

# HIRING

insulation contractors and distributors

By John W. Kalis, Jr.

what  
**YOU**  
need to know

The evidence of a good contractor or distributor is both obvious and subtle. Know these signs before you bid your next job.

**T**he selection process to determine proper insulation contractors is serious business. Each insulation project must be evaluated on the demands of the contractor. It is not enough that contractors can install insulation. They must fully understand their responsibility before the bid is submitted. The following discussion identifies key elements that owners and managers should look for when selecting contractors for a job.





### Contractors Must Have the Right Experience

The best way to explain the scope of the contractor's responsibility is to provide an example of what happens without proper accountability.

A major vegetable processing facility in a West Coast valley where temperatures often exceed 100°F, required total replacement of insulation on several thousand feet of piping and associated equipment. The owner/manager of the complex was concerned since the facility was only a few years old and the compressors could not maintain temperature in the cold storage buildings. Upon inspection, no attempt was made to properly seal the vapor retarder on any of the cold temperature ammonia piping and equipment. The insulation was saturated with moisture, both indoors and outdoors. The insulation contractor responsible for the work was considered to be the best in that part of the country according to the superintendent and prime contractor.

After investigating the work history of the insulation contractor, it became apparent that they had never insulated cold operating systems and had no knowledge of vapor retarders. Their experience was insulating refineries and similar facilities where everything operates hot. The prime contractor depended on the wisdom of the insulation contractor to follow the mechanical contractor's specifications. The mechanical contractor selected the insulation contractor. Apparently, no inspection by the prime or mechanical contractor was made. It probably wouldn't have mattered since they thought the system was installed correctly and the original specifications could not be found to substantiate poor performance. The owner paid for all of the rework.

Several lessons are learned from the above example:

- Evaluate the insulation contractor's past experience to determine if it meets the requirements for a given project.
- The owners and contractors, mechanical and insulation, should maintain a file of specifications for future reference.
- The mechanical contractor has a responsibility to fully evaluate the work history of the insulation contractor and inspect the work for compliance to the specification.
- The insulation contractor, if properly trained, should know the importance and have the proper experience working with the assigned systems.

### Contractor Must Be Financially Sound

Geography usually dictates how many qualified insulation contractors can be included in the bid process. The normal review of contractors' qualifications would include such items as insurance, bonding and affiliation with a drug prevention or awareness program. Another item of extreme importance is their financial soundness. A Dun and Bradstreet report may not indicate a contractor's current financial status.

For example, an industrial facility in West Virginia required extensive insulation work. Only a few insulation contractors in the area were capable of handling this work. The lump sum bids were received and the low bid was considerably lower than the second and third bids. No meeting was conducted with the low bidder nor was any investigation made on its financial condition since it had successfully performed work at the site a few years prior. The low bidder was awarded the project and the work proceeded on schedule.

Just prior to completion of the project, it became apparent that the contractor eliminated insulation under fitting covers and other items that were spelled out in the specifications were missing. When approached about correcting this situation, the contractor indicated it needed more money to complete the work or it would go out of business. The contract coordinator agreed that the funding should be provided since there were so few insulation contractors in the area. This idea was nixed.

Funding a contractor under these circumstances would only create a situation where the bidding process would become meaningless. The contractor did go out of business. The work was corrected by another contractor, but the project completion was delayed.

Insulation distributors and fabricators could be important contacts when assessing contractors' financial soundness. They know the reliable contractors, especially ones that pay their bills on time.

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The distributors generally have a good idea as to whom the qualified contractors are by the way contractors plan and order their insulation materials. An organized contractor will plan ahead and not expect instant shipments of materials. This is especially true of materials requiring fabrication (e.g. where double layer insulation nesting and fitting covers are required).

Some distributors/fabricators are in the contracting business. In this case, the total company should be evaluated. The contracting division should be willing to provide a list of recent projects and names to contact.

### Proper Supervision

Supervisors should understand the insulation specifications and follow up as the work progresses. Some contractors may have only one qualified supervisor or foreman. He or she may be supervising several projects at different locations. Consider if your project is only supervised 10 percent of the time.

