Employee Retirement Income Security Act (ERISA).*

**"Legal Center to Aid Contractors:"** May '79, pg. 20. *The National Roofing Litigation Center begins service.*

**"Legal Consequences of Applicator Agreements are Significant:"** April '81, pg. 33. *An attorney warns contractors about reading contracts carefully before signing.*

**"Legal Headaches Still Affect Industry:"** May '79, pg. 28. *The law and the roofing industry as explained by attorney McNeill Stokes.*

**"Lessors of Construction Equipment Can Collect Under State Lien and Bond Laws:"** April '81, pg. 46. *A brief discussion on lessor rights.*

**"Liability for Winter Damages:"** May '79, pg. 40. *What is the roofing contractors liability for damages because of severe winter weather.*

**"Litigation Center Continues Growth and Service:"** Nov. '80, pg. 56; by Patricia Appelhans, Manager, National Roofing Litigation Center. *An update on the NRCA Litigation Center.*

**"Litigation Center Established:"** Jan. '79, pg. 39. *NRCA establishes litigation center to serve as a source of information on legal problems within the roofing industry.*

**"Litigation Center Growth Continues:"** March '80, pg. 40; by Patricia Appelhans. *Use of NRCA Litigation Center increases as the center expands its service.*

**"Managing Your Company's Insurance Program:"** March '81, pg. 17; by Walter T. Derk, NRCA Insurance Advisor. *An expert outlines roofing concerns regarding insurance.*

**"Mechanic's Lien Waivers:"** Jan. '81, pg. 72. *Summary of mechanic's lien waivers.*

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## Legal & Insurance

continued

**"Mediation: A Less Costly Method of Dispute Settlement:"** April '81, pg. 29; by Patricia Applehans, Manager, National Roofing Litigation Center. *A mock mediation session at the 1981 convention shows what mediation is like.*

**"Mediation: New Solution to an Old Problem:"** April '80, pg. 33. *A report on mediation as discussed at the 93rd NRCA Convention.*

**"Mediation Procedures Established:"** July '80, pg. 28. *The Roofing Industry Mediation Service (RIMS) was initiated as an alternative to litigation and arbitration in settling contract disputes. This article explains RIMS.*

**"Minority Goals for Federal Construction Contractors:"** Jan. '81, pg. 71. *Minority regulations on federal or federally-assisted construction contracts.*

**"National Electric Industry Fund Declared Illegal:"** Nov. '80, pg. 53. *A federal district court decision on the agreement between the National Electrical Contractors Association and the International Brotherhood of Electrical Workers.*

**"National Pension Plan:"** Nov. '71, pg. 28. *Finance Report on National Roofing Industry Pension Fund.*

**"Negotiation as an Art:"** May '82, pg. 17; Summers, Hendrick, Spanos, Phillips

and Grant. *Sharpening your negotiation skills is advantageous.*

**"New Construction Industry Developments:"** March '82, pg. 25; by Summers, Hendrick, Spanos, Phillips and Grant. *OSHA citation procedures outlined.*

**"New Developments in Construction Industry Labor Relations:"** Feb. '82, pg. 14; by Summers, Hendrick, Spanos, Phillips and Grant. *Subcontracting restrictions, union violence and other changes affecting contractors.*

**"New Effort to Alter Subcontract Forms:"** April '82, pg. 10; by Summers, Hendrick, Spanos, Phillips and Grant. *Understanding the legalese of subcontracts.*

**"New Options for Your Company's Audit:"** March '80, pg. 44. *New guidelines from the American Institute of CPS, enables accountants to provide a wider range of financial reporting assistance to companies than ever before.*

**"New Restrictions on OSHA:"** Sept. '81, pg. 52. *Court decisions limit OSHA's use of search warrants for job safety inspection.*

**"New Rules Make Davis-Bacon Work More Likely for Small Contractors:"** July '82, pg. 12; Summers, Hendrick, Spanos, Phillips and Grant. *After extensive revision by the Reagan Administration, the Davis-Bacon regulations were set to become effective July 27, 1982.*

**"NLRB Policy on Construction Subcontracting Stands:"** Sept. '81, pg. 53. *The Supreme Court declined to rule on whether union signatory clauses which prevent the subcontracting of construction work to nonunion employers violate Taft-Hartley.*

**"NLRB Rules Unions Have Right of Access:"** April '82, pg. 11; by Summers, Hendrick, Spanos, Phillips and Grant. *Access decision may provide new ammunition to union challenges for dual shop arrangements.*

**"Nonunion Workers and Employers Victimized by Union Violence May Have An Action for Damages:"** July '81, pg. 50. *A decision by the U.S. Court of Appeals for the Fifth Circuit, said that workers who are victimized by union violence may bring a law suit for damages.*

**"No Right of Contribution Against Union for Backpay Award:"** Sept. '81, pg. 53. *The Supreme Court rules that a union employer has no right to demand that a union contribute a portion of a backpay award in wage discrimination cases.*

**"NRCA Casualty and Property Insurance Update:"** Jan. '82, pg. 36; by Walter T. Derk. *Why CNA was selected to provide a safety group dividend program for workers, commercial liability and property coverage.*

**"OFCCP Proposes Easing Affirmative Action Requirements for Construction Contractors:"** Nov./Dec. '81, pg. 16. *New affirmative action requirements proposed by the Office of Federal Contract Compliance Programs would reduce or eliminate many of the compliance burdens on smaller construction contractors.*

**"Payment Bonds and Lien Laws Revisited:"** June '82, pg. 19; by Summers, Hendrick, Spanos, Phillips and Grant. *Information on the complicated issues of payment bonds and lien laws.*

