Cheating—The Insulation Industry's Dirty Secret

MICHAEL UNIACKE

by Michael Uniacke

Major problems exist with the way some attic insulations are manufactured, labeled, and installed. An experienced insulation contractor, diagnostic technician, and building science educator sizes up the ongoing problem of cheating and offers specific recommendations to prevent it.

In many parts of the country, cheating with blown attic insulation is rampant. I have blown insulation into hundreds of attics and inspected thousands more attics where insulation has been blown, and I rarely have found attics with blown insulation that deliver the specified R-value–often the attics are missing 20%-50% of the insulation. That's how I came to appreciate the complexity of the insulation industry's gigantic quality control problem.

The blame for this missing insulation can readily be spread among manufacturers, insulation contractors, builders, installers, utility companies, and consumers. This brings up the question, Why can't the building industry get something as simple and basic as attic insulation done correctly? The Insulation Contractors Association of America (ICAA) recognizes this problem. ICAA's *Plan to Stop Fluffing and Cheating of Loose-Fill Insulation in Attics*, which was published in 1996, succinctly states that, "cheating of blown insulation in attics is prevalent throughout the United States." The ICAA readily acknowledges that cheating is still prevalent.

Cheating Defined

Cheating involves the shorting of blown cellulose, fiberglass, or rock wool insulation and overblowing or fluffing of blown fiberglass. Shorting simply means that all of the material needed to achieve a given R-value is not installed. For instance, if the average settled depth of cellulose is 5 1/2 inches for an R-30 attic when in reality it should be 8 inches, then the attic has been shorted 31% and has an R-value of 19. Here in the Southwest where I work, it is very common to find 30% of the blown cellulose missing in an attic. I'm only surprised these days when I find an attic in which the work was done correctly.

Fluffing of fiberglass insulation results from a contractor increasing the air on the blowing machine. The contractor blows in the fiberglass insulation to the depth stated on the bag label–for example, 13 inches to achieve R-30–but ends up covering perhaps 70 ft^2 instead of the 50 ft^2 it is supposed to cover because the fiberglass is fluffed. In other words, the depth of the loose fill insulation would

suggest that it's providing the desired R-value, but the density isn't there to actually deliver it. To verify the density, a core sample or cookie-cutter test must be conducted. This test involves going up into an attic and taking at least three samples and weighing them. If we do a core sample on blown fiberglass and measure .40 lb/ft^2 instead of 0.50 for an R-30, then 20% of the material is missing, with a corresponding 20% drop in R-value.

Fraud Everywhere

The problem is not indigenous to the Southwest, nor is it limited to one type of insulation material. According to the ICAA's plan, "All over the U.S.–Florida, Massachusetts, Minnesota, North Carolina, South Carolina, Virginia, and elsewhere–investigators have discovered patterns of fraud. This pattern of fraud has persisted since day one." Fraudulent work puts pressure on honest contractors, especially the ones that are not established, to either justify or lower their prices.

In severe climates, fraudulent insulation installations are more readily apparent than they are in more moderate climates. In extremely cold climates, high utility bills, moisture problems, ice damming, comfort problems, and mold can result from a mediocre insulation job. Poor quality work in extreme cooling climates, such as Phoenix and Las Vegas, lead to extreme air conditioning expenses, but I've still seen plenty of inadequate installations in these areas.

No blown insulation material is impervious to the potential of fraudulent use. If the installing insulation company does not place a value on quality work and there are no inspections, cheating can occur with cellulose, fiberglass, or rock wool. Your typical construction superintendent probably does not know how many inches of material are required to deliver an R-38 with blown cellulose, rock wool, or fiberglass.

Why Cheating Occurs

There are two reasons that cheating is so endemic to the insulation industry. The first reason is obvious: No one is inspecting our work. There is little or no accountability. Why do the job right if the client and the building contractor don't hold the insulation contractor accountable? Blowing insulation correctly into attics is hard work, and inspecting them is almost as difficult. Most utility companies, energy offices, city inspections, and energy programs do not perform thorough attic insulation inspections, which are imperative for keeping the industry honest.

The building industry doesn't inspect any more thoroughly. Most builders see the specified R-value for attic insulation on a set of prints and assume that it is delivered. Builders make the mistake of believing attic cards and depth rulers in attic insulation are reliable indicators of a quality job.

Other trades are held more accountable by codes and by more obvious performance issues. Plumbers are held accountable by pressure tests, water leaks, and building inspections; roofers by inspections and leaks during rainstorms. When other subcontractors work fails or doesn't look right, usually there are recognizable consequences, including customer complaints.