Here's an example of some of the concerns that may arise from lack of supervision:

A chemical plant in Texas was constructing a foundation for a 90-foot diameter ammonia tank. The cellular glass insulation blocks were installed over the

foundation and awaiting a top layer of concrete. The insulation supervisor was at another project for another company. He released his work as completed by phone. However, prior to releasing the work a rainstorm flooded the foundation. The concrete floor was poured over the insulation that was literally floating. By the time it was recognized that water bubbles were rising to the top of the concrete indicating something was wrong, the concrete had set. The concrete had to be removed with jackhammers. In addition to the cost for rework, the owner lost several weeks of production because of project delay. Supervision must not be spread too thin. It is imperative to pick-up any errors early in the project and coordinate insulation work with other crafts.

### Apprentice Training

Apprentice training is paramount to quality insulation work. Our present economy with full employment puts a

stress on insulation contractors. A contractor commitment to work schedules is broken because of inadequate manpower. This condition may increase the number of apprentices trained to be mechanics. Presently, most contractors have set the ratio at 3 mechanics to 1 apprentice, which seems acceptable. Some dispute the length of time training is required. The apprentice program may be 4 to 5 years long and may include classroom study as well as hands-on field experience.

Insulation contractors may be merit or open shops and in some cases both. Insulation unions have formally trained many insulators that are working for merit and open shops. The union locals have played a leading role in organized training and record keeping of insulators over the years.

The one area of concern has to do with industrial facilities that provide insulation maintenance by employees

who have essentially no training in the field. In an effort to downsize manpower to cut cost, management has gone to a multi-craft program. In this case, pipefitters and carpenters install insulation. On industrial plants, the maintenance work can be extensive and include both hot and cold systems.

If the people installing the insulation have little training or interest in the job, the insulation job may not

be done properly. To illustrate, several years ago a group of pipefitters needed to be trained on the art of reading insulation specifications and installing insulation. It was a 1-1/2 day classroom training session with no hands-on training. The group had a negative attitude about insulation work right from the beginning. One must question the value of such little training with a group that's disinterested. Furthermore, one really has to question management's decision regarding the effectiveness of this strategy.

### Safety Record

The safety record of a contractor on the work site must also be reviewed. Contractors with clean safety records indicate that they take their work seriously. Safety meetings must be conducted on a regular basis and the necessary safety equipment must be provided. Contractors must be familiar with working from rigging and high places if the project

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### Characteristics of a Good Insulation Contractor

- Diversified experience to cover all project requirements
- Ability to understand and/or provide insulation specifications, drawings and documents in order to develop accurate estimates
- Good financial standing
- Good planning management, for materials, or manpower
- Good safety record
- Dedicated key personnel with a proven record of performance
- Express willingness to work with owner and/or prime contractor personnel
- Enforcement of an alcohol/drug prevention program for site acceptance
- Constant site/project supervision
- Mechanic/apprentice ratio is minimized
- Ability to provide samples of field fabrication skills if requested



calls for it. Review contractor safety records to prevent injuries on site. An injury prone contractor can lead to litigation and cause delays in the work completion.

#### Prior to Officially Awarding the Bid

Before making decisions about contractor selection, review the project insulation specification and requirements with the successful insulation contractor/sub-contractor manager to be sure they thoroughly understand the commitment. Cover the work schedule to be sure it is realistic. In some cases, the work schedule must be coordinated with other crafts.

Where applicable, the meeting should include the site superintendent, safety coordinator, the owner project engineer, insulation consultant and primary mechanical contractor project manager.

If there is any question about the low bid contractor and his ability to accomplish the work, then a meeting with the second low bid contractor is justified. If there is a considerable difference in the low bid and the next bid, then a meeting may still be appropriate.

Depending on the complexity of the project, quality approval may be required by fabricating mock-ups of flange and valve covers or insulating pipe hanger/shoe configurations, for example.