**"Pension News:"** July '81, pg. 50. *The Department of Labor issues a final rule which outlines when an employer can suspend pension benefits for a retiree who goes back to work for the same company.*

**"Pension Services Available:"** Nov. '74, pg. 14; by Walter T. Derk. *The NRCA endorsed retirement program.*

**"Placing Liens on Public Projects:"** Oct. '81, pg. 31. *A review of liens on public projects.*

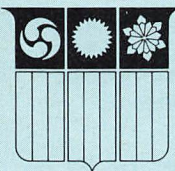
**"Potential Liability of Fiduciaries Under New Pension Reform Act:"** March '75, pg. 20; by Peter H. Lowery. *The Employee Retirement Income Security Act of 1974.*

## Foreman & Superintendent's Management Conference

January 7 - 8, 1983 • Chicago, Illinois  
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### Who Should Attend

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**"Practical Tips for Equal Employment Compliance:"** Jan. '77, pg. 44. *Legal guidance pertaining to equal employment laws.*

**"Proposal Would Eliminate Completed Contract Method:"** July '82, p. 18; by Frank Zedeck, Doty Jarrow & Co. *Discussion of the elimination of the completed contract method and its proposed replacement, the progress payment method.*

**"Proposed Tax Cuts:"** Sept. '80, pg. 56; by William M. Drohan, NRCA Washington Representative. *A discussion on tax cuts proposed by Republican Presidential nominee, Ronald Reagan.*

**"Protect Yourself Where Contract Calls for Assumption of Unusual Risks:"** March '79, pg. 30. *Construction contracts that include clauses for workmanship and liability are reviewed.*

**"Recent Anti-Trust Enforcement in Construction:"** July '80, pg. 41. *Review of anti-trust laws in the construction industry.*

**"Recent Court Decisions Affect Labor Relations:"** August '82, pg. 32; Summers, Hendrick, Spanos, Phillips and Grant. *House Bill #767 in the Georgia legislature calls for an amendment to the Georgia Mechanics and Materialmen's Lien Law, which has an impact upon general contractors.*

**"Regulations on Affirmative Action for the Handicapped:"** Jan. '81, pg. 71. *Regulations regarding the employment of the handicapped on federal construction projects.*

**"Subcontractor Not Protected by Payment Bonds — Lien Laws:"** May '82, pg. 16; by Summers, Hendricks, Spanos, Phillips and Grant. *Where lien rights are cut off.*

**"Summary of Multi-Employer Pension Plan Amendments:"** March '81, pg. 47. *An overview of the Multi-Employer Pension Plan Amendments Act of 1980.*

**"Supreme Court Rules that OSHA Can Fine Employers Without Jury Trial:"** May '77, pg. 28. *A summation of the ruling.*

**"Tax Tips:"** Sept. '81, pg. 52. *Explains how a new tax law permits business to amortize start-up costs over a period of 60 months.*

**"Taxes:"** Sept. '82, pg. 52. *The U.S. Supreme Court has invalidated a Treasury regulation which included the computation of taxable wages for FICA and FUTA purposes for the value of food and lodging an employer provides its employees on remote job sites.*

**"There May Be No Need to Pay Pre-Hire Trainees:"** Oct. '81, pg. 31. *A district court ruling for non-payment for workers during training period.*

**"Time of Commencement & Completion in Subcontract Documents:"** Jan. '75, pg. 48; by McNeill Stokes. *Draft subcontract documents carefully.*

**"Union Signatory Subcontracting Clauses Upheld:"** August '82, pg. 33. *In Woelke and Romero Framing Inc. v NLRB, the U.S. Supreme Court rejected the argument offered by several construction industry employers and trade associations that union signatory subcontracting clauses are illegal except when confined to particular jobsites at which both union and nonunion workers are employed.*

**"Update on the Wage-Price Guidelines:"** March '79, pg. 28. *Significant changes in the wage and price standards are discussed in this article.*

**"Update: What to Do Legally When a Roof Fails:"** Nov. '76, pg. 18. *An outline of precautionary steps and what to do when a roof fails.*

**"Vacation and Travel Expenses:"** Nov. '78, pg. 29. *The regulations that govern vacation and travel expenses for tax purposes.*

**"Value Added Tax: A Proposal for the 80's:"** March '80, pg. 42; by William M. Drohan, Washington Representative. *Tax breaks for capital formation confronts the business community in the 80's.*

**"Wage & Hour Document Wages When Paying on a Lump Sum Basis:"** Oct. '81, pg. 30. *Care must be taken to avoid allegations that Fair Labor Standards Act overtime requirements are not being violated.*

**"Wage Discrimination Claims:"** Sept. '81, pg. 53. *The Supreme Court ruled that a sex-based age discrimination claim could be brought under Title VII even if the claimants cannot satisfy the equal work standards of the Equal Pay Act.*

**"What to Do Legally When a Roof Fails:"** July '74, pg. 20; by McNeill Stokes. *A roofing contractor's legal rights in roof failure.*

**"When is a Failure a Failure:"** May '77, pg. 34. *A discussion on when a roof can be determined a failure.*

**"When Government Comes Knocking:"** March '82, pg. 14; by Stokes & Shapiro. *Steps to take if a subpoena arrives.*

**"Worker's Compensation:"** Sept. '79, pg. 18. *The National Commission on State Workmen's Compensation Laws reports that compensation laws have*

*shown some signs of improvement since 1972, but those improvements could be destroyed by government actions which may send insurance rates spiraling.*

**"Worker's Compensation - Florida: War for Reform:"** Sept. '79, pg. 19; by Stephens W. Munnell, General Manger - FRSA. *A Florida law cuts the cost of workers compensation 15% and overhauled state laws governing worker's compensation.*

