

Insulation Outlook

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September 1987



Cover: Understanding the scope of
building envelope insulation
Inside: The Problems of Asbestos Abatement

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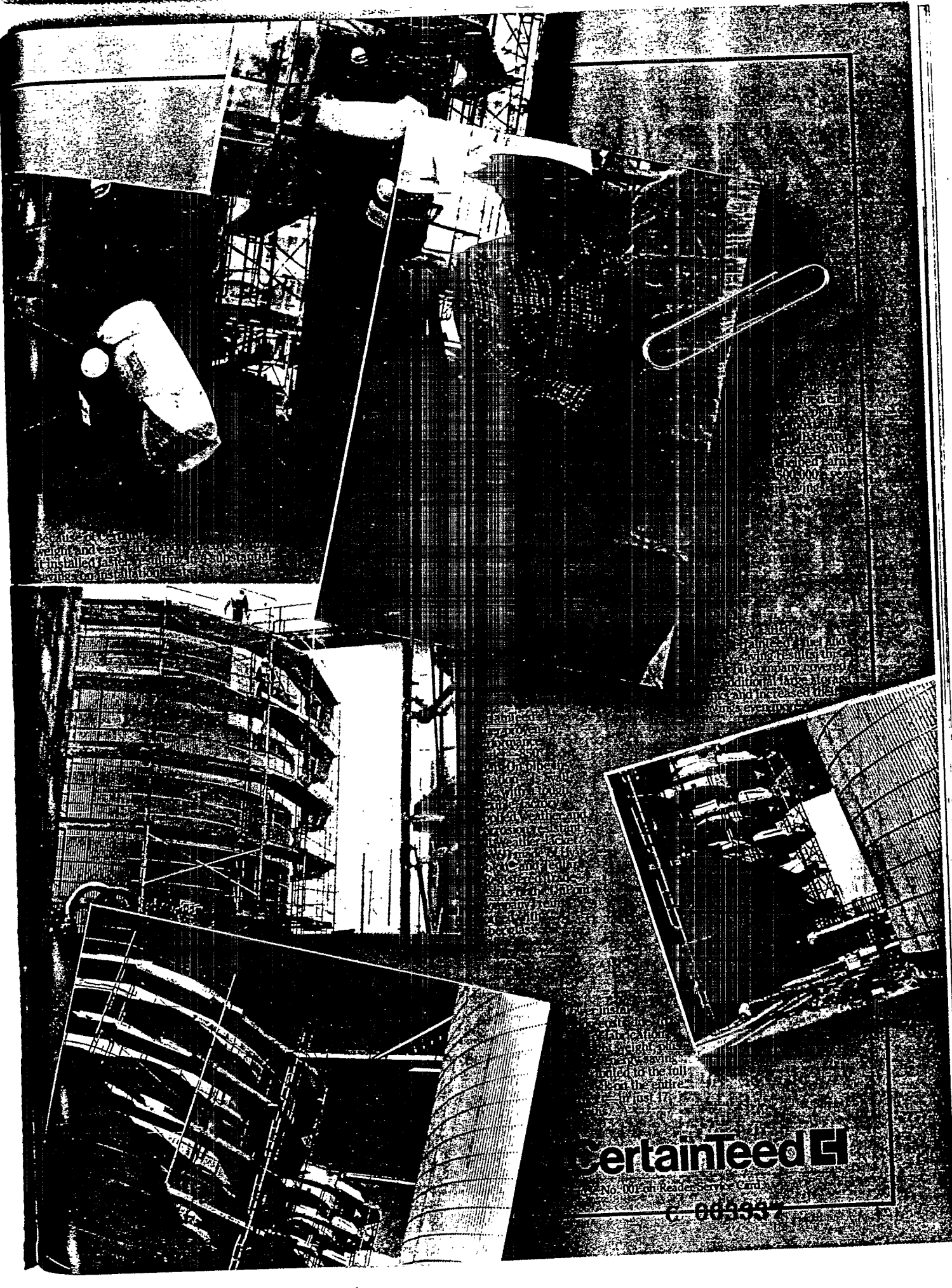
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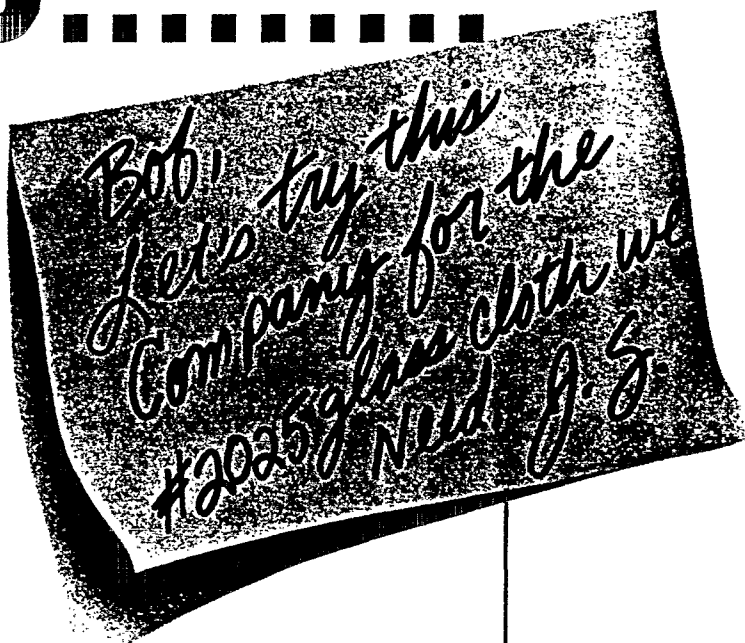
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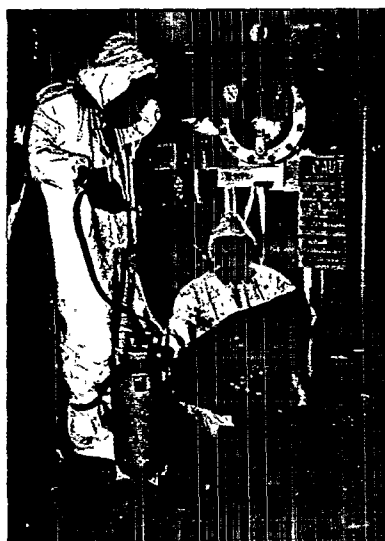
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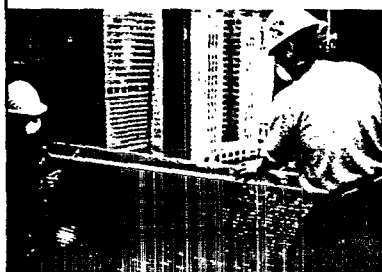


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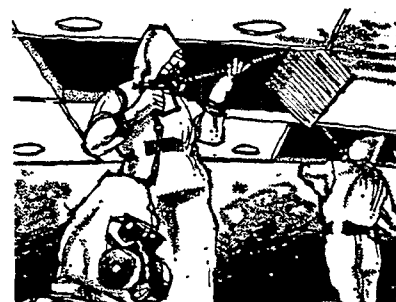


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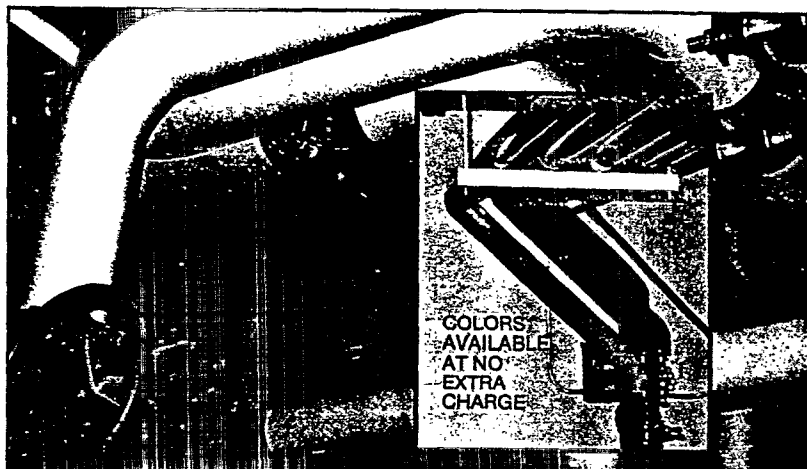
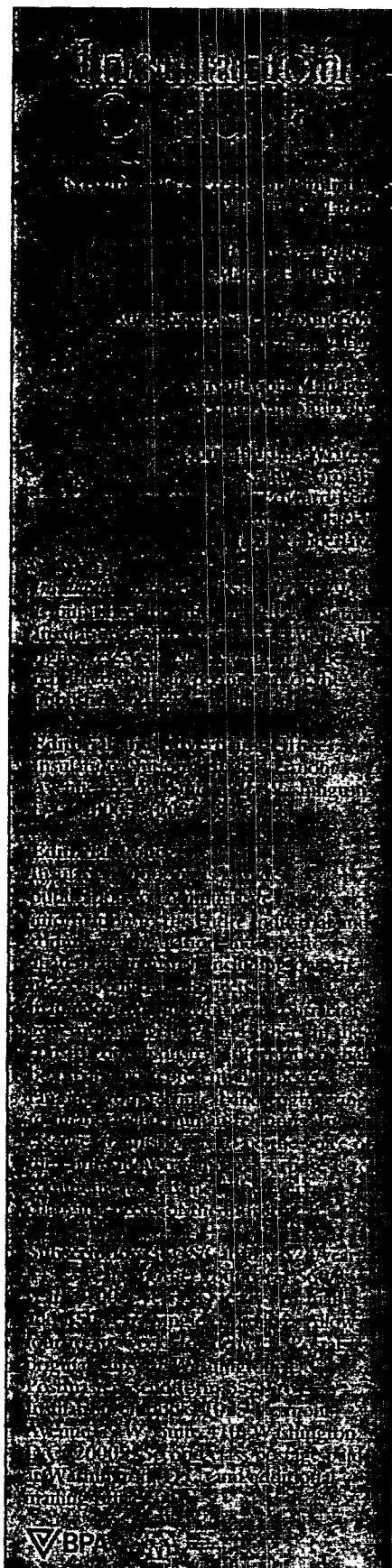
One of my goals as NICA President is to work towards strengthening the relationship between NICA and the regional associations. Building upon the strengths of each, while avoiding wasteful duplication of effort to achieve a balance where each region and NICA complement each other's activities to the benefit of all.

As part of that effort, this July the first joint meeting between the NICA Board of Directors and the regional Executive Secretaries and Presidents was held in conjunction with the annual Summer Board/Committee Day meeting.

This format gave us the opportunity to provide the regions with in-depth information regarding the NICA programs available to them, both current and upcoming. It also allows the regions a larger role in determining future activities and services that may be provided by NICA at the regional level. In addition to being updated on the programs currently on hand, such as: the NICA Medical Insurance Program, NICA Financial Survey, Foreman Training, Employee Manual, Safety Manual, and Man-Made Mineral Fiber Health Aspects Task Force, to name a few, the participants were presented with a brief overview of each for review and prioritizing for our future needs.

As a result of this interactivity, we can move forward together with programs that are truly member services, representing the thoughts and wishes of you, the membership, and moving toward our mutual goals of providing the maximum level of service from each organization.

W. Paul Stonebraker
NICA, President



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The Problems of Asbestos Abatement

by Edward Feit

Asbestos, we now know, causes cancer, yet this was not common knowledge from 1900 to 1975, when, as a cheap and versatile natural fiber, it formed part of the insulation of just about every structure built. In the 1970s, as awareness of the dangers of asbestos grew, the Environmental Protection Agency (EPA) forbade its use in new buildings. Yet, the work of removing asbestos from old buildings has only begun, the substance remains a hazard to those who use these buildings, and is a source of worry to their owners and managers.

The safe removal of asbestos from older buildings is the business of Robin Brodie's firm, New England Asbestos Removal, Inc., which she founded in 1985. A registered professional nurse, Robin sees nothing strange in being president of such a firm for, to her, asbestos abatement is an extension of health services, as much as it is a question of insulation.

"People do not often think of it in this way," she says, "but, asbestos abatement is an isolation technique."

Abatement seems simple on its face: find the asbestos and remove it. Practice, as always, is more complicated. Asbestos abatement is a new industry, with many grey areas, and one where nothing is certain. It comes down, in the end, to "how clean is clean?" on which there are as many opinions as there are people. In practical terms, the question boils down to this: When is enough asbestos removed to en-

sure a practical and sufficient margin of safety?

Robin holds that the government's guidelines are minimal, confusing, and often contradictory. The agencies that regulate the industry differ from state-to-state, and their officials vary in their knowledge and sophistication. These confusions carry over into the relations of asbestos abatement contractors with industrial hygienists, who often work for all-inclusive firms of consultants. The consultants go into a building, survey it for asbestos, and write out the specifications for removal. Often, they decide on the fitness of the contractor who is to do the removal.

At times, they set out the contractor's budget, which they either have devised on their own, or have obtained from another contractor. They may, in addition, select the

firm that is to do the work.

"There are differing levels of competence among industrial hygienists and consultants," Robin says, "some are highly qualified, and others don't know what they are doing, and as contractors, we must often cope with their shortcomings. Ours is a young industry, and we are still having our shake-out."

Robin cites a recent project, cleaning the crawl space of a large and old building, as an example.

"It was a firm bid," Robin says, "and to be covered and still make the area safe, we would have had to put in a high estimate, for we felt there were too many unknowns."

The building had twenty bays, all pitch dark, with one four-inch steam main, insulated with asbes-



The central question remains: When is enough asbestos removed to ensure a practical and sufficient margin of safety?

Edward Feit is a freelance writer based in Amherst, Massachusetts. He is a frequent contributor to Insulation Outlook magazine.

tos, running through it. The insulation was in poor condition, much of the asbestos had fallen to a floor also littered with old building debris, rocks, and dirt. The floor was not plain dirt, but was pebbly, making it all the more difficult to clean. Cleaning it meant men crawling around on their hands and knees in a bay perhaps four feet high, shoveling six inches of soil into bags, and dragging it through neighboring bays to the outside.

"The hygienist told us that we could vacuum up the asbestos," Robin says, "but we knew that there was no way of doing this and getting the area free of asbestos. We were also assured that there was no contamination farther from the pipe, and if there was 'a little here and there,' we could clean it up. But, no one can say how far into the floor the asbestos fibers have been ground, or how far any particles may have migrated. There was no alternative to removing a few inches of debris. At the very least, I would have wanted a change order for any asbestos found away from the pipe."

The trouble is that the interests of asbestos abatement contractors and of industrial hygienists could be in conflict. Robin says the industrial hygienists, usually employed on an hourly basis, could be tempted to prolong the contract by requiring a level of freedom from asbestos which appears "to be that of a forest several thousand miles from any source of asbestos." The contractor usually works on fixed money, and wants to get the job done within the time and the limits of the bid.

"There is much ambient asbestos in the air," Robin points out, "and the level of cleanliness some industrial hygienists expect is far greater than on any city street. This makes abatement very costly, which is not in the interest of managers or users. We need an organization



There is no one organization that represents removal contractors at the federal and state level, and negotiates with the government and hygienists.

that will enhance public awareness and represent the industry," she says.

There are no organizations of asbestos abatement contractors as such, although several organizations include abatement among their interests. There is no one organization that represents removal contractors at

the federal and state level, and negotiates with the government and with hygienists. Robin works within the National Asbestos Council, which is not a lobby, but confines itself to spreading the facts on asbestos abatement.

"Contractors have a hard time getting to trust each other," Robin remarks, "but, if we don't form a body to represent the asbestos

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abatement contractors, we will take it on the chin and deserve what we get."

The asbestos abatement industry needs a special organization, Robin believes, as NICA addresses mainly mechanical insulation contractors, who are mechanical insulators, and generally do not concern themselves with the outside insulation of commercial buildings, or spray-on insulation.

A new organization would treat asbestos abatement contracting as an industry in its own right with its own peculiar problems.