#### Establishing a Good Owner/Contractor Relationship

Keep the owner/project personnel informed during the project. The correspondence should go beyond the typical end of the week or month percentage of work completion. They should report on any manpower changes, on areas where the work is more difficult than expected, and also where the work is being performed smoothly. This

#### Characteristics of a Good Distributor

- Sound financial status
- History of good working relationships with contractors
- Have a well-stocked inventory
- Capability to go high-tech
- Ability to provide emergency shipping for exceptional conditions
- Ability to provide total fabrication needs where fabrication is performed

flow of information will help in the event scheduling appears to be a problem.

The contractor should encourage periodic inspections by the site safety coordinator or project engineers. If they ask questions, contractors should be friendly in answering and if they can't answer, pass the questions on to supervision. A good working relationship starts from the ground up. The attitude of contractor management and supervision is reflected in the mechanic's attitude in the field.

Most owners and project managers are open to suggestions on how they (the contractors) can improve on what the specifications call for. As a result of the contractor's input, there may be cost savings to the owner, which is a win-win for everyone. However, contractors should study their recommended changes before the owner commits to them. Sometimes the specifications do not always define why certain materials or their application is necessary. Be sure to get lots of signatures on the change order before proceeding. If a mechanical contractor is directing the insulation, then they should have the change reviewed by the owner project engineer. ALL materials should be at the site prior to commencing with the work. With few exceptions, the insulation material should be properly stored, ready for installation. Owners will not accept the shortage of material as a delay of the project.

#### Selecting Insulation Distributors/Fabricators

Many distributors also do fabrication work. This gives them flexibility to provide a short turn-around on special orders of materials that may otherwise require days or weeks for delivery. Distributors that do not fabricate in-house usually have an alliance with a local fabricator.

#### Distributors Working With Contractors

Distributors generally know what they need in inventory to satisfy contractors needs.



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### The Bidding Process

Where extensive new work requires many crafts, most companies will elect to go with a single contractor. This is especially true where there is a resident construction alliance partner on the project site. The contractor may wish to subcontract the insulation work if the schedule is tight.

### The Three Most Common Contracts

- **Cost-Plus-Percentage-of-Cost (CPPC)**

CPPC is a contract where the contractor fee is based on a percentage of labor. Under this agreement, all contractor costs are reimbursable, such as material, labor, employee benefits, payroll taxes, rental equipment, taxes, overhead and insurance. These contracts are usually based on competitive proposals and negotiated with a contractor.

- **Lump-Sum (LS)**

LS is a contract for projects that is well defined and documented in a firm scope. No changes are expected.

- **Pay-for-Performance (PFP)**

PFP is a cost-reimbursable contract with a performance-based fee. The project group and contractor agree on specific business objectives. The contract incentives are structured to drive these business objectives, which are based on performance. The performance criteria must be established before work begins. The project scope should be firm, but not as firm as for a lump-sum contract.

For a project that is well defined and where few changes are anticipated, a lump-sum contract or a pay-for-performance contract would be appropriate. For less defined projects where flexibility in the project scope is required, then cost-reimbursable contracts are good. Work can begin while design and scope of the project are developed.

Insulation material manufacturers vie for their specific products to be exclusive with distributors. Therefore, in some cases, the contractor is between a rock and a hard place when the owner's insulation specification calls for a specific manufacturer's material and no substitutes are allowed. The contractor is forced to contact another distributor and pay a premium for the material or the distributor may elect to order the material, thus breaking an agreement. The manufacturer may sell direct to the contractor, bypassing the distributor, which can really cause havoc within the whole system.

