

National Roofing Contractors Association

ROOFING SPEC

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Roofing falls victim
to drug abuse epidemic



The Manville Fesco[®] Board in use would blanket most of Manhattan Island.

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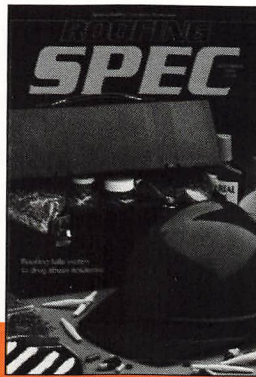
Manville

ROOFING SPEC

Vol. 14, No. 9 September 1986

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Non-residential contracting down in spite of June construction's rebound

Construction contracting remained strong and steady in June, at an annualized rate of \$227.2 billion in newly started projects, according to the F. W. Dodge Division of McGraw-Hill Information Systems Co.

June's construction starts, which closely matched May's value, helped to bring the second quarter's average contracting to a near record \$237.3 billion, a rebound of 5 percent after a shaky first quarter.

According to George A. Christie, vice president and chief economist for F. W. Dodge, "The second quarter was the prototype of the 1986 construction market, as strength in homebuilding covered the current shortfall of non-residential projects. The result: a continuation of last year's peak rate of total construction activity."

For the first six months of 1986, a 9 percent decline in commercial and

industrial building and an 11 percent increase in residential building put the unadjusted midyear total of newly started construction at \$117.4 billion, a net gain of 4 percent over the same period of 1985.

June contracts for residential building were valued at \$114.5 billion, virtually even with May's rate. Including the surge of housing starts in April, second quarter contracting for residential construction averaged \$119.1 billion, an all-time high.

Contracts for non-residential building edged up 1 percent in June to a seasonally adjusted \$73 billion, bringing the second quarter average to \$76.7 billion. This compares with a rate of \$85.2 billion for the third quarter of 1985, the most recent peak in non-residential building.

In the sluggish commercial and industrial sector, where both office and factory construction have been running sharply below last year's levels, June saw an uncharacteristic spurt of activity, due primarily to increased military and aerospace spending. "For most civilian goods, however, manufacturing capacity is excessive and construction plans are being shelved this year," Christie pointed out.

Office building starts eased further in June, bringing the second quarter rate of contracting to the lowest point in three years.

Contracting for public works and utilities construction advanced 3 percent in June to a seasonally adjusted rate of \$39.6 billion.

At midyear, the North Central and Northeastern regions were showing sizable gains, while the South failed to keep pace. The North Central's mid-year total of contracting for new construction was up 14 percent from last year's level, while the Northeast was ahead by 8 percent. The West matched the national average with a gain of 4 percent, while the South trailed last year's level by 2 percent.

Following is a summary of the latest month's Dodge construction statistics, measuring the value of newly started construction that will be completed soon.

Monthly Summary of Construction Contract Value

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

MONTHLY CONSTRUCTION CONTRACT VALUE Seasonally Adjusted Annual Rates, In Millions

	JUNE 1986	MAY 1986	PERCENT CHANGE
Non-residential building	\$ 73,048	\$ 72,040	+ 1
Residential building	114,521	115,669	- 1
Non-building construction	39,602	38,545	+ 3
Total construction	\$227,171	\$226,254	-

YEAR-TO-DATE CONSTRUCTION CONTRACT VALUE Unadjusted Totals, In Millions

	6 MO. 1986	6 MO. 1985	PERCENT CHANGE
Non-residential building	\$ 37,718	\$ 39,225	- 4
Residential building	59,007	53,067	+ 11
Non-building construction	20,704	20,153	+ 3
Total construction	\$117,429	\$112,445	+ 4

THE DODGE INDEX (1977 = 100, Seasonally Adjusted)

April 1986	183
May 1986	160
June 1986	161

Overbuilding becoming problem in commercial market

For the second quarter in a row, Coldwell Banker's National Industrial Vacancy Index rose sharply. The increase of 0.4 percent in June followed an increase of 0.3 in March, and is the steepest rise since March and June of 1982. The new all-time high of 5.7 percent is 0.6 percent above the previous peak of September 1983.

In 20 out of 26 areas surveyed, available space in large industrial facilities increased, with most of the space availability arising in warehouse and distribution centers of large buildings. About half of the market areas reported that most of their increases came in existing, previously occupied buildings.

Overall, the level of second quarter sales and leasing activity was down only slightly from the first quarter, but available space exceeded absorption by a wide margin.

New construction was vigorous in California, accounting primarily for the increased vacancies. New construction was also a big component of the index increases in Chicago, Atlanta and Mid-New Jersey.

The relatively severe rise in the vacancy index among large industrial facilities occurs at a time of both consolidation and expansion. While contractions and plant closings are prevalent in some areas of the country, other areas are seeing their large industrial plants growing and modernizing. Several areas report increases in available buildings because tenants have relocated into new built-to-suit facilities.

Nine market areas recorded new highs for the quarter. The highest vacancy rates are in: Houston (13.2 percent); Miami (11.2 percent); Northern and Central California (8.9 percent); and Chicago and Dallas (both at 6.8 percent). The lowest rates are in: Washington, D.C., (1.0 percent); Seattle and Nashville (both at 1.9 percent); Philadelphia (3.3 percent); Long Island (3.4 percent); and Oklahoma City (3.7 percent).

continued on page 7

THE HAUL MIGHTY LEASE IT! OR BUY IT

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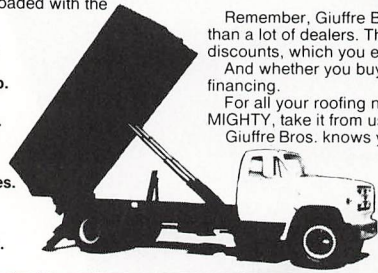
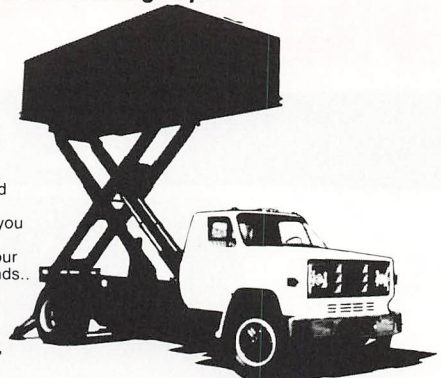
Why should the second truck in your roofing operation, the busy one that hauls your equipment and materials, be anything less than the rugged, dependable Giuffre-designed unit you crane from? Why should you have to shape and shop for all of those necessary second-truck features yourself? And worry about the financing?

That's what we thought! So the folks that brought you the Complete Roofer's Package now bring you the haul-American performer in second trucks. Built to our exacting specifications to meet your exacting demands. Complete with everything the job requires.

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For all your roofing needs, and now the HAUL MIGHTY, take it from us: Giuffre Bros. knows your job.

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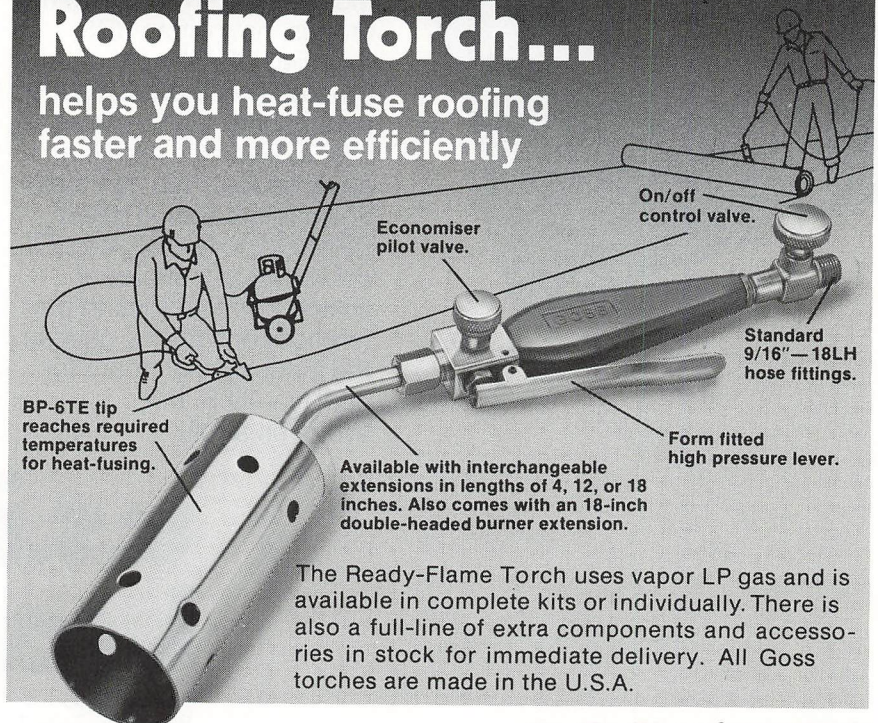
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helps you heat-fuse roofing faster and more efficiently



BP-6TE tip reaches required temperatures for heat-fusing.

Available with interchangeable extensions in lengths of 4, 12, or 18 inches. Also comes with an 18-inch double-headed burner extension.

The Ready-Flame Torch uses vapor LP gas and is available in complete kits or individually. There is also a full-line of extra components and accessories in stock for immediate delivery. All Goss torches are made in the U.S.A.

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Home insulation company charged with R-value rule violations

The Federal Trade Commission (FTC) has charged four companies with misrepresenting the effectiveness of their thermal insulation products. In a complaint filed in federal district court, the FTC asked the court to prohibit such misrepresentations and to order the companies to pay civil penalties for violating the Commission's insulation rule.

The complaint names TS Industries, Inc.; two subsidiaries, named Thermal Systems, Inc., and Energy Thermal Systems, Inc., that manufacture and sell home insulation as well as a subsidiary holding company, TSI, Inc., and Harry L. Woodcock, a TSI, Inc., officer.

The FTC's home insulation rule, known as the R-value rule, is designed to provide consumers with information so they can compare the effectiveness, or R-value, of different types and brands of insulation. The rule requires the use of standard test procedures for determining R-value and requires advertisers to base their claims on these tests.

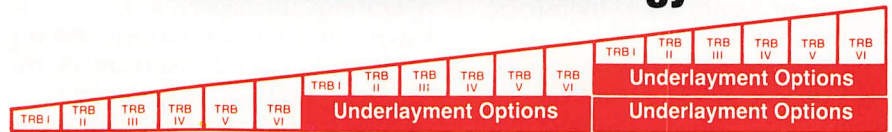
The complaint charges that the four companies violated the R-value rule by:

- failing to use required tests for determining R-values;
- failing to age the insulation properly before testing;
- selling insulation with R-values more than 10 percent below the advertised level; and
- failing to keep records required by the rule.

TSI is contesting the charges and plans to go to court. Representatives from Manville Corp. and Celotex Corp. are expected to be called upon to testify.

The FTC's Denver Regional office filed the complaint in the U.S. District Court for the District of Colorado.

Now, You Can Recommend and Install The Very Best of Today's Tapered Roof Insulation Technology!



FOAMGLAS® ROOF INSULATION PC PLUS SYSTEMS™

The new FOAMGLAS® PC PLUS SYSTEMS™ take advantage of the best physical characteristics of Pittsburgh Corning's cellular glass and foamed plastic insulations. The nucleus of the PC PLUS SYSTEMS™ is the new FOAMGLAS® insulation, with 10% improved "R", the most moisture resistant insulation on the market.

The PC PLUS SYSTEMS™ have underlayments of FOAMGLAS®-Board, phenolic foam (PF) or polyisocyanurate foam (PI) insulations. They offer you competitively priced systems.

The top layer of Tapered FOAMGLAS® insulation provides slope to drain water and it is compatible with all roof membranes. It shields the PF and PI Underlayments from temperature extremes and distributes loads evenly.

Satisfies Performance Criteria and Priced Competitively!

The All-FOAMGLAS® PC PLUS SYSTEM with FOAMGLAS®-Board insulation underlayment offers constant thermal efficiency and exceptional

compressive strength. Recommended wherever maximum long-term thermal performance and reliability are needed.

The FOAMGLAS® PC PLUS SYSTEM with PF (phenolic foam) Underlayment provides the highest R-value available in these systems. Recommended where insulation thicknesses are limited by physical or cost restrictions.

The FOAMGLAS® PC PLUS SYSTEM with PI (polyisocyanurate foam) Underlayment is also a high R-value system. Recommended where physical or cost restrictions exist.

For more information contact Pittsburgh Corning Corporation, Marketing Department FB-6, 800 Presque Isle Drive, Pittsburgh, PA 15239, Tel.: (412) 327-6100.

Proposal would change code's roofing criteria

A delegation from the Single Ply Roofing Institute (SPRI) met with representatives of the International Conference of Building Officials Evaluation Service, Inc., (ICBOES) in Los Angeles in June to discuss the ICBOES' criteria for special roofing systems in the Uniform Building Code published by ICBO.

As a result, a proposed code change providing for the independent evaluation of single-ply systems will be considered by ICBO early next year.

The SPRI Codes Sub-Committee plans to develop its draft proposal for consideration by an ICBO code development committee at its January 1987 meeting in Los Angeles. If accepted by the ICBO membership, the code change will be incorporated into the 1988 edition of the Uniform Building Code.



Check # 18 on Reader Service Card

Asphalt roofing manufacturers elect next year's leaders

The Asphalt Roofing Manufacturers Association's (ARMA) Board of Directors recently met in Denver to elect officers and committee chairmen for the upcoming year.

J.D. Hasselbach, vice president and general merchandising manager for the Roofing Products Division of Celotex Corp., and William C. Schwingen, vice president, research and commercial development at GAF Corp., were elected vice presidents of the Commercial and Residential Roofing Divisions of ARMA.

The Board also elected E.A. DiSalvo, president of Leatherback Industries, treasurer of ARMA.

The Board reconfirmed Roger H. Bengtson, vice president and general manager of the Roofing Systems Division of Manville Corp., as ARMA president. Richard D. Snyder will remain executive vice president and general manager.

Chairmen of five standing committees were also appointed at the Denver meeting.

E.M. (Ric) Durand, general sales manager, Asphalt Roof Operations, Gypsum Division of Georgia-Pacific Corp., was named chairman of the Residential Roofing Committee. Chairman of the Built-up Roofing Committee is Ted W. Michelsen, Ph.D., manager of Marketing Engineering Services for Manville Corp., Kenneth Grzybowski, senior research chemist at Celotex Corp., was named Research Committee chairman, while Brian M. Hayden, operations manager, Roofing and Paper Division of Georgia-Pacific Corp., was named chairman of the Manufacturing Committee. Chairman of ARMA's new committee on modified bitumen is Gerald A. Schubert, director of sales/marketing for Nord Bitumi U.S., Inc.

ARMA has also announced that the second annual National Roofing

Week promotion will be held May 2-10, 1987.

Snyder also said that the biggest problem faced by the promotion in 1986 was the lack of sufficient lead time, having announced plans for the May 1986 event in January of that year. He hopes the early promotion for the 1987 event will eradicate that problem.

"We want to get the word out to the industry as early as possible," said Snyder. "We are looking forward to an even more successful promotion in 1987."

National Roofing Week was conceived by ARMA to increase awareness of roofs and roofing. Supported by companies and associations with an interest in promoting roofing, National Roofing Week is directed at both consumer and trade audiences. Details of the 1987 event will be announced later this year.

THINK BIG!



CLEARFIELD'S BIG 5: (L to R)
HSDU-42, HSDU-52, LSN-62,
NEW GL-72, LN-77.

Clearfield introduces the all-new GL-Series, featuring a 16" wide belt, 20' folding section, and 51' high reach!

The GL has a 72' boom, 30 hp Wisconsin engine, tandem axles and outriggers. You get the safety and added reach of a folding boom, with guaranteed Clearfield quality!

The GL-Series is just in time for Clearfield's 30th Anniversary. Watch for it at the NRCA, or call for details today:
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*There's always something
new at Clearfield!*



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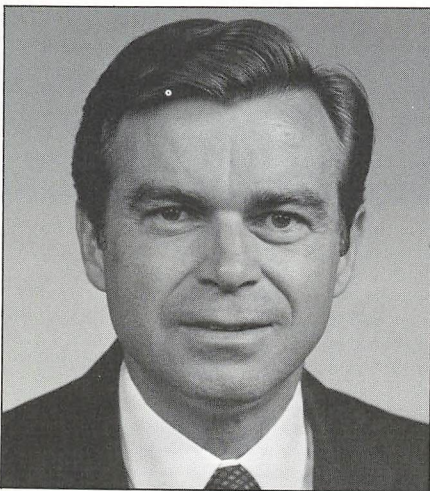
362 South Main Clearfield, Utah 84015
Telephone 1-800-453-2446

Check #4 on Reader Service Card

Southwestern General acquires Armco Atlantic

The Southwestern General Corp., a holding company headquartered in Golden, Colo., has acquired Armco Atlantic, Inc., from Armco, Inc.

The sale was effective July 1. The sale price was not disclosed. Armco Atlantic, which has an annual sales volume of more than \$130 million, was a wholly owned subsidiary of Armco, Inc. In 1985, the parent company announced plans to divest itself of non-steel businesses.



Daniel C. Wertenberg

Daniel C. Wertenberg has been named president of Armco Atlantic. He replaces James A. Zimmerman, who will take a new assignment at Armco, Inc.

Armco Atlantic, Inc., will be a wholly owned subsidiary of Southwestern General, which presently has 15 subsidiaries in three basic industries: building materials/construction, agribusiness products and industrial/commercial products. The new subsidiary will continue to be headquartered in Cincinnati. No significant changes in operations are anticipated at this time.

Southwestern's acquisition is consistent with the company's policy of acquiring companies that provide a seasonal balance and complement one another during fluctuating economic trends. This philosophy helped Southwestern General grow over the last six years from a \$4-million-per-year building components manufacturer to a diversified holding company with annual sales in excess of \$400 million.

As a subsidiary of Southwestern General, Armco Atlantic is now in a much better position to improve its position in the marketplace by obtaining the capital needed for growth and development, according to Wertenberg. Because of financial difficulties during the past few years, Armco has not been able to provide the metal building manufacturer with this needed capital.

The Eastern Steel Division of Armco, Inc., will continue to be a steel supplier for Armco Atlantic, which has been a part of Armco since 1935.

Kitson Brothers awarded Perfect 10

Kitson Brothers, Inc., a Hatfield, Pa., roofing firm, has been awarded Carlisle SynTec Systems' Perfect 10 Award for consistent technical excellence in single-ply roofing applications.

The award is presented to roofing firms that complete 50 error-free roofing applications, as judged by Carlisle technical representatives.

Enroute to its Perfect 10, Kitson Brothers completed single-ply roofing applications for Snap-On Tools, Inc.; Shrine of Our Lady Czestochowa; and the Burlington County Memorial Hospital.