"We need our own organ to cir-

of contractors. Licensing already is the law in several states, and with federal pressure on states to license and monitor asbestos abatement contractors, many other states will soon require it. States, in the meantime, are setting standards of their own, without coordinating them with their neighbors. There, for instance, are no common regulations among the six New England states for the licensing of asbestos abatement contractors, and even the EPA-approved course at Tufts University in Medford, Massachusetts, was not accepted in Rhode Island or in Vermont, un-



After three months of training, a man decides that he does not like having his private sauna in a Tyvek suit, with a respirator, in 100°F of heat, and he quits.

culate information. I am organizing a local chapter of the National Asbestos Council for New England, and have been in touch with contractors, some of whom I'd never met before, who find common representation and shared information to be as sorely needed as I do. However, NAC is not a body that can work in the interest of asbestos abatement contractors, as their main business is to disseminate information."

Among its tasks, the organization could supervise the licensing

til reviewed and approved by each state.

"The states should be doing what EPA is now doing," Robin asserts, "that is, have all interests sit down together to hammer out the regulations. Were I on such a body, I could bring a different perspective, as would any other asbestos abatement contractor."

An organization of asbestos abatement contractors could encourage the states

to set up joint committees, could act as a central clearing house in the collective interest, and draw its members into accord on issues of importance.

Training is one such issue: How much should there be, and how much training is necessary?

A worker in Rhode Island, for example, must have 32 hours of asbestos training before starting on the job. A supervisor must have 38 hours and must, in addition, pass a competitive examination. This is all very costly, and it is doubtful that this much training is necessary.

"I am not suggesting that we do away with training," Robin says, "but, I do think that 16 hours would be enough time initially to orient a worker to the problems of asbestos, of working in the situations and atmospheres he is likely to encounter, and the rudiments of safety on the job, with more training to follow later. Mine is a union shop, and my workers come trained from the union hall. They have had physicals in line with the new OSHA regulations, which cost about \$250 for each worker. OSHA regulations also require a fit test, that should be done by an industrial hygienist, and costs another \$75. Training—I now insist on 38 hours—including wages and expenses, costs anywhere from \$1,200 to \$2,000 for each man. Often, after three months of training, a man decides that he does not like having his private sauna in a Tyvek suit, with a respirator, in 100°F of heat and he quits. I question the need for so much training, for I think even 32 hours is excessive."

After attending training programs, Robin finds some of the material covered unnecessary, incomplete, and sometimes inaccurate.

"When you sit in on a course, watch the clock tick by, and know what it costs the end-user, you must question the need for all this train-

ing," she remarks.

An organization such as Robin envisions could also help police the industry, as do other business and professional organizations with their industries.

"The American Industrial Hygienist's Association (AIHA) presumably requires a certain level of competence of their members," Robin points out. "In England, I think, an organization of asbestos abatement contractors police themselves, and set the industry standards. We need to look at that here. Many of our contractors are not highly regarded, and a few deserve their bad reputation. Yet, a great many are reputable, concerned, and aware. We need some way of recognizing these differences, so that we are not all tarred with the same brush."

Setting standards is one way of policing an industry, and as these would be negotiated within the industry, they would rest on compromise and not go to extremes. No one would lay down the law saying: "This is the way it's going to be done!" The organization would have no powers of enforcement, could not insist that contractors meet its standards, but clients would know what to expect of reputable asbestos abatement contractors, which, in time, would bring the others into line.

The organization might circulate a newsletter on new products, and how useful they are in the field. It could also feature pending legislation, current lawsuits, and other such matters, for contractors are themselves reluctant to exchange information.

The need for an organization exists, and it remains for asbestos abatement contractors, in their own interests, to explore ways to establish it.

NICA's Response to the Growth of the Asbestos Abatement Industry

Robin Brodie has made some good points in this article. She says she is looking for an organization that represents and speaks to the interests and concerns of the asbestos abatement contractor. NICA is making attempts to be that voice. We are moving ahead and evolving—realizing that we are not as strong a voice in this industry as we would like to be. But we are striving to move in that direction and have made some major decisions in response to this growing market, looking for ways to help contractors be more professional and competitive in this fast-moving industry. Specifically, NICA sees that its special role is to help contractors in the day-to-day management of this complex business.

NICA has already taken a number of positive steps in this direction, including changing the by-laws to allow asbestos abatement contractors as full members of NICA. Also, a number of services especially for the asbestos abatement contractor have been introduced:

- Publishing and marketing a 500-page *Asbestos Abatement Reference Manual (Third Edition)*. The 25 key areas that affect the work of the contractor—from estimating to complying with regulations—are presented in a detailed and comprehensive manner. This is a basic Operations Manual that presents materials unavailable in any other single source. To date, almost 950 copies have been sold.

- Providing an "Annual Update Service" on a subscription basis to supplement the *Asbestos Abatement Manual* with new or revised asbestos abatement information on a subscription basis (about 450 subscriptions have been received).

- Keeping NICA members up-to-date on the Negative Air Patent Re-examination and other challenges to this industry.

- Enlisting the services of a well-qualified and experienced Asbestos Abatement consultant to assist in formulating broad Asbestos Abatement policies and activities.

- Developing for publication a *NICA Asbestos Abatement Industry Directory* as a "single source" summary of information about this emerging industry. This is NICA's effort to organize the industry and to promote the contractor through this directory. Subjects include detailed information on contractors, summary of industry issues, and a host of listings such as disposal sites, training sources, accredited laboratories, and suppliers.

- Continuing to expand the asbestos abatement editorial in *Insulation Outlook* including case studies, key issues, and trends. Through these articles we intend to surface the unique problems of this industry. Moreover, we have added the names of 1500 abatement contractors to the circulation of *Outlook*.

Although these are significant endeavors, we are constantly looking for ways to fulfill the needs of our members. And as NICA's commitment to this industry continues to grow, we look forward to hearing from the contractors in the field. Ours is not an ivory tower approach—but we plan to continue presenting practical services that will assist you in developing to your full potential in this industry.



William W. Pitkin
NICA
Executive Director

Glenn and Ted Brodie, on Venture Insulation Tapes.



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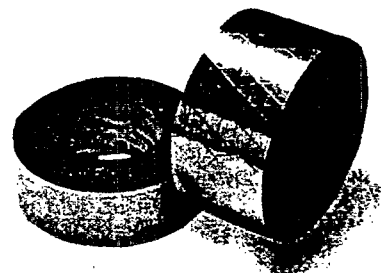


Museum of Science, Boston, Massachusetts

Glenn Brodie distributes insulation and building tapes through his company, National Energy Industries. His father, Ted, is the owner of New England Insulation Company; contractors specializing in the insulation of commercial and industrial projects. In business for over 50 years, they have tackled tough jobs under even tougher conditions, with excellent success.

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NICA Apprenticeship Program Receives BAT Endorsement

On Friday, July 24 at the NICA Summer Board Meeting, representatives from the U.S. Department of Labor Bureau of Apprenticeship and Training formally approved the establishment of the NICA Apprenticeship Program. The National Insulation Contractors Association has developed an apprenticeship program in cooperation with the Bureau of Apprenticeship and Training, Employment and Training Administration, and the U.S. Department of Labor. The competency-based curriculum is designed to bring a high level of skill and effectiveness to the trainees of an insulation contractor.

This program encompasses requirements for recruitment, selection, and registration of apprenticeship applicants; outlines the work processes required; references the necessary curriculum; provides the various skill values needed; and stipulates the rules and regulations governing the program administration.

Productivity, quality, and doing it right the first time are the watch words of the current marketplace. A heightened competitiveness is motivating everyone to learn ways of getting the most from human resources and advanced technologies. One way for the insulation contractor to show his employees how to be more effective is with a training program. Each employee who is part of this NICA Apprenticeship Training Program learns the precision and decision-making skills necessary for peak performance. And because the NICA/BAT program is competency-based everyone works at his or her own

pace to gain greater skills. This NICA Apprenticeship Program is designed to be completed in a minimum of 3,000 hours with 9,000 hours being the upward limit.

The incentive for this Apprenticeship Program arose from the NICA Merit Committee, whose members were concerned that these contractors find ways of being more competitive. What was needed was a way to give employees training in more sophisticated tasks as well as determining ways to define the level of skill and competency in their workforce. The Committee set the stage for the development of this program and Chairman Otis Odell and Bob Ferry, Administrative Vice President of NICA, have worked with the appropriate agencies of the federal government to get this program registered and approved. The course work recommended for inclusion in the training program is very practical including: equipment insulations, sheet metal lagging and jacketing, fiber glass applications, and weather barriers.

These Apprentice Guidelines are designed to conform to the U.S. Department of Labor's general labor standards for an apprenticeship program as set forth in Title 29 of the Code of Federal Regulations Part 29. It is suggested that prospective program sponsors contact the local Bureau of Apprenticeship and Training (BAT) office for assistance in establishing local programs. In states with State Apprenticeship Councils (SAL), these Guidelines may require modification to meet the standards in such states. The local BAT and SAC staffs are available for consultation in program setup.

The *NICA Insulation Craft Training Program Learning Sections* referred to in the Guidelines are self-study texts with detailed illustrations and sketches, along with written tests, evaluation forms, and certificates for successful completion of individual sections. This particular program is not required for the operation of an approved apprenticeship program, but is a source for texts and tests necessary for administering both the on-the-job training and the related instructional aspects of the training.

Once workers are under the umbrella of this Apprenticeship Training Program, the insulation contractor can present a mix of salaries, reflecting different levels of competency, allowing the contractor to present a more competitive bid and to mix his workers in efficient and cost-effective ways for both private and public construction.

NICA is striving to meet the needs of the insulation contractor and this Apprentice Program is one example of this. Also, NICA is continuing to update existing and develop new Craft Training Sections. Video training aids to augment these Learning Sections are also being produced. The National Insulation Contractors Association is committed to assist our industry and the Insulation Contractor in this endeavor.

For more information contact:
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NICA
1025 Vermont Ave., N.W., #410
Washington, DC 20009
(202) 783-6277

Understanding the Scope of Building Envelope Insulation

by Marcia G. Lawson

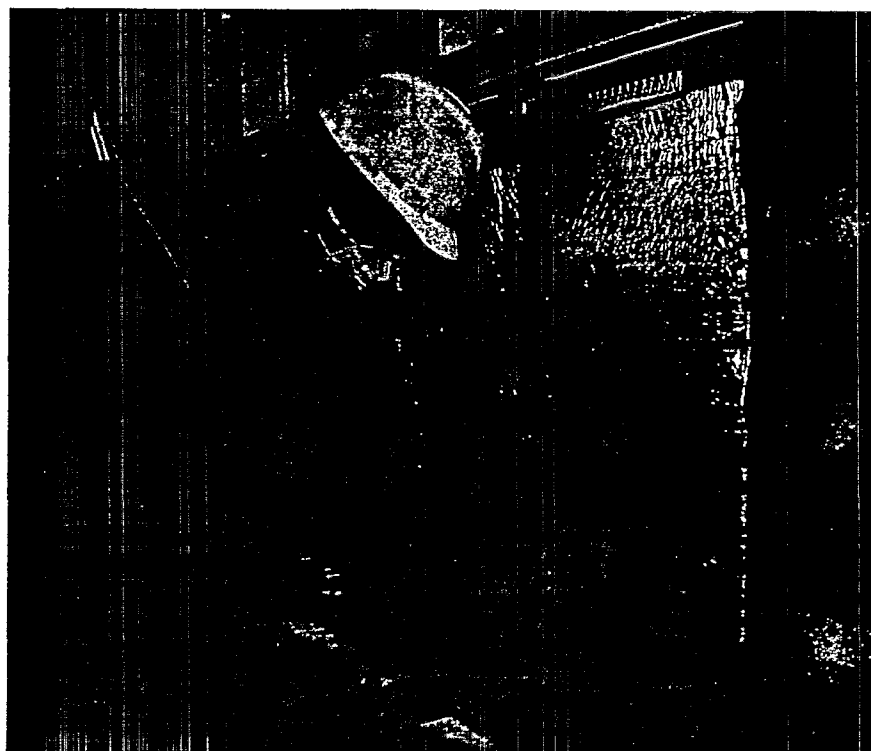
Over the last decade, some manufacturers and insulation speciality contractors have looked at the business opportunity of applying the thermal insulation to the building envelope of commercial and institutional buildings. Some contractors have pursued this and make it a significant (20-30 percent) part of their total business, others may dabble from time to time, and still there are those who have not come to recognize this sector as a potential growth area. Following is a case study of a building envelope project that illustrates this type of work and the reasons why some insulation contractors find it a lower risk and more profitable venture than other types of thermal insulation applications, such as mechanical projects. (See, *Increasing Your Firm's Profitability*.) The case described combines two functions of this type of system: the thermal and the life-safety functions provided by a specific type of building envelope insulation.

In 1983 the University of Virginia at Charlottesville began planning for a replacement hospital to enhance the diagnostic, nursing care, and outpatient medical services at this research/teaching/community facility. This replacement hospital and related renovations were designed by architect Donald Velsey of the Wash-

ington, D.C. firm Metcalfe, Davis, Brody, Russo, and Sonder. When this six-story structure is completed, it will replace 402 beds, increase diagnostic and treatment capabilities, and serve as a central supply and distribution operation for the replacement hospital and the existing hospital, which is being renovated and updated—not demolished. Groundbreaking for

this \$121,329,136 project was in 1985 and the facility is scheduled to open in the Summer of 1988. Renovation of the old hospital is scheduled for completion by 1990. (See, *Updating Healthcare Needs*.)

By early summer of 1987 the steel structure was up, fireproofing of the beams had been completed, and the thermal building envelope and life-safety system had been put in



An appropriate building envelope insulation was specified for its thermal and life-safety value at the Replacement Hospital Project at the University of Virginia in Charlottesville.

Marcia G. Lawson is the Executive Editor of *Insulation Outlook* magazine.

place. Manville Commercial Construction Services, Roebling, New Jersey, has recognized the growth opportunity of the building envelope insulation and has responded to this sector of the marketplace, according to Edward J. F. Dougherty, Regional Superintendent. Since the energy crisis in the mid-1970s, insulation has become one of the most basic and reliable ways to conserve energy. Therefore, whenever a building is constructed now, it is assumed that an appropriate thermal envelope material will be specified for its thermal and often for its fire-safety value. At the UVA facility both these needs were met by the application of the Thermafiber® Life-Safety Insulation system from USG Interiors, Inc. This system consists of foil-faced curtain wall and safin insulation installed at the slab edges and spandrel panels, along with Smoke Seal® compound that inhibits the passage of smoke at the curtain wall/safing juncture. In the UVA Replacement Hospital there is 130,000 square feet of 2-inch CW-90 mineral fiber curtain wall insulation with foil scrim vapor retarder; 11,000 square feet of 4-inch foil-faced mineral safin insulation; and 800 30-ounce tubes of smoke seal compound.

On this project the building envelope insulation is composed of mineral wool. According to Architect Velsey, "the mineral fiber fire-safety system was selected because Virginia's fire code is tough and this



A continuous channel fastening system was devised which would allow placement of safin insulation despite field constraints.

system conformed to the requirements."

Installing the thermal insulation can be executed in a fairly straightforward fashion. On this job, Foreman Jim Collins, of Manville Commercial, worked a small crew who were able to effectively complete the project. Collins has supervised a number of Manville jobs and is being moved from location to location. He hires a new crew for each assignment, trains them, and oversees their installations. The UVA project was also run in this fashion.

Material was selected that could be cut from a standard, 72-inch size board of mineral wool. The board is cut into 36" X 53-1/4" and

36" X 61-3/4" sizes. A labor-saving compromise was that some of the material was customized at the USG plant and some field fabricated. When making cuts in the field, a simple serrated knife is used. The insulation board is placed against the exterior panels of the building and pressed onto impaling pins and joints are taped. This replacement hospital is constructed from prefabricated panels, so the envelope insulation is placed onto this panelized system, and not in between the mullions as with the stick framing type of structure. According to Dougherty, he sees this type of construction in 25 to 30 percent of new buildings and it seems to be growing in popularity. Then the

safing insulation was applied using a custom-designed fastening system.