The second major reason that insulation lends itself so readily to cheating is pricing–actually a whole gamut of pricing issues. During many of the transactions involved in installing insulation, the price per ft^2 is more important than the delivered R-value or quality work. Missing cellulose or fluffed fiberglass equates to either a low bid price or more profit for the installation contractor. My company insulated an attic in late May for $700. Our bid had almost $350 in material costs and our customer told us that several of our competitors bid the job close to half our price. Based on our experience in the field, we know that this customer was not going to get the R-30 from one of the other bidders.

In addition to the right amount of material, it takes time to blow an attic thoroughly, and time slows down production. Installers are rarely rewarded for quality work; instead they are typically paid for the amount of bags they blow. With this type of fee structure, why should an installer take the time to blow insulation around duct work on scissor truss ceilings?

Some manufacturers compound the installation problems by creating coverage charts that don't work and by manufacturing products that can be fluffed. These fraudulent coverage charts misrepresent the coverage of a product, which means the product appears more cost competitive when compared to other types of insulation material. If product X calls for 45 bags of material for a 2,000 ft^2 attic, and product Y for 62 bags, and both bags cost the same, product X will appear to be more cost-effective–in spite of the fact that product X may not provide the necessary amount of material to deliver a specified R-value. These types of labeling practices have to change.

The Consequences of Cheating

Most builders don't realize that Federal Trade Commission Law 460, Labeling and Advertising of Home Insulation, holds builders–not the insulation contractor–responsible for missing insulation. Builders are liable for $10,000 per home for missing insulation in attics. The law is quite clear regarding fraudulent insulation practices. In the first section of the law, 460.1, the penalty is stated clearly:

This regulation deals with home insulation labels, fact sheets, ads, and other promotional materials in or affecting commerce, as "commerce" is defined in

Which Is Worse?

In Situation 1, a contractor promises R-38, but delivers only R-30. (Assume air film coefficient R=1.2.)

The percent difference is a 26% increase in heat loss over R-38.

In Situation 2, a contractor fails to insulate 5% of the attic (leaving only air film coefficient).

The percent difference is a 52% increase in heat loss over 100% coverage.

Conclusion: Failing to insulate even a small part of an attic is a much more serious omission than fluffing. Still, both kinds of cheating need to be avoided.

the Federal Trade Commission Act. If you are covered by this regulation, breaking any of its rules is an unfair and deceptive act or practice or unfair method of competition under section 5 of this Act. You can be fined heavily (up to $10,000) each time you break a rule.

The Federal Trade commission understands the extent of the problem. ICAA members have gone to the FTC on several occasions to discuss cheating in attics. According to Larry Heliminiak, former president of ICAA, "We went to the FTC because we want to get the skeleton out of the closet, but we're still facing an extreme uphill battle." This is a battle that is presently being lost in the field, partly because of a failure to enforce the law on the part of the FTC and state Attorneys General.

The Home Insulation Rule 460 is a good law, and my experience has been that no one either knows about it or takes it seriously. Enforcement of this law would galvanize the attention of the building community. The message would be that the proper amount of insulation in attics does matter. (To find a complete copy of the law go to www.ftc.gov/bcp/rulemaking/rvalue/16cfr460.htm.)

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A core sample or cookie-cutter test involves taking at least three insulation samples and weighing them.

Insulation Materials

I believe cellulose, fiberglass, and rock wool are good insulation materials, when labeled and installed correctly. However, all three of these types of attic insulation have common problems associated with their use and installation.

Cellulose

I'll never forget the day when I discovered that the cellulose problems I had been seeing in attics for years were not just the result of errors by the installation contractors, but that the manufacturers were contributing to the problems. I was blowing an R-38 in a straightforward attic with a flat ceiling. I had estimated that I would need 101 bags of stabilized cellulose. I determined the number of bags by taking the square footage of the house and dividing it by the manufacturer's coverage for a 30 lb bag of material, which is found on every bag of material. I had excellent lighting. I wore a headlamp and carried a fluorescent light on a power chord. I took dozens of depth measurements with a tape measure that was tied to my belt loop. Although the coverage charts specified the need for 101 bags, I

Attic Notes

A Tale of Two Houses in One City

Two years ago, while I was teaching a workshop in Las Vegas, Nevada, I had an opportunity to visit the Build America and Engineered for Life project for Pulte Homes, which was very impressive. The cathedralized ceiling, an unvented attic with insulation against the roof sheathing, and the simple and effective ventilation systems were real breakthroughs.