GAF offers rebate on Ruberoid MB

Contractors who purchase rolls of Ruberoid® MB modified bitumen between July 1 and Sept. 30 are eligible for a \$2-per-roll rebate from the GAF Building Materials Corp. The rebate is valid on all purchases; there is no minimum purchase quantity.

This promotion is designed to help introduce Ruberoid MB, which is now available throughout the United States.

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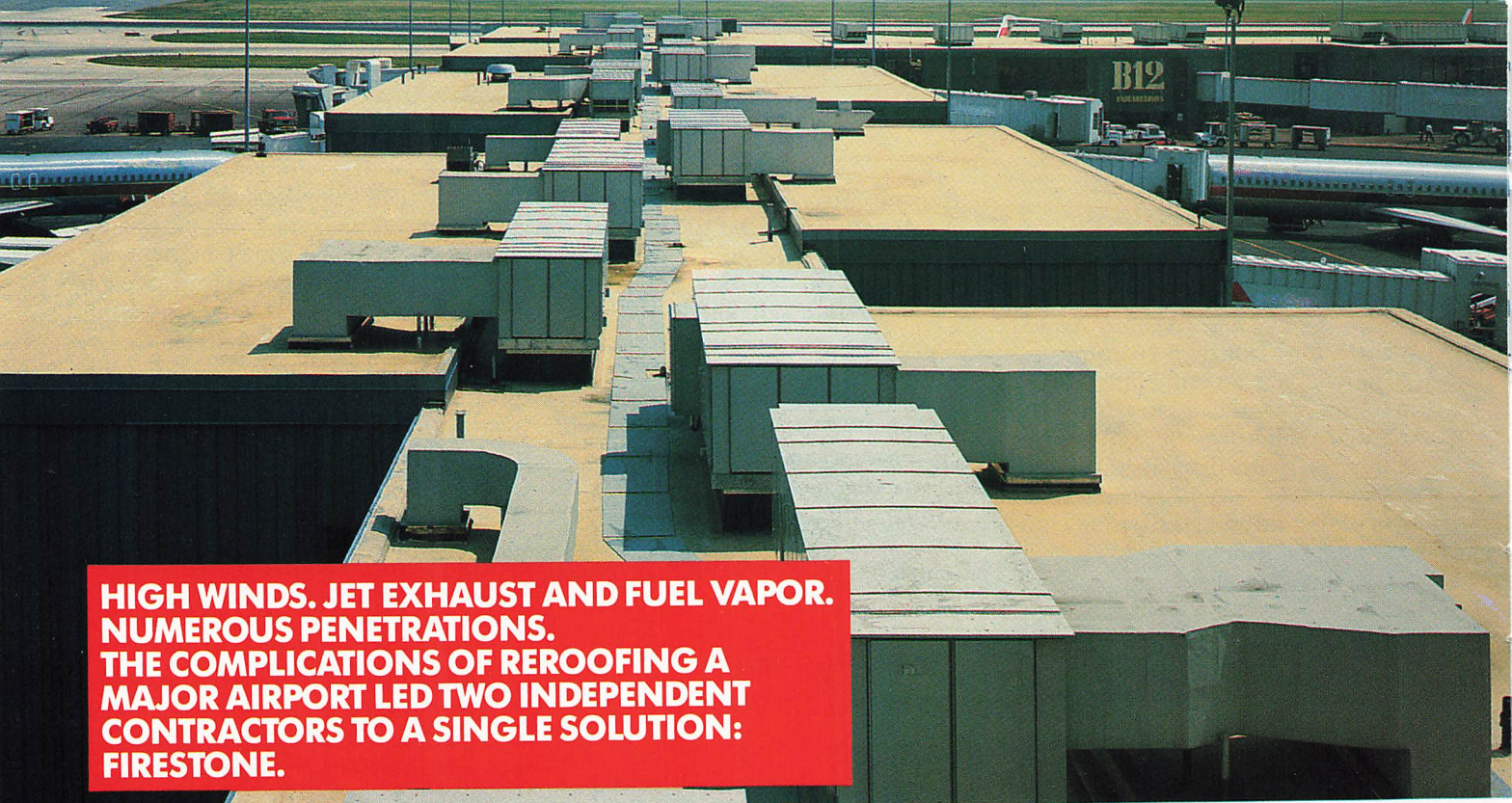
**MOST PEOPLE USE ONE TO GET HOME.
TO THE LONG FAMILY IT WAS HOME.**

J.C. Long had lost his job. And with his savings exhausted and his house repossessed, he and his family found themselves calling their car their home. Even though they were homeless, thanks to United Way they were not helpless. United Way helped set up a special fund for community donations, and two days before Christmas the Longs received the greatest gift of all: a home to rent. As a middle class family like the Longs can attest, United Way does a lot in your community. And what makes it all work are generous contributions from people like yourself. The Long family thanks you. And so do we.

Ad Council

United Way
THANKS TO YOUR GENEROUS CONTRIBUTIONS

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HIGH WINDS. JET EXHAUST AND FUEL VAPOR. NUMEROUS PENETRATIONS. THE COMPLICATIONS OF REROOFING A MAJOR AIRPORT LED TWO INDEPENDENT CONTRACTORS TO A SINGLE SOLUTION: FIRESTONE.

The problems facing contractors reroofing the Philadelphia International Airport were as big as the airport itself.

High winds, jet exhaust, corrosive fuel vapors, building vibration and expansion—all had accelerated the decay of the existing built-up roof. Cracks and leaks abounded. Blowing roof debris threatened jet engine intakes.

Plus a new HVAC system was going in, requiring an enormous number of penetrations, with difficult flashing details.

In the face of all this, the airport engineer and architect recommended against another BUR. They specified EPDM rubber. And their two independent roofing contractors specified Firestone.

“Support was critical for this job, and from the beginning Firestone worked with us in putting it all together,” said Zach Hamada, of the Philadelphia-based Hamada Inc., contractor for the recently completed Concourse “B.”

Hamada laid down Firestone RubberGard® 60 mil EPDM, fully adhered over 1" high density fiberboard insulation. A top coat of Hypalon® paint and silica sand protects against fuel vapor and gives the new roof a UL Class “A” fire rating.

Firestone field personnel helped with flashing details and conducted two interim inspections. The final warranty inspection came within 30 days of job completion.

“Firestone is providing us with tremendous technical assistance,” said Jerry Hughes of Davisville Contracting, Ivyland, PA, which is in the midst of reroofing two other concourses and the main terminal. “Not only is the quality of their product excellent, they respond quicker than other companies.”

Contractors across America choose Firestone RubberGard for its strength, durability, economy, ease of installation—and Firestone’s outstanding field support.

Firestone’s good name insures your good name, even on the most difficult jobs. Call 1-800-428-4442.

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Check #8 on Reader Service Card

ARCO names vice president of sales

ARCO Building Products has named Nicholas P. Trainer vice president of sales. Trainer will be responsible for the company's complete building products line, including Alasco™ siding and extrusion products and Amarlite™ architectural products.

Trainer joined the Atlantic Richfield Co. in 1980 as president of the Sartomer Co., a wholly owned subsidiary. In 1985, he was named business and marketing director for ARCO Specialty Chemicals.

Armco builders win awards of excellence

Eight Armco Building Systems builders have won 1985 Design Awards of Excellence for innovative and economical design at the annual meeting of Armco builders. Seven of the eight winning projects were roofing projects.

Winning roofing projects, builders and project architects were:

- the Broadmoor Corp. of Metairie, La., for the construction of the Delta Queen Steamboat Co. office/passenger terminal in New Orleans, designed by the Broadmoor Design Group;
- the J.G.A. Construction Corp. of Syracuse for construction of the Scherz Porsche & Audi, Ltd., facilities in Syracuse;
- N & J Constructors, Inc., of Lufkin, Texas, for reroofing the BMS Associates office building in Columbus, Ga., with BMS Associates as the project's architect;
- Palmer Building Systems Corp. of Huntington Beach, Calif., for reroofing Todd Shipyard's office and shop in San Pedro, Calif.; and
- Ruff Building Systems, Inc., Baltimore, for the construction of the Meadowbrook Maintenance Facility roof in Chevy Chase, Md., with

Michael B. Amos, AIA, PA, of Baltimore as the project's architect.

Stoldt-Stotts, Inc., Oklahoma City, won two Design Awards of Excellence for the construction of the roofs on the Francis Tuttle Vo-Tech School and the Springlake Vo-Tech School of Oklahoma City. HTB, Inc., of Oklahoma City was the architect for both projects.

All well-designed Armco facilities that include Armco structural framing plus Armco wall systems and/or Armco roof systems are eligible for entry in the company's annual design award contest held each year in Cincinnati. Also eligible are Armco wall-only or roof-only applications, including reroofing.

continued on page 13

Protect your reputation... with Detail Products from JBD Supply.

Make sure the system you install today, will last into the next century. JBD Supply insures this by designing their products with performance in mind. Made from superior Aluminum or Corrosion-Resistant Steel, our products are engineered to stand the test of time!



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JBD Supply

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The Siplast product line has evolved over nearly three decades of designing systems to satisfy the critical demands of specific roof conditions.

A key discovery in this evolution was our development of SBS Modified Bitumens in 1968, as a response to increased stresses imposed by modern roof construction. Modifying asphalt with SBS produces an elastomeric blend with exceptional elongation/recovery properties over a wide range of temperatures. We combine this blend with appropriate reinforcements and surfacings to create a full line of systems, each engineered for a specific use.

Our systems also provide the right application method for varying job requirements, allowing you the practical advantage of choosing hot asphalt, cold adhesive or torching. Plus we offer one of the largest varieties of colors and finishes available in the

roofing industry. And every one of our systems is fully tested and guaranteed.

This ability to provide the *right* product for each application, rather than one product for all uses, is a cornerstone of the Siplast philosophy.

Engineered products, a choice of application methods and a variety of finishes all contribute to the ultimate performance of Veral, Paradiene and our other roofing materials.

Superior product design — just one of the many elements that sets us apart in high-performance roofing.

For more information on any of our roofing systems, call 1-800-922-8800. In Texas, call collect 214/869-0070. Siplast, Xerox Centre, Suite 1840, 222 West Las Colinas Blvd., Irving, Texas 75039.



Some manufacturers expect
one roofing product to do everything.
We don't.

 **siplast**[®]
Roofing Systems

Check #23 on Reader Service Card

ASC Pacific hires two new managers

ASC Pacific, Inc., has named Steven D. Gardner Northwest region sales manager and Peter B. Beimford roof manager.

In his new position, Gardner will be responsible for marketing steel building products manufactured at the company's Tacoma, Spokane and Anchorage plants. Gardner comes to ASC Pacific from the Champion International Corp.'s Tacoma distribution plant, where he was sales manager.

Beimford will be responsible for marketing the company's new industrial standing seam product, including sales, field erection, engineering and product development. This product will be sold under the trade name Dura Seam. Before joining ASC Pacific, Beimford owned and operated a commercial roofing company in the Cincinnati area.

GAF promotes Bondac to roofing manager

The GAF Building Materials Division has promoted A.A. Bondac to manager of prepared roofing, research and development. He was formerly senior staff scientist.

Bondac holds 13 patents and is considered an expert in product and process design. He was recently involved in non-woven products and processes using glass fiber applied in commercial and residential roofing.

Cooley announces personnel changes

Cooley Roofing Systems, Inc., (CRSI) has appointed Orlando Lobo as manager of corporate accounts and promoted Tim Whaley to Southwest regional sales manager.

Lobo's new responsibilities include coordinating CRSI's corporate ac-

count program personnel and field technicians, identifying multi-facility accounts, and making sales presentations to building owners, design/build firms and engineers. To assume this new position, Lobo is transferring to CRSI's corporate headquarters in Pawtucket, R.I., from the company's Houston office, where he was Southwest regional sales manager.

Whaley, who replaces Lobo at the Houston office, will be responsible for overall sales management and technical support to CRSI customers. Previously, Whaley was a CRSI sales representative for Northern Texas, Oklahoma and Arkansas.

continued on page 15

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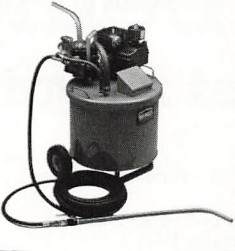


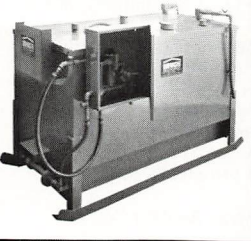

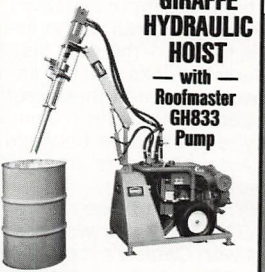
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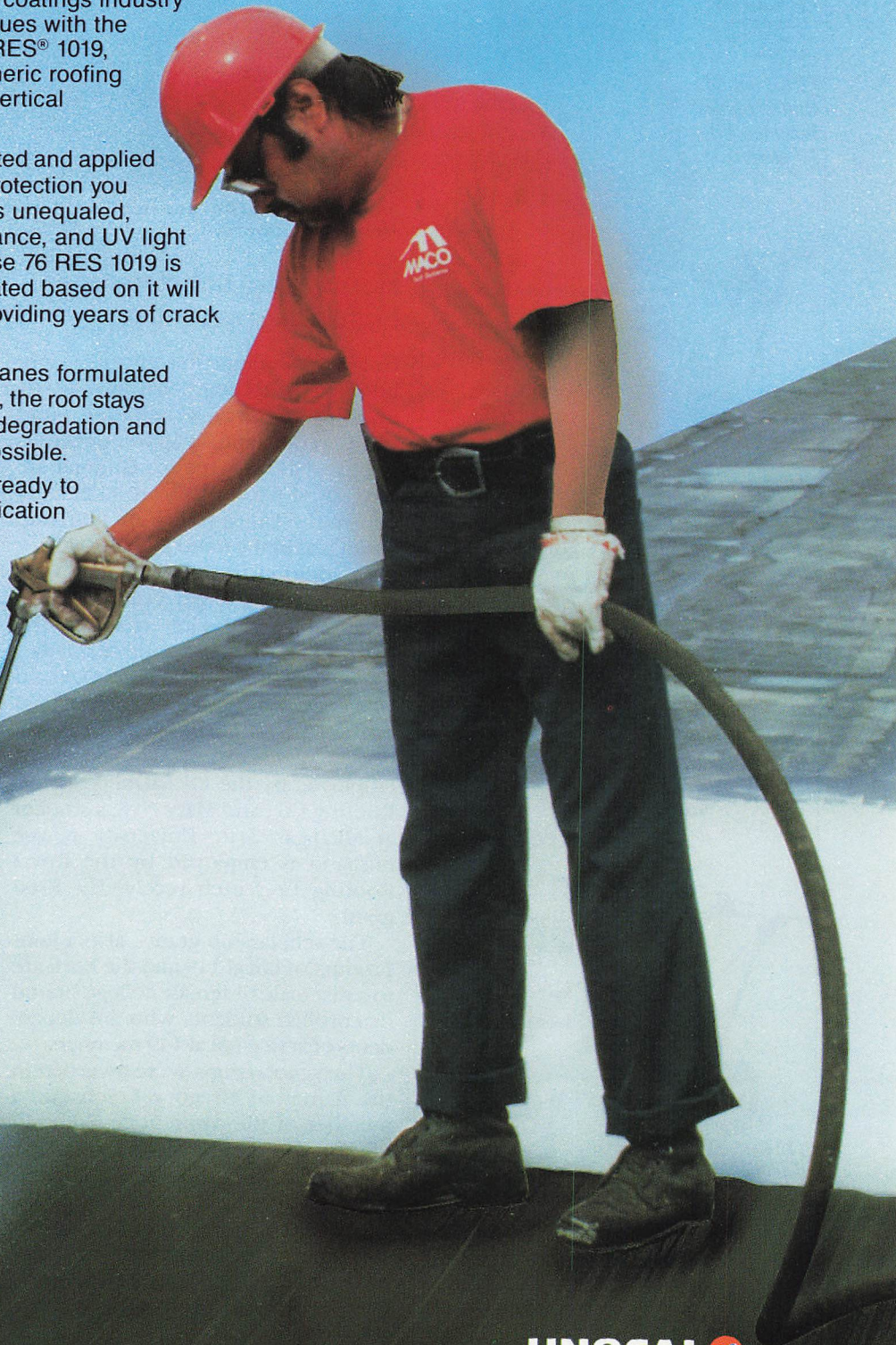
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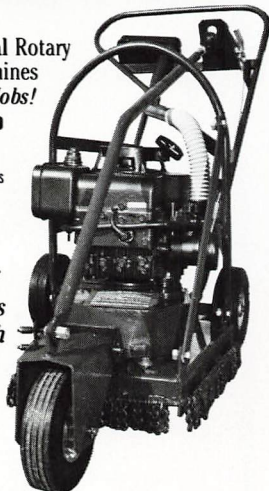
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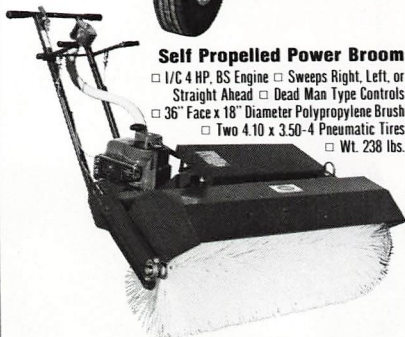
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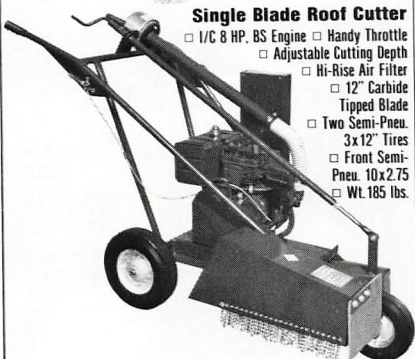
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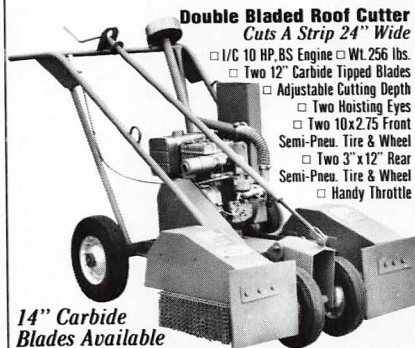
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Jon Jackson, Paul Buc and Mary Nye (left to right) are the proud winners of scholarship grants.

Honors and scholarships highlight graduation

Greg Schimmel and Russell Sroka were honored by Roofers Local 149 and the Roofing Industry Promotion Fund (RIPF) as outstanding apprentices during the 1986 Apprentice Graduation, June 28, 1986, in Detroit. Schimmel was in the January class of 1986 and Sroka was in the June class of 1985.