Because of certain field conditions prevalent on this job, the safing could not always be installed as originally detailed. To solve this design constraint, Dougherty worked with Marville's Rosemary E. Kennedy-Johnson, Chief Estimator, and Mike Chinnici, Estimator, to design a fastening system that would work. According to Dougherty, Chinnici and Kennedy-Johnson were able to design a fastening system that would work because "They have been involved with the insulation industry for a number of years, and overcoming fastening difficulties

comes naturally for them." A continuous channel fastening system was devised which would allow placement despite this field condition. This occurred where the metal form of the floor slabs extended below the underside of the slab.

According to USG, the safing and curtain wall insulation work together to confine fire at the floor of origin—stopping fire from flanking the floor slab and spreading to floors above. The smoke seal compound that is a part of this specific system acts to prevent the passage of particulate smoke.

As with many construction projects, the most difficult part of the job is coordi-

nating with the other trades, getting the material on site when it is needed, and having access to certain equipment, such as the hoist or crane, which are necessary in getting the work completed. The sequence for this building was typical of other building envelope assignments. Before the envelope insulation was put in place, the fireproofing was completed behind the beams and ironworkers and glaziers had completed their segment of the project. Then the insulators were scheduled and had to have their work completed so the dry-wall contractor could begin.

After the thermal envelope and fire safety system were applied, each area was inspected and checked off by the local fire mar-

Increasing Your Firm's Profitability

An underlying reality in many aspects of construction work is risk. How well can a job be estimated? Can material costs be contained? How fast can a crew really put this stuff in place?

According to NICA's Bill Burnett, who has worked as a insulation specialty contractor for 35 years, "there is less risk and greater reward with insulating the building envelope than with many other types of projects, including the insulation of mechanical systems.

One reason is that the material is fairly standard and when a job is estimated, the contractor looks for the most uniform size and orders that from the manufacturer. Usually some compromise must be struck between customizing and field fabrication. Burnett says, "Some customizing saves in overall labor costs because fab labor is cheaper than field labor."

When estimating a mechanical job, 60 percent of your projected cost is in the labor and 40 percent is in the cost of materials. How-

ever, with a building envelope insulation estimate the reverse is true, because 60 percent of the building envelope job is in the material. There is a huge surface of work and most jobs are about \$100,000 contract value. And, because of these different proportions of material and labor costs, it is apparent that cost control is easier on the envelope job. For example, labor expects to be paid each week and requires a large expenditure of money. However, materials do not have to be paid for each week and expenditures can be projected in compliance with the normal billing cycle of a supplier.

Widely used curtain wall materials include mineral fiber, glass fiber, and polystyrene foam. Design requirements are set by the architect, developer, engineer, or local fire code officials, and vary according to the type of construction—low-rise, mid-rise (fewer than 20 stories) or high-rise. Insulation material then is selected to conform to the specific requirements of each

individual job.

Each material seems to have found a niche in the construction industry, and overall there is a 50/50 split in the marketplace. In low-rise construction of several stories, fiber glass is frequently specified. In mid-rise structures of less than 20 stories, the market is fairly evenly split, according to representatives of thermal manufacturers. However, in high-rise structures today, mineral wool is specified 80 to 90 percent of the time.

The actual application of this type of insulation is not complex and can be done by a journeyman and helper under the guidance of a trained and skilled foreman. Crew size is normally quite small, materials are stored on the site, and no special, sophisticated training is necessary. Burnett says this work can be described as:

- Relatively low risk
- Less sophisticated skills required
- Easier to Track Costs
- Short on-the-job duration

shall. He examines the material at the job site and confirms that it coincides with the specs for the job. Then, this official makes an inspection of the workmanship, looking for misapplications that could create voids in the system.

Once in place the owner of the building has a more thermally efficient and life safety enhanced structure. According to the Building Thermal Envelope Coordinating Council at NIBS, the energy crisis of the 1970s allowed owners to see that with prudent use of insulation, money could be saved not only in immediate energy costs but in the total life-cycle costs of operating and maintaining an efficient building.

Also, typical jobs are done for the General Contractor on the project. This brings the insulating subcontractor up a couple of tiers, placing him closer to planning and scheduling meetings and closer to receiving his payment for a completed project.

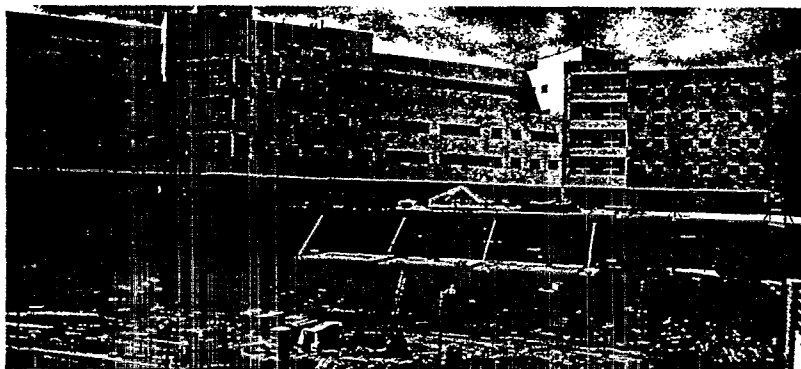
Insulation contractors already know the insulation manufacturers and the characteristics of this material as well as proper application techniques. In addition, if they have done any type of cold storage work, these contractors are accustomed to working with the architectural drawing to understand and estimate a job. And, since in new commercial construction heating and cooling is more of an air distributed than a pipe distributed system "if commercial jobs are to be had, they won't be with the mechanical system—but with the insulation for the building envelope, Burnett adds."

Updating Healthcare Needs

The University of Virginia Replacement Hospital is so-named because it will not replace an existing structure on a permanent basis but will replace bed space, facility space, and provide a structure for ongoing medical services while the existing University of Virginia Hospital is renovated. Within this

which offers the diagnostic capabilities of a CAT scan without using X-rays. Three nursing units will be on each floor, and each medical subspecialty will have its own intensive care unit.

The Replacement Hospital has a modern look and does not imitate a Jeffersonian era design—as does



six-story building, 402 beds will be replaced; approximately 174 beds will remain in the existing hospital. A two-story connector links the two hospitals. On the first level will be public areas and on the second will be a conveyor system to move supplies and equipment from one facility to another. The new facility opens in the Spring of 1988 and extensive work on the older hospital can proceed. All renovations are scheduled for completion by 1990. The entire project, according to architect Don Velsey, is to give the medical community at UVA "more elbow room to provide adequate medical care." In addition to designing less crowded in-patient areas, more diagnostic and clinical facilities will be added as well.

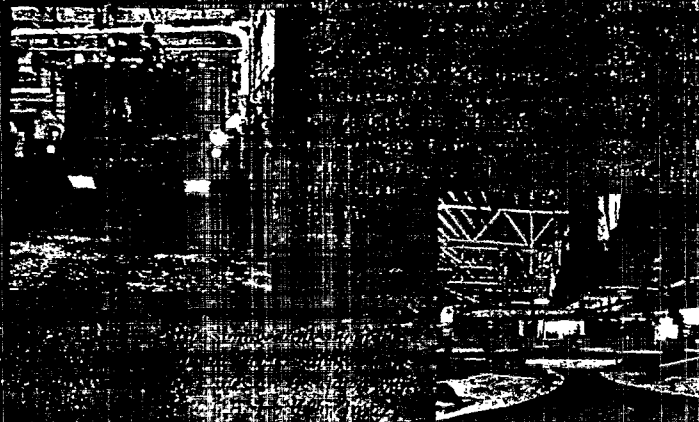
Emil Fargo, Project Coordinator for the University of Virginia, emphasized that the university targeted this effort because of its commitment to delivering the highest quality of care to its patients. Key facilities enhancements include a new emergency room, occupational therapy clinic, and a magnetic resonance imaging machine,

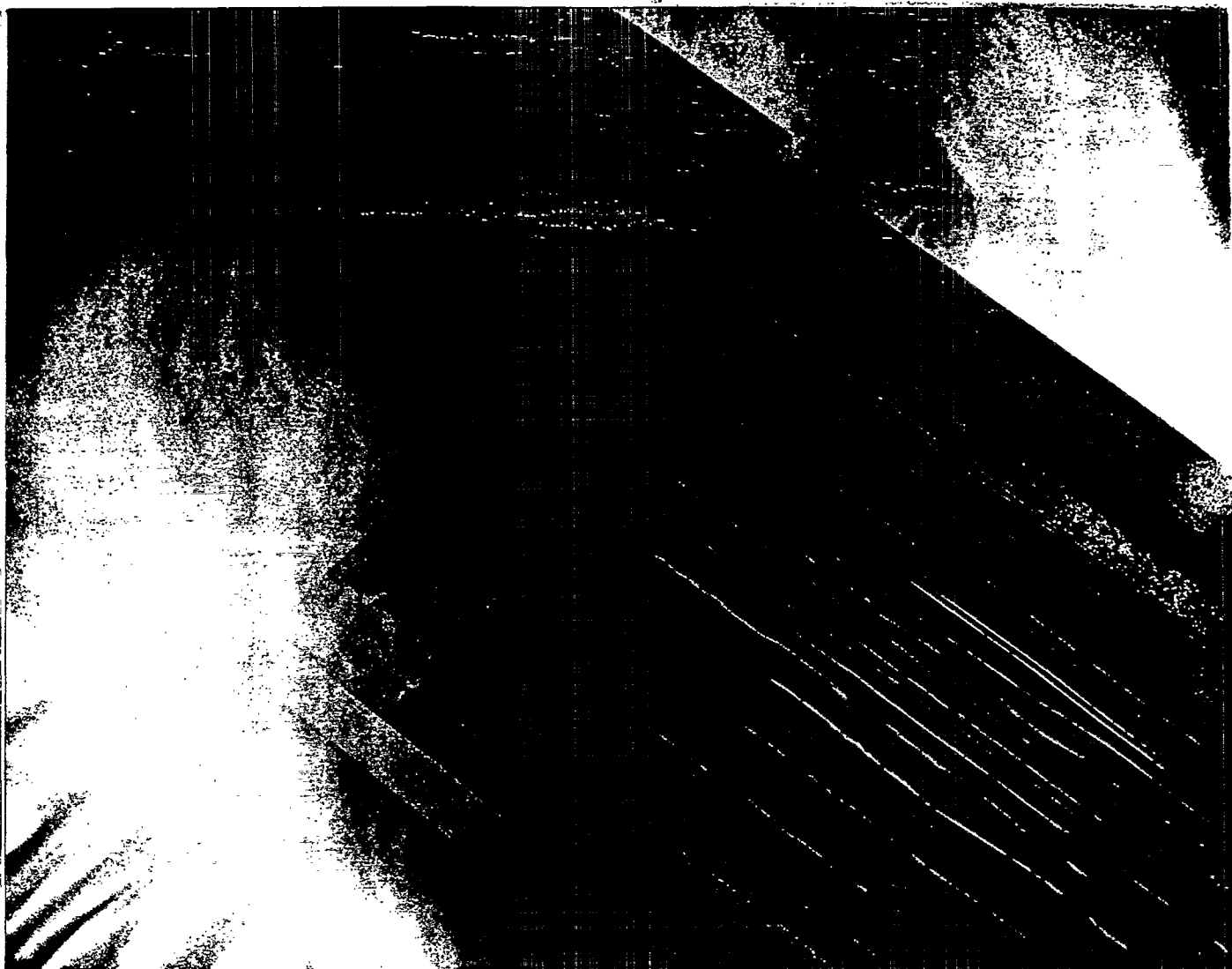
much of the grounds. However, design details provide an evocative feeling about the building that allows it to more harmoniously fit with the overall look of the surrounding community. For example, the two lower floors are of brick to more closely blend in with the scale and texture of the traditional look of UVA. Attention to detail further increases this compatibility, such as the use of cornices and detailing in the brickwork.

The four upper floors are clad in white metal panels, which are low maintenance and lightweight. Using the contrast of white and brick further evokes the Jeffersonian pattern in architecture. Touches of green bands on the building are intended to be reminiscent of the patina on the copper roofs that dot this campus.

According to Velsey, within the basic design requirements a concerted effort was made to conform to the look of this historic campus. This project also includes the addition of 630 parking spaces, centralized chillers and boilers, and replacing the helicopter pad.

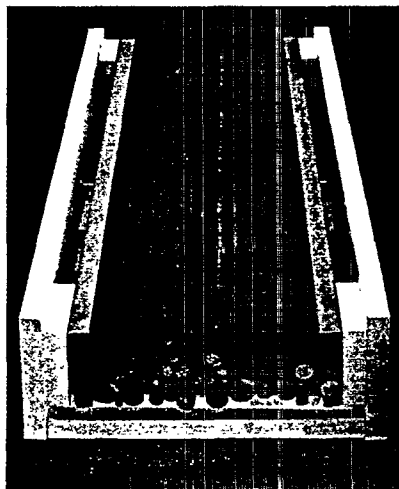
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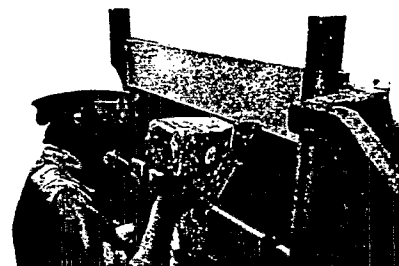
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Assessing the Impact of New Immigration Act

by Milton Zall

On October 17, 1986, Congress gave final approval to the Immigration Reform and Control Act of 1986, popularly referred to as the Simpson-Rodino-Mazzoli Bill. When President Reagan signed the legislation (Public Law 99-603) on November 6, 1986, it marked an historic change in this country's immigration policy. Under the prior law, illegal aliens were subject to deportation if discovered, but employers were generally not expected to concern themselves with the immigration status of employees they hired. Now that's all a thing of the past. The new law makes every employer in America an agent of the Immigration and Naturalization Service (INS). And unfortunately, there's no exemption for the Insulation Industry. Employers who hire illegal aliens are now subject to fines, and in some cases, even imprisonment. At the same time, the new law provides for the legalization of certain illegal aliens who are already here. The issues surrounding this hallmark legislation and its specific provisions are discussed below.

You should have a copy of the Immigration and Naturalization Service (INS) employer handbook by the time you read this article. It should answer any questions you may have. If you don't have it yet (it was supposed to be mailed to you) contact the nearest INS regional or district office. INS also

Milton Zall has a B.A. in Economics and an M.B.A. He writes frequently on taxes, investments and legislative developments and is also a senior Financial Management Officer with the U.S. Department of State. The views expressed here are his own.

has a nationwide toll-free number which has a wide-range of prerecorded messages on all aspects of the law. That number is 1-800-777-7700. If you need further or additional assistance, call the INS Office of Employer and Labor Relations at (202) 633-2471. Their mailing address is 425 Eye Street, NW, Washington, DC 20536.

Illegal immigration remains a principal concern of this administration and its predecessors. Since 1977, the INS has been apprehending approximately one million illegal immigrants per year. Your guess is as good as mine as to how many illegal immigrants come into our country each year who are not apprehended! A primary goal of the new law is to stem this flow while at the same time providing some relief for those aliens who are already here so they can become full-fledged taxpayers. The thinking in Congress was that unless something could be done to close the growing incidence of "backdoor" entry by illegal immigrants, we'd have to close our doors to everyone.

To carry out these objectives, it was generally agreed that there would need to be some major change in our policy towards employers. The prospect of employment at U.S. wages is generally perceived to be the primary lure which draws aliens into our country illegally. Sanctions against employers who knowingly hire illegal aliens had been debated in Congress for the past 20 years, but had encountered stiff opposition not only from employer groups—who predictably didn't warm to the prospect of becoming INS Agents—but also from civil rights and His-

panic groups. The opposition from these groups stemmed from the concern that employers, in an attempt to avoid running afoul of the new law, would discriminate in their hiring practices. To allay these concerns, the new law also contains provisions to protect against such discrimination. Now, let's examine the specifics of the bill.