**"Year End Tax Planning:"** Jan. '80, pg. 54. *The legal aspects of tax planning and filing.*

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## Association News

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**"Aiming for 2000:"** Sept. '82, pg. 48. *An article on the NRCA membership drive.*

**"Air Tragedy Put Daughter in Charge:"** Feb. '82, pg. 58; by Riverside Press-Enterprise. *Roy O. Huffman Roofing Co. moves ahead with daughter at helm after owner and president killed in air crash.*

**"ARCO Reveals EPS - Coal Tar Pitch Guidelines:"** August '82, pg. 10. *ARCO announced recommendations for using insulation board molded of Dyllite, expandable polystyrene in retrofitting coal tar pitch roofing.*

**"ARMA Offers Promo Pack for Roofing:"** Sept. '81, pg. 19. *The Asphalt Roofing Manufacturers Association suggests that contractors must understand the psychology of selling home improvements.*

**"Associated Roofing Contractors of the Bay Area Counties:"** Jan. '74, pg. 26. *Third in a series of articles on associations affiliated with NRCA.*

**"Association Leaders Develop Ongoing Dialogue:"** May '81, pg. 14. *Relationships are developing between the NRCA and the American Institute of Architects.*

**"Basics of Good Planning Highlighted at New Orleans Conference:"** Jan. '79, pg. 52. *Summary of the 1978 NRCA Foremen and Superintendent's Conference.*

**"The Book that NRCA Built:"** May '81, pg. 17. *An article detailing the input from many roofing contractors which resulted in the "NRCA Roofing and Waterproofing Manual.*

**"BUR Conference - Good Roofing Practice:"** April '80, pg. 38. *The 93rd NRCA Convention coverage of the built-up roofing conference.*

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Roofing Spec Index continued, page 40

## Association News

continued

**"Charlie Raymond Receives Special Recognition for Membership Efforts:"** March '81, pg. 34; by Dave Honaker. *The Charlie Raymond award will be presented each year to the NRCA member who has made the most important contribution to membership development.*

**"Chicago Roofing Contractors Association:"** May '74, pg. 10. *Fourth in a series of articles on associations affiliated with NRCA.*

**"Communication: Defining It's Role in NRCA:"** Jan. '82, pg. 30. *Focus on NRCA's Communications Department.*

**"Conferences Designed to Better Roofing:"** Nov./Dec. '81, pg. 40. *Brief description of two NRCA conferences.*

**"1982 An Election Year:"** July '82, pg. 15; by Connie Arkus. *The fall election favors the Democratic Party and presents a struggle for the Republican Party.*

**"Energy Supplies Up: Demand Down:"** August '82, MS. *Predicast Inc., Ohio, forecasts that the U.S. will produce more than 91 percent of its energy needs in 1995.*

**"The European Experience:"** July '82, pg. 20; by Bill Good. *NRCA's executive director travels to Cologne, Germany, for the German Roofing Contractors Federation 1982 Dach & Wand Convention, June 17-20, 1982.*

**"EVT The Right Temperature for Applying Built-Up Roofing Asphalts:"** May '82, pg. 11; by Mike Beightol. *Discussion of the values of the equiviscous temperature concept.*

**"The Fifth Conference on Roofing Technology:"** July '79, pg. 38. *An account of the 1979 Conference on Roofing Technology held in Gaithersburg, Md.*

**"A First Look at NRCA's New Construction Details:"** Nov. '79, pg. 19. *After more than two years of development, NRCA's Construction Details are approved and readied to become standards of the industry.*

**"Five Teams Kick-Off NRCA Superbowl Contest:"** Sept. '81, MS. *NRCA kicks-off membership recruitment contest.*

**"Former Big League Pitcher Looks Back at the Dark Side:"** Feb. '82, pg. 39; by Mike Beightol. *Baseball player Don Newcombe discusses his battle with the bottle and the rough road to recovery.*

**"Hark - Good Thing in a Small Package:"** April '80, pg. 36. *A preview of the Handbook of Accepted Roofing Knowledge as published by NRCA.*

**"Health Problems and the Roofing Contractor:"** Oct. '80, pg. 24. *NRCA Senior Vice President Johnny Zamrzla, addresses government safety regulations and the question of "industry-associated" cancer.*

**"Improved Safety and Better Health Are Goals of Administration Department:"** Feb. '82, pg. 60; by Chuck Kouri. *NRCA Administration Department works to eliminate safety hazards.*

**"Interstate Roofing Entry Wins Contest:"** July '80, pg. 38. *W.F. Tucker, Jr., of Interstate Roofing Company, Inc., Charlotte, N.C. wins safety contest held by NRCA in 1980.*

**"An Interview with NRCA President John Bradford, Part I:"** July '82, pp. 29-33; by Mike Beightol.

**"An Interview with NRCA President John Bradford, Part II:"** August '82, pp. 24-25; by Mike Beightol.

**"An Interview with NRCA President James King:"** Jan. '73, pg. 16. *Question and answer article with King.*

**"An interview with NRCA President Melvin Kruger:"** July '78, pg. 18. *Question and answer article with Kruger.*

**"An Interview with NRCA President Robert Linck:"** July '75, pg. 26. *Question and answer article with Linck.*

**"An Interview with NRCA President J. Roy Martin, Jr.:"** July '77, pg. 14. *Question and answer article with Martin.*

**"An Interview with NRCA President Charles Raymond:"** July '74, pg. 17. *Question and answer article with Raymond.*

**"An Interview with President William Steinmetz:"** Sept. '73, pg. 10. *Question and answer article with Steinmetz.*

**"J.A. Piper Award Goes to Fred Good:"** April '81, pg. 13. *NRCA executive vice-president receives the industry's most prestigious award.*