In addition to honoring graduates for completing three years of classroom and on-the-job training, the Local and RIPF awarded three scholarships. Paul Buc, a student at Oakland University whose father is employed by the T.F. Beck Co.; Jon Jackson, a student at Michigan Tech whose father is employed by the P.F. LaDuke & Sons Roofing Co.; and Mary Nye, a student at Michigan State University whose husband is employed by the Royal Roofing Co., each received a \$700 grant.

The scholarship grants, also a joint product of Local 149 and the RIPF, are to assist male or female college-bound or enrolled students who are dependents of active Local 149 members.

The scholarships were awarded in the names of Gregory J. Schaez, a member of the Apprentice Committee and a long-time member of Local 149's Executive Board; A. Stewart Kerr, RIPF counsel for more than 25 years; and Mervin E. Smith, a former secretary of the Apprentice Committee and current RIPF executive secretary. Each were present to award a scholarship.

Scholarship applicants were judged on a 250-word essay about the importance of the roofing industry. The compositions were to encompass trade history, current systems, improvement ideas and what roofing means to the writer.

The graduation program speakers were John Stenson, an RIPF account executive credited with spearheading the adoption of the joint program; Don McNamara, president of the National Roofing Contractors Association; Lawrence Bringard, apprentice instructor; and Phil LaDuke III, chairman of the Joint Apprenticeship Committee.

Mazurkiewicz president of Western Michigan

The Associated Roofing Contractors of Western Michigan, a chapter of the Michigan Roofing Contractors Association (MRCA), has elected Dave Mazurkiewicz of Allied Roofing in Grand Rapids president for 1986-87.

Also elected were Charles Knapp of G.A. Richards Co., Grand Rapids, as vice president and John Zant of Vander Broek Roofing Co., Grand Rapids, as secretary/treasurer.

Ron Kanaar of East Muskegon Roofing Co., Muskegon, and Dan Boom of J & L Roofing Co., Grand Rapids, were appointed to the MRCA Board of Directors for 1986-87.

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Roofing falls victim to drug abuse epidemic

At one mid-sized roofing company, increased employee absenteeism, decreased productivity and signs of poor workmanship were the first indications that drugs had invaded the workplace.

"I knew we had a problem, but it kept getting worse and worse," said the company's president, an NRCA member who wishes to remain anonymous. "Then we noticed that materials were disappearing. Over the period of a year, more than \$400,000 worth of materials and equipment were lost through mishandling, lack of controls and just plain theft."

The roofing contractor also noticed a marked difference in the morale of his employees. "Some people were afraid to go off on jobs with others, and there was the general feeling that no one cared," he said.

Tricia Drevets is a Chicago-based freelance writer.

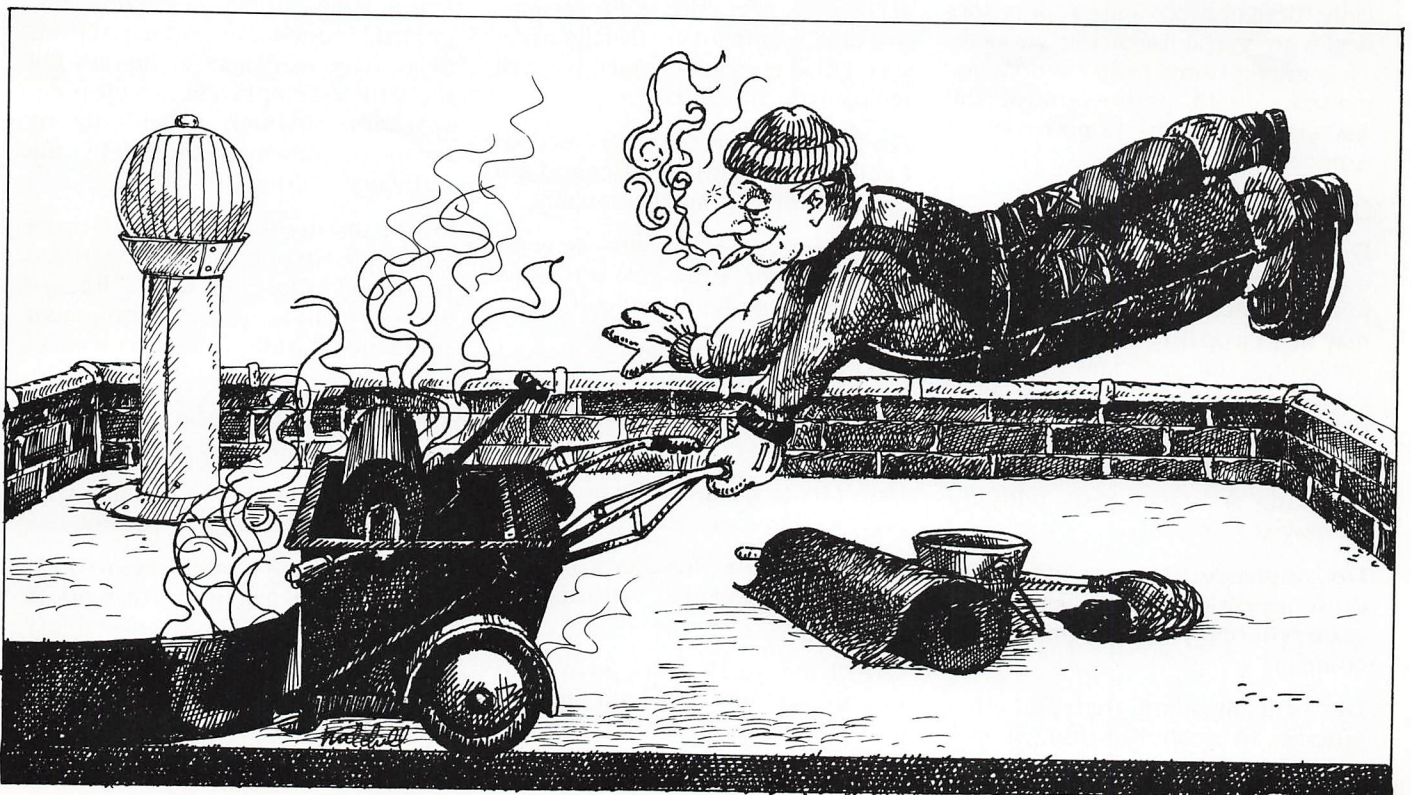
Enforcing firm policies may be the cure

by Tricia Drevets

This contractor's experience has become all too common in recent years. Employee drug abuse is a cancer that has spread to many other roofing firms as well as other American businesses across the country—both blue collar and white collar.

"We knew we had a drug problem," the contractor continued, "but the extent of it was not apparent until we were notified by the police that some of our employees had been arrested."

In this contractor's case, employees from the supervisory level down were buying, selling and using drugs on company time and at company jobsites. Of 150 employees, about 40 were involved with drugs, primarily PCP, cocaine and marijuana. In order to support their expensive habits, some employees were stealing the company's roofing materials, such as insulation, to sell or to use in their own moonlighting endeavors.



Employee drug abuse is a cancer that has spread to many businesses across the country.

Faced with a situation that had already hurt his company's reputation in the community and one that could easily put him out of business, the contractor hired legal counsel and drug enforcement specialists to help him attack the problem from the inside.

"We first publicized our concern to the employees and offered assistance to anyone who admitted they had a problem and wanted help," the contractor said. "Then we posted a \$1,000 reward to anyone who gave us information about the pilfered materials and equipment. One response led to the recovery of some of our materials and to the dismissal of several people.

"We hired undercover people to work with our crews and we mentioned the use of polygraph tests, although we never enacted them. Just the threat seemed to be enough for some people."

In the wake of these initial steps, some employees resigned. "I guess we made it too hot for them," the contractor said. "We also fired a few people."

Today, with a detailed drug policy in place, many new employees and stricter supervisory guidelines, this roofing company is in a rebuilding stage, and the president is optimistic about its future.

"The company—what we'd been working to build for so long—was in jeopardy because of drugs," he said. "We have a fresh new spirit now, and we're on the way back. We've definitely helped morale by tightening the overall organization."

A national malady

No one can accurately state how pervasive substance abuse among roofers is, but the industry does seem to reflect national trends. Federal experts estimate that between 10 and 20 percent of all American workers use dangerous drugs on the job. Other studies show that people who take drugs regularly—about 25 percent of the population—are likely to use them on the job or at least be under their influence when they arrive at work.

One study, conducted last year by the 800/COCAINE national telephone hotline for cocaine abusers, found that 75 percent of the callers got high on the job, and 69 percent regularly worked under the drug's influence. One-fourth of the callers said they used coke at work every day.

No age group is immune from the problem of substance abuse, but the choice of highs may be different. Studies have shown that drug abuse is more prevalent among younger workers, while alcohol abuse is more of a problem for older workers.

These guidelines have been specifically designed to help supervisors deal with drug abuse on the worksite. They are reprinted from *Constructor* magazine with permission of the Associated General Contractors of America.

Do

Do make it clear the company is concerned with job performance; unless job performance improves, the job may be in jeopardy. Do point out the availability of programs that help resolve a personal or health problem that may be affecting job performance.

Do explain that the responsibility for accepting assistance rests with the employee.

Do emphasize that the identity of those accepting treatment in a program will remain confidential in the company.

Do bear in mind that addiction, whether to alcohol or drugs, is pro-

gressive. Without treatment it always gets worse, never better. Professional help and treatment are usually necessary. Do keep regular, objective written records. Document!

Do know your employees—become familiar with skills, abilities and normal performance and personality.

Do become familiar with signs and symptoms of drug/alcohol abuse. Learn awareness and recognition.

Do know your company policy and the exact steps the employer wishes to be taken.

Don't

Don't try to diagnose the problem or act as a counselor.

Don't moralize. Restrict comments to job performance, attitude and attendance.

Don't be misled by sympathy-evoking tactics, at which the drug addict or alcoholic has become expert.

Don't cover up for a friend and ignore a developing problem. A misguided kindness can lead to a serious delay in recovery and can literally kill the afflicted employee, as well as co-workers, through accidents or errors of judgment caused by the influence of drugs or alcohol.

Don't discuss the employee's problem with anyone except designated personnel, those in direct line of authority above you, or competent professional authorities involved in treatment programs.

Don't fail to keep good objective records of all employees' performances.

Don't discipline those caught with prohibited substances unequally.

Don't allow unfit employees to operate dangerous machinery or work in areas where they could cause injury or property damage.

Endangered roofers

While substance abuse can affect job performance in any field, it is a particular threat to an industry such as roofing.

"Anybody whose sense of judgment is impaired creates a big problem when you're up on a roof," said Jay Refieuna of Mansfield Roofing, a suburban Chicago company. "One person with a drug problem can affect everybody else up there. I'm concerned about safety."

Rick Rosenow of Hans Rosenow Roofing, another Chicago area contractor, added, "My employees are working in conditions in which one step the wrong way can mean a life. To me, safety is most important, but with drug abuse, we're also dealing with loss of productivity and a bad image for the industry. The roofing industry has never had a particularly high public image, and this problem just hurts it all the more."

Roofing workers, like other workers, with substance abuse problems, can burden a contractor's operation with ruinous productivity and safety problems. Abusers are four times more likely to have accidents and five times more likely to file compensation claims. They are also absent 16 times more often than the average worker.

The problem of substance abuse is all the more insidious because it is often so hard to detect. There are, however, some indications that should alert a contractor to the possibility that drugs are damaging his operation. Contractors should take note of increases in absenteeism, tardiness, accidents, workers' compensation claims, or health and medical costs. Reduced productivity, and damaged, destroyed or missing property are also warning signs. Other red flags are changes in an employee's work habits, such as sloppy work from a competent employee, and poor worker morale.

The no-drug cure

According to Peter Spanos, a partner in the Atlanta law firm of Hendrick, Spanos and Phillips, contractors who suspect employee drug abuse must take decisive action. "First, the company should adopt a firm no-drug policy and enforce it," Spanos said. "Communicate to employees that anyone found using drugs or under the influence of drugs will be fired. Second, have an educational program to show employees how drugs affect safety and productivity. A third step can be actual drug testing."

Drug policies must have clearly defined goals, according to Bruce Wilkinson, president of Workplace Consultants, Inc., a New Orleans-based loss prevention consulting firm. The programs he develops for companies:

- provide a safe and healthful workplace;
- protect property;
- comply with contractual obligations to clients, other contractors and existing laws; and
- ensure quality craftsmanship and protect the company's reputation.

To accomplish these objectives, drug policies must spell out which drugs are prohibited. "Be specific about what they can't have," Wilkinson said. "The most successful policies restrict or regulate out the use of alcohol, drugs and contraband."

The times and places to which these rules apply should also be listed. Wilkinson suggests the company premises as well as jobsites and the time and distance to and from jobsites as places where drug regulations should be enforced.

Finally, employees must be informed of the penalties for breaking these rules. Many policies state that an employee will be terminated if he is found using drugs on the job. If the policy includes the use of drug searches when drug abuse is suspected or when an accident has occurred, it should also state what action will be taken if an employee refuses to submit to a search.

Adherence to a company drug policy can and should be made a condition for employment. The policy should be posted and displayed at prominent locations throughout the worksite. In addition, Wilkinson recommends that a copy of the policy be sent home. "Not only will you go on record of notifying the employee of the policy, but you will also get the support of the spouse this way," he said.

Wilkinson also suggests that companies hold orientation programs to teach employees the positive aspects of the new policy and how it will ensure everyone's safety. At the end of the orientation, employees should be asked to sign a form that acknowledges they are now working under the new policy.

Contractors who suspect employee drug abuse must take decisive action.

Wilkinson suggests that after an employee tests positive for drugs on two occasions, he be suspended for a week.

Detecting the disease

Policies and good intentions may do little good if the drug abuse goes undetected, however. But discovering the abusers among the workforce requires a keen sensitivity to the legal and ethical issues involved. Drug searches and medical tests must be conducted without abusing the worker's rights or breaking the prevailing laws.

A company's search policy should be clearly explained in the drug policy. Unannounced, periodic and non-discriminatory searches of all persons and property on company premises may be conducted by authorized management representatives. Dogs and third party consultant search teams, such as Wilkinson's firm, may be used.

Workers cannot refuse to submit to searches and testing on the grounds that they invade their right of privacy, according to Spanos. "Drug use is illegal," he said. "A private employer is not subject directly to the First or 14th Amendment, so technically there is no right of privacy in this case."

If an employee objects to a search, the management representative should carefully explain company policy. If the employee still refuses, it may be grounds for dismissal.

Under no circumstances should an employee be forced to submit to a search or be detained forcibly.

In some situations, the contractor may want to medically test the employees themselves for the presence of drugs. However, the results of such tests may be uncertain. Urinalysis, the most common means of testing for drugs, can accurately detect the presence of a drug in the body, but it cannot pinpoint when the drug was consumed. For example, a urinalysis on Monday may detect Saturday night's marijuana or cocaine.

According to John Barnhard, the United Union of Roofers, Waterproofers and Allied Workers' health and safety representative, drug testing should be handled on a case-by-case basis. "Urine tests are unreliable," he said. "If someone tests positive, and there is probable cause drugs are involved, he should be given a second test."

Spanos, on the other hand, believes that the question of when the drugs were taken is irrelevant. Employers have the right to fire workers for using drugs even if they weren't under their influence on the job, he argues. "There's no law that employers have to employ or hire someone whose lifestyle they don't like," he said.

Wilkinson suggests that after an employee tests positive for drugs on two occasions, he be suspended for a week while he obtains professional help and counseling paid for by the employer. "After seven days, the employee must prove he has seen a clinician, pass a pre-entrance drug screening and sign a conditional drug statement that says he will be routinely tested for drugs and fired if there is a further problem.

"Now you've given the employee free help and given him a second chance," Wilkinson explained. "If he still feels drugs are more important than the job, I feel the employee has resigned."

Some of the problems associated with drug testing and searches may be avoided if drug abuse problems can be detected through careful observation of the workforce. According to George S. Moeller Jr., president of A.J. Shirk Roofing Co. in Kansas City, Mo., each contractor must be cognizant of any changes in the crew or its work. "We have a small company. With a crew of about 25 to 30 men, it is relatively easy for us to watch them daily. We try to spot a problem before they go to a jobsite. If employees report directly to a jobsite, we have a supervisor there to check the crew."

On the road to recovery

Some drug programs go beyond the detection of drugs and enforcement of the rules. They also help employees overcome substance abuse problems through employee assistance programs (EAP).

"Our company spends a lot of time and energy on the employees we train," said Rich Bolan of Quality Roofing in Passaic, N.J. "With employee assistance we recoup our investment. We also feel a certain obligation to our employees to help them get through this."

An EAP might include care by a company-recommended health facility in the community or a substance abuse self-help organization. The roofing contractor should pick up the costs of this service, Wilkinson said. "We spend millions of dollars on equipment every year but none on people. Yet employers always says it's the employees that are their most valuable asset."

Some contractors, such as Jay Refieuna, refer workers who admit they have a problem to the Union's EAP, which has been in place since 1982. The Union's program puts Union locals and individuals in touch with community service representatives throughout the country. "Our program is affiliated with the AFL-CIO community service department and the United Way," explained Barnhard. "These representatives have been trained to know the resources in their area. They can help workers with any drug- or alcohol-related problems."

NRCA joins the fight

In the past, NRCA has offered help to contractors with employee drug and alcohol abuse problems. A program for members was proposed by the Health Operating Committee in 1982. Former Los Angeles pitcher Don Newcombe presented an outline of the program at the Annual Convention that February, but it never got off the ground.

Moeller, who chaired the Health Operating Committee in 1982, explained, "Quite frankly, the program didn't work because of apathy. It was a matter of contractors not wanting to become too involved with the individual employee."

But, according to Carl Good, NRCA staff liaison for the Health and Safety Committee, the widely publicized incidents of drug abuse in the sports world and an increased concern for jobsite safety have renewed contractors' interest in drug abuse programming.

"Right now we're not sure how big a problem we're talking about in our industry," Good said. "But because drug abuse has become so widely publicized in general, you almost have to take a look at your company and think, 'Maybe I have a problem with my crew.'"

Good mentioned the increased losses and the resulting rise in insurance premiums that contractors have experienced recently as another incentive. "Companies now are saying they can't survive these kinds of losses, so they're more carefully looking into the causes," he said.

"What we're trying to do this year is address the problem of drug and alcohol abuse in terms of health and safety," Good added.

The Associated Builders and Contractors (ABC) is another construction-related organization that is offering help to contractors. ABC is selling its 60-page manual *Drug Abuse and the Workplace* to both members and non-members. "The manual includes everything from detecting the problem, to setting up an in-house drug testing program," said Vicki Tanner, ABC director of communications.

A final word of caution

While quick and decisive action is important to combat drug abuse, it is best to consult a lawyer before implementing a drug policy. In a union shop, the union representative should also be involved in the preparation of the policy and its procedures.