Under the new law, it's unlawful to knowingly hire, recruit, or refer for a fee, an "unauthorized," i.e., illegal alien. This applies to all hires made after November 6, 1986. It is also against the law for an employer to *continue* to employ an alien once the employer becomes aware the alien is "illegal." To comply with the new law—whose full set of provisions which apply to employers went into effect on July 1, 1987—employers are required to verify the identity and work authorization of every new employee hired. The single-page I-9 Form must be completed for each new hire.

The I-9 Form is a simple form and relatively easy to fill out. If your new hire has one of the following documents, you are in good shape:

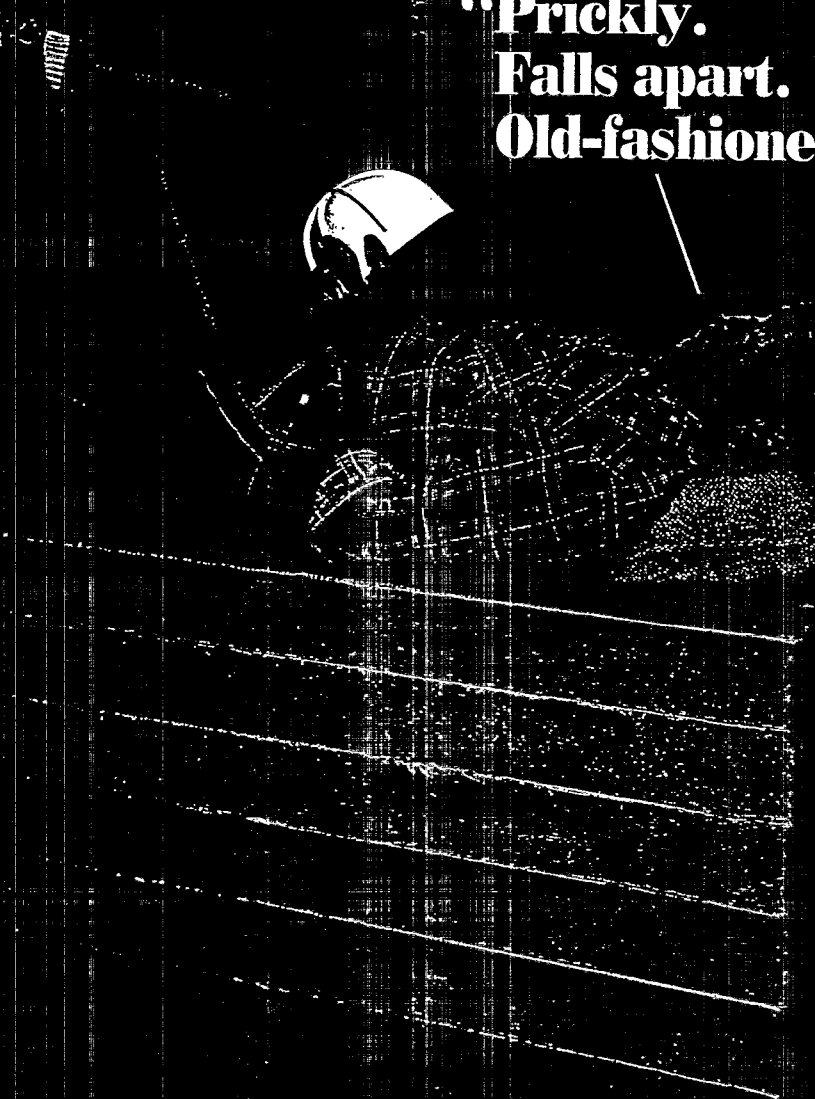
- United States Passport
- United States Citizenship Certificate
- Certificate of Naturalization
- Current foreign passport with attached employment authorization
- Unexpired alien registration card with a photograph

You just check one of the boxes on the I-9 Form, record the document number, and sign the form, attesting to the fact that you have seen one of the above documents.

The employee is also required to

“Faced Mineral Wool Board.”

**“Prickly.
Falls apart.
Old-fashioned.”**



sign the I-9 Form certifying that he/she is legal. If a new hire doesn't have the necessary documentation with him, you can still go ahead and hire him/her, so long as you take care of the paperwork within three days of the hire.

If your new hire doesn't have one of the documents identified above, which incidently establishes both the employee's identity and employment eligibility, you must obtain two documents from him as shown in Table 1 before you can satisfy the law's requirements.

Again, you simply check off on the I-9 Form what documents the employee has provided, record the document numbers, and then both employee and employer sign the form.

There really shouldn't be much trouble in complying with the new law. However, you do have to fill out a form for every employee you hire, but the form is easy to complete and shouldn't unduly burden you. For example, to establish an employee's identity, the I-9 Form doesn't mandate that the employee must have a driver's license or a United States Military Card. Let's face it, not everyone drives or is in the military. So there is a fair amount of latitude as to what can be used to establish identity. Voter registration cards, school IDs, and similar documents are alright. To play it safe, its advisable to photocopy the documents submitted. It's not required that you do so, but it's a smart move, particularly in questionable cases. It eliminates any possible question that might be raised at a later date as to whether you've made a good faith effort to comply with the law.

Incidently, if an employee is referred to you by a state employment agency, they're responsible for "documenting" the employee. All you need to do is get a certification from the state agency that

Table 1
Pertinent Documents

Documents to establish identity

1. A valid driver's license with a photograph or identifying information, i.e., height, weight, date of birth, color of eyes, sex
2. A U.S. Military Card
3. Some other document which clearly establishes the employee's identity.

Documents to establish employment eligibility

1. Original social security card
2. A U.S. Birth Certificate with a raised seal or similar certification
3. A current employment authorization from INS

they complied with the law, fill out the I-9 Form and attach the state's certificate.

The documentation requirements we've just described apply to all hires on or after the compliance date. For employees you've hired prior to September 1, 1987, but subsequent to October 6, 1986, you were given until September 1, 1987, to get all your paperwork in order; i.e., review necessary documentation and complete I-9 Forms. For employees hired prior to October 6, 1986, relax. You don't have to do a thing. If they're "illegal," they have the problem, not you.

Until May 31, 1988, INS says that they will only issue warnings to employers who are found to be in violation of the law, *provided they are first offenders*. After that, all bets are off. Beginning with June 1, 1988 or sooner, if you're a repeat offender, the penalties for hiring an unauthorized alien are \$250-\$2,000 per alien for a first offense, \$2,000-\$5,000 per alien for the second offense and \$3,000-\$10,000 per alien for the third offense. The law also provides for criminal penalties of \$3,000 per alien and/or six months imprisonment per violation for repeated flagrant or intentional violators. INS will probably use this

provision to target certain repeat offenders who they think need to be taught a lesson. You can also be fined anywhere from \$100-\$1,000 per individual for simply not having the necessary I-9 Forms on file, even if the employee in question is legal.

The key to staying out of trouble is having an I-9 Form on file for every employee hired since November 6, 1986. You shouldn't run afoul of the law if you comply with this straightforward requirement. One other point, you don't have to worry about employees you hired after October 6, 1986, whose employment terminated before September 1, 1987. INS is not going to make you chase after these employees and document them. If they did, there'd probably be an employer uprising!

INS intends to enforce compliance by investigating complaints made by the public. If such a complaint is lodged against you, INS will notify you and give you at least three days' notice before coming to your office to inspect your records. Similarly, if the Department of Labor (DoL) is investigating an alleged minimum wage law violation, they may also inspect your records for compliance with the new immigration law. In these cases, they must also give you at least three days' warning. You needn't

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be concerned about unannounced visits by INS or DoL. They won't be kicking in doors saying, "Gotcha." If INS does charge you with a violation, you must be given a written statement of the charges which you can contest before an administrative law judge. If you're not satisfied with that outcome, you can take the case to court.

The new law prohibits discrimination against any group to make sure employers don't overreact to the law.

Immigration Law Points to Remember

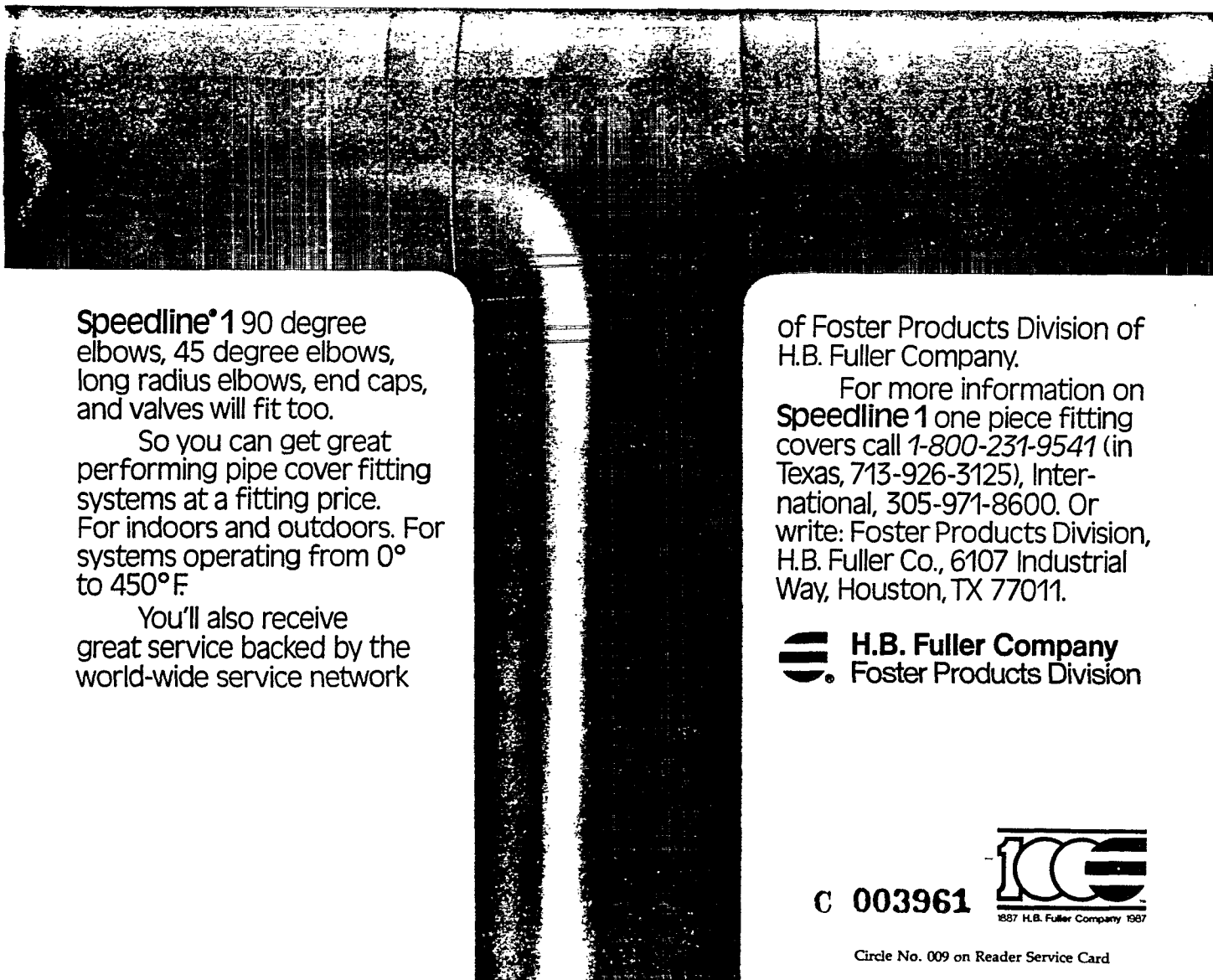
- The new law does not apply to casual hires, such as babysitters or temporary hire-ones for special occasions. On the other hand, regularly employing an illegal alien is a crime, particularly if the man lives in your home, which will get you in trouble.
- If you hire an illegal immigrant who is authorized to work here for a specified period of time, you are violating the law if you employ him beyond that period of time.
- You don't need to keep any paperwork for people who come here. However, if you do this could prove useful in the event you are charged with discrimination and you can show that you don't discriminate.
- You are required to verify the authenticity of the document that an alien is allowed to work here.
- If you hire an alien and cannot well provide adequate documentation, it's best to turn him/her away. If he/she is applied for the new law, he/she will be in trouble.
- If you're not sure about the authenticity of an employee's documents, you're better off hiring him rather than rejecting him and running the risk of a discrimination claim. You're not required to retain alien documents submitted to you.

Don't take the position that you're simply not going to hire anyone with an accent. You could get into a lot of trouble that way, if someone or some organization decides to file an anti-discrimination charge against you. And it's just not worth it. All you need to do is complete an I-9 for everyone you hire and you've complied with the law. Even if it turns out that someone you hired is illegal, INS is not going to presume you knew about it. If there's a valid I-9 on file, why should they?

Illegal aliens currently residing in the U.S. who want to become legal can do so provided they've been living here continuously since at least December 31, 1981. During a 12-month period, which runs from May 5, 1987 through May 4, 1988, these aliens can apply for legalization. Initially, these people will be granted temporary resident status for an 18-month period. After 18 months in temporary resident status, these aliens can convert to permanent resident status, provided they can demonstrate a minimal understanding of English, U.S. History and Government, or are pursuing the necessary instruction. Those aliens that apply for amnesty under the new immigration law can eventually make the transition from illegal alien to temporary resident to permanent resident and eventually, for those who qualify, citizenship.

When an illegal alien becomes a temporary resident, he/she is barred from receiving federally funded public assistance (welfare) for a 5-year period. If an alien applies for legalization under the provisions of the new law and meets the requirements, they of course, are eligible for employment. The legalization procedures are seen as a humane solution to the question of what to do with the undocumented aliens who have established roots here and are now law-abiding, productive members of our society.

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Coordinating Scheduled Outages with Asbestos Removal

by George Hotchkiss

The Young Insulation Group of Memphis recently completed a major asbestos removal and reinsulation project located at the Associated Electric Co-op, New Madrid, Missouri, Power Plant.

The project included the removal of approximately 18,000 square feet of asbestos-containing pipe and block insulation from Unit 1 located in the turbine area, boiler walls, and the hot reheat line extending from the penthouse to the turbine.

Several elements of this project offered quite a challenge for the Young Insulation Group. The entire removal portion had to be completed in 30 days from notice to proceed. This, combined with the size of the hot reheat line—36-inch diameter with 5 inches of asbestos double-layer insulation with metal lagging stretching out and up an eleven story-tall power house—made this project unique indeed.

Unit 1 sits next to Unit 2, but the second Unit was not going to be shut down because there was substantial maintenance work to be performed on Unit 1. The first problem was establishing and controlling the work area. Associated Electric assigned us one overhead door on the north side of the plant to bring in all of our materials and to load out all of our waste.

After setting up the regulated area using asbestos warning tape and signs, we held a safety meeting with the other crafts on the project to explain the work rules involved.

We then started building the de-

contamination station on the turbine floor and building scaffold around the entire hot reheat line. After the scaffolding was in place, we laid a plywood floor and enclosed the entire scaffold in 6-mil plastic, which resulted in a 500-foot long cocoon. Enclosing the turbine was completed by sealing all openings in the turbine shroud and using the shroud itself for the enclosure.

The next 30 days were hectic. We finished the turbine in approximately seven days and moved the decontamination unit to the boiler floor under the hot reheat line. Removal on the hot reheat line was very slow. The double-layer material was held in place with S. S. bands and the elbows were secured with fibrous adhesive, which had to be scraped

off.

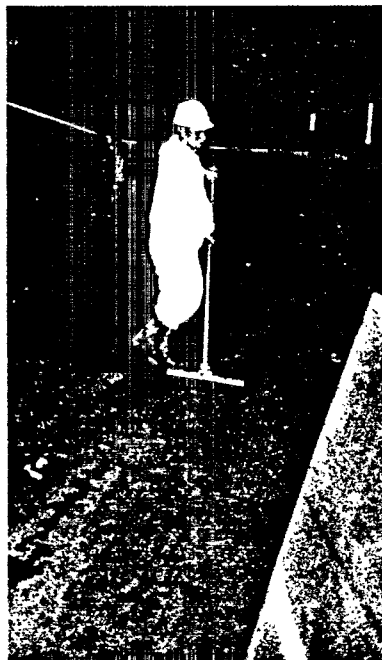
The enclosure was built in sections which allowed us to start at the top. As soon as one section was clean, we could take the plastic down and release the line to the testing crew who were working right behind us at all times. As we slowly worked our way down and the testing crew released the line back to us, we started a second crew installing the new insulation.