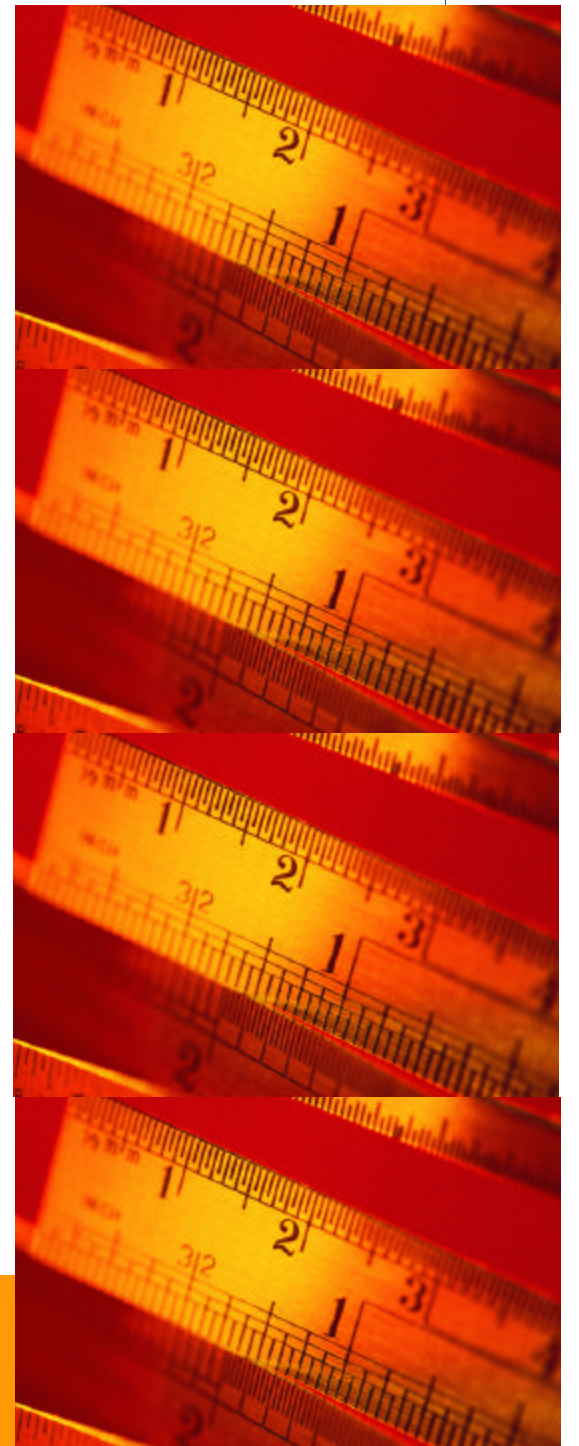
The alliance that contractors have with distributors is good business for both parties. This bond between the contractor and distributor will improve since both parties will know what to expect from the other.

### Distributor Location

Where large industrial/commercial facilities are located, there usually is an insulation distributor/fabricator. The insulation maintenance at most of these facilities is not planned ahead. For example, when a requisition is released to reinsulate 30 feet of 3-inch pipe, two boxes of insulation are expected at the site the following morning. Fortunately this is not always the case, but it is a common occurrence. The owner is expected to pay a premium for this service, but it's still cost effective when you have two insulators on the payroll even though the material is not available for installation.

### High-Tech Capabilities

Some distributor/fabricators have established a computer database that is tied in with their clients. Code numbers are given to all insulation materials. The distributor







receives an order by computer and can quickly check the inventory by cross-referencing the numbers. This is especially beneficial where plant maintenance work is performed. These distributors/fabricators may also have a contracting division, which is also a great resource to have for their contracting work.

#### Special Service

Most distributor/fabricators have the ability to fabricate just about anything the contractor needs. More contractors are ordering prefabricated vessel head segments since they are more cost effective than fabricating in the field. They generally fit better than the field fabricated segments. Many fabricators are capable of making precision ship-lap longitudinal and circumferential joints on two-piece pipe and fitting sections, thus eliminating the need for double layer insulation on many cold sys-

tems. The advantage of utilizing this ship-lap insulation is just beginning to be recognized as a cost saver to the industry.