"Drug abuse in the workplace is a developing area," Spanos said. "There may be state laws enacted soon on what management can and cannot do. Keep up on that and be vigilant on what your employees are doing."

With good legal help and the employee's cooperation, a contractor should be able to develop a drug abuse policy that will be well worth the trouble. A clear drug policy will send a signal to employees and to the community that the company is concerned about safety and job performance.

"We see having a drug policy as something that has come of age," concluded Refieuna. "It's a way of dealing with a problem that's affecting all of us."

Some contractors refer workers who admit they have a problem to the Union's EAP, which has been in place since 1982.

Former baseball player Don Newcombe explains the basics of NRCA's substance abuse program at the 1982 Annual Convention.

Safety vs. privacy: the debate over drug tests

by John Barnhard

Testing for illicit drug use on the job has emerged as a major issue in American industry. A quarter of the Fortune 500 companies already have on-the-job drug testing. A presidential commission recommended drug testing for federal employees and strongly urged it for state and local government and the private sector. Drug testing is catching on in fields beyond business, including sports.

It's also catching on in the construction industry, where drug and alcohol abuse is perceived to be a major problem even though there is no credible information on the extent of substance abuse in the workplace.

What does this mean for roofers? It means that somewhere down the road (if it hasn't already happened) they and their local unions will have to confront this issue in collective bargaining. Because of this, the International Union believes it is important for roofers to understand the major issues surrounding drug and alcohol testing and the potential consequences.

First of all, the International Union is not opposed to workplace rules forbidding employees from possessing, using, selling or being impaired from illegal drugs or alcohol on the job. What we do object to is the unwarranted searches, random drug testing and arbitrary discipline that comprise many employer- and owner-imposed plans.

We also object to plans that are imposed without the participation of the local union. Because many elements in these plans constitute a condition of employment, they are mandatory subjects of collective bargaining under the National Labor Relations Act.

Proponents of on-the-job drug and alcohol testing say that it improves efficiency, job safety and productivity. Those are worthy objectives. But many plans do the opposite. They victimize the worker and ignore his rights as a citizen and union member.

If efficiency, job safety and productivity are the real concerns, then those workers who appear stoned or drunk, or

continued on page 25

by Rick Rosenow

The use of controlled substances in the workplace has continued its growth nationwide. The problem includes the use of drugs and alcohol, and it affects both workers and managers. The epidemic of substance abuse has even prompted the White House to begin an all-out war against drugs and their use on the job. While the sale of liquor has diminished slightly, the sale of hard drugs has grown, a surprising fact considering the fatal results of the use of drugs.

The growing use of drug and alcohol tests is one response

to the substance abuse epidemic that is eating away at our population. To illustrate the seriousness of the drug problem and the Reagan administration's attempt to find a solution, federal officials from the president on down are voluntarily submitting to drug tests.

The use of drug tests has remained controversial in spite of the support that drug testing has received from government and industry. Many employees have been reluctant to submit to testing procedures because they believe it is an infringement of their rights. The proponents of drug testing, on the other hand, point to the benefits that have been gained by the industries that use tests to control drug abuse.

These industries are boasting significant increases in production and attendance as well as improvements in their employees' outlook and attitude toward their jobs.

Does drug testing really lead to a happier and more productive workforce? I don't know the answer, but I do believe that the use of drug tests could remain an option to rid worksites of controlled substances. Because our industry already is viewed as a bad insurance risk, it can't afford to lose any technique such as drug testing that can make the worksite safer.

The critical issue in this debate is how to prevent the use of drugs on the job without violating the workers' rights. We must ask ourselves if drug tests are an unacceptable infringement of these rights. While I am against the encroachment

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The two articles beginning on this page describe opposing viewpoints concerning the use of medical tests to detect the presence of drugs in workers' blood or urine. The article authored by John Barnhard originally appeared in the April/May/June 1986 issue of the The Journeyman Roofer & Waterproofers, published by the United Union of Roofers, Waterproofers and Allied Workers and is reprinted with the Union's permission. The article by contractor Rick Rosenow is his response to the views expressed in Barnhard's article.

Barnhard *continued*

are otherwise acting inefficiently or unproductively, should be tested. Contractors shouldn't screen en masse or conduct unwarranted searches. And they shouldn't conduct random testing of all employees or all employees in a certain classification.

And if a worker is found who has tested positive on the urine test, a second, more precise test should be conducted to confirm initial test results before assuming the worker is a drug user.

Tests' usefulness questionable

This leads to the issue of the test itself, where there are some serious concerns. First, drug tests can be only about 40 percent reliable or accurate. A major shortcoming is that these tests rely heavily on the skills and care of technicians who perform them, and those factors can vary greatly. A study that appeared in the April 1985 issue of the *Journal of the American Medical Association* bears this out. Thirteen labs that handled drug testing for 262 drug rehabilitation centers were sent urine samples with known quantities of drugs added. These tests found error rates of up to 100 percent in the results from some labs.

A second problem is that drug tests reveal the presence of drug residues in the system but they don't reveal when the drug was ingested, how much of the drug was taken, or if the person is a regular or occasional user. There is little correlation between positive test results and an employee's fitness for duty. Tests for marijuana can detect casual use within the last 14 days and chronic use for much longer periods following discontinuance of use. Because intoxication lasts only one to four hours, the test is useful only as an indicator of marijuana use, not as a measure of intoxication.

Finally, positive results on a chemical test can arise from chemicals in a person's system other than the drug being tested for. Urine tests for amphetamine use may give a positive result if the person being tested has used some kind of eye drops, nasal decongestants, or certain non-prescription

cold tablets, allergy pills or diet medications. One of the most popular urine tests to detect marijuana use can produce positive results if the person tested has taken a common aspirin substitute such as Advil or Nuprin.

So what does all this mean? It means that employers have been made to believe that the technology is available for eliminating drug abuse when in fact the technology has severe limitations. These tests have already ruined the careers of those people who have refused to take them or who have been wrongly labeled as drug users.

It also means that the kind of drug testing program being carried out throughout the industry is really an attempt to improve behavior—not productivity, not efficiency, not safety. It's an attempt to influence an employee's life off the job, his private life.

Urine tests are cheap but the resulting cost to workers can be too high. It can mean sacrificing workers' rights to privacy and confidentiality and ultimately their right to earn a living.

Are these tests worth the price? The International Union thinks not.

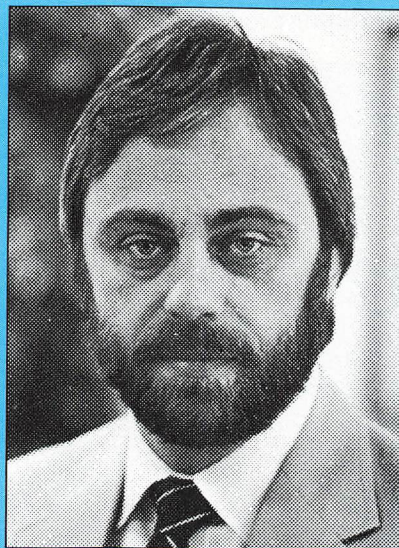
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Contractors shouldn't conduct random testing of all employees or all employees in a certain classification.



John Barnhard is the safety and health representative for the United Union of Roofers, Waterproofers and Allied Workers.

Random testing gives contractors a method to fairly and equitably evaluate each worker's condition.

Rosenow *continued*

of my own rights, I also believe there comes a time when these rights must be questioned.

Even the International Union agrees that controlled substances do not belong in the workplace, and it seeks to participate with management in the implementation of controls. However, the Union weakens its position by also stating that this issue belongs as part of the collective bargaining agreement.

I believe just the opposite. Techniques that could save someone's life or prevent an injury do not belong on the bargaining table *ever*. Those employees who do not use drugs should strongly support any good testing program because of its ability to help rid their workplace of the substances that jeopardize their lives as well as the lives of fellow workers and friends.

International's concern that management would use drug programs and controls to victimize employees is also unwarranted. I don't believe testing programs were ever conceived or intended to victimize workers.

The International's proposal to test only those people who, by their actions or inefficient and unproductive work habits, appear to be under the influence of drugs is also subject to abuse. It leaves unanswered the question of who should be the judge of the employees' actions. And it depends too heavily on that person's judgment to keep the program fair and unprejudiced. The only clear and definitive means to avoid prejudicial judgments appears to be a random urine testing program.

Random screening does not single out individuals for harassment. Instead, it gives contractors a method to fairly and equitably evaluate each worker's condition. If these tests were a pre-employment requirement, they could help contractors avoid hiring people that may initiate an accident due to their mental or physical condition. Tests conducted in this manner would not be used to evaluate the person's efficiency, but rather provide the medical information needed to reduce the possibility of workplace fatalities.

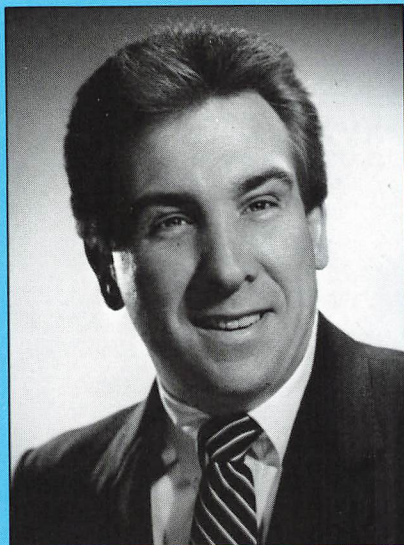
Cooperation is necessary

Drug tests aren't perfect, however. I strongly agree with the union that we should be concerned with the accuracy of the tests. One way to control this accuracy would be to allow only accredited laboratories to analyze the samples using only specific criteria.

Other questions must also be answered before a drug testing program can be instituted. For instance, the level of impairment that is unacceptable is one issue that labor and management must come to an agreement on during the planning stages. Another question that must be addressed is the use of prescription or non-prescription drugs for medical reasons. If these drugs affect a person's ability to function safely and adequately, some mechanism must be set up to indentify workers who are taking these medications and control their use.

The steps that should be taken once testing exposes a drug abuse problem must also be carefully considered by labor and management together. As a business owner, I would hope that the rapport I share with my employees would allow us to combine our efforts to find help for the workers with drug problems. If a qualified worker can be rehabilitated through the programs that are available in the community rather than dismissed, everyone benefits.

Because overall employee safety is the primary goal of any drug testing program, I believe that labor and management should be able to cooperate on this issue. As we work together, however, we must realize that some rights may have to be infringed upon to pursue our goal. The final outcome of such an effort could be our growth as an industry concerned in each other.



Rick Rosenow is president of Hans Rosenow Roofing Co. in Chicago.

No one wins when disputes reach arbitration

Arbitation, like litigation, is an unpleasant experience for the parties involved. In most cases, reasonable people making reasonable compromises can settle disputes before arbitration is necessary.

An arbitration hearing I witnessed recently was no exception to this rule. The case, which involved an alleged roofing problem, could have been avoided and both the owner and the contractor would have come out ahead. Unfortunately, the parties couldn't come to an agreement and the issue had to be settled by a panel of three arbitrators. If there is a lesson to be learned from this event, it is that communication between the owner and contractor is vital if arbitration or litigation is to be avoided.

The case that finally reached the arbitration stage began in 1983, when the owner decided one of its buildings required a new roof. The owner's first step was to retain a consulting firm, which prepared contract documents that clearly and precisely specified the work to be done, the materials necessary and the application procedures from the award of the bid to the job's completion. The document defined 36 work items covering quality control, surface preparation, operational procedures, underlayment components, insulation, membrane components, sheet metal work, roof test sampling and special treatments.

The project, as described by the documents, consisted of removing the two roofs that were on the building down to the light-weight concrete deck. The recover system the documents specified consisted of a two-ply asphalt/organic vapor retarder over which a layer of fiber glass insulation was mechanically fastened. A slag-surfaced, four-ply, coal tar bitumen membrane was to be applied over the insulation.

The documents also directed the contractor to appoint a quality controller, who would perform the duties outlined in the contract's quality assurance clause. Among the duties listed was the taking of roof samples to be analyzed in a laboratory designated by the owner. According to the document, an evaluation of the entire roof

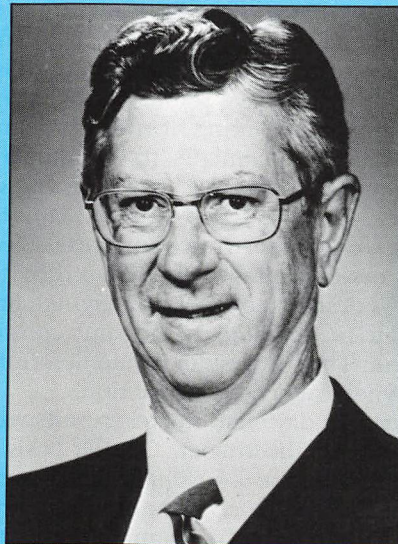
Working together a better solution

by William C. Cullen

would be based to a large extent on the results of these roof sample tests.

The contractor who submitted the successful bid for this job had been in business more than 25 years and was an NRCA contractor member as well as a member of one of NRCA's affiliates. The roofing firm had done several successful jobs for the owner in the past. In preparation for the project, the owner and contractor chose a well-known manufacturer as the material supplier and selected one of the manufacturer's published specifications for the membrane system to be installed. This specification became part of the contract documents' requirements.

The worker appointed by the contractor to serve as quality controller for the job was the project's foreman, a man with more than 20 years' experience. He had worked as foreman and quality controller on five previous jobs for the same owner. In his dual role as foreman and quality controller, the worker attended construction conferences, reviewed specifications, drawings and application requirements, and supervised the application process, according to his testimony at the arbitration hearing.



William Cullen serves NRCA's Technical Services Department as research associate. He was formerly deputy director of the Office of Engineering Standards, National Engineering Laboratory at the National Bureau of Standards.

According to the document, an evaluation of the entire roof would be based to a large extent on the results of these roof sample tests.

Suggestions for owners and specifiers on avoiding arbitration:

- Select contract documents and manufacturers' specifications that contain reasonable requirements that can be attained using state-of-the-art application practices.
- Select reasonable and realistic application tolerances that can be attained using local application practices.
- Consider using NRCA's *Quality Control in the Application of Built-up Roofing*.
- Do not use quality control procedures that require laboratory analysis of test cut samples.
- If test cut sampling is required, use ASTM Procedure D-3617, "Sampling and Analysis of New Built-up Roofing Membranes."
- Select specifications commensurate with climate, structure and local application practices.
- Communicate clearly and candidly with your contractor regarding your expectations, requirements and penalties.
- Require and provide third-party inspection during application.
- Make your complaints and questions known to the contractor.
- Resolve on-the-job conflicts with contractors promptly and honestly.

Conflicting reports halt work

The owner assigned its own inspector on the job as well, although it was reported that this inspector visited the jobsite infrequently as the project progressed. In spite of his limited number of visits, he noted several contractual breeches, including unlabeled materials, failure to complete work started that day, exposed felts, failure to apply chalk lines to designate ply lines and other deficiencies in application techniques as defined in the contract documents.

The contractor's foreman/quality controller disagreed with these reports and assured the owner that quality materials were being applied in accordance with local roofing practices. The owner's representative continued to report jobsite problems, however. Finally, the situation deteriorated to the point where the owner ordered the contractor to halt operations.

With the work at a standstill, the owner called in the consulting firm that prepared the contract documents to examine the roof and provide advice. The decision was made to remove seven test cut samples. These were taken from roof areas selected by the consultant and analyzed by the owner's designated laboratory, which happened to be operated by the same consulting firm. The test results would determine the owner's next course of action.

After a 15-day wait, the test results were delivered to the owner. On the basis of these results the consultant and owner judged that the work was not in conformance with contract documents, and the contractor was ordered to remove and replace the roof.

The contractor, on the other hand, believed the job was satisfactory and would perform adequately for the intended service life. He was willing to back his belief with an extended roof warranty, but this failed to sway the owner, who continued to insist on a complete roof replacement. The contractor refused to perform the work and was dismissed from the job. Subsequently, the project was awarded to two other contractors who completed the roof.

Contractor turns to arbitration

After he was removed from the project, the contractor sought compensation for the work he had already completed. The owner failed to respond. Consequently, the contractor turned to the legal system for relief. The attorneys representing both parties agreed to settle the dispute through arbitration.

With arbitration pending, the owner retained a second consultant who examined the roof and took several test samples. They were analyzed by ASTM Method D-3617 as modified by the consultant. The second consultant's report was submitted as the test results and subsequently introduced by the owner as evidence at the hearings.

The actual hearings, which lasted about seven days, took place in the spring of 1986, two years after the contractor was dismissed. Hearing the testimony was a panel comprised of an attorney, an architect and an engineer. In my opinion, the

Suggestions for contractors on avoiding arbitration:

- Carefully read the contract documents and manufacturers' specifications.
- Do not bid on jobs where the contract document requirements cannot be met using local application practices.
- Do not bid on jobs whose contract documents require laboratory analysis of test samples to evaluate your application practices for quality control purposes.
- Prior to application, request in writing waivers on application tolerances that are unreasonable and impossible to meet.
- Encourage the use of NRCA's document *Quality Control in the Application of Built-up Roofing*.
- Learn and understand the tolerances, consequences and penalties associated with test cut sampling and analysis.
- Understand the role of the third-party consultants associated with your project.
- Inform the owner in writing of unexpected occurrences during application that are in conflict with contract documents.
- Resolve on-the-job difficulties with owners promptly and honestly.

arbitrators were experienced, distinguished, modest, perceptive, firm, fair and in command.

The contractor and owner called several witnesses to support their claims. The owner's key witnesses were its employees, its on-the-job inspector and its primary and secondary consultants. Testifying for the contractor were the firm's president, the foreman/quality controller and myself, acting as a technical consultant to the contractor's attorney and as an expert witness for the contractor.

Also introduced as evidence were the contract documents, the manufacturer's specifications, detailed drawings, samples of materials used, photographs and a screening of a videotape showing the complete installation of a similar roof system. In addition, the arbitrators took the opportunity to visit the jobsite and examine the roof in question, which was more than two years old at the time of this inspection.

The reports of the test sample analysis by the owners' two consultants were also introduced. Although several issues (some relevant and some not) arose during the hearings, the test sample results played a major part in the panel's decision.

Compliance questioned

The primary question the two sides debated at the hearings was whether or not the contractor complied with the requirements of both the contract documents and the manufacturer's specifications. Another related point of contention was the validity of the test sample results, and how it was affected by the sampling techniques, methods of analysis, biases and interpretations

involved. It appeared to me as I listened to the debate that the question of the roof's present and future performance was secondary.