Air monitoring was ongoing the entire time that removal was being done, and included area samples both inside and outside the work areas: one area sample at negative air exhaust and personal samples for each type of work being done. Samples were taken every day and for every shift that was worked. This required that the industrial hygienist be on-site to read the samples on a daily basis.

Clearance was established as being 0.01 fibers per cubic centimeter and was only done after the area was inspected by Associated Electric's environmental engineer, Mr. Russell Rice, who determined that no visible contamination was found. All air-monitoring and bulk sampling was done by Laseter and Associates, Inc. Mr. Kenneth Laseter, the hygienist, was very helpful to us through the entire project.

In addition to the concerns mentioned, waste handling on this project was critical because of other crafts working in such close proximity to the work area. All waste was double-bagged and rinsed-off in showers before load-out, and all metal jacketing was disposed of using fiber drums. Personnel wore protective clothing and respirators during load-out and air-sampling was done for maximum protection.

Young's superintendent on the project, Mr. Bennie Ray Allen, was



The first problem was establishing and controlling the work area.

George Hotchkiss is the President of the Young Insulation Group, Memphis, Tennessee.

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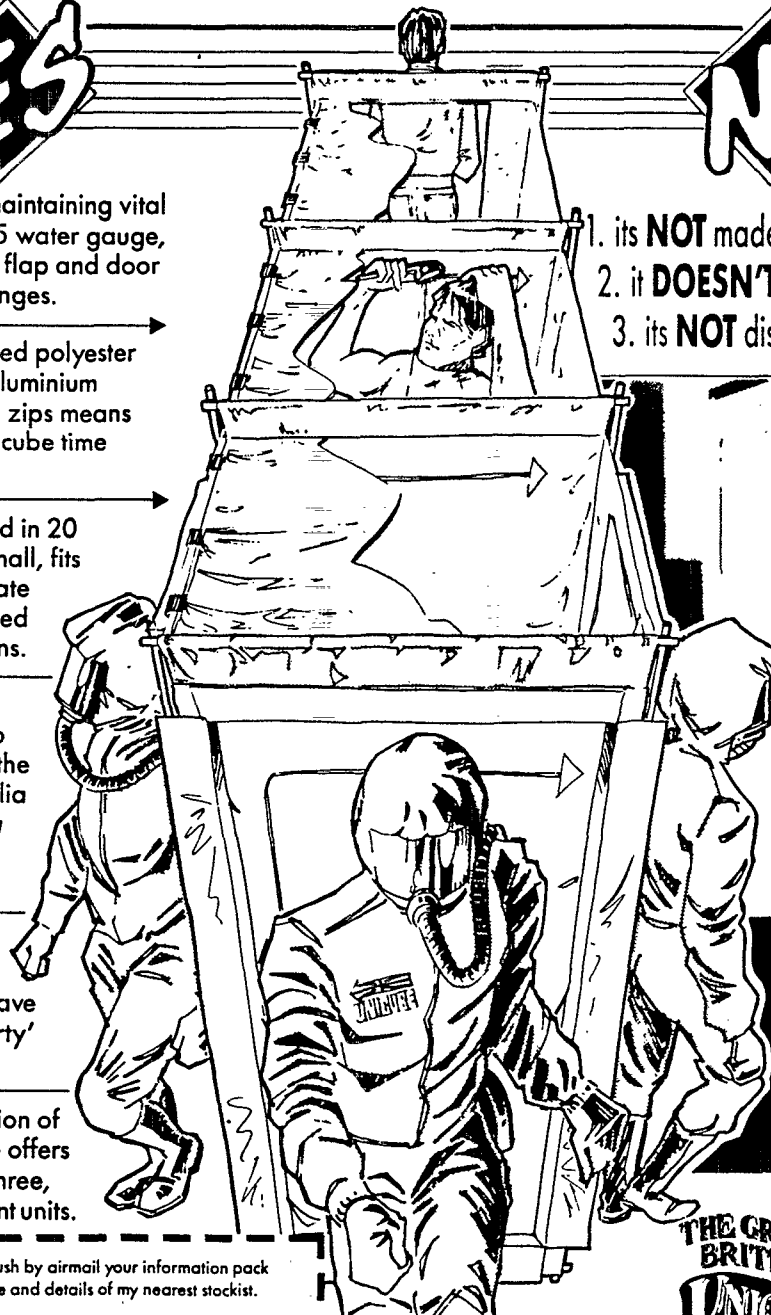
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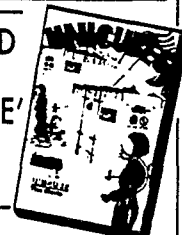
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responsible for coordinating the entire project, and along with the environmental quality control personnel for Young, attended weekly job meetings to discuss progress and any problems with Mr. Russell Rice. We believe these weekly meetings were very productive and helped keep the project on schedule and on budget.

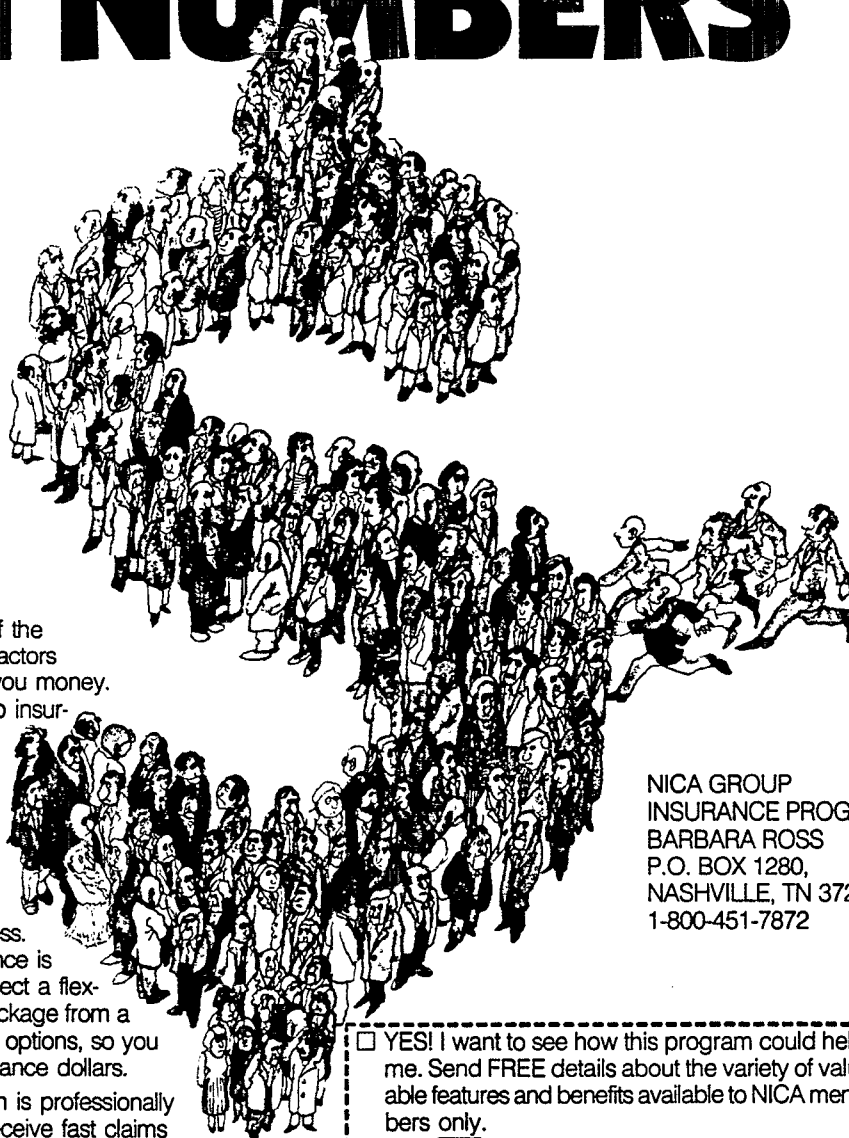
"... weekly meetings were very productive and helped keep the project on schedule and on budget."

When the asbestos abatement was finalized, we still had to complete the new insulation work, which was very extensive. The new work included the 36-inch H.R.H. line, which received double-layer 5-inch total thickness of calcium silicate with 0.016 smooth aluminum jacket. The entire turbine was reinsulated, including the upper loops, turbine shell, and six ball valves. The turbine work required making removable pads to replace the old pads which were contaminated with asbestos. Also included in the project were the lower water wall inlet headers and part of the east boiler wall.

The large amount of work involved required coordination with several of Associated Electric's engineers, including John Liesure for the turbine work and Rick Arbott and Jim Allen for the boiler and penthouse work. The entire project was completed and the boiler refired on June 5, 1987.

This project represented the largest outage that Associated Electric has ever had at this plant and the largest abatement project that Young Insulation Group of Memphis has handled to date. ☉

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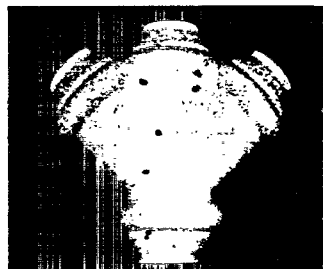


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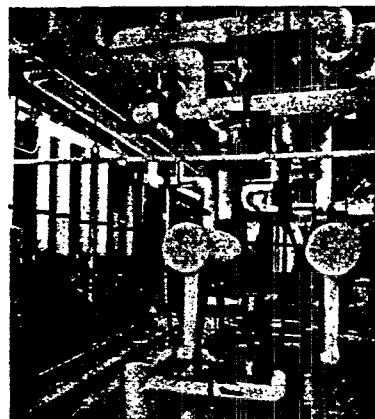
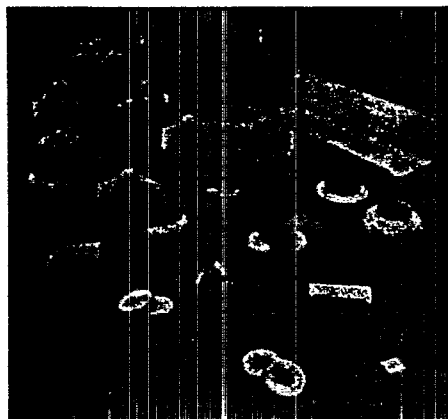
Size X (Max. Insul.)	List Price With Insert	List Price No Insert
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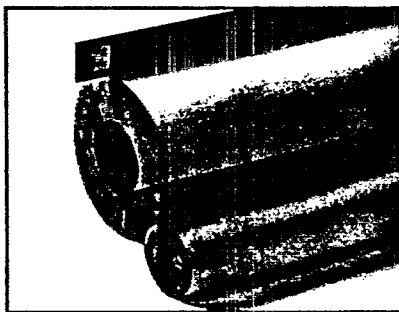
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Double-Breasted Operations and Pre-Hire Agreements

by Herbert R. Northrup,
Robert E. Williams,
and Douglas S. McDowell

The following article is excerpted from the concluding chapter of *Double-Breasted Operations and Pre-Hire Agreements: The Facts and the Law*. The entire book is part of Major Industrial Research Unit Series, No. 62a, and is available from the Industrial Research Unit, The Wharton School, Vance Hall, University of Pennsylvania, Philadelphia, Pennsylvania 19104-6358. This copyrighted piece is reprinted by permission of the University of Pennsylvania.

NICA's position

HR 281 passed the House June 17th by a vote of 227-197. The bill would ban dual shop or "double-breasted" operations in the construction industry; vastly expand permissible picketing; and violate employee's rights to choose whether or not to join a union. The battle now moves to the Senate where the companion bill S. 492 was approved by the Labor and Resources Labor Subcommittee on July 23rd. Full committee action is expected now that Congress has returned from the Labor Day recess.

Contact your U.S. Senators today and urge opposition to this proposed bill—the most far-reaching labor legislation in over a decade.

Robert Ferry
Administrative Vice President
NICA

Present law recognizes, and creates a number of special accommodations for, the complex factors that differentiate construction industry labor relations from those in other industries. Nevertheless, proponents of H.R. 281 and S. 492 argue that further special legislation is necessary to prohibit double-breasting in the construction industry and to give greater binding effect to pre-hire agreements than they are presently accorded. Neither of these objectives is warranted. Moreover, proponents of H.R. 281 and S. 492 also ignore the likely serious economic and social consequences which such legislation would entail.

The discussion below first summarizes the legal and operational experience which demonstrates why current laws concerning double-breasted operations and pre-hire agreements are reasonable and equitable and how the proposed legislation would upset this balance and create serious inequities. Following this information is an examination of the economic and social consequences which would result from the enactment of H.R. 281 and S. 492.

Herbert R. Northrup is the Director of the Industrial Research Unit, The Wharton School, University of Pennsylvania. Robert E. Williams, Esq. and Douglas S. McDowell, Esq. are partners in the Washington, D.C. law firm of McGuinness and Williams.

Double-Breasting— Law and Practice.

The existing law prohibits the use of separate, nonunion operations that have been established as a sham for an employer to evade its obligations under a collective bargaining agreement. The law, however, also recognizes that there may be legitimate, separate nonunion operations where the self-determination rights of affected employees must be protected.

... The individual units of a construction employer or holding company often operate their labor relations separately, or operate in different areas, sectors, or segments of the construction industry. For example, a single entity may be engaged in more than one construction market (e.g., residential, commercial, industry, heavy, highway), and/or in several specialty construction operations (e.g., electrical, plumbing, roofing, bricklaying) within a particular market. In many situations, there is no logical reason why a union contract in one of those markets or specialties should be applied to other parts of the contractor's operations.

The law further recognizes that the establishment of a separate, nonunion enterprise does not necessarily mean that the employer has evaded its obligations to the union. By considering the cumulative effect of all of the relevant surrounding circumstances (including common ownership, common control

and management, centralized control of labor relations, and substantial interchange of employees), the NLRB and the courts have been able to determine whether a non-union operation is indeed a legitimate separate business or rather an entity set up as a pretext to avoid pre-existing obligations to a union.

H.R. 281 and S. 492 would set aside these practical considerations and greatly expand the definition of "employer." The legislation would abandon decades of experience in looking at all the pertinent facts in order to determine whether an employer is attempting to side-step its legitimate obligations to a union. Instead, H.R. 281 and S. 492 would rigidly declare separate construction entities to be a single employer whenever there is any degree of common ownership. Truly independent parts of an enterprise automatically would be considered a single employer; consideration of all the circumstances to determine whether or not the entities were set up separately for legitimate business reasons no longer would be allowed. Also, there would be no clear distinction drawn between the type of work performed by separate segments of a contractor's operations.

The nation's labor laws have never required mandatory unionization in any sector of our economy. Nonconstruction employers often have subsidiaries that are both unionized and nonunionized. Indeed, even within a particular plant, there may be many different appropriate bargaining units coexisting with nonunionized employees. The interests of the employees are protected and there has been little controversy over this system as compared with the political uproar raised by the proponents of H.R. 281—even though nonconstruction unions have never had all of the special legal protections that construction unions enjoy under existing labor laws.

Economic and political realities demonstrate the true reasons for the push to enact H.R. 281 and S. 492. Largely for legitimate economic reasons, construction industry unionization has declined over the last several decades, as has membership in the construction trade unions. H.R. 281 and S. 492 would cure the problem by forcing separate groups of employees, some of which have never voted for union representation, to abide by the terms of a labor contract negotiated for only one of those groups. Such a policy is without precedent, directly contravenes the rights of individual employees, and for construction workers makes a mockery of Section 7 of the National Labor Relations (Taft-Hartley) Act which guarantees employees "the right of self-organization...for the purposes of collective bargaining or

Pre-Hire Agreements —Law and Practice

other mutual aid or protection, and...the right to refrain from any or all of such activities..."