#### Mutual Understanding

Distributors/fabricators are willing to work with contractors in almost any situation. They must also realize that stocking all materials at any given time is impossible. In addition, the contractors must provide a reasonable lead time when ordering. ☺

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## An Example of One Company's Philosophy on Contractor Relations

by Stacy Stryjewski

Honeywell's Performance Polymers & Chemicals plants view its insulation contractors as extensions of the company: Safety (personnel protection), productivity and energy savings are paramount. Honeywell takes a proactive approach when evaluating where insulation fits into the budget and the overall plant strategy. The company also looks at the condition of its insulation on a day-to-day basis and is staffed in-house and through vendor relationships to react to those needs.



"We look for contractors to form a partnership. It's more than just contractors coming in, insulating the pipe and going away. It's being part of our success--the more we're successful, the more people providing us our services are going to be successful."

Andre Tremper



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Andre Tremper, vice president of operations, notes insulation as being a driving force for keeping the plant running. Chemical plants need to keep process fluids hot—if the fluids cool they can freeze, even at 150°F. In addition, insulation provides burn protection, a key safety consideration. The energy savings that insulation provides is an added value once these first two issues are addressed with insulation requirements.

Honeywell relies on its insulation vendors for expertise—to provide innovative solutions that will save money. John E. Legard, Honeywell's capital sourcing leader at the Hopewell plant says he might not make sourcing decisions based on one-year contracts. He looks at a vendor profile over a number of years. Honeywell actually includes productivity clauses into the contracts in order to encourage the vendor to look at long-term proposals, technology, efficiencies and savings. A good contractor will build a partnership and include alternate recommendations that are in Honeywell's best interest. A mediocre contractor will just do as it's told without incorporating new insights and ideas into the job.

Henry (Hank) C. Lang, Jr., maintenance materials leader at the Hopewell plant, emphasizes a safety screening process. Contractors are given a safety test before being accepted as a partner with Honeywell. In addition to safety requirements, Hank also looks to the contractors as sources of expertise on a daily basis. Interpreting specifications and regulations are integral parts of the job. Contractors' administrative processes are essential, too. Their billing systems and paperwork flow should be technologically up to speed in order to fit into Honeywell's system. It's not just a matter of how much the workers get paid, according to Hank. It's the whole package of resources that they bring.

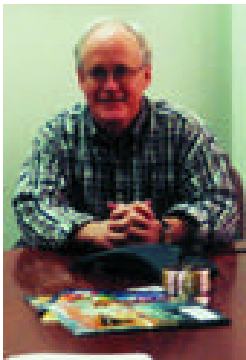
**A Sample of Honeywell's Contractor Selection Criteria**

- Safety history and programs
- Organizational stability
- Technical expertise
- Financial stability
- Future oriented—understand total quality management and might want to participate in Honeywell programs
- Cost—it's driven by more than price. Mandate contractors to identify opportunities to find "buried treasures" and drive costs down.
- Worker stability
- Experience in a specific industry segment



"We have strong expectations of our contractors and suppliers. And they should have strong expectations of us, particularly in multi-year contracts. If we push, they push, all for our mutual benefit that we're all becoming more cost competitive."

John E. Legard, III  
C.P.M.



"What differentiates us from other companies is our serious focus on safety. We are absolutely focused on safety as a primary concern. In addition, we focus on supplier productivity."

Hank C. Lang, Jr.

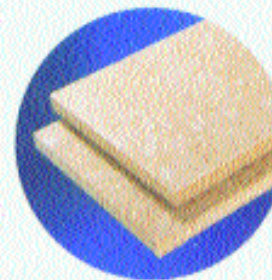


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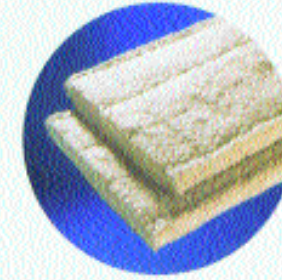
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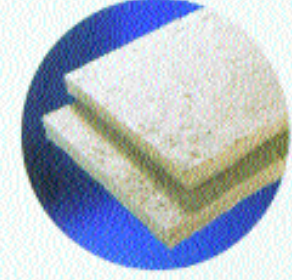
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