The contractor argued against the validity of the test samples, claiming that the techniques used to obtain the samples were inadequate. He stated his belief that the seven 1-foot-square samples taken were not representative of the large roof area involved, and he asserted that the selection of the roof areas to be tested was biased because the samples were selected by the owner's consultant and sent to the consultant's lab for analysis. The owner responded to these charges by saying that it was the owner's prerogative to sample and test as stated in the contract document.

The contractor also challenged the method used to analyze the samples, claiming that there are no consensus procedures to evaluate new roof applications by laboratory test sample analysis. It was also pointed out to the panel that even if a method similar to ASTM Standard Method D-2829 "Sampling and Analysis of Built-Up Roofs" was used, the laboratory analysis may not have produced valid and repeatable results. The shortcomings of test method D-2829, which explicitly states that it is not to be used for new construction inspection, make it unsuitable for settling disputes, it was stated. One shortcoming cited was the fact that the precision of the individual test procedures contained in the standard has not been established. Another deficiency mentioned was the technical literature's lack of

Although several issues arose during the hearings, the test sample results played a major part in the panel's decision.

The panel ruled in favor of the contractor, awarding him approximately 60 percent of the amount he sought from the owner.

defined standard test procedures for measuring interply voids and head lap (two of the major points of contention at this hearing) for a 1-square-foot test specimen.

The owner's testimony focused on the contractor's failure to conform to the requirements of the contract documents and the manufacturer's specifications. According to the owner, requirements for head lap, weight and slag embedment as well as the integrity of the interply coverage were not met.

The contractor responded by saying that the tolerances cited by the laboratory were not contained in the contract documents or the manufacturer's specifications. Instead, the laboratory based its judgment of the contractor's work on tolerances similar to those required by Air Force Manual AFM 91-36 "Built-Up Roof Management Program." The contractor objected to this procedure, claiming that the laboratory's tolerances could not be found in the contract documents or in the manufacturer's specifications. Further, the contractor said, he was not told when he bid and accepted the job that the application was to conform to the laboratory's tolerances.

The requirements for both head lap and interply moppings that were stated in the contract documents became major points of contention during the hearings. According to these documents, the head lap had to be 2 inches without any tolerances given, and the interply moppings were to be fully bonded, implying that voids were not to be permitted. It should be noted that in each case cited in the test reports the head laps exceeded the 2-inch requirement, and the void areas were within the limits that are considered acceptable in the published technical literature.

The contractor's compliance with the manufacturer's specifications was also called into question. According to the manufacturer's literature, the application required a coal tar bitumen topcoat of approximately 75 pounds per square and slag of not less than 300 pounds per square (or 400 pounds per square in some parts of the country). The owner contended that the test results, which showed that considerably greater amounts of bitumen and slag had been applied, established the contractor's failure to meet the manufacturer's requirements.

The contractor explained the surplus material by stating that he was trying to ensure a good job by meeting or exceeding the manufacturer's specifications. He also attempted to establish that the owner's concern for the harmful effects of excess bitumen and aggregate was irrelevant, because the deck was essentially level, which eliminated a potential slippage problem, and structurally sound enough to safely support the additional dead load.

Some of the other issues raised during the hearings involved asphalt contamination of the coal tar, temporary roofs, exposed felts, defective sheet metal work, work completion, costs, fraudulent sampling and blame placing. In my view, some of these issues appeared valid while others appeared to be nit-picking, dishonest or only half true.

Contractor wins, loses customer

After sifting through this information and sorting out the pertinent data, the arbitrators were able to render a decision. The panel ruled in favor of the contractor, awarding him approximately 60 percent of the amount he sought from the owner. It would be difficult to call the contractor the winner in this dispute, however. The bottom line is that both parties lost not only dollars, but much more. The contractor lost a good customer with whom he had been associated for many years, and the owner lost as a bidder on future work a competent and experienced contractor who had served him well in the past.

The situation is all the more unfortunate because the conflict could have been avoided or resolved early in the project, when the parties' expectations could have been aired through open and frank communication. And, had the contractor and owner worked together as partners rather than adversaries, they could have produced better results. If a spirit of cooperation had prevailed, the parties could have addressed the problems when they arose, and sought out reasonable compromises.

Trapped asphalt can kill a kettle

The ever-increasing cost of labor and equipment downtime makes a good equipment maintenance program essential. For BUR contractors, part of this program should involve the regular care and cleaning of asphalt kettles and tankers.

The need for proper kettle maintenance is even more urgent with today's asphalt, which rapidly produces an abundance of carbon and sludge. If these byproducts are not routinely removed, they will produce a heavy buildup under and around the equipments' tubes causing considerable damage. When carbon collects in a kettle, it prevents quick heat dissipation from the fire tubes, which causes higher tube temperatures and much higher fuel consumption. In a heavily carboned kettle, this will change the molecular structure of the steel tube wall, causing it to collapse and leak.

Cleasby Manufacturing Co., based in San Francisco, produces the SpeedKing line of roofing equipment.

Routine care avoids costly downtime

by the Cleasby Manufacturing Co.

A worker uses a jet-spray to loosen asphalt before cleaning a kettle.

An ounce of prevention . . .

To avoid costly equipment breakdowns, it is best to clean and maintain kettles and tankers frequently. One problem that can be eliminated with regular maintenance is trapped asphalt, a little-known and often-overlooked phenomenon.

Asphalt can become trapped in kettles where hot asphalt circulation is greatly reduced or eliminated during the heating process. Asphalt is most likely to collect in areas such as the draw-off valves at the rear of the kettle and inside pump lines within the kettle vat.

The problems occur when asphalt in these areas is continually heated but not circulated. This constant heating breaks the material down, forming carbon deposits that plug the pump system's draw-off valves and circulation lines. With the system blocked at these points, the engine and pumps must work harder. The constricted or plugged circulation lines also create additional back pressure, which greatly reduces the life of both the pump and engine.



To keep pump lines free of constrictions, asphalt should be circulated through them daily after the discharge line has been capped off.

There is an easy solution to the problem of trapped asphalt, however. At least one bucket of asphalt, or "hot," should be drawn off daily from the draw-off valve and poured back into the kettle to prevent carbon deposits from forming. To keep pump lines free of constrictions, asphalt should be circulated through them daily after the discharge line has been capped off.

Carbon buildup can cause problems in other parts of the kettle as well. It may cause flashing or, should oil-soaked carbon accumulate around exhaust stacks and under the tube platform, it may cause a fire that is difficult to extinguish. Large

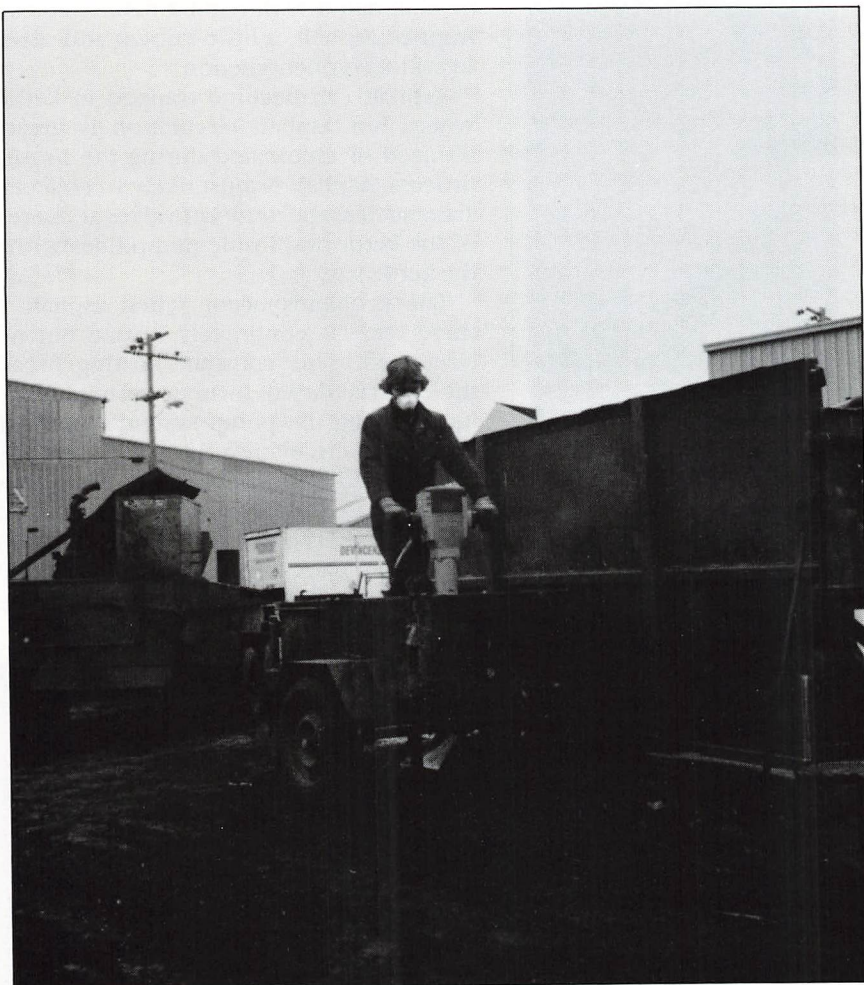
amounts of carbon in these areas can also reduce the kettle's capacity. Enough carbon may accumulate inside a 230-gallon kettle to reduce its capacity to 175 gallons.

The kettle's performance will also be affected by carbon accumulation. Carbon around submerged centrifugal pumps can cause the siphon pipe's check valve to jam open or closed, or reduce asphalt flow to the roof. Carbon partially covering the tubes on the bottom of a kettle will reduce production. Hard carbon on the tubes and manifold will prevent the kettle from heating properly because the heat will be unable to pass through the tubes and into the kettle.

If there is carbon buildup around the temperature sensing tube, the kettle's thermostat will not work properly. This condition prevents the thermostat from quickly perceiving temperature changes in the asphalt. The delay causes the thermostat to turn the burner on and off at inappropriate times. Should carbon accumulation on the sensing tube be a problem, the temperature of the asphalt inside the kettle will vary from extreme to extreme within a short period of time.

A crack in a tube can also be a problem. As the asphalt leaks from the crack it can drip into the burner well, causing asphalt smoke to rise from the exhaust stacks. If a small leak or a little smoke is ignored, it can lead to very expensive kettle damage. In the worst cases, the carbon around the crack breaks loose and floods the tubes.

All of these costly and bothersome problems can be avoided with routine kettle cleaning and maintenance. At Cleasby, we have initiated a complete kettle cleaning and repair service to help contractors keep their equipment operating at top efficiency.



After asphalt cools and hardens, it may be necessary to remove it with a jackhammer.

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Mail to: Joan Kriete, NRCA, 8600 Bryn Mawr Ave., Chicago, IL 60631



Catalog will increase Convention participants' investment

Every contractor visiting NRCA's Centennial Convention and Exhibit will receive a valuable new reference to roofing products. Called *Products In Print*, the guide will contain specifications for a wide sampling of the products that will be exhibited at the Convention, which will be held Feb. 22-25, 1987, in San Francisco. Contractors unable to attend the Convention will be able to order copies of the guide for \$35.

"*Products In Print* is a way to extend the trade show experience throughout the year," according to Chris Taylor, NRCA associate executive director. "For the contractor, it will be a handy reference to detailed specifications for products he sees at the Exhibit. And for the exhibitor, *Products In Print* will be an effective way to provide specifications to customers and prospective customers long after the exposition closes.



Products in Print, NRCA's newest publication, will help organize the information contractors receive at the Annual Exhibit.

"Because contractors will use *Products In Print* throughout the year," Taylor added, "it will become the industry's major reference to roofing products. It will make more valuable the investment both the attendees and exhibitors make in the Centennial."

Using the guide's cross-referenced exhibitor booth listings, contractors can visit manufacturers, see products, review the specifications and jot down notes in their copies of the publication. Products will be listed by category in the guide's reference section. Also listed for each product in this section will be the number of the page on which the product's specification appears as well as the manufacturer's booth number.

Products will also be cross-referenced by trade name. This will allow contractors to find the products even if the trade name is all they know. A complete listing of NRCA exhibitors participating in *Products In Print* will include the name, address and telephone number as well as the products exhibited.

"We believe roofing contractors will find *Products In Print* indispensable," Taylor said. "It will become one of those items we wonder how we did without."

According to Taylor, contractors who use *Products In Print* will have at hand all the technical specifications needed to make cost-effective product decisions. By listing all details in a single source, she said, the guide makes it quick and easy to compare products. The information will provide contractors with a ready reference to the products they examined at the show for months after the show ends.

Several hundred of the products shown at the NRCA Exhibit are expected to be included in the 1987 edition of *Products In Print*. Other helpful details planned for the guide are listings of roofing industry associations and related organizations, data about NRCA, and important information about the Centennial Convention and Exhibit.

"These are the plans for our first edition," Taylor said. "We will expand *Products In Print* in 1988 if there is other information that contractors need at their fingertips."

NRCA has appointed an independent publisher, Fleishman & Linden Expositions Group, to coordinate production of the guide. Said Lin Fish, project director, "We are excited about creating something new that will make it easier for roofing contractors to evaluate and buy products."

Information about *Products In Print* was distributed to prospective participants as part of the Centennial Convention exhibitors' information package. For another copy or for additional information exhibitors should contact NRCA's Joan Kriete at 312/693-0700.



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NRCA combats the insurance crisis

In July, 85 roofing contractors eager to learn tactics that would help them survive the insurance crisis came to Chicago for an afternoon seminar sponsored by NRCA.

"In light of the current insurance situation, we felt we had to do something for our membership," said NRCA Director of Education Alan Grayson, the event's organizer. "Many contractors today are confused about insurance. This seminar afforded us the opportunity to answer their questions and provide them with invaluable information."

The seminar was divided into three sections covering basic insurance concepts, minimizing insurance costs and shopping for insurance.

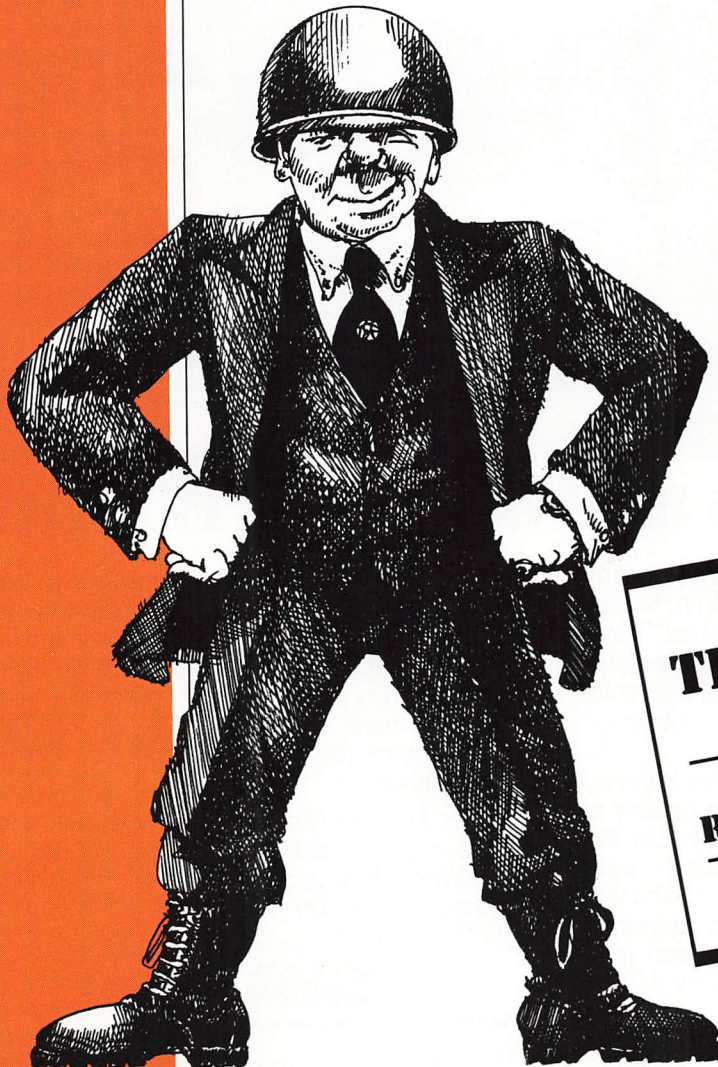
In his discussion on basic insurance concepts, speaker Richard E. Schmidt, an insurance consultant from Binghamton,

N.Y., blamed laymans' confusion about the concepts on their "innate resistance to insurance." Stressing that insurance is a contract, he suggested that contractors share their insurance policies with legal counsel. Schmidt cautioned contractors to make sure their workman's compensation policies cover them in the states in which they are working. One way to accomplish this for free, according to Schmidt, is to add a "Broad Form Other States Endorsement" to the policy. This clause makes coverage in a jurisdiction not named in the policy automatic.

When insuring property and fixed assets, contractors should consider an "all-risk" policy, Schmidt suggested. This type of coverage insures against all perils except those listed in the policy. Schmidt believes that when the dangers are spelled out in a policy, it is easier for the contractor to make the appropriate changes in his program to avoid them.

Schmidt advised against umbrella coverage to insure vehicles. However, he did suggest that contractors investigate this type of policy to weigh against other forms of coverage.

Schmidt also explained the factors that, when combined with the low interest rates that sent insurance companies in search of premium dollars, led to today's insurance crisis. The factors he listed were exorbitant punitive damages, pollution liability and asbestos liability. "These three things have triggered a need for the industry to revamp its coverage forms," said Schmidt.



**SURVIVING
THE INSURANCE
CRISIS**

**A CONFERENCE FOR
ROOFING CONTRACTORS**

July 22, 1986 Chicago, Ill.

NATIONAL ROOFING CONTRACTORS ASSOCIATION

Ways to minimize insurance costs were suggested by Carl T. Ernstrom of Ernstrom & Hefferon Associates, Binghamton, N.Y. Ernstrom told the contractors that they could dramatically deplete their risk level by establishing a loss control program.

To create a successful program, management support is vital, according to Ernstrom. He also suggested that contractors designate one individual as safety director regardless of the firm's size.

Ernstrom said a loss control program's ongoing activities should include:

- investigating, analyzing and reporting all accidents;
- inspecting jobsites;
- enforcing safety regulations; and
- promoting workers who demonstrate a keen awareness of safety.

All supervisors should be trained in the areas of safety and loss prevention, Ernstrom added. This includes instructions on federal

and state regulations, hazard recognition, safety motivation and worker training.

Ernstrom said that to monitor the effectiveness of a loss control program the contractor must ask: "Is it working? Have losses been reduced? And what further steps can be taken to reduce losses?"

Tips for contractors shopping for insurance were given by John M. Stubbs, a consultant from Tillinghast, Nelson & Warren, Inc., in Dallas.

Agent selection is the most critical process when shopping for insurance, according to Stubbs. Contractors must look for an experienced agent with a knowledge of the construction industry.