One of the special accommodations which existing law makes to the largely transient nature of the construction workforce is the provision for pre-hire agreements. As a practical matter, construction projects often do not provide enough time to apply traditional NLRB election procedures. Section 8(f) was added to the National Labor Relations Act in 1959 in order to permit building and construction employers and unions to enter into pre-hire agreements. These agreements allow the union to represent a contractor's future employees without an NLRB election or other evidence that a majority of the employees in the unit covered by the contract want union

representation. Section 8(f) also allows: (a) seven-day union shop requirements; (b) mandatory union hiring halls; and (c) minimum training, experience, and seniority provisions. These provisions greatly aid union control over the hiring for construction projects.

Early NLRB decisions allowed either party to repudiate a pre-hire contract unless and until the union achieved majority support among the employees in the unit. But once the union gained such support, the contract would be enforced and the union would be presumed to have continued majority support after the agreement expired. Unions bitterly protested those decisions, arguing that the employer could "walk away" from pre-hire agreements. The NLRB addressed and resolved that problem, however, in its 1987 decision in *John Deklewa & Sons, Inc.*, 282 NLRB No. 184. That decision prohibits any employer from unilaterally repudiating the agreement before it expires. The *Deklewa* decision also allows the processing of an election petition during the term of the agreement. Further, when the agreement expires, the union will not enjoy the presumption of majority status. *Deklewa*, thus, binds the employer during the term of the pre-hire agreement unless the employees vote to oust the union. Of course, if the union obtains an agreement to have a mandatory hiring hall, it can largely control the employees at the job site and thus influence the outcome of any subsequent election.

The supporters of H.R. 281 and S. 492 now argue that *Deklewa* does not go far enough in solidifying the union's ability to control the contractor's employees. Rather, they want a presumption of union majority status *after* the pre-hire agreement expires—even when a majority of the employees have not demonstrated such support. Thus, under both bills, the union's status

as bargaining representative no longer would lapse at the end of its term unless the employees voted to retain the union. Rather, its language states that pre-hire agreements "shall impose the same obligations under this Act as an agreement made with a majority representative pursuant to section 9(a)."

This provision would further weaken the already limited right of construction employees to make their own determination about union representation. Construction unions would never have to prove their majority status and would be given a monopoly over the employees covered by pre-hire agreements except in situations in which employees went through the NLRB's election procedures to decertify the union involved.

H.R. 281 and S. 492, thus, represent an attempt to dispose of the principles of majority rule and self-determination for construction employees. The only way the bills would allow construction employees to escape union membership would be by using the very same NLRB election procedures that were found unworkable for establishing construction industry bargaining relationships in the first place. Again, Section 7 of the Taft-Hartley Act would become meaningless for construction industry employees.

Economic and Social Impacts

If the proposed legislation is enacted and accomplishes what its proponents seem to expect, the

economic and social impacts could be substantial. It was pointed out in an earlier chapter of this book that unionized construction raises construction costs about 25 percent above . . . open shop conditions. This the result not only of higher union wage and benefit costs, but particularly because of restrictive and inefficient union work rules and less flexible regulations governing hiring, training, and deployment of the workforce. If double-breasting is outlawed, union boycotting and picketing rights enhanced, and prehire agreements enforced regardless of a union's majority status or of the desires of the affected employees, all of which H.R. 281 and S.492 would accomplish if enacted, it appears obvious that construction costs in major markets throughout the country will

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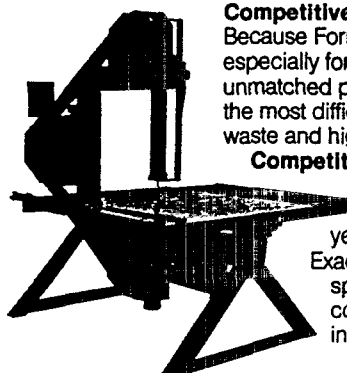
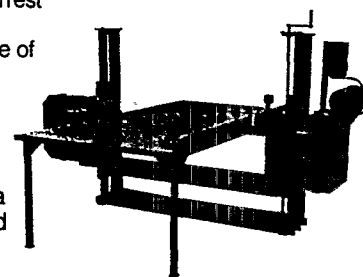
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be immediately increased. Moreover, such cost inflation could be substantially greater than the differential between unionized and open shop construction costs. It was shown in another portion of this work that open shop competition has greatly slowed union wage and benefit increases since 1982. With a monopoly in major markets, that restraint would disappear, construction costs would again escalate, and the inflationary impact would spread throughout the economy.

and constructors have been a strong competitive force that has restrained union monopoly power from inflating costs.

Besides the economic effects which it would generate, the passage of H.R. 281 and/or S. 492 would have important and clearly adverse social consequences. We have already noted that one effect would be to force construction employees to work under union control and to pay dues to unions which, contrary to historic American policy and practice, they had no opportunity to vote for, or otherwise to select.

"In other situations, the new rules on boycotts and picketing that would flow from H.R. 281 and S. 492 would force companies to operate union regardless of the wishes of management or employees."

Of course, it is possible that, if enacted, H.R. 281 and S. 492 would have the opposite result of what the construction unions plan—that is, the double-breasted companies would break with the unions and operate entirely under open shop conditions.

...This, of course, could occur, but it is not very likely. Many major double-breasted companies have markets in areas where, ...politics and lack of police protection, or user preferences, now preclude open shop operations. In other situations, the new rules on boycotts and picketing that would flow from H.R. 281 and S. 492 would force the companies to operate union regardless of the wishes of management or employees. What is a more likely result is the enhancement of union monopoly in key areas and key sectors of the industry in which currently the open shop builders

A second, and very important social consequence of the passage of H.R. 281 and/or S. 492 would be a major setback for efforts to increase opportunities for minority construction contractors. The construction unions, except for the trowel trades (bricklayers, plasterers, and cement finishers) have historically been antagonistic to the welfare of minority craftsmen. ...

Congress, the NLRB, and courts have made extensive efforts to accommodate the special character of labor relations in the construction industry. They have devised a unique system that has adjusted to changing conditions, thereby protecting the interrelated interests of employees, unions, and employers.

The NLRA was enacted with the overriding purpose of protecting the rights of employees to select a bargaining representative "of their

Moreover, passage of this legislation would raise construction costs, thereby contributing to inflation pressures. . . .

own choosing." H.R. 281 and S. 492, however, would require the automatic unionization of thousands of employees who have not voted for such unions and who, as a practical matter, would not have an opportunity to express their desires regarding union membership. Thousands of employees would be locked into union representation on a permanent basis by this legislation without being given any realistic chance to express their preference for a different union, or for no union at all.

Union membership may be increased by this legislation, but the union's present decline in members is not the fault of the current legal framework. Rather, it is primarily the result of the uncompetitive wage rates and inefficient work restrictions negotiated by the building and construction trades unions over the past several decades, which have effectively priced unionized employers out of major portions of the construction market. H.R. 281 and S. 492 make no attempt to address these root causes

of the problems now faced by those unions, but instead simply offer additional special accommodations to the union interests at the expense of further abrogation of the rights of construction workers, employers, and the public. Moreover, passage of this legislation would raise construction costs, thereby contributing to inflation pressures, and threaten the economic progress of minority contractors. There is neither need nor justification for such special interest legislation. ☐

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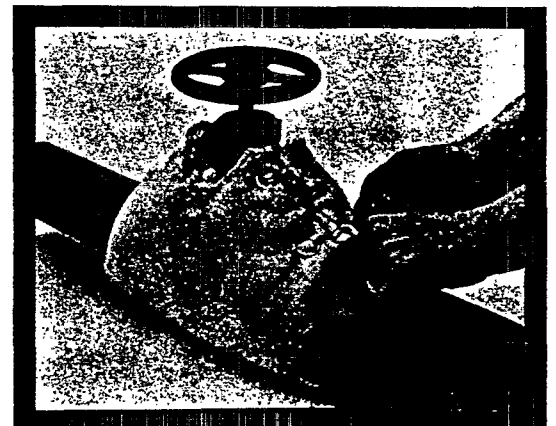
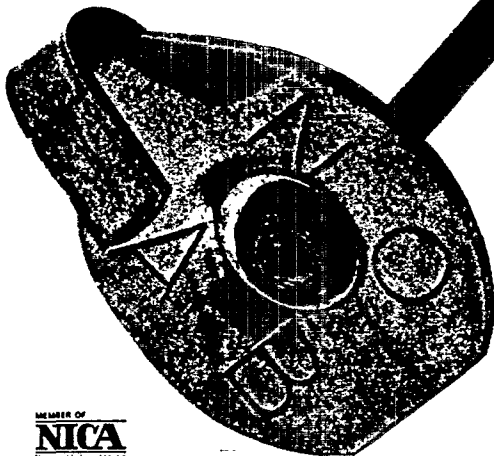
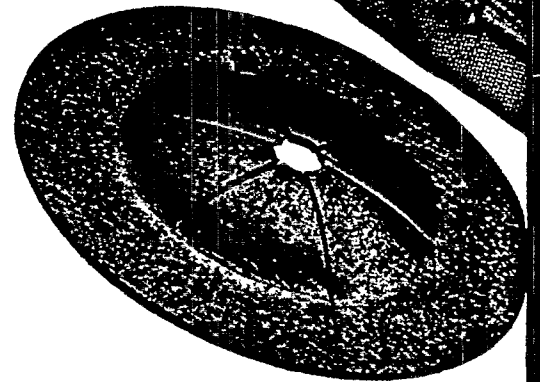


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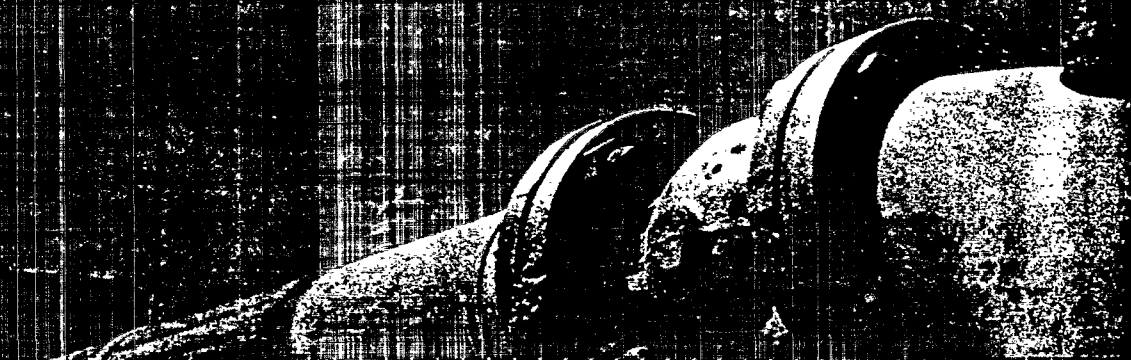
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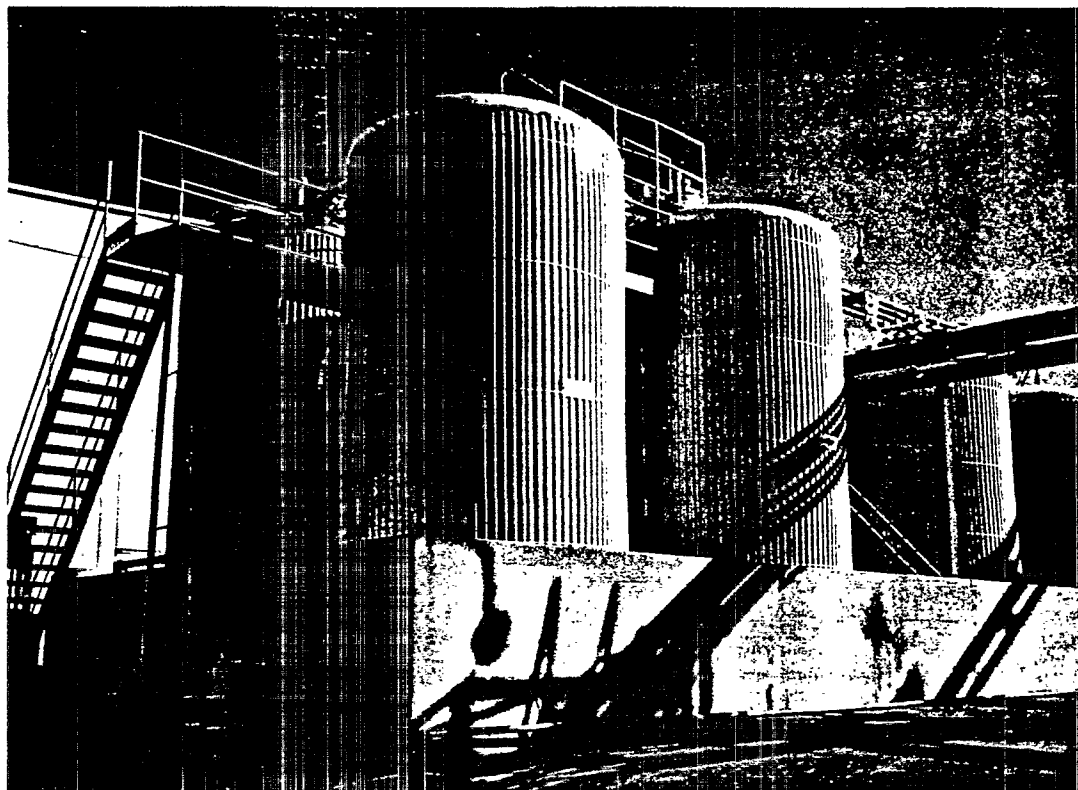
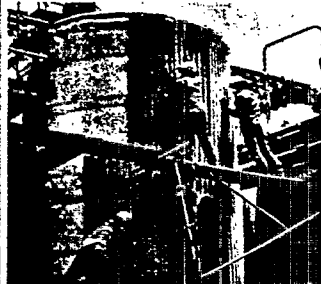


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C 003976

Updating Health Status of Fiber Glass

Information Provided By Thermal Insulation Manufacturers Association

Fiber glass was not found to cause cancer in humans, following a comprehensive review of human studies by an agency of the World Health Organization (WHO). Based on the results of animal implantation studies, however, fiber glass wool was classified as "possibly" a human carcinogen.

WHO's International Agency for Research on Cancer (IARC) designated continuous glass filament fiber, most commonly used in textiles and reinforcements, as a Group 3, "not classifiable as to human carcinogenicity." This means that evidence is insufficient to link the fiber to cancer.

While agreeing there is "inadequate evidence" that inhaling glass fibers causes cancer in humans, IARC designated fiber glass wool, most commonly used as thermal insulation, as a Group 2B, "possibly carcinogenic to humans." This was substantially based on evidence that artificial implantation of fibers caused tumors in laboratory animals.

Also sharing the 2B classification were mineral wool, commonly used for insulation and ceiling panels, and ceramic fiber, used in high-temperature industrial applications.

Under IARC procedures, any substance under study as a potential carcinogen may be classified as: Group 1, sufficient evidence of human carcinogenicity; Group 2A, probably carcinogenic to humans; Group 2B, possibly carcinogenic to humans; Group 3, not classifiable as to human carcinogenicity; or Group 4, probably not carcinogenic to humans.

"No evidence of lung cancer or other respiratory disease was found in laboratory animals that inhaled concentrations of fiber glass and mineral wool greatly in excess of levels found in the working environment," according to a spokesperson for the Thermal Insulation Manufacturers Association (TIMA). That study, the most comprehensive one in the field, was conducted by the Los Alamos National Laboratory in New Mexico.

... TIMA and its member companies will continue to support research studies on the health effects of man-made mineral fibers.

"The 2B classification for fiber glass wool is based substantially on studies in which tumors were provoked in animals by injecting the fiber directly into the trachea, or surgically implanting fiber into the animal's abdomen," according to the TIMA spokesperson. "Some scientists have cautioned that it is inappropriate to extrapolate non-natural animal exposure data to man, especially when more appropriate animal studies show no cancer."