**"Knoxville's Bill Martin Covers the World . . . That's the 1982 World's Fair:"** Feb. '82, pg. 29; by Mike Beightol. *NRCA member W.J. Martin Co., constructed many buildings at the 1982 World's Fair.*

**"A Look at FRSA:"** Nov. '73, pg. 20. *Second in a series of articles on associations affiliated with NRCA.*

**"Massachusetts Company Receives Award from Weather Reps., Inc.:"** July '82, MS. *Founded in 1915, Burgess-Blacher was recently honored for its*

*extensive construction efforts in the east.*

**"Member Services Department Seeks to Boost NRCA:"** Oct. '81, pg. 20. *NRCA department profile on member services.*

**"Mid-Year Report:"** Sept. '78, pg. 9. *Summary of the 1978 NRCA Mid-Year Board of Directors meeting held in Chicago. Includes: NRCA Roofing Manual developments, safety films for roofers, the indexing of technical data and a preview of educational programs.*

**"Mid-Year Report:"** Sept. '78, pg. 16. *A report on the 1979 Mid-Year NRCA Board of Directors Meeting in Chicago.*

**"Mid-Year Report:"** Sept. '80, pg. 53. *In 1980, 39 NRCA Committees met in Chicago.*

**"The National Roofing Foundation:"** Nov. '79, pg. 41. *A new name, trustees and programs for the National Roofing Foundation.*

**"The National Roofing Foundation -Progress and Growth:"** April '80, pg. 14. *Update on the National Roofing Foundation.*

**"The National Roofing Foundation:"** May '80, pg. 72. *Scholarship agreement with RIEI.*

**"National Roofing Foundation Needs Support from its Friends:"** Oct. '81, pg. 15; by Thomas Manson, NRCA Past President. *An open letter from Thomas Manson regarding the National Roofing Foundation.*

**"New Manual Is Important Tool for Saving Costly Energy Dollars:"** April '82, pg. 40; by Chuck Kouri. *Manual enables user to calculate cooling and heating costs and proposes cost-effective system based on precise data.*

**"New Representation in Washington for NRCA:"** March '81, pg. 50. *Bill Cullen joins NRCA staff as research associate; the firm of Leggett, Lanier and Associates has become the association's government relations representative.*

**"NRCA/ASTM Coordinating Committee:"** May '81, MS; Robert LaCrosse, NRCA technical services manager. *An overview of the NRCA/ASTM Coordinating Committee.*

**"1982 NRCA Convention Draws Good Reviews:"** July '82, pg. 22; by Chuck Kouri. *The results of the Meetings and Convention Department's survey on the 1982 NRCA Convention held in Los Angeles.*

**"NRCA Convention Report: Bradford Ascends; Karp Elected NRCA Senior Vice President:"** April '82, pg. 36. *The 1982-83 lineup for NRCA Board of Directors.*

**"NRCA Convention Report: The J.A. Piper Award to Charles Griffiths:"** April '82, pg. 34; by Fred Good, NRCA Executive Vice President.

**"NRCA Convention Report: Reagan Addresses NRCA in Videotaped Message:"** April '82, pg. 33.

**"The NRCA Energy Program Revisited:"** May '77, pg. 20. *A progress report on the NRCA energy conservation program.*

**"NRCA Hits Flaws in Warning Line Rule:"** Nov. '79, pg. 10. *NRCA issues statement to OSHA regarding flaws in the rule guarding low-pitched roofs.*

**"NRCA Long-Range Strategy Plan:"** July '82, pg. 24; by Chuck Kouri. *A five-year plan was devised by the Long Range Planning Committee to direct NRCA's development through 1986.*

**"NRCA Member Installs High-Rise Roof:"** August '82, MS. *Friedman Roof Co., Inc. in Gardena, Calif. applied the materials for the tallest structure to be erected in downtown Los Angeles.*

**"An NRCA Member Reviews Roofing in Australia:"** August '82, pp. 26-30; by William Mansell, The Chadwick Group. *The only Australian roofing member in NRCA provides an update on roofing "down under".*

**"NRCA Legislative Outlook for 1980:"** Jan. '80, pg. 64, by William M. Drohan, Washington Representative. *Preview of the 1980 legislature in Washington and its effects on the roofing industry.*

**"NRCA Management Conference:"** March '79, pg. 32. *Coverage of the 1979 NRCA Management Conference.*

**"NRCA Members Elect Three Vice Presidents, 19 Directors:"** April '81, pg. 16. *Results of the 1981 NRCA elections.*

**"NRCA's Ninety-Fifth Annual Convention and Exhibit:"** Nov./Dec. '81, pg. 32. *A sneak preview of the Los Angeles show.*

**"NRCA Restructures Committees:"** Sept. '81, MS. *An overview of the NRCA committee structure.*

**"NRCA Seeks Help With Proposed Alcohol and Drug Abuse Program:"** Feb. '82, pg. 37; by Mike Beightol. *Health Operating Committee looks into alcohol and drug abuse program.*

**"The NRCA Staff in Brief:"** July '81, pg. 33. *A synopsis of the NRCA staff.*

**"NRCA Statement on Expanded Polystyrene Roof Insulation:"** August '82, MS. *Discussion of Technical Bulletin #12..*

**"NRCA's Statement on OSHA Reform Legislation:"** Oct. '80, pg. 38. *Statement of the NRCA in support of S.2153, The*

*Occupational Safety and Health Improvements Act.*

**"The NRCA Warning Line System:"** July '79, pg. 24. *A question and answer article with NRCA's Member Services Manager, Bob McAdam on the future of the warning line system.*