When prequalifying agents, a contractor should determine the kind of construction-related insurance the agent has written and whether he writes entire accounts. If possible, the contractor should compare the size of his account with others on the agent's client list.

Stubbs suggested that contractors ask to see prospective agents' resumes to determine their qualifications.

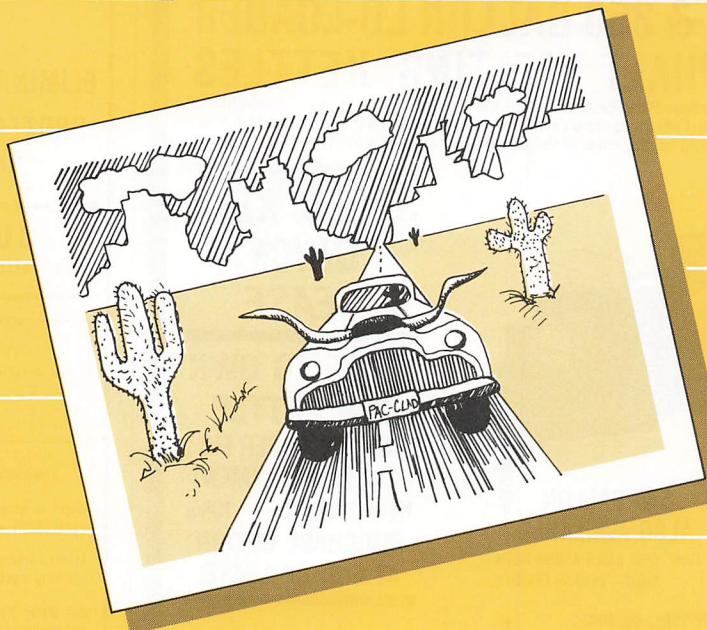
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Stubbs also suggested that contractors ask to see prospective agents' resumes to determine their qualifications. It is particularly important that agencies have competent claims departments and personnel; good claims processing can make a differ-

ence in how the carrier handles claims, Stubbs said.

The three speakers at the seminar provided the contractors with much useful information. "Judging from the evaluation forms we've received, I'd say the seminar was a success," said Grayson. "Everyone left having learned something that they could apply." Grayson complimented the speakers for handling a great deal of information in a brief period of time.

NRCA is selling a videotape of the seminar, accompanied by a written study guide. Additional loss control information can be found in NRCA's pamphlets *Suggested Safety Program Guidelines*, *Suggested Fleet Safety Guidelines* and *Practical Guidelines To Control Water Damage*. These publications are available at a nominal fee.

IN BRIEF

■ **EPA files asbestos suits.** The federal government filed 11 civil lawsuits against 28 defendants for allegedly failing to protect workers from asbestos exposure.

In the suits, filed last January, the Justice Department and the Environmental Protection Agency (EPA) are seeking injunctions against future violations of the Clean Air Act and fines of as much as \$25,000 per day per violation. The cases all involve buildings containing friable asbestos that were demolished or under renovation in 1984 and 1985.

When EPA first issued building asbestos regulations under the Clean Air Act in 1973, the regulations covered demolition only. Later, the rules were expanded to cover renovation. The regulations require that contractors notify EPA in advance of projects that involve friable asbestos. Contractors must also follow designated procedures for removing and disposing of the asbestos.



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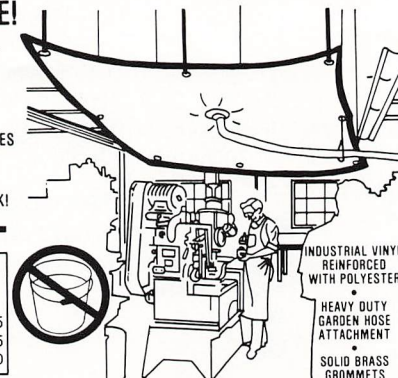
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- American Western Mfg
- Apache Bldg Products Co
- Arco Chemical Co
- Arvron Inc
- Associated Foam Mfrs
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- Consolidated Protective Cooley Roofing Systems Inc.
- Cornell Corp
- Danosa Caribbean Inc
- Dibiten USA
- Diversitech General Building
- Dow Chemical Co
- Drew Foam of Colorado
- Dunlop Construction
- Durolast Roofing Inc
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- EPS Molding Inc
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- Foam Tech Inc
- Futura Coatings Inc
- GAF Corporation
- The Garland Co Inc
- Gates Engineering Co Inc
- Gedaco SPA
- Genstar Roofing Products Co
- Gilman Bros Co
- The Goodyear Tire & Rubber Co
- W.R. Grace & Co
- Great Western Diversified Inc
- Guaina Corp of America
- Hitchins America Inc
- Homasote Company
- Huebert Fiberboard Inc
- Hyload Inc
- Imperialta SPA
- Index SPA
- Industrial Foam Products
- Insul-Board
- Insulated Building
- Insul Corp of America
- International EPDM Rubber
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- Kelly Energy Systems Inc
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- Lucas Sales Co Inc
- Lunday Thagard Co Inc
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- Pacific Allied Products Ltd
- Pantasote Inc
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Comparison of Data Contained in Commercial Roofing Material Publications

COMMERCIAL ROOFING MEMBRANES				
Built-up Roofing Specifications				
0	50	100	150	200
GUIDE *				199
43	1986 Handbook of Commercial Roofing Systems**			
0	Single-Ply Roofing: A Professional Guide to Specifications***			
Modified Bitumen Membranes				
0	50	100	150	200
GUIDE *				134
15	1986 Handbook of Commercial Roofing Systems**			
15	Single-Ply Roofing: A Professional Guide to Specifications***			
Thermoplastic/Elastomeric Membranes				
0	50	100	150	200
GUIDE *				134
27	1986 Handbook of Commercial Roofing Systems**			
73	Single-Ply Roofing: A Professional Guide to Specifications***			

ROOF BOARD INSULATION				
0	50	100	150	200
GUIDE *				196
5	1986 Handbook of Commercial Roofing Systems**			
0	Single-Ply Roofing: A Professional Guide to Specifications***			

WARRANTIES				
0	50	100	150	200
GUIDE *				116
0	1986 Handbook of Commercial Roofing Systems**			
0	Single-Ply Roofing: A Professional Guide to Specifications***			

* Commercial, Industrial & Institutional Roofing Materials GUIDE, Volume #8; Published February, 1986 by the National Roofing Contractors Association, Chicago, Illinois.

** 1986 Handbook of Commercial Roofing Systems; Published by Harcourt Brace Jovanovich, Inc., Cleveland, Ohio.

*** Single-Ply Roofing: A Professional Guide to Specifications; The Single-Ply Roofing Institute, Glenview, Illinois.

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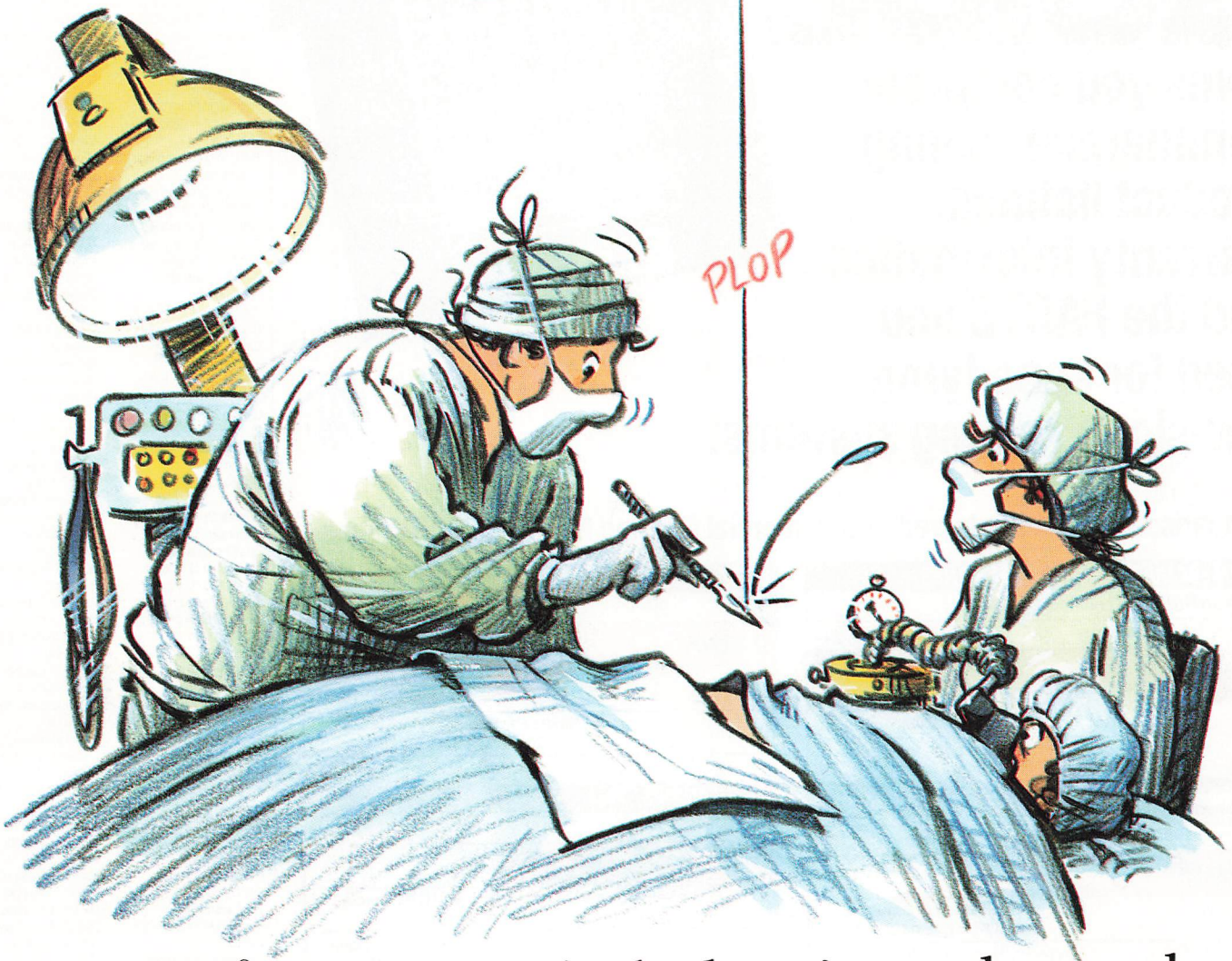
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In many of the regional offices of the American Arbitration Association (AAA) recently there has been a substantial increase in the number of demands for arbitration in construction-related disputes. This has imposed a significant strain on the existing panel of "construction" arbitrators maintained by these AAA offices, according to the law firm of Hendricks, Spanos & Phillips.

While arbitration may not be suitable for resolving all categories or sizes of construction-related disputes, there seems to be substantial agreement within the industry that the arbitration forum does serve a proper function in resolving many construction disputes. But the only way this forum will continue to be effective is if qualified and experienced construction business people and professionals are willing to serve as arbitrators to assist in resolving the various disputes that come before the panel.

AAA's regional offices are located at:

1197 Peachtree St., N.E.
Atlanta, Ga. 30361
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Boston, Mass. 02114
7301 Carmel Executive Park
Charlotte, N.C. 28226
205 W. Wacker Drive
Chicago, Ill. 60606
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Cincinnati, Ohio 45202
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Any business person or professional involved in the construction industry should consider volunteering to serve on the panel of arbitrators. It's very easy to volunteer. Simply contact the regional office of AAA and indicate your interest. The AAA office will provide all of the necessary forms and information required to submit your name for inclusion on the panel.

It is unlikely that any one panel member will be called to serve more frequently than his or her schedule will permit. Panel members always have the option of declining to serve in the event of schedule conflicts. Volunteers may also decline to sit on any panel hearing a dispute that they perceive to be in conflict with their own interests.

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IN BRIEF

- **The shrinking value of a dollar** owed to a company was charted recently in an issue of the Tennessee Association of Roofing Contractors' (TARC) newsletter. According to the figures, every dollar of a payment that is 30 days past due is worth only 97 cents. After 90 days, each dollar is worth only 83 cents. Accounts that are one year past due are worth only 45 cents on the dollar, and after five years the value of each dollar owed is only one penny. TARC cites the U.S. Department of Commerce for this information.

Wisconsin roofer offers tips on government work

A JLG Model 800BT like this one made the Great Lakes reroofing job a snap for Elite Roofing and Sheet Metal, Inc.

A suburban Milwaukee reroofer has carved a niche for himself by specializing in government projects. Ed Zibolski (known as Ed Zib in the business), president of Elite Roofing and Sheet Metal, Inc., in Cudahy, Wis., says that his company has developed a history of bidding on federal projects, especially for the U.S. Navy.

"The key to success on a government job is to read and follow the blueprints exactly," Zib says. "But that's not a complaint. Checking specs very carefully is what any competitive roofer should be doing anyway. While there is extra paperwork, it's not a stumbling block—if you've paid attention to the specifications."

Zib's latest project for the Navy is a 50,000-square-foot reroofing job atop a three-story barracks at the Great Lakes Naval Training Center in North Chicago, Ill. This is Zib's seventh job for the Navy.

"We have 20 employees, including two estimators and an office worker," Zib reports. "My crews generally work in groups of six, though we also work in teams of eight to 12. If there are two crews working, each has its own crane. Using a crane with the right accessories is certainly one of the keys to efficient reroofing."

For the barracks job, Zib assigned the newer of his two cranes, a JLG Model 800 BT mounted on a GMC chassis from Giuffre Brothers Crane Service. The crane's features include:

- eight-ton capacity;
- 65-foot tip height; with boom and jib extended, a tip height of 94 feet;
- proportional telescoping boom; and
- dual control stations.

Zib chose the Model 800 BT because "there's nothing we can't lift with it."

Zib also purchased a Giuffre-designed accessory, the "Humpty-Dumper." The 3½-cubic-yard box is crane-carried and features hydraulically opened bottom doors that deposit waste from the roof into a dumpster at ground level.

"One worker is able to operate the crane and do all of the groundwork. There's less dust, no ground cleanup and no damage to the landscape. That's our favorite way of removing an existing roof," says Zib.

Elite's heaviest piece of equipment is a 3,800-pound, skid-steer loader. The loader could not be used at Great Lakes because there was no parapet. In fact, the Corps of Engineers asked Zib to take special safety precautions on this job.

"We were observing OSHA safety regulations, but the engineers asked that we install a complete cable guardrail system around the perimeter. The cable system could not have more than 4 inches of slack from post to post and had to be exactly 42 inches above the roof. This is typical of the difference between the two regulators. But we followed the engineer's requests and lost very little time. Thanks to the crane, the guardrail hasn't interfered with the job."



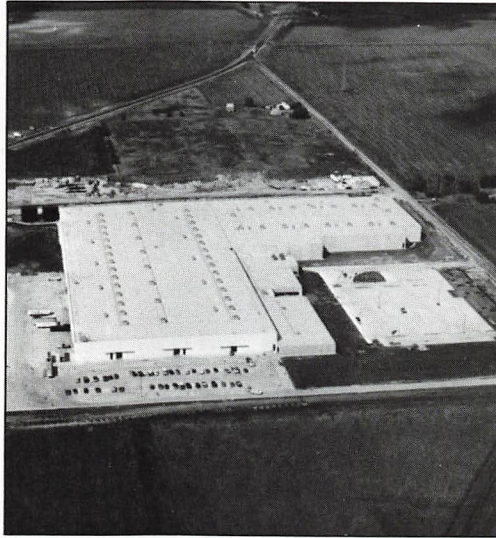
ON THE ROOF

With a roof the size of 16 football fields, the new Southwestern Bell Materials Distribution Center in Lancaster, Texas, lives up to the Lone Star State's reputation for doing things in a big way.

CEI Industries of Texas, Inc., covered the 500,000-square-foot roof with 1½-inch Celotex Energy-Lok insulation and a 60 mil Trocal Type S membrane mechanically attached by an SFS system. The project was the largest CEI had ever undertaken. Since completion in October 1985, the facility has been used to distribute materials ranging from fiber optic cable to office supplies to Southwestern Bell operations in Texas, Missouri, Oklahoma, Arkansas and Kansas.

CEI used three crews of five workers each during the eight-week project. Averaging 210 squares per day, the crew mechanically fastened the insulation and membrane to the metal deck of the roof with belt-loaded 2½-inch screws. A tapered saddle system was mechanically attached to the roof's perimeter.

The system carries a Factory Mutual I-60 wind rating. During construction, with about half of the roof in position, a 70-mile-per-hour windstorm swept through the site. The membrane remained undamaged and in place.



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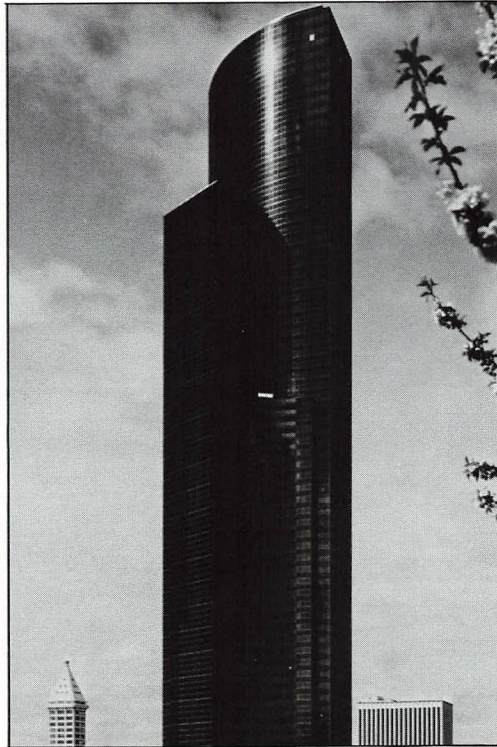
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Single-ply tops tallest building in the West

Seattle's stunning new Columbia Center is the tallest single-ply in the West.

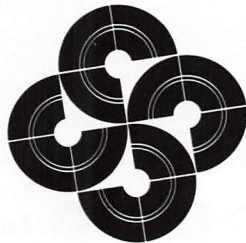


The Columbia Center is Seattle's newest, and tallest, landmark. The concave/convex 76-story triangular structure has 2 million square feet of floor space, including a 58,000-square-foot retail center and a 60,000-square-foot public arcade.

The building was designed with a tremendous glass curtain wall system and a seven-tiered roof. To make such a structure energy efficient, designer Chester S. Lindsay specified 8,800 insulated non-reflective tinted glass windows and a high R-value, water-resistant single-ply roof system. A 2-inch layer of Foamular® 404 Extruded Polystyrene Rigid Foam Insulation from UC Industries, Inc., was placed over the roofing membrane and the concrete topping slab to provide an R-value of 10 and protect the expensive underlying membrane.