A combination of U.S. and European epidemiological studies, including 15,000 U.S. fiber glass factory workers, showed no statistically significant increase in lung cancer death rates among these workers as compared

to the general population of their local communities. Those studies focused on deaths from all causes occurring after 1945 among these factory workers.

Preliminary analysis of the U.S. study reported at a conference last fall in Copenhagen had suggested a statistically significant excess of deaths from lung cancer for workers first exposed 30 or more years ago. However, at that time, cancer deaths among the 15,000 fiber glass workers studied had been compared to the U.S. population at large, a less meaningful comparison than with local populations.

Based on these same epidemiological studies, IARC concluded there was limited evidence of an association between mineral wool and cancer in production workers. Based on studies in which mineral wool was injected or implanted in laboratory animals (artificial means of exposure), IARC concluded there was also limited evidence of cancer in animals. This classification did not consider the lack of cancer in animals exposed by inhalation, the normal means of exposure.

No new evidence on ceramic fibers was introduced at the IARC conference.

"More than 400 studies on the health effects of man-made mineral fibers have been conducted since the 1930s, much of it at the initiation of TIMA and its member companies," the TIMA spokesperson said.

He added that TIMA and its member companies will continue to support research studies on the health effects of man-made mineral fibers and their production, installation, and use. ☉

Contractor's Employee Selection

After nearly a year of preparation, a revised edition of the NICA Asbestos Abatement Reference Manual is available. It was conceived by the Midwest Insulation Contractors Association, National Insulation Contractors Association regional group based in Omaha, Nebraska. Developed by NICA's Asbestos Abatement Committee, the manual was unselfishly assigned to NICA for publication and national distribution.

The manual has been compiled primarily as a guide and reference service for insulating contractors offering asbestos removal and disposal services. It also is a valuable informational tool for owners, architects, engineers, industrial hygienists, school administrators, local/state/federal governmental officials, safety personnel and students who need practical background knowledge of asbestos abatement procedures, regulations, and related information.

Due to the nature of asbestos removal and control work, potential employees for these positions must be carefully screened and reviewed. If the potential employee appears to satisfactorily fulfill the requirements of the position applied for, he/she must then submit to a company-paid physical examination by a qualified physician. If the applicant is physically fit for the position applied for, he/she then enters a training and certification program conducted by the contractor.

Employee Selection: This is the only means by which personnel should

be accepted as asbestos control workers or hazardous material handling workers.

1. Heavy smokers of tobacco products must be screened out of asbestos worker positions. Smoking, in conjunction with inhalation of asbestos fibers, increases the risk of health damage by a factor of over 50 times. It is preferable to employ non-smokers in positions that hold the potential for exposure to and inhalation of airborne asbestos fiber.

2. Applicant must fill out employment application *completely* leaving no spaces blank. If a question does not pertain to this applicant, write "N/A" in that space. Applicant's physician should be listed.

3. References for work history must be checked. Of special interest are: Employee reliability and stability, record of absenteeism, history of worker's compensation and/or group medical claims, and ability to get along with co-workers. Contact applicant's physician if possible.

4. Applicant must speak passable English or Foreman must speak language of crew, and be able to understand both written and oral instructions.

5. Applicant should be able to obtain transportation to and from the job site as required for local job sites. Contractor will arrange transportation for out-of-town jobs.

6. Applicant must understand that beards or any facial hair or facial abnormalities that would render a respirator-to-face seal ineffective will disqualify applicant for this position. He/she may be suitable for other related clerical, main-

tenance, driver, etc., positions.

7. Applicants *must* be in generally good physical condition as he/she may be subject to bending, stooping, crawling, twisting, overhead work, lifting, leaning and stretching movements which may result in physical exertion.

8. Some jobs may require the applicant to work at heights up to 40 or 50 feet, or in confined crawl spaces, in extremely cold or extremely hot environments, or to operate complex specialized equipment.

Medical Examination: Once your applicant has submitted a complete application, been interviewed and checked out and appears satisfactory, you should schedule him/her for a medical examination.

1. Contractor should provide, at no cost to the applicant, a physical examination by a qualified physician including, but not limited to, the following:

a. Chest roentgenogram, either posterior or anterior, measuring 14 x 17 inches. (OSHA 1910.1001) At discretion of physician, and unnecessary X-rays should be avoided.

b. Medical history to elicit symptomology of respiratory disease. (OSHA 1910.1001)

c. Pulmonary function testing to include Force Vital Capacity (FVC) and Forced Expiratory Volume (FEV) at one second (FEV 1.0). (OSHA 1910.1001)

d. Blood pressure.

e. General physical condition, including weight to height ratio, to determine suitability



for performing work in hot environment, while wearing respiratory protective equipment, bending, stooping, reaching, twisting, lifting, crawling, etc.

f. List of medications or medical treatments applicant is now taking or may be taking during period of employment as an asbestos control worker.

g. History of back injury or existing conditions that may be aggravated by the physical demands of the position applied for.

h. Document if applicant suffers from phobias that may be detrimental to his/her health such as high work, confined spaces, etc.

2. Medical examination will be performed and results available to contractor *prior* to hiring of applicant.

3. Contractor will provide a medical examination for current employees who may engage in asbestos control work within 30 calendar days following his/her first employment in a position in which the potential for exposure to airborne asbestos fiber exists.

4. Contractor will provide, or make available, appropriate medical examinations to each employee engaged as an asbestos control worker on an annual basis.

5. Contractor will notify, in writing, the examining physician

of the physical requirements of the position applicant is applying for so that physician can make a reasonable determination as to the physical ability of the applicant to perform the job without undue danger.

Questionnaire For Prospective Employees

The following is a sample of what employees will sign at a job site: As you know from reading the Statement of Corporate Policy Concerning Smoking and Exposure to Asbestos, we have adopted a corporate policy of refusing to hire any persons who smoke for positions which are likely to involve work-related exposure to asbestos. The position for which you are applying is likely to involve work-related exposure to asbestos. We must, therefore, know the answers to the following questions in order to determine whether you may be considered for this position.

Please answer each of the questions set forth below. You are reminded that we are relying on the truthfulness of the answers to these questions in determining whether to employ you for this position. Should you be hired, and should we then determine that the answers to any of these questions are not true, it will be cause for dismissal.

1. Do you presently smoke cigarettes, cigars, or a pipe?

2. If you do not presently smoke, have you ever done so in the past, and, if so, when did you stop smoking?

By signing this questionnaire, you acknowledge the following: (a) I have read and understand the Statement of Corporate Policy Concerning Smoking and Exposure to Asbestos; (b) I understand there are articles in the medical literature reporting on the existence of an enhanced risk that persons who smoke and who are exposed to asbestos (including perhaps persons who have stopped smoking only within five years of first being exposed to asbestos) face a greatly enhanced risk of contracting and dying from an asbestos-related injury or disease than do persons who do not smoke; (c) I have given truthful and complete answers to the questions asked concerning my smoking history; and (d) I understand that if the Company determines that the answers to either of these questions is not true, it will be cause for dismissal.

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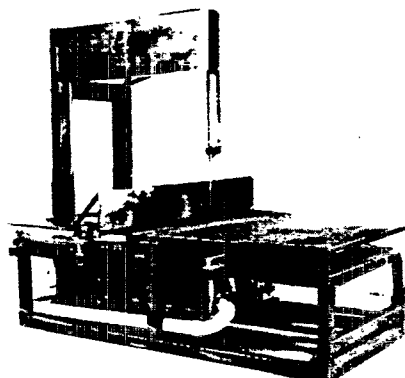
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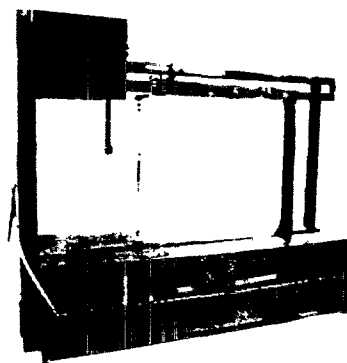
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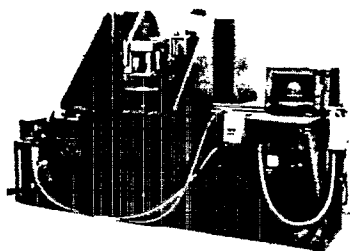
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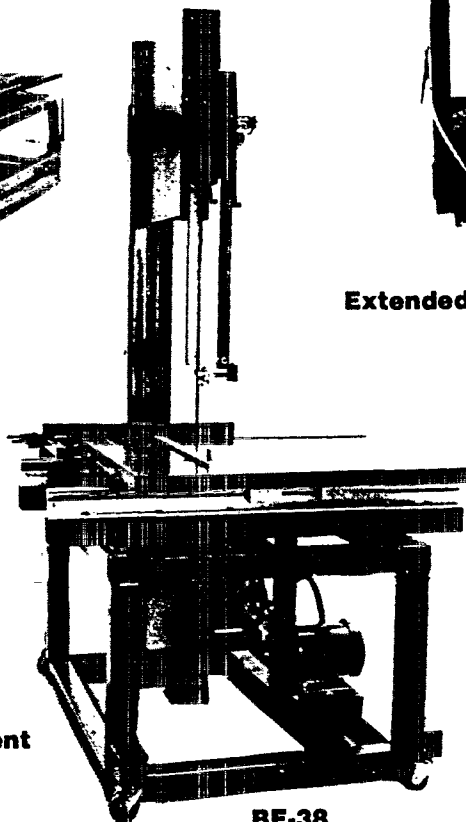
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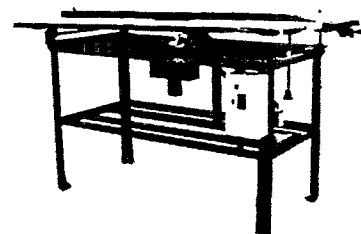
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BE-34
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PEOPLE & PLACES

Strieter Heads Distribution Firm

John N. Strieter accepted the position of President with Insulation Sales and Supply Company, which has distribution locations in Cleveland (home office), and Columbus, Ohio.

This firm distributes industrial/commercial insulation, air handling insulation, and most related accessories. He has spent the last seven years with Knauf Fiber Glass as a salesman and regional sales manager. Mr. Strieter is a member of the NICA Distribution/Fabrication Committee.



Construction Marketing

The 1987 Society for Marketing Professional Services (SMPS) National Convention in Chicago, September 30 to October 2, will focus on "Winning Better Business," and how this translates into bottom line success.

Featured speakers at the Convention will include renowned author, D. Quinn Mills, a professor of Business Administration at Harvard's Business School, and author of *The New Competitors and Industrial Relations in Transition*; and Donald J. Hackl, FAIA, the 1987 President of the American Institute of Architects (AIA).

For registration information, write Margie Anderson, SMPS, 801 N. Fairfax Street, Alexandria, Virginia 22314, or phone 1-800-292-SMPS.

Infrared Scanning Courses

A four-day certification course in the application of infrared scanners to detect building energy losses, roof moisture and to inspect electrical and mechanical systems will be held October 19-23, 1987, in Burlington, Vermont; and November 2-6, 1987, in San Diego, California. The cost is \$895. If you have any questions about these courses, or this announcement, please contact The Infrascpection Institute at 33 Juniper Ridge, Shelburne, Vermont 05482; (802) 985-2500.

Delta Systems Announces New Employees

Charles M. Nelson, President of Delta Systems, Inc., Houston, Texas, has announced the appointment of Barry D. Dobbs as Vice President - Marketing, responsible for all marketing and sales activities of the company. Barry Dobbs brings to Delta Systems 23 years of marketing and sales management experience with four Fortune 100 corporations.

Delta Systems has also recently announced the appointments of three new manufacturer representatives. Ivie Parsons, owner, Southeastern Sales, Inc.,

NICA Spotlights Marcia Lawson

Marcia Lawson is the Executive Editor of *Insulation Outlook*. Each month she and her staff work to bring readers case studies of projects in the commercial and industrial insulation industry, as well as the asbestos abatement field. Other subjects include emerging markets, workforce issues as well as human relations, financial, and business-related articles. In the year-and-a-half since she has joined the NICA staff, her goal has been to find lively ways to disseminate information on these ever-changing matters.

This editor says that she would like to have greater involvement from members of NICA and the seven regions. If you know of a



unique project, new project, and/or ways to work more effectively, efficiently, and safely, please drop Marcia a note or give her a call at NICA headquarters.

Prior to joining NICA, this communicator worked for technical-, business-, and construction-related publications.

Anderson, South Carolina, will cover several southeastern states. Mike Van Horn, President, Insulation Accessories, Kansas City, Missouri, will serve the midwestern states. Dick Bennett, owner, DBS Sales, Shreveport, Louisiana, is covering Arkansas.

Delta Systems is a fabricator of various mineral wool insulation products, including a recently announced TANK WRAP.

Legal Issues and Abatement

Construction Education Management Corporation (CEMC) is offering a contin-

uing education program, "Asbestos: Legal Issues and Effective Techniques for Abatement and Removal," November 9 and 10, in Washington, D.C.

CEMC serves the construction industry through presentation of continuing education programs each Spring and Fall.

For more information on this asbestos abatement-related program, please contact CMEC, P. O. Box 3236, McLean, Virginia 22103; (703) 734-2399.

New York Abatement Conference

The second annual Asbestos Abatement Conference in New York State will be held September 29 through

PEOPLE & PLACES

October 1, 1987 at the Albany Hilton; Albany, New York.

This conference is sponsored by the Education Division, Hall-Kimbrell Environmental Services, Inc.

This event is a three-day technical conference that focuses on asbestos abatement in the State of New York. The curriculum includes a comparison between New York City asbestos abatement laws and regulations and the State's laws, certification and licensing requirements for the State, school funding and grants, and state-of-the-art industry standards for all parties involved with asbes-

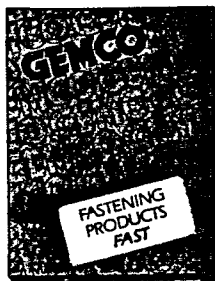
tos abatement.

Numerous state officials from the State's Health and Education Department, Department of Labor, a New York State Assemblyman, nationally recognized speakers in the field of asbestos abatement, and other professionals in law, insurance, and medicine.

For more information, please contact Hall-Kimbrell Education Division at 1-800-445-0682.

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PRODUCT TRENDS

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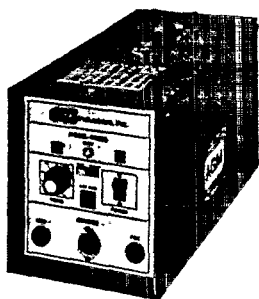
Critical-Vac Filtration Company has introduced a replacement HEPA filter for Pullman/Holt critical vacuums. DOP- tested and certified to have a minimum efficiency of 99.97 percent on 0.3 microns, this filter provides performance identical to the original equipment, including compliance with military and U.L. standards.

The filter's complete compatibility with Pullman/Holt vacuums allows for proper installation and operation, ensuring its acceptability for nuclear, asbestos and other critical applications.

Circle No. 035 on Reader Service Card

Capacitor Discharge Welding System

AGM Industries has just introduced their Model 580SS Solid State Capacitor Discharge Welding System. Its circuitry, reportedly, was designed to allow the use of either contact or drawn-arc welding mode, depending on your welding requirements.



According to the maker, this unit will weld C.D. weld pins, cupped head pins, and weld studs up to 5/16 to 5/18-inch (m8) diameter, to a variety of base metals. In ad-

dition to the 580SS, AGM manufacturers other Solid State welders for various applications, as well as a complete line of insulation fasteners and weld studs.

Circle No. 036 on Reader Service Card

Asbestos Removal Tape

Venture Tape Company, Rockland, Massachusetts, has announced the introduction of a complete line of tapes for the asbestos removal market. These tapes are used in both commercial and industrial applications and, reportedly, are designed to provide significant advantages over the traditional duct and masking tapes used to-date.

They include polyethylene tapes for superior splicing of poly sheeting and for securing poly bags as well as a double-coated tape, appropriate for use around door frames and for holding polyethylene on floors under poor air conditions.

In addition, tapes are available with special adhesives, designed for application to painted drywall surfaces. When removed, these tapes do not leave residue and eliminate any spackling or repainting, thus saving many dollars in labor costs, according to the maker. Literature and samples are available.