**"NRCA in Washington:"** March '76, pg. 10. *Outlook for the roofing industry from a Washington perspective.*

**"NRCA Welcomes its 2000th Member:"** Nov. '80, pg. 18; by David Honaker. *A report on how NRCA's Phone Team recruited more than 100 new members in less than a month.*

**"The NRCA Warning Line System: An Idea Whose Time Has Come:"** Nov. '78, pg. 16. *A comprehensive article on the warning line system.*

**"PAC Track Record Good:"** Sept. '81, pg. 20. *A review of the NRCA Political Action Committee.*

**"Political Action Committee Wins Support of NRCA:"** Sept. '81, pg. 20. *NRCA Political Action Committee Chairman Bud Padon asked for and received the endorsement of the NRCA Board of Directors for a rejuvenated PAC at the Board's July 1981 meeting held in Chicago.*

**"Prize-Winning Safety Ideas:"** Oct. '81, pg. 16. *The Second and Third place winners in the 1980 NRCA safety contest.*

**"Progress Report: NRCA Research Projects:"** July '80, pg. 34. *An update on 1980 NRCA research projects.*

**"RCA of California:"** Nov. '73, pg. 20. *Second in a series of articles on associations affiliated with NRCA.*

**"Retention of Elasto/Plastic Roofing Products:"** August '82, MS. *Discussion of Technical Bulletin #13.*

**"RIEI To Give Virginia Seminar:"** Oct. '81, MS. *The Roofing Industry Educational Institute announces Virginia seminar.*

**"RIEI Long Range Planning Committee Plans the Future While it Considers the Past:"** Sept. '81, pg. 16. *The Roofing Institute's Long Range Planning Committee reflects upon the future of the Institute.*

**"RIEI Seminar in Denver:"** Oct. '81, pg. 13. *The Roofing Industry Educational Institute conducted a seminar on Elasto/Plastic Sheet Applied Roofing Systems.*

**"Roofing Contractors Optimistic, NRCA Survey Shows:"** July '81, pg. 26. *The results of the 1980 NRCA roofing industry research survey.*

**"Roofing Spec/Solar Age Rooftop Solar Equipment Index:"** August '82, pp. 14-20. *Concentrating Collectors, Liquid Flat Plate Collectors and Roof Mounting Devices are included in this index.*

**"Roofing Spec Survey Results:"** Sept. '81, pg. 18. *Results of the May 1981 Roofing Spec survey on how well the magazine is meeting the needs of its readers.*

**"Roofing Technology Papers Available:"** July '81, pg. 12. *Twelve papers presented at the Sixth Conference on Roofing Technology 1981, are available in a hardbound book from the NRCA.*

**"Simplified Management Survey:"** Oct. '68, pg. 17. *Survey results from 1967.*

**"Simplified Management Survey:"** July '69, pg. 23. *Survey results from 1968.*

**"Simplified Management Survey:"** Sept. '70, pg. 16. *Survey results from 1969.*

**"Simplified Management Survey:"** Sept. '71, pg. 18. *Survey results from 1970.*

**"Solar Collectors Put Heat on the Roof:"** August '82, pp. 12-13; Douglass Root, Educational Consultant For the Florida Solar Energy Center. *Root discusses installation goals for solar roofing.*

**"Strength in Numbers at NRCA:"** August '82, MS. *Membership report.*

**"The 1975 Survey Results:"** March '76, pg. 15. *The results of the 1975 roofing industry research survey.*

**"Technical Assistance Program:"** July '80, pg. 30. *Expert advice and assistance is available to roofing contractors through the NRCA's Technical Assistance Program.*

**"Technical Services Crew Keeps NRCA in the Know:"** April '82, pg. 19; by Glen Nelson. *NRCA keeps members abreast of new roofing developments.*

**"Three for the Show:"** Sept. '81, pg. 54; by Glen Nelson. *A profile on the NRCA's meetings and conventions department.*

**"Trustees Report:"** Oct. '80, pg. 45. *Trustees report on the National Roofing Foundation.*

**"A Year of Consolidation - An Interview with NRCA President Tom Manson:"** July '79, pg. 14. *A question and answer article with Tom Manson.*

**"Western States:"** May '75, pg. 12. *Close-up look at a new contractor group.*

**"Zamrzla Era Begins:"** July '81, pg. 19. *A profile on NRCA President John Zamrzla who emphasizes a "back-to-basics" theme.*



# New Products, Ideas, & Publications

## 25 Years From Kurtz

Perma-Plastic Acrylic Roofing is now available through T.E. Kurtz, Inc.

The product is the result of a four coat process consisting of glass fiber mesh and four layers of acrylics. The top coat is white and stays within eight degrees of ambient temperature.

Since Perma-Plastic does not absorb heat, contractions and expansions are minimized.

A 25-year warranty is provided and the product has been approved by Underwriters Laboratories and the Southern Building Code.

For additional information, contact T.E. Kurtz, Inc. at P.O. Box 177, Ephrata, Penn. 17522; 717/733-9661.

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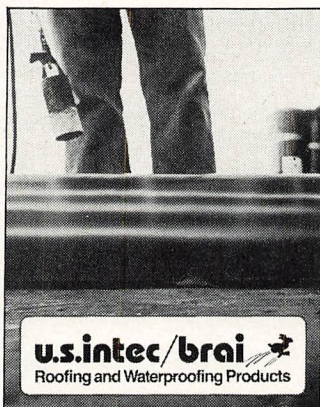
## Brochure Shows Brai Membrane In Action

The new U.S. Intec brochure shows its Brai membrane in action — as waterproofing for a water tank and in typical roofing and flashing applications.

In addition to these illustrations, the brochure describes Brai membrane's ease of application, elimination of pollution from smoking kettles, the vigorous quality control process that guarantees product uniformity and details of the U.S. Intec/Brai Leakproof Warranty.