The NRCA Roofing & Waterproofing Manual

LOW-SLOPE ROOFING
CONSTRUCTION DETAILS
HANDBOOK OF ACCEPTED ROOFING KNOWLEDGE
STEEP ROOFING
WATERPROOFING
TECHNICAL BULLETINS
GLOSSARY
APPENDIX



**2nd Edition
Now Available!
UPDATED & EXPANDED**

Since its publication in 1981, this complete guide to roofing and waterproofing has become the standard in the industry. Revised and expanded in 1985, the second edition of the **NRCA Roofing & Waterproofing Manual** contains new material on quality control in built-up roofing, elastoplastic membrane systems design and installation, and single-ply construction details. Now over 600 pages, the manual contains sections on low-slope roofing, including decks, vapor retarders, insulation, and built-up, elastoplastic, and cold-process membranes; on steep roofing; and on waterproofing. There are numerous specification plates for waterproofing, steep, and low-slope roofing and construction details pertaining to both single-ply and built-up roofing. NRCA technical bulletins are also included. A handy appendix contains a general guide to mechanical fasteners, roof curb criteria, venting recommendations, and metric conversion charts.

For more information and an order form, call or write:
National Roofing Contractors Assn. 8600 Bryn Mawr Ave.
Chicago, IL 60631-3502 (312)693-0700

Check #29 on Reader Service Card

COMING EVENTS

(For inclusion of events, address all correspondence to:
Roofing Spec "Coming Events"
 8600 Bryn Mawr Ave.,
 Chicago, Ill. 60631).

Sept. 29-Oct. 2
 Basic Roofing Technology
 Roofing Industry Educational
 Institute
 Boston, Mass.

Sept. 29-Oct. 3
 Infrared Scanning Courses
 Infraprospection Institute
 San Diego, Calif.

Oct. 2-4
 Annual Convention
 Arizona Roofing Contractors
 Association
 Tucson, Ariz.

Oct. 8-9
 Construction Claims and Disputes
 for Owners, Contractors,
 Developers, Architects and
 Engineers
 Construction Education
 Management Corporation
 Washington, D.C.

Oct. 20
 Construction Contracts and the
 Rules of Contract Interpretation
 Construction Education
 Management Corporation
 Washington, D.C.

Oct. 20-24
 Infrared Scanning Courses
 Infraprospection Institute
 Burlington, Vt.

Oct. 26-29
 Annual Convention and Trade Show
 Midwest Roofing Contractors
 Association
 St. Louis, Mo.

Nov. 3
 Asbestos Abatement and Removal:
 Legal Considerations and Planning
 Construction Education
 Management Corporation
 Washington, D.C.

Nov. 6-7
 Concentrated Course on
 Government Construction
 Contracting
 Construction Education
 Management Corporation
 Washington, D.C.

Nov. 10-11
 Construction Claims and Disputes
 for Owners, Contractors,
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 Construction Education
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 Lake Buena Vista, Fla.

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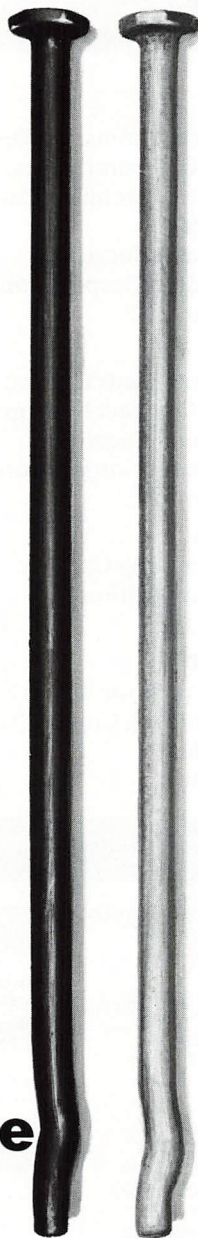
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Most good ideas are **deceptively simple**

The new Rawl-Spike™ looks like a simple, crooked nail. Very deceptive. It's actually a very sophisticated one-piece expansion bolt made of Grade 8 hardened and tempered spring steel.

The characteristic S-shaped tip of the Rawl-Spike exerts pressure against the walls of the concrete hole at three different points, in three different planes, reaching the deepest level of embedment. This produces remarkable holding power and extreme and continuous resistance to pull-out loads. The Rawl-Spike holds even under extreme conditions of wind and vibration stress.

The Rawl-Spike is used to attach membrane, insulation and wood blocking to structural concrete roof decks.

It is FM approved for I-60 and I-90 ratings and comes in 3/16" and 1/4" diameters in lengths from 1-1/2" to 10".

A mechanically galvanized (Class 50) or Perma-Seal™ finish meets and exceeds Factory Mutual's proposed #4470 corrosion requirement.

The only thing that's really simple about the Rawl-Spike is the installation: you drill a hole and hammer it in.

It's that simple!

Rawl

The Rawlplug Company, Inc., Two F.B. Powers Square,
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Rawlplug Canada, Ltd., 7404 Bren Road, Mississauga, Ontario L4T 1H3, (416) 673-7295

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MEMBERS' SUPPLEMENT

Like roofing professionals in every country, Swedish contractor Leif Zettergren is trying hard to keep pace with the rapidly changing roofing industry. His search for knowledge brought him to the United States recently to visit NRCA contractors and compare notes on technology, management and coping with change. Zettergren is regionschef (general manager) for Mataki-Hoganas Tak, the roofing contractor division of the Mataki group, a major manufacturer of roofing materials and industrial chemicals in Sweden. Hugh Guilderson, General Manager for the American Pacific Roofing Co., San Diego, was Zettergren's host for two days in Southern California. Together, Guilderson and Zettergren toured several jobsites, including a recently completed cap sheet roof.

The Mataki roofers are enjoying success with EPDM, APP-modified bitumen and CPE, Zettergren reported. EPDM allows them to work throughout the winter, while torch-applied APP-modified bitumens are solving the problem of asphalt flashings sliding off parapet walls. Commercial buildings in Sweden are typically poured-in-place concrete with either concrete or masonry parapets and no wood nailers. Zettergren has found that he can secure the

flashings to these structures with 1-inch square head nails at 12 inches on center.

Zettergren also said that APP-modified bitumens are used as complete roof membrane systems, especially in reroofing, which has begun to dominate the Swedish roofing market. Thanks to a Swedish building boom in the 1950s and 1960s, Zettergren projects the need for commercial and industrial reroofing at 3,000,000 square meters over the next 10 years.

According to Guilderson, Zettergren was impressed with American reroofing technology. Apparently, many of our tear-off and scraping machines are not available in Sweden, so Guilderson gave his Swedish counterpart several brochures and catalogs. "He was amazed at the size of our mops," Guilderson added. "We did not compare asphalts, but the fact that our 8-pound mops hold much more asphalt than the small brushes used in Sweden may contribute to our success with built-up base flashings."

"One of our technological prophets has described the world of the late 20th century as a global village," says Guilderson. "Two days with Leif Zettergren taught me that roofing contractors do indeed live in a small world. We speak the same language."

Swedish roofer tours United States

NEW MEMBERS

The following have been approved for NRCA membership for July.

CONTRACTORS

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Troy, Mich.
Douglas Sawicki

Flint Regional Roofing, Inc.

3364 Associates Drive
Burton, Mich.
Mary Alice Stephenson

Hamilton Roofing Co.

510 W. Richey
Artesia, N.M.
David A. Harris

Humboldt Roofing Co.

90 E. Lenwood Drive
Sparks, Nev.
Melvin Naumann

Mr. Roof/Greaves Inc.

5126 Merritt Road
Ypsilanti, Mich.
Herbert Greaves

B. Nock & Sons Roofing, Inc.

1016-3 Grand Blvd.
Deer Park, N. Y.
Suzanne Nock

Orleans Parish Acrysyl

2617 Olivier Blvd.
P.O. Box 741
Marrero, La.
Gerald R. Roy

Reinhardt Roofing, Inc.

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San Jose, Calif.
Carole A. Harden

Tri-County Roofing

814 E. Yanonali St.
Santa Barbara, Calif.
Richard Visueta

Troco Roofing, Inc.

1625 Hartman St.
P.O. Box 712
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1735 Hinton St.
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Richard Rentschler

Thermal Insulation Manufacturers Assn.

7 Kirby Plaza
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INTERNATIONAL

Trinidad Domestic Contractors Ltd.

30 Mountain View Road
Maracas Valley, St. Joseph Trinidad
Giles Edwards

Application of the Built-up Roof: Flashings

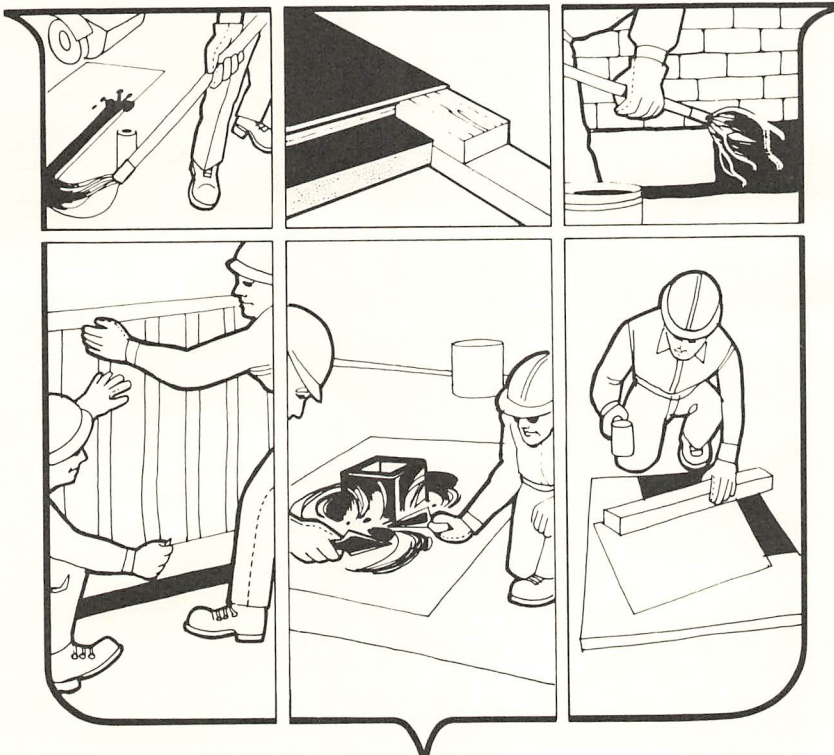
Now available from NRCA is the worker training program **Application of the Built-up Roof: Flashings**. The training package consists of a narrated audiovisual presentation and companion workbook specifically designed for training workers through in-house sessions in the contractor's shop. It introduces the roof mechanic to flashing detail design, to the different materials used for BUR flashings, and to the proper procedures for installing both vertical and horizontal flashings. The program provides clear, step-by-step instruction in the application of built-up flashings at drains and penetrations, roof edges and walls, and curbs.

The audiovisual program, available in either slide/cassette or videotape format, consists of 400 slides and a 47-minute narration. A comprehensive workbook contains a complete outline of the program plus quizzes, drills, and tests to gauge student progress and aid in instruction. A complete instruction guide is available as well.

Up to six hours of credit toward the requirements of the Academy of Roofing Contractors program can be earned using this program.

For more information on **Application of the Built-up Roof: Flashings**, contact the NRCA Education Department, 8600 Bryn Mawr Ave., Chicago, Ill. 60631, (312) 693-0700.

**A four-part audiovisual
program designed for
the roofing worker**



JLG adds platform, 12¹/₂-ton boom

JLG has added two new products to its line of cranes and lifts.

The Model 1250BT truck-mounted hydraulic boom crane has a rated capacity of 12¹/₂ tons. The crane features a mounting design that eliminates the need for added supports; it may be installed on any standard truck meeting 1250 specs. The boom length runs from 25 feet retracted to an extended tip height of 76 feet. A manual pull-out boom extension can be added for greater capacity and reach. A brochure detailing both the 1250BT and the 800BT cranes is available from the company.

JLG is also marketing a new aerial work platform designed for construction and industrial applications where working heights of up to 80 feet are required.

The Lift® Model 80HX features hydraulic extendable axles that provide a wider working base. This design allows the machine to be driven while the platform is fully elevated, an operation that would not be possible with outriggers. The 80HX has a maximum restricted capacity of 1,000 pounds and an unrestricted capacity of 500 pounds at maximum horizontal reach.

Check #30 on Reader Service Card



Tools, equipment expand Hilt's line

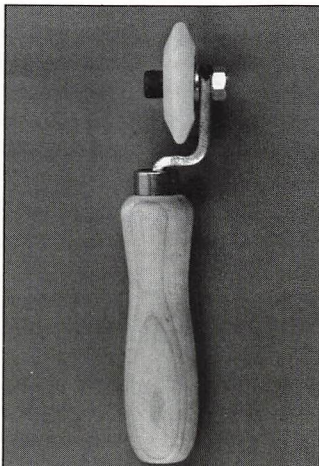
E.L. Hilt's & Co. has expanded its roofing equipment line with several new products.

The company has developed a new hand roller for use in applying EPDM, Hypalon and PVC roofing materials. The Diamond Roller has a nylon roller mounted on ball bearings. The roller head has rounded edges to prevent damage to materials when tucking and tightening flashing around curbs, skylights and other penetrations. The tool's design helps avoid the bridging effect that can occur when flashing with elastoplastic materials.

Hilt's is also offering a new two-wheel wheelbarrow with oversized balloon-type trailer wheels. The extra width of the wheels allows the unit to roll more efficiently and improves the balance of the wheelbarrow. The new wheelbarrow is designed for use on EPS and foam roof insulations.

Hilt's has added two major equipment lines to its inventory. The company is now carrying Gravelly tractors along with the Nieman tear-off attachment. In addition, Hilt's is stocking Reimann & Georger hydraulic swing hoists.

Check #31 on Reader Service Card



RO introduces new Stinger series

The RO Corp. has recently introduced two new series of Stinger truck cranes in the 12-ton-and-up lift capacity ranges.

The new cranes are designed to be installed on single-axle truck chassis. The TC-130 series features a maximum lift capacity of 25,000 pounds and sheave heights to 112 feet when equipped with optional two-sectional telescoping jibs. The Model TC-145 offers a maximum lift capacity of 29,000 pounds and sheave heights to 121 feet when equipped with optional jib and widespread, rear out-and-down outriggers.

Optional one- and two-worker aerial platforms are also available for use with the Stinger line of cranes, along with material-handling accessories such as hoppers, clam shell buckets, pallet forks and hydraulic lines. The company has published a brochure describing the Stinger truck-mounted cranes.

Check #32 on Reader Service Card



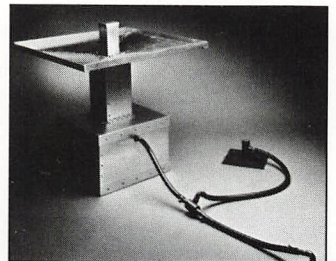
System eliminates standing water

Roof Saver Systems, Inc., has introduced a permanently installed system that removes ponding water from flat roofs.

The Roof Saver System includes a priming unit with a pan on top and a satellite unit. Rain collects in the primer unit's pan and drains into the pump, which contains a flotation and shut-off device. Accumulations of 1/16 inch of water activate the flotation device and open the manifold. Water released through the manifold creates a siphoning action and drains the pond at the satellite to a depth of 1/8 inch at the deepest part.

The Roof Saver System uses no electric or battery-operated parts, and needs no special tools for installation.

Check #33 on Reader Service Card



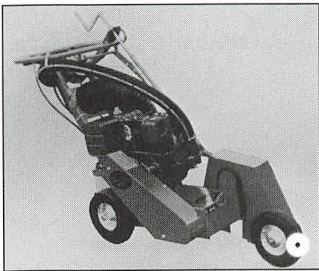
Aeroil expands equipment line

Aeroil Products Co., Inc., has added two new products to its roofing equipment line.

A new 25-gallon patch kettle, Model KE-B-25W, is light enough to be hand-hoisted to the roof and small enough to fit in a car, truck or through a skylight opening. The unit is mounted on two wheels and has removable handles for convenience. The company has also introduced a new roof saw that features a cutting depth of 4 inches and a design that allows use within 3 inches of parapets. The Mark I-E saw has a gas engine with an electric starter, and comes with a full-depth blade cover and dust shield. The unit is 21 inches wide with handle-mounted controls.

Aeroil has also announced that its Topsider trash chute meets OSHA roof safety requirements. The chute has worker guard rails on both sides and a chain across the middle section, where debris is dumped. The chute can be assembled on the rooftop without tools.

Check #34 on Reader Service Card



Armorlon markets custom chutes

The Armorlon Division of Reef Industries, Inc., is marketing custom-made chutes for removing debris from rooftop sites.

The flexible chutes are manufactured by the company according to the client's individual specifications for length and diameter. The chutes are designed for easy assembly to decrease set-up time. They are available at prices up to 70 percent lower than other comparable chutes, according to the company. Each chute is covered by a complete one-year guarantee.

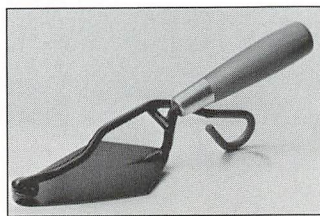
Check #36 on Reader Service Card

Tool simplifies seam welding

Allied Roofing and Sheet Metal Co., Inc., has developed a new tool designed to help roofers properly weld modified bitumen membranes.

The Torch-Mate is a 5-inch trowel base with a clamping device that holds the membrane during heat application. A lever at the back of the trowel releases the membrane when it has been properly heated for sealing. The Torch-Mate trowel helps eliminate faulty seaming caused by premature contact in seams, laps and flashings. A rounded tip on the trowel also helps feather seams according to manufacturer specifications.

Check #37 on Reader Service Card



Grover introduces high-pressure pumps

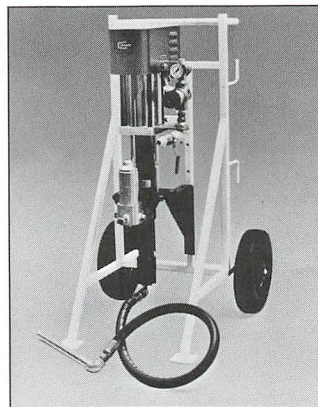
The Grover Manufacturing Corp. has introduced a new line of high-pressure airless pumps.

The new series of pumps offers ratios from 11-to-1 to 48-to-1, with deliveries of 0.5 gallons per minute to 3.5 gallons per minute. All models, except the 0.5 gallon-per-minute model, have two-position adjustable lower inlet ball settings for use with thin or viscous materials. The 3.5 gallon-per-minute model features a large internal porting for pumping zinc primer, mastics, coal tar epoxies and sprayable block fillers.

Eight basic models of the high-pressure pump are available for use in both circulating and dead-end systems. The heavy-duty models may be mounted on drum covers, wall brackets or portable carts.