Yet the very next day, I took the HVAC technicians I was training up into the attic of a recently built home in another location we had just finished testing. Close to 50% of the cellulose insulation had never been blown. In the far reaches of the attic, the cellulose tapered down to bare sheetrock. I identified a major thermal bypass in dropped soffits and behind the fireplace. This attic epitomized the complete lack of accountability in the insulation industry.

For every one Build America house being built, there are thousands being insulated to this standard. Where are the builders, the utilities, and the energy experts? The story was told in the insulation itself. Blown insulation is like fresh snow, and there were no tracks. No one had ever inspected this attic. And no one has ever inspected the tens of thousands like it.

Massive Scale

Last June, I interviewed the owner of an inspection company in the Phoenix metro area that specializes in the inspection of homes that are less than two years old. He told me that of the homes that his company inspects in Maricopa County, only 1 in 20 is not underblown by at least 25%. He also confirmed that one large insulation contractor is re-insulating 2,000 homes in Surprise, a West Phoenix suburb. Cellulose that was to provide R-30 and R-38 had been shorted 25%-75% in attics throughout two subdivisions.

The Need to Apply Pressure

In the spring of 2000, I reported to a homeowner in Sun City, Arizona, that 50% of the insulation in the attic had never been installed. The home was just a year and a half old. In their 1,900 ft2 home, I estimated that it would take an additional 1,260 lb of cellulose to achieve the R-value they had paid for in their contract. They originally contacted me because they were uncomortable and had very high utility bills.On my recommendation, the homeowner called the builder, who in turn had the insulation contractor return the following day. The insulation installer's work order said to blow an additional 10 bags, but the homeowner told them that I said to blow an additional 40-44 bags. Based on my second inspection, I believe they did blow the 43 bags like they said they did, but why did they come back so quickly and why were they so accommodating?

Table 1. Cellulose Statistics: R-30

Manufacturer	Bag Weight (pounds)	Installed Thickness (inches)	Settled Thickness (inches)	Coverage Per Bag Per Mfr (ft^2)	Bags Per 1,000 ft^2	Min. Weight Per 1,000 ft^2 (lbs)	Weight Per ft^3 (lbs)
Greenstone Stabilized	30	8.1	8.1	34.2	29.3	879	1.3
US Fiber	30	8.1	8.1	35.6	28.1	843	1.25
Thermolock	28	8.8	8.0	26.2	38.1	1,070	1.6
Redi-therm Dry stabilized	35	8.1	7.9	32.2	31.0	1,090	1.65
NU-Wool	26	9.6	8.2	23.8	42.0	1,090	1.36

had to blow the 127 bags I had on the truck and was still short. I was astounded. The stabilized cellulose coverage chart I was using was not accurate.

What I later learned was that even stabilized cellulose settles in attics (see Table 1). In theory, if you mist the cellulose insulation with water as the material leaves the hopper, an adhesive bond is created that is supposed to prevent settling. This is why it is referred to as stabilized cellulose. After returning to past jobs in which we marked the truss framing members with spray paint, we learned that the supposedly stabilized cellulose does settle.

I've spoken with trustworthy owners of insulation companies who still believe the coverage charts are accurate, and they genuinely think the product doesn't settle. They are faithfully following the manufacturers coverage charts, and subsequently have many attics out there that do not achieve the specified R-values.

It is easy to tell if the cellulose has been shorted in an attic once you determine the specified attic R-value. Simply stick a tape in the cellulose after it has been installed, and measure it. My company calls eight inches an R-30 attic, and ten inches an R-38. We blow 9 inches to get 8 inches settled, and 12 inches to get 10 inches settled. Most of the settling will occur in the first couple of months, but the cellulose will continue to settle for up to two years. My company follows very few manufacturer's coverage charts, and we assume that cellulose will settle as much as 20%.

One of the main reasons the coverage charts are inaccurate is that cellulose can't be blown at the low densities that the manufacturers state on their coverage charts. Minutes from the May 1997 ICAA technical committee meeting state, "An investigation by the ICAA Cellulose Task Force has found that coverage charts for stabilized cellulose products have a major flaw. The density of blown cellulose increases with higher R-values and thickness. A recent survey of coverage charts produced by manufacturers of stabilized products reveals settled densities that range from 1.3 to 1.7 lb/ft^2. Products using the lowest possible settled densities (generally less than 1.5 lb/ft^2) will require as much as 15% more material, at higher R-values, than is shown on coverage charts." The reason for this difference is that the first four inches of cellulose are compressed by the next four to six inches, which increase the density while at the same time reducing coverage. This has been referred to as progressive density.