The brochure is available upon request from U.S. Intec P.O. Box 2845, Port Arthur, Texas 77640.

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## Perlite Institute Issues Newest Technical Data

A two-page technical data sheet on silicon-treated perlite loose-fill insulation is now available through the Perlite Institute.

The data sheet contains: a description of the product, technical data and how to install it in the cores of hollow masonry unit walls, in masonry wall cavities and between masonry walls and interior furring. A table of thermal resistance and a graph illustrating thermal conductivity of expanded perlite for densities are also included.

Copies of the Spec-Data Sheet 7p may be obtained from Perlite Institute, Inc., 45 West 45th St., New York, N.Y. 10036.

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## GAF Does It Cold

GAF Corp. introduced its new cold-applied glass system at the recent Construction Specifications Institute conference in Atlanta.

GAFGLAS Mineral-Shield Membrane is a lightweight roofing material designed for multiple-ply cold applications with long term field performance and less susceptibility to moisture absorption.

Its cold application eliminates the danger of fire and other safety hazards found in heat-applied systems.

For a detailed brochure on GAFGLAS Mineral-Shield Membrane, #2223-064, write the GAF Corp., Built-Up Roofing, 140 West 51st St., New York, N.Y. 10020.

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## Author Pens Guide To Renovation and Remodeling

With skyrocketing new housing costs and an increasing appreciation of our architectural heritage, homeowners and renovating existing homes.

Michael W. Litchfield's *RENOVATION: A Complete Guide* is an illustrated, 600-page book that draws upon the remodeling expertise of carpenters, electricians, architects and other professionals.

Litchfield covers the entire sequence of a renovation from planning the design to painting and wallpapering. Illustrations and photographs show a variety of architectural designs and decorating ideas, as well as providing demonstrations of potential problems and workable solutions.

Litchfield, a technical journalist and founding editor of *Fine Homebuilding Magazine*, has renovated three houses on his own, in addition to assisting on numerous other rehabilitation projects.

For further information, contact John Wiley & Sons, 605 Third Ave., New York, N.Y. 10158.

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## Chief System Easy To Install

Chief Building Systems Division has introduced the Chief LTC, a self-seaming, weathertight, economical and energy efficient roofing design that is easy to install and requires little maintenance.

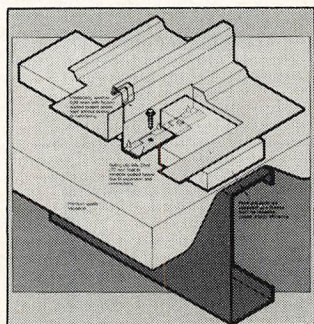
The interlocking seam contains factory-applied sealant and rises 2½ inches above water and ice. The panel directly attaches to a building at the eaves with universal interlocking panel clips. The clips let the Chief LTC roof float to minimize sealant damage due to expansion and contraction.

Factory pre-engineering eliminates the need for field measuring, cutting and alignment.

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## Transport Gravel The Giuffre Way

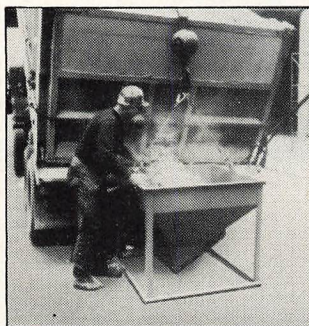
When the job calls for dumping stone or gravel but the space required isn't available, Giuffre Bros. Cranes, Inc. suggests the use of its new product, the "Hippity-Hopper."

The 5/8 yard capacity "Hippity-Hopper" can be filled directly from the gravel truck and carried to the roof. A discharge door is hydraulically opened and stone or gravel is deposited into the large roof-located hopper, wheelbarrows or gravel carts.

According to Giuffre Bros., the entire job can be accomplished without disrupting traffic and when it's completed, there is no clean-up necessary.

For additional information, contact Dominic J. Giuffre at Giuffre Bros. Cranes, Inc. at 9770 S. Ridgeview Dr., Oak Creek, Wis. 53154; 414/761-2300.

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## Pittsburgh Corning Brochure Is Free

Pittsburgh Corning Corporation is now offering a 24-page brochure on FOAMGLAS cellular glass insulation for building applications.

FOAMGLAS is available in flat and pre-tapered block and board.

The all-glass, closed-cell material is impervious to moisture in liquid or vapor form, fire resistant and easy to install.