Grover has published a 12-page brochure describing the company's line of airless pumps, accessories and outfits.

Check #38 on Reader Service Card



Blackwell offers rear-mount kettle

Blackwell Burner Co. has introduced a new 270-gallon kettle with a rear-mounted engine and pump.

The KT-270 kettle is designed to fit into narrow locations. Its construction allows the lift line unobstructed access to the roof without passing over the kettle. The rear deck lid of the kettle is hinged to allow the mounting plate to swing out for pump maintenance or unobstructed tube removal. The engine and pump can be tilted back to allow access to the pump while providing a work platform.

The KT-270 is equipped with an engine-to-pump drive system that uses a heavy-duty chain with sprockets suitable for engines over 100 horsepower. The unit also features a rear bumper that protects the 2-inch draincock.

Check #39 on Reader Service Card

Lubin markets convertible ladder

Lubin Marketing Association, Inc., is offering a new ladder that can be used as a solid step, extension or stairway ladder, or as portable scaffolding.

The Jaws Ladder™ features an interlocking hinge design and telescoping legs that allow it to be locked into a variety of positions. It may be adjusted at 1-foot intervals to a height of 22 feet, and carries a capacity rating of 300 pounds. The ladder, which is available in two sizes, folds down for transport and storage. It carries a full one-year unconditional guarantee.

Check #40 on Reader Service Card

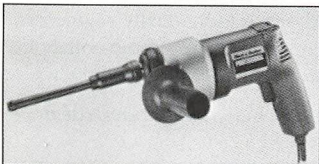
Drill installs Tapcon anchors

Black and Decker, Inc., has introduced a new hammer drill designed specifically to install Tapcon® anchoring systems into concrete.

The Model 5085 drill features dual spindles, which operate at different speeds. The inner spindle, used for drilling the pilot hole, runs at speeds up to 4,000 rpm and hammers up to 68,000 beats per minute. The outer spindle provides the low speed and high torque required to install the Tapcon anchor effectively. The installation sleeve is slipped onto the larger outer spindle, which is over the drill bit. The anchor is then inserted into the sleeve and driven into the pilot hole at 500 rpm.

The hammer drill has a side handle designed to increase control. The reversing switch is located away from the trigger to decrease the chance of accidental reversing. The tool comes with the installation sleeve, a 1/4-inch hex socket, a 5/16-inch hex socket, a Phillips adapter, #2 and #3 Phillips bits, and a hex key.

Check #41 on Reader Service Card



Benjamin markets Aro equipment

The Julien P. Benjamin Equipment Co. is now marketing Aro fluid handling equipment for use in installing EPDM membranes.

The company now carries Aro's adhesive sprayer Model 650093, which allows bonding adhesive to be applied at a rate of one square every two minutes. The Model 650259 lap seamer, which welds seams at a rate of 50 feet per minute, is also available.

The Benjamin Co. is also offering a new, 16-page contractors price guide for all roofing equipment and tools. In addition, the company has established a new WATS line to provide information on stock and equipment inquiries. The new number is 800/874-1151.

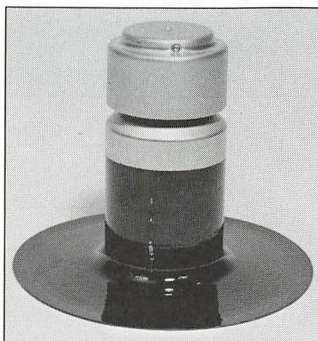
Check #42 on Reader Service Card

Marathon introduces new line of vents

Marathon Roofing Products, Inc., is marketing a new line of vents for use with BUR and modified bitumen systems.

Insulvents are available in either one- or two-way models. The units are manufactured of primed aluminum, and satisfy NRCA and manufacturers' requirements for vent installations.

Check #43 on Reader Service Card



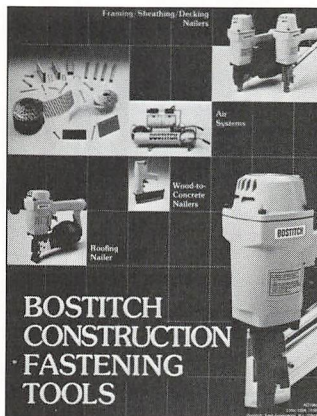
Bostitch publishes reference catalog

Bostitch has published a reference catalog of its full line of construction fastening tools, fasteners and accessory products.

The illustrated catalog presents each product individually with a thumbnail description of key features. Applicable fasteners are illustrated opposite each tool.

Categories include pneumatic staplers and nailers, pneumatic finish staplers, pneumatic tools for special applications, air compressors, and air hose kits and accessories. Other categories listed include electric and manual staplers, stapling hammers, low-velocity powder-actuated tools, and standard-velocity powder-actuated tools.

Check #44 on Reader Service Card



Force-Flo develops caulk gun loader

A new caulking gun loader has been introduced by Force-Flo, Inc.

The loader allows an operator to pump 1 pound of caulk into a caulking gun in about five strokes. This reduces loading time by about 50 percent, according to the manufacturer. The loader is also designed to reduce spillage. The loader features heavy-duty, reinforced latches and a ratchet-action pump. The unit's bottom latches are made of a heat-treated alloy designed specifically for industrial use.

Check #45 on Reader Service Card

Kettle uses either liquid or gas LPG

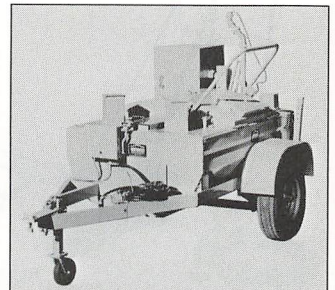
Roofmaster Products Co. has introduced a fully automated, electronically controlled kettle that uses either vapor or liquid LP-gas.

The Flameguard™ system is self-igniting and features an automatic shut-off system that turns off the controls if the burner blows out or fails to ignite. The controls remain off until the thermostat is reset. Flameguard's pump is powered by an engine equipped with an electric gear start and alternator for recharging its 12-volt system.

Roofmaster has also introduced a line of kettles with rear-mounted engines and pumps. The Standard Vat kettles feature a non-removable, swing-free engine cover and a reduced kettle length designed to make the kettle easier to maneuver. A 200-square-inch vent has been installed on the lid to prevent pressure buildup in the kettle.

A new granule blowing system is also being marketed by Roofmaster. The Dual-Hopper Granule Master™ has two hoppers; one side can be refilled while the other side remains in operation, eliminating the need to stop work to refill. The unit is capable of spreading up to 55 pounds of granules per minute and has a total capacity of 1,000 pounds.

Check #46 on Reader Service Card



continued on page 50

QUALITY Torches For The PROFESSIONAL Roofer

**NOW
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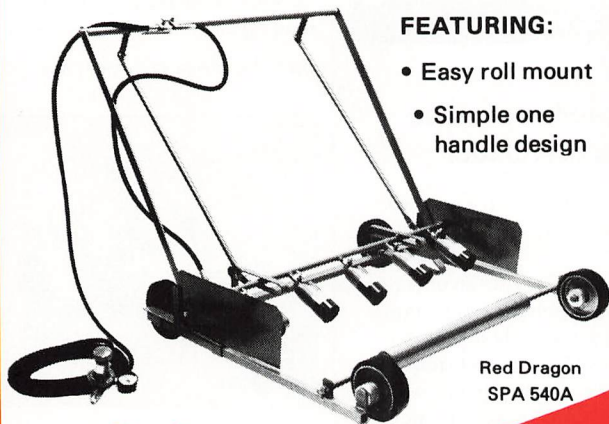
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WHAT'S NEW IN EQUIPMENT

Giuffre broadens crane, lift line

Giuffre Brothers, Inc., has announced the addition of two new products to its line of cranes and lifting equipment.

The Little John is an all-purpose skid steer drive vehicle that lifts, sweeps, digs, bulldozes and plows. The unit weighs less than 1,400 pounds and can be hoisted to a roof site by crane. Designed specifically for small work areas, the Little John has a loader capacity of 500 pounds and features a 30-inch turning radius. It is compact enough to fit in elevators and through doorways.

Giuffre Brothers has also announced the availability of the JLG Model 800BT truck-mounted crane. The crane has an 8-ton capacity with a 94-foot tip height, and features dual control stations.

Check #47 on Reader Service Card



System offers load limit warning

A British firm, Safety Devices, is marketing a system that warns operators when a telescoping boom is approaching its maximum load.

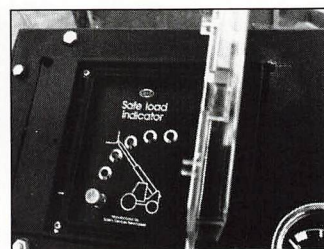
The SafetyMaster system permits maximum use of a machine while providing both visible and audible warnings when the load approaches its rated limit.

The SafetyMaster consists of a series of sensors that monitor chassis load, extension of the telescopic boom and the elevation angle. A control box computes the working load from the sensor inputs. A display of lights indicates both the load level and the actions that will affect the safety margin by increasing or reducing the load radius.

The lights illuminate in turn at 75 percent, 85 percent, 95 percent, 100 percent and 105 percent of rated capacity. An audible alarm sounds intermittently at 95 percent and continuously at 105 percent, while at 100 percent a cut-out system prevents operation of any hydraulic services that would lead to unsafe conditions.

Each installation of the SafetyMaster is individually engineered by the manufacturer in collaboration with the vehicle manufacturer.

Check #48 on Reader Service Card



WHAT'S NEW IN EQUIPMENT

Hyster brochures describe platforms

The Hyster Co. has released a series of six-page folders detailing its line of aerial work platforms.

The brochure detailing the M series work platforms highlights the units' one-person operation. Caster mountings make it possible for one person to move the platforms to the work area, set the stabilizers and elevate the platform to a height of 30 feet. When lowered, all M series platforms will pass through a 3-foot-wide doorway.

The motorized V18 series offers an 18-foot lift with a 24-foot working height. Model V18A can carry 1,000 pounds; the V18NA model, which is designed to fit through a 3-foot doorway, can lift 750 pounds.

Other models offer 24- and 36-foot working heights. All platforms in the Hyster line feature a lift design that uses only eight pivot points in the arm.

The hydraulically powered units also feature cylinder-mounted control valves that prevent free-fall if the hydraulic line ruptures. All controls are mounted on the platforms and can be removed for security.

Check #49 on Reader Service Card

In-tire sealant patches punctures

The Tire Sealant Service Corp. has developed an in-tire sealant that is designed to permanently seal tire punctures as they occur.

Perma-Seal™ is designed for use in all tire applications, including wheelbarrows, automobiles, trucks and heavy equipment. According to the manufacturer, Perma-Seal can reduce the downtime and tire repair costs associated with either flat tires or underinflation.

Check #50 on Reader Service Card

Sales-Impex adds Starlight line

Sales-Impex, Ltd., has announced the availability of a new line of roof windows and skylights.

The Starlight windows and skylights are available in either fixed or top-hinge venting styles. Units feature a profile of extruded aluminum in bronze baked acrylic polymer paint with thermal breaks and condensation gutters. The sash, which opens outward on the venting units, is made of extruded aluminum with neoprene gaskets. The frame is constructed of ponderosa pine treated with Tribucide for protection against mold, mildew and insects. Perimeter and step flashings are included with the units.

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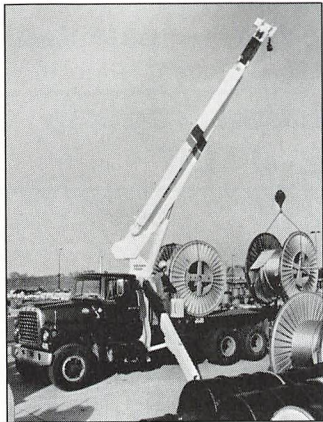
National offers heavy-duty cranes

National Crane is marketing a new line of heavy-duty truck-mounted cranes.

The Series 800B crane has a 35,000-pound maximum capacity and a vertical reach of 140 feet. The unit features a hydraulic, four-section, 75-foot boom with box-section construction and an 18-foot outrigger span. The crane's planetary winch uses $\frac{9}{16}$ -inch-diameter, rotation-resistant, wire rope.

The Series 800B crane mounts on most standard heavy-duty commercial trucks in one of four configurations to match job requirements. A complete line of 800B accessories is available.

Check #52 on Reader Service Card



Integral skin protects panels

The Kornylak Corp. has developed a process that produces phenolic foam insulating panels with integral surface skins. The panel's surfacing is tough enough to permit foot traffic without damage to the foam, according to the company.

The panels are produced on Phenoflo-Foamboarder lines in widths of 1 meter, 4 feet or 9 feet. The process produces skins up to $\frac{1}{4}$ inch thick that are approximately as hard as countertop phenolic laminates. The Foamboarder lines can produce panels with or without skins at rates from 20 to 60 lineal feet per minute.

Check #53 on Reader Service Card

Moisture detector fits in pocket

United Construction Products, Inc., is marketing a new pocket-sized electronic moisture detection device.

The Tramex Moisture Encounter can be used to evaluate moisture content in timber, plaster, felt and brick without cutting, scratching or drilling. The unit uses two conductive rubber pads on the base. Electronic signals are transmitted through the base into the material. The resistance between the signals is measured to give the moisture reading.

The Moisture Encounter unit is fitted with three separate ranges of sensitivity, making it suitable for a variety of tasks, including identifying rising damp in walls, locating leaks in felt roofs and determining the moisture percentage in timber.

Check #54 on Reader Service Card

Shorty fastener fits power drivers

The Tru-Fast Corp. has developed a new fastening tool for driving screws of 12 inches or more in length.

The Shorty driver fits most power screwdrivers. It features jam nut positive depth control and a snap-in bit design. The unit is also built with Tru-Fast's internal positive chuck, which grips the screw head plus a portion of the shank. This design reduces screw wobble and "walking," ensuring accurate driving to the pre-set depth.

Check #55 on Reader Service Card



Werner develops bolted plank

R.D. Werner Co., Inc., has introduced the 5200 Series Aluma-Plank® bolted plank with wood decking.

The Aluma-Plank uses extruded aluminum T-cross members, instead of swaged rungs, to join the rails. Side rails are attached to the T-cross members with self-tapping fasteners that screw into channel grooves in the cross members. The bolted construction allows for easy replacement of damaged components using common tools.

The plank is available in lengths of 7, 8 and 10 feet. All are duty-rated at 75 pounds per square foot and meet applicable national codes. The unit has been tested at 26,000 cycles with a weight load of 300 pounds with no loosening of screws or rivets.

Werner has also published a number of catalogs and brochures describing its complete line of aluminum and fiber glass step and extension ladders, climbing equipment and accessories.

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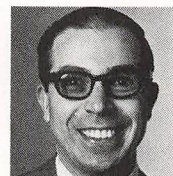
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BUR industry needs performance standards

By Bob LaCosse



The desired properties and characteristics of BUR materials have traditionally been described by "prescriptive" types of specifications, according to the National Bureau of Standards (NBS) Building Science Series 55 "Preliminary Performance Criteria for Bituminous Membrane Roofing" (BSS-55). The performance of the membrane itself has been considered only from a practical viewpoint, that is, by observation of its durability under in-service conditions.

Poor roof performance has often been attributed to the limits on the design, manufacture and application of roofing products imposed by prescriptive specifications, BSS-55 says. According to the document, these limits inhibit new product development and the introduction of innovative systems.

A number of prescriptive standards have been developed and published by the American Society for Testing and Materials (ASTM). ASTM's standards for roofing products set forth the agreed-upon physical properties that the products should possess at the time they are sold. In no way do they guarantee the performance of the finished roof or is there any assurance that the product will maintain the prescribed levels of performance after it is incorporated into a roofing system.

The groundwork for a more performance-oriented approach to roofing standards was laid in 1964 by a committee of the Building Research Advisory Board. The committee was formed to develop performance characteristics, appropriate testing procedures and suitable criteria for the acceptance of roofing systems in general for the Federal Housing Administration. It was chaired by NRCA Research Associate William C. Cullen, who was on the staff of NBS at the time.

The committee prepared a list of 18 characteristics deemed essential to the performance of a roofing system. It found, however, that adequate test methods were available to evaluate only a small portion of these characteristics. The committee also concluded that meaningful prediction of performance must take into account the components' interaction.

Since the committee published its findings, NBS has become active in the development of performance tests. In November 1974, the Bureau published BSS-55, which presented a slightly revised list of 20 attributes for the evaluation of BUR performance, including: tensile strength, thermal expansion, flexural strength, tensile fatigue strength, shear strength, impact resistance,

notch tensile strength, the effects of moisture on strength, creep, ply adhesion, abrasion resistance, tear resistance, pliability, permeability, moisture expansion, weather resistance, wind uplift resistance, fire resistance and fungus resistance.

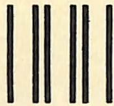
BSS-55 also described test methods and criteria for 10 of these characteristics. However, criteria for the roofing industry as a whole must be established by the industry itself. For the criteria to be meaningful, it is essential that they be based on tests that can be conducted by well-equipped testing laboratories at a reasonable cost. The test results must also be reproducible. The proper way to establish these performance criteria is through a recognized standard-making body such as ASTM and not through a government agency such as NBS.

At the present time, there are industry-accepted test methods for four of these attributes. ASTM D2523 tests tensile strength; ASTM D3746 tests impact resistance; ASTM E84, E108 and E119 test flame spread and fire resistance; and ASTM E907 tests wind uplift resistance.

BSS-55 says that the establishment of acceptable performance criteria will provide a basis for the in-service evaluation of both established and innovative roofing systems and guide manufacturers in the development and production of roofing materials.

The development of performance criteria for bitumen BUR has been slow, and NRCA would like to see more progress in this area. Some groups are already working on criteria for other types of roofing. The Midwest Roofing Contractors Association took the lead in the United States and developed performance criteria for PVC, elastomeric and modified bitumen membrane systems. Internationally, the Joint International Committee on Elastomeric, Thermoplastic and Modified Bitumen Roofing is working to determine the current state-of-the-art standards, test methods and evaluation criteria that apply to sheet-applied single-layer roofing, and develop recommendations for performance standards for these materials.

We appreciate the initial efforts by these groups to establish performance criteria and we hope from these efforts all segments of the roofing industry will proceed jointly to develop the realistic and meaningful performance standards that the roofing industry desperately needs.



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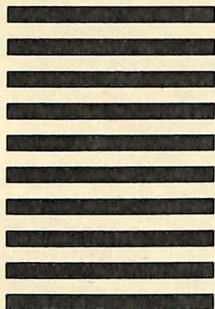
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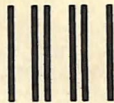
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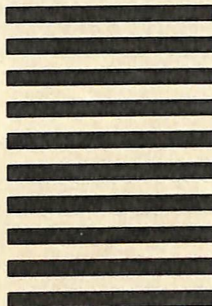
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