Circle No. 037 on Reader Service Card

Respirator Brochure

Willson Safety Products offers a new 10-page, full-color brochure describing the features and benefits of its

new NIOSH/MSHA-approved 6000 Series respirators.

The company's half-mask, dual- and single-cartridge air-purifying models are highlighted, focusing on their low-breathing resistance design and comfort features.

The brochure also describes the full line of 6000 Series air-supplied respirators, gas masks, and fully-interchangeable accessories. A color-coded ordering information chart and cartridge/filter selection guide are also featured.

Circle No. 038 on Reader Service Card

Merit Shop Wage and Benefit Survey

The 1987 edition of the PAS Merit Shop Wage and Benefit Survey details the wages and benefits currently being paid to over 41,900 craft employees reported by 1,127 merit shop contractors.

The survey breaks down the information by craft, type of construction performed, type of contract, type of bid, revenue size, and geographical location. Included are 30 journeymen, 30 foremen, 11 first-year apprentices, 11 third-year apprentices, and 11 helper positions.

Generally, contractors with over \$50 million in revenues provide the fewest benefits as 26.3 percent of the larger responding firms provided paid vacations, 34.2 percent provide a pension plan, 62.5 percent have a craft bonus plan, and 82.9 percent provide a health insurance program. Up from last year, 51.3 percent of the companies in the 50 million

category reported having a performance appraisal system for craft workers.

The 1987 Merit Shop Wage and Benefit Survey is an annual publication of PAS—Personnel Administration Services, Inc., of Ann Arbor, Michigan.

Circle No. 039 on Reader Service Card

Portable HEPA Vacuum

Tornado introduces the new portable HEPA ToxVac to complete its full line of hazardous recovery vac systems. The Pro ToxVac allows recovery of such materials as asbestos, lead dust, and other critical materials, yet meeting OSHA and EPA standards for safe recovery.



Applications that require HEPA filtration in congested areas can now be filled with the Portable HEPA ToxVac system, electric- or air-operated, portable, or up to 55-gallon recovery.

Circle No. 040 on Reader Service Card

Disposal Wipers

Scott Dry Up® Towels are big. A full 19 by 24 inches. They reportedly are large enough for wiping walls,

protective barriers, tools, and wide, open areas. Also, a worker needs only one to dry up after a shower, according to the maker.

These towels are strong, wet or dry. Tough enough to wipe rough and uneven surfaces clean. Durable enough to outlast conventional paper disposables.

But, most of all, they are absorbent. They reportedly are able to soak up to six times their weight in liquid. This cloth is a substitute for workers who must wash-up and dispose of their towels after every job.

Circle No. 041 on Reader Service Card

Nonmetallic Corrosive Cabinet

A new, larger nonmetallic cabinet for the storage of acids and other corrosive liquids is now available from Justrite distributors.



The cabinet measures a full 61 inches in height, by 43 inches wide, and is 18 inches deep. Two shelves are standard. Construction is of a 3/4-inch particle board, clad inside and out with a chemical resistant laminate. Shelves are cleated, no

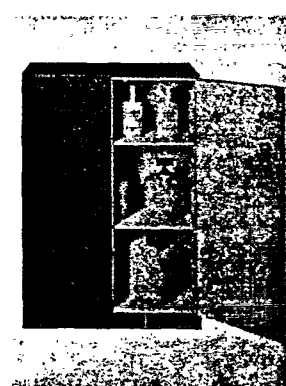
brackets or clips of any kind to deteriorate and fail.

Resistance tests exposing the laminate directly to the corrosive fumes of 20 different chemicals produced results ranging from superior-to-good in every case, according to the maker.

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Asbestos Air Monitoring Video

Air monitoring—the process of collecting, analyzing air sample for asbestos content—is a crucial aspect of all asbestos assessment and control projects in buildings. This new, 38-minute program provides an overall orientation to the equipment and procedures involved in air quality assessment for asbestos situations.



Produced by Selectron Productions, the program is narrated by Gordon Yetter and John Luxford of Alternative Ways, Inc., a Bellmawr, New Jersey environmental engineering and consulting firm which designed asbestos safety training programs for industry and government.

The program also demonstrates and discusses the three kinds of microscopes currently associated with as-

bestos air sample analysis—optical microscopes (Phase Contrast), scanning electron microscopes (SEM), and transmission electron microscopes (TEM).

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Bag-Closing Tool

Asbestos Control Technology offers the "Twister" for closing polythylene bags. This spiral-tooled, spring-loaded device tightly closes and seals plastic bags in a single pull. Utilizing eight-inch wire ties, it can quickly close even the largest of bags.

Originally used in the as-

bestos abatement industry, where large numbers of waste bags must be sealed with assembly line efficiency, it has wide use in any situation where bags must be securely closed.

Made of rugged aluminum and steel with rubber parts, the tool has an ergonomically-designed handle that naturally fits the contours of the hand and is comfortable to use.

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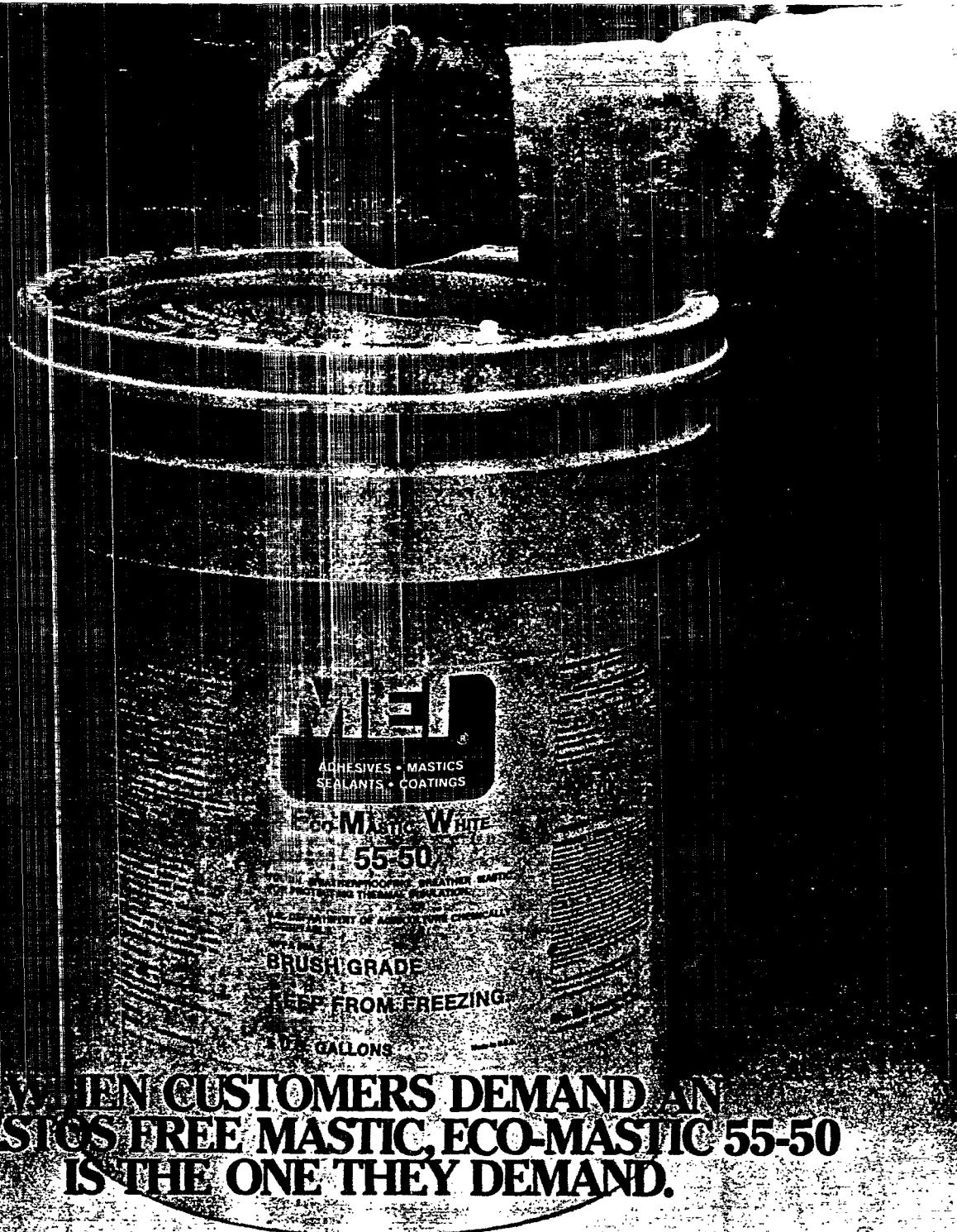
Send all information for Product Trends to Marcia Lawson, INSULATION OUTLOOK, 1025 Vermont Ave., N.W., Suite 410, Washington, DC 20005.

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Classified by Underwriters Laboratories, Inc.
for Surface Burning Characteristics.



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EVENTS

NICA Conventions

1988 March 26-31
Doubletree Hotel
Monterrey, CA

Regional Meetings

CSICA

1987
Fall Meeting
October 11-14
The Greenbriar
White Sulphur
Springs, WV

1988
Fall Meeting
October 9-12
Marriott Griffin Gate
Lexington, Kentucky

1989
Fall Meeting
September 24-27
The Greenbriar
White Sulphur
Springs, WV

EASICA

1987
Fall Meeting
September 9-11
Copley Plaza
Boston, Massachusetts

1988 Spring Meeting
Pittsburgh, Penn.

1988
Fall Meeting
Lancaster, Penn.

MICA

1987
Fall Meeting
October 7-8
Ramada Inn
Omaha, Nebraska

1988
Spring Meeting
June 19-22
The Broadmoor
Colorado Springs, CO

NYSICA

1987
September 17-20
Fall Meeting
Lake Placid,
New York

SEICA

1987
Fall Meeting
October 11-13
Grove Park Inn and
Country Club
Ashville, North Carolina

SWICA

1987
Convention
October 29-November 1
Hilton Palacio Del Rio
San Antonio, Texas

WICA

1987
Annual Convention
October 25-28
Lowes Ventana Canyon
Tucson, Arizona

1988
Annual Convention
October 16-19
Hawaii

TIAC

1987
25th Anniversary
September 16-20
Gray Rocks
St. Jovite, Quebec

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Elbows**



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*NICA Associate Member

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 Hump Elbow sample
 for you,
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C 003989

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VOICES OF THE INDUSTRY

Bottom Line Benefits of Supervisory Training



I am pleased that Quorum, Limited has been selected to offer the Supervisory Development Program to the NICA regions. NICA was presented with the challenge of enhancing Education and Training, and they responded by looking for a program that would meet these needs. When a program such as this one is presented, many sectors of the commercial and industrial insulation industry are positively affected—your region, your firm, and your workforce—everyone benefits.

The regions and NICA have worked together to reaffirm the central goals of these organizations—to help contractors stay competitive in an ever changing marketplace. And, National is assuming part of the cost of these sessions for the regions. When your supervisors go through this program, they know you are behind them—willing to spend time and money so that they can gain a greater business awareness and competency to make them more professional in their approach to the job site. Your firm reaps the rewards of a more motivated workforce who see that you take an interest in them and their careers and they'll repay you with enhanced productivity. And, because your foreman now has been trained in basic management skills: training, motivating, quality control, and material management, you have a more smoothly run, cost conscious, and efficient work site.

Now, this is only part of the benefits to you. Productivity can be the competitive edge that your firm needs to bring about significant profit margins. Let me show you how this works:

- If you as a contractor are at 5 percent profit before tax and you can increase productivity one percent, you can increase your profit before taxes 20 percent.
- If you as a contractor are at 5 percent profit before tax and you can increase your productivity 5 percent, you can double your profit before taxes.

And this can make a real difference to your business.

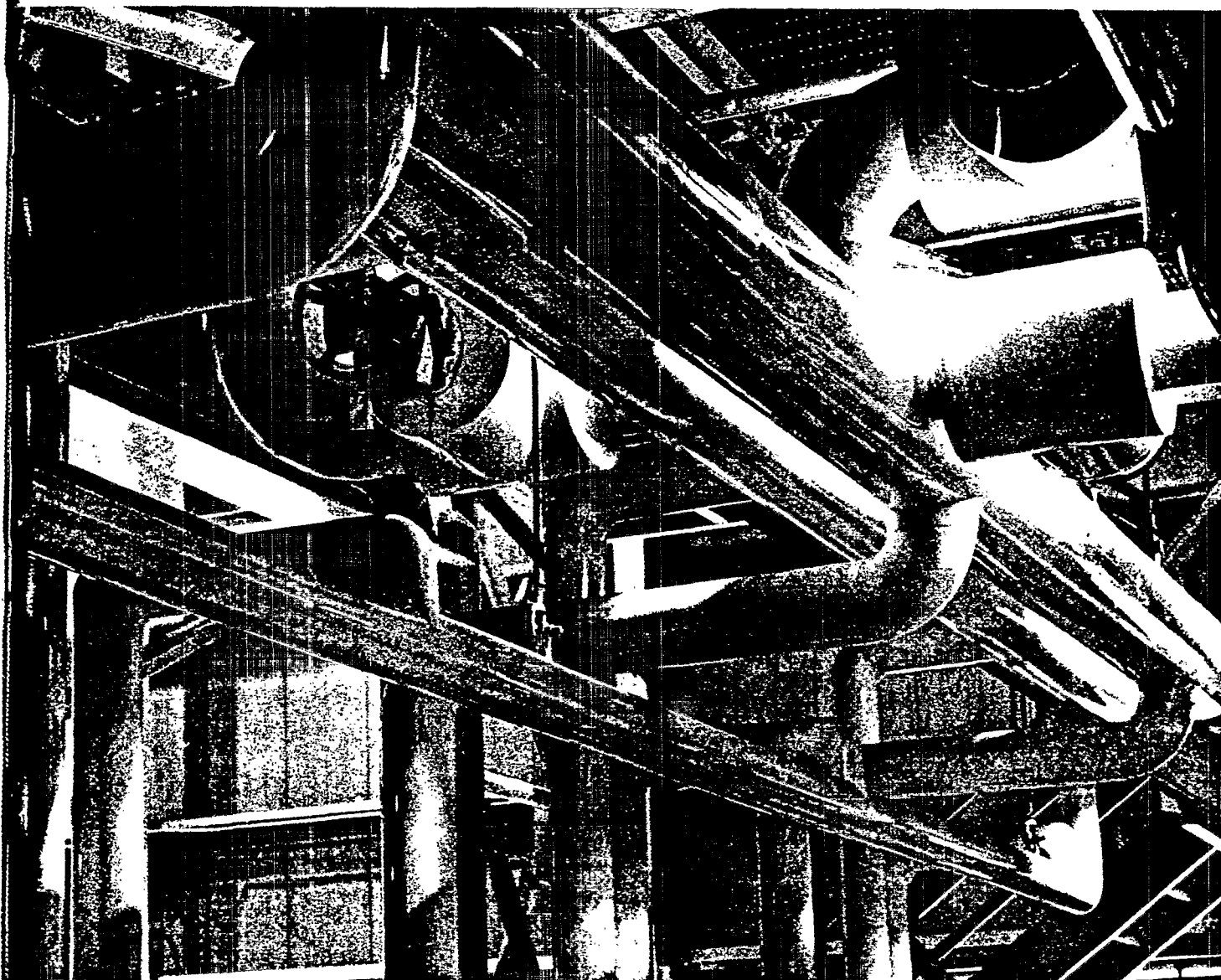
I'm looking forward to sharing these ideas with you and showing you how to make a positive impact on your bottom line.

Allan Hurst
President
Quorum Limited

In response to requests from INSULATION OUTLOOK readers, this open forum for member views and opinions and NICA staff, Committee, and Board reports will be a regular feature of the magazine. I welcome your articles or editorials on the trends, future and current issues in the insulation industry. Speak up! This is your opportunity to speak and be heard on an issue of importance to you.

Marcia G. Lawson
Executive Editor

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