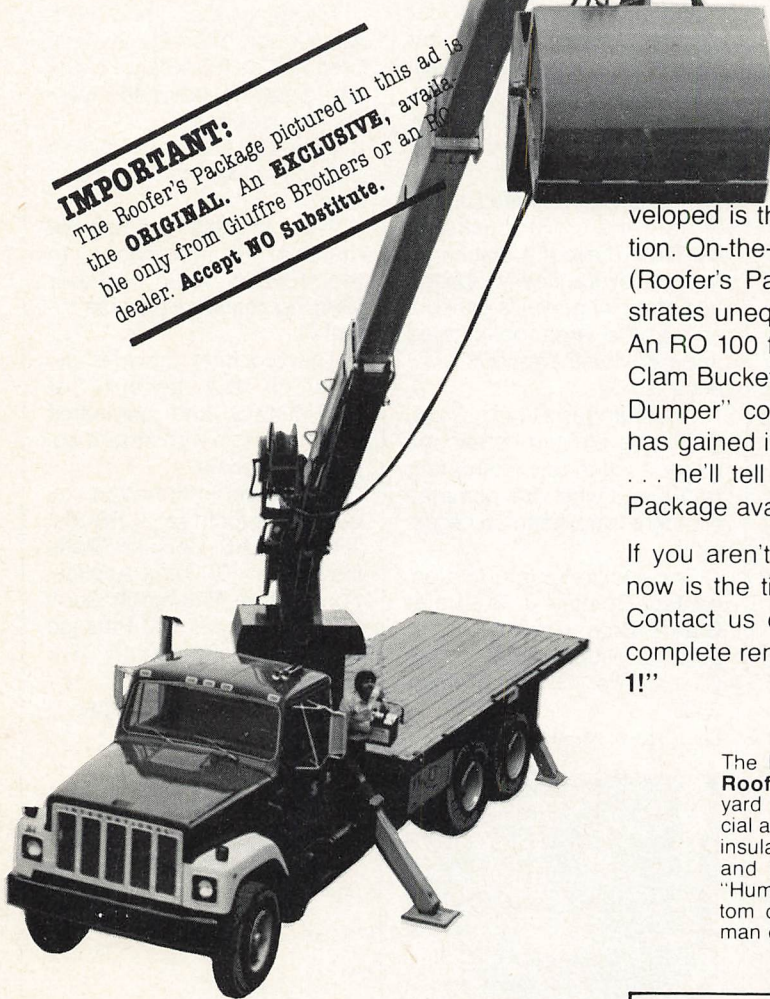
The brochure provides details on the benefits of FOAMGLAS and compares this insulation with other insulation materials.

For more information, request brochure FB-161, "FOAMGLAS Cellular Glass Insulation—Building Applications," from Pittsburgh Corning Corporation, 800 Presque Isle Drive, Pittsburgh, Pa. 15239.

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# IT'S FUN TO BE NO. 1!

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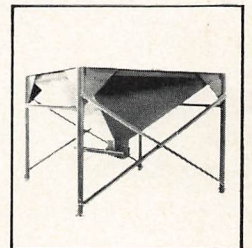
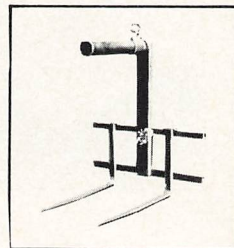
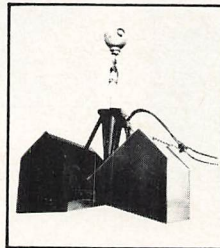
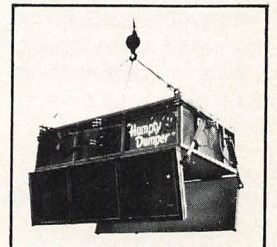


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# Classified Ads

Place a classified ad in *Roofing Spec* for 25 cents per word. There is a minimum charge of \$10.00. Boxed or display advertisements are available in the classified section for \$20.00 per inch (one inch minimum). Ads using blind boxes available at no additional charge to NRCA members; non-members add \$5.00 to total order. Send ad copy and payment to: Advertising Manager, *Roofing Spec*, 8600 Bryn Mawr Ave., Chicago, Ill. 60631

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Management oriented individual seeking opportunity in built-up roofing company. Experience includes estimating, management, consulting, sales and application of BUR. For resume write to: Box 10A, NRCA, 8600 West Bryn Mawr Avenue, Chicago, Ill. 60631.

## INSULATION FASTENERS

Distributors wanted for Factory Mutual approved insulation fasteners. Write to: "Bullseye," 480 Pierce Street, Birmingham, Michigan 48011.

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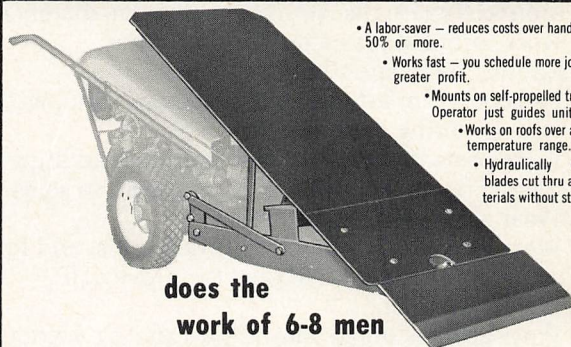
laboratory analysis  
of roof samples

## SLATE ROOFS

"A Handbook On Data On The Constructing and Laying of All Types of Slate Roofs." Written in 1962 and now reproduced. Completely relevant today. Many details. Send \$7.95 to Vermont Structural Slate Co., Inc., P.O. Box 98, Fair Haven, Vermont 05743.

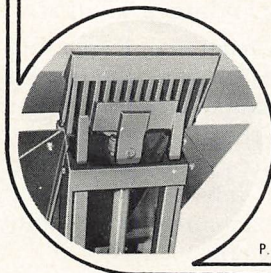
# Nieman Power Roof Remover...\*

\*Patent No. 3,779,605



does the  
work of 6-8 men

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- Works fast — you schedule more jobs for greater profit.
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POWER ROOF REMOVER is equipped with two cutting tools to remove roofing down to the insulation or down to the decking, even if the insulation is solid mopped. A toothed blade (left) is used on most roof removing jobs when job conditions require its bull-dozer action. The wide cutting blade (above) is used mostly when removing fiberglass insulation and when removing roofing down to the insulation.

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# Tech Talk

By Bob LaCrosse, CAE  
Director of Technical Services

## Good Safety and Health Practices For the Roofing Industry

**H**ealth is wealth: This statement holds true in any industry. Health covers many areas: Personal hygiene, use of safety equipment and protection from materials and equipment that could be dangerous to health. Roofing professionals have a responsibility to families, employers and the industry to always practice good safety and health habits.

NRCA has long stressed the importance of good health habits as they relate to the job. The NRCA Health Committee, with valuable staff assistance from Director of Administration Robert McAdam, has made several major contributions to this area of utmost concern. This column will attempt to stress several facets of safety and health, but due to space limitations, it won't elaborate or go into detail on topics covering toxic fumes, alleged skin cancer dangers from hot bitumens or single-ply adhesives and/or solvents.

### Personal Hygiene

Personal hygiene and daily safety practices are an important part of anyone's routine. The following are a few recommendations geared toward roofing applicators:

- Remove material residues (bitumen or pitch) from around fingernails, skin and hair immediately after work, or if food is eaten during the day.
- Shower daily after the job.
- Use creams or lotion when working in sun, wind or with irritating materials.
- Wear protective, full-length clothing and high-topped boots with rubber or composition soles.
- Wear gloves with tight cuffs.
- Wear long pants with close-fitting cuffs, and long-sleeved shirts buttoned over the glove cuff.
- Wear a hardhat.
- Wear goggles on all tear-off jobs and if a kettleman.
- Wear safety glasses when grinding or sanding.

For more information, NRCA recommends reading the new *NRCA Health Guidelines* prepared by the Health Committee as a guide for roofing contractors interested in establishing comprehensive health programs for their respective companies. It's also a good idea for roofing professionals to be familiar with NRCA's "Passport To Safety," a handy, pocket-sized booklet pinpointing specific health and safety concerns.

### Single-Ply Safety

With the increasing use of elasto/plastic materials in both new construction and reroofing, there are many concerns as to potential health hazards associated with the application of these materials. A former NRCA committee, working in conjunction with both the Health and Safety committees, developed information on 'Solvents & Adhesives' for inclusion in "Passport." These safety suggestions include:

- Always use adhesives in open or well-ventilated areas. If existing ventilation is poor, use fans to better circulate air.
- Store only enough solvent bearing adhesives on the roof for the same day's use. Do not leave adhesives on the roof overnight. Store remaining materials on the ground at least 50 feet from the building in a controlled area or in a locked enclosure. Adhesives should be stored in original containers.

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***Roofing professionals have a responsibility to families, employers and the industry to always practice good safety and health habits.***

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- Organic cleaning solvents should only be used from safety cans.
- Again, storage on the roof should not exceed one day's supply.
- Shop rags should be removed from the roof nightly to prevent spontaneous combustion.
- Smoking should be prohibited within 50 feet of any organic solvents used in cleaning or adhesive application. Post NO SMOKING signs.
- Roofing applicators should be aware of other trades working in the same area. Acetylene or electric welders and equipment producing open flames might ignite solvent vapors.
- Adequate fire extinguishers should always be nearby. In addition, special safety precautions should be taken when materials are in storage at a warehouse. These include:
  - Identifying all adhesives and organic solvents.
  - Securing separate, isolated areas for the storage of adhesives and organic solvents. Post NO SMOKING signs.
  - Never store flammable materials near building exits.
  - Handle material containers individually and with extreme care.
  - Immediately dispose of all empty pails and containers in the proper way.

Finally, the new *NRCA Health Guidelines* contains a complete list of toxic substances giving source of exposure to roofers, descriptions, health effects, personal protective measures and sanitation, symptoms and recommended first aid treatment for each substance.



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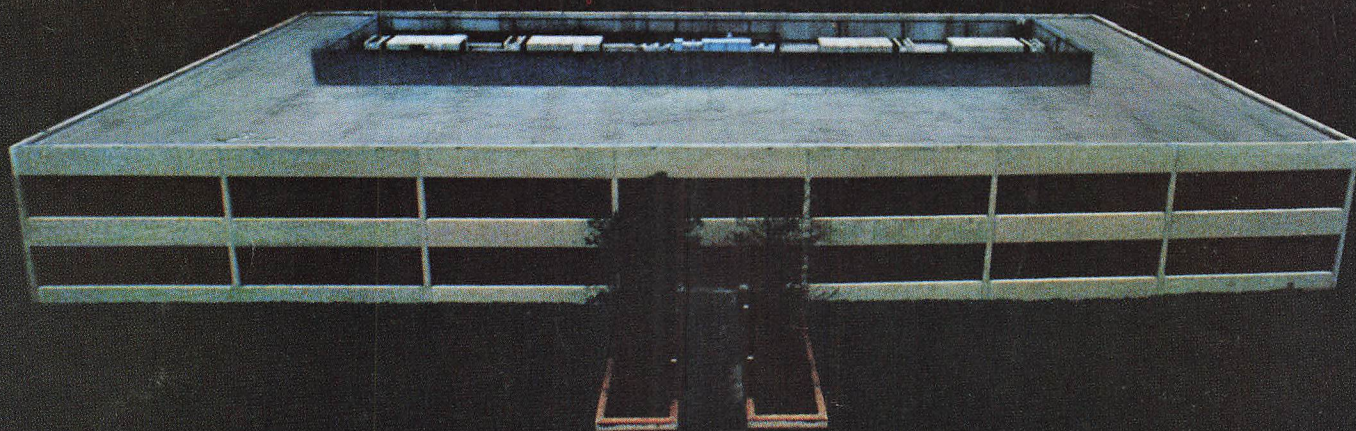
This difference is built into all felts manufactured and marketed by the Manville family: GlasPly™ ply felts, GlasKap™ cap sheets, GlasBase™ base sheets, Ventsulation® felts, and Planet II™ roofing felts.

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For more information consult Sweet's or contact Bob Graboski, Manville Building Materials Corporation, Ken-Caryl Ranch, Denver, Colorado 80217, (303) 978-2228. These felts are produced by Johns-Manville Sales Corporation and marketed by Manville Building Materials Corporation.

## Manville

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