At my company, Advanced Insulation, we know that a 30-lb bag of cellulose that is supposed to cover 27 ft^2 to achieve an R-38 instead covers from 19-21 ft^2. Consequently, we have created our own charts that guarantee that our customers get what they paid for. We have a $200 guarantee on every attic that we will install the proper amount of material to achieve the specified R-value.

Blowing traditional cellulose dry (in which no moisture is added) at depths that won't account for settling is also problematic. It is very important to make the distinction between initially installed thickness in inches and minimum settled thickness in inches. For example, on one manufacturer's coverage chart, to achieve an R-38, the initially installed thickness would be 11.3 inches in depth, which will in turn settle to 10.1 inches. Both measurements can be found on a coverage chart. During inspections, I have observed that the installers often initially blow 10 inches, which does not account for settling. If the 10 inches settles 20%, which is not unusual, then the customer ends up with 8 inches or an R-30. The customer paid for an R-38 and got an R-30. This is fraud.

To identify shorting of attic insulation, nothing takes the place of an actual inspection.

Blown Fiberglass

Overblowing or fluffing can be a significant problem with blown fiberglass. To verify that a specified R-value has been delivered, a contractor or inspector not only must measure the amount of product in inches, but also must take a core sample to verify density. In an interview, former ICAA president Larry Helminiak said that overblows of 25% are common in the industry, with some

reaching 50%. Independent research performed by McGrann & Associates for ICAA indicate the problem is not as bad as Helminiak suggests; however, I've also heard enough anecdotal evidence to suggest that the fluffing of blown fiberglass insulation is common. I've had fiberglass manufacturers representatives openly admit to this problem in classes I've taught on attic insulation and cheating.

To verify the proper R-value has been reached with blown fiberglass, a core sample must be taken to determine density. Core sampling is time-consuming, and in the process of taking the samples a large amount of blown fiberglass is compressed, compromising the R-value of the insulation. However, an insulation quality control program that does not include core sampling of blown fiberglass in attics is not addressing one of the most fundamental issues with blown fiberglass in attics.

Why are fiberglass manufacturers producing a product that can be tampered with? In my opinion what fiberglass manufacturers have done is shift the responsibility from themselves to the installing contractor. This is why ICAA has demanded that manufacturers produce a product in which inches of insulation equal R-value. To the best of my knowledge, no such fiberglass product is being sold today.

One manufacturer who tried to comply with the "inches equals R-value" rule learned an unfortunate lesson. In the mid-1990s, Johns Manville designed and produced a blown fiberglass for which the company guaranteed that the inches would equal a specified R-value. They did this by increasing the minimum thickness, so that virtually all blowing machines would deliver at least the correct R-value at the minimum thickness. The company found that very few insulation contractors or builders saw much value in this guaranteed R-value. In the competitive construction market, maximum coverage, not R-value, was in demand.

In the end, Johns Manville couldn't justify the higher product cost; after about three years, they gave up and changed back to a more standard product design without the guarantee. The marketplace did not value the leader who was trying to do the right thing.

It is also my understanding that some manufacturers of blown fiberglass insulation for walls require core samples. If they require core samples on walls, then they can require it in attics. As an inspector, I much prefer an insulation product whose R-value can be verified with a measuring tape. For this reason, I support ICAA's demand for products in which inches equal R-value.

Blown Rock Wool

One of the most distinguishing factors of rock wool is that it cannot be fluffed, yet it can be shorted. In a recent infrared scan of a newly built manufactured home with a Ratheyon Palm IR Infrared camera, I observed areas where the rock wool tapered down to an inch or two, and other areas that had only bare sheetrock. A poor installation job and a lack of quality control can lead to shorting of any insulation product.

While I see the fact that blown rock wool cannot be fluffed as a virtue, in a marketplace that refused to purchase Johns Manville's fiberglass in which inches equaled R-value, this quality may also be a liability. Several rock wool manufacturing companies are trying to turn the product characteristic into a marketing strength. The Rock Wool Manufacturing Company in Leeds, Alabama is

The ICAA Plan: Still Viable?

In the mid-1980s, Georgia's Office of Consumer Affairs (OCA) responded to concern about the fact that more than half of the attic insulation jobs being done for the regional utility's energy-efficient home construction program had failed to meet the program's standards. So the utility, Georgia Power, launched an inspection program, checking every newly insulated attic and fixing all jobs that failed. However, a couple of years after that inspection program ended, auditors found that 28%-30% of new attics still weren't being insulated up to standard.

The response was A Plan to Stop Fluffing and Cheating of Loose-Fill Insulation in Attics, now being promoted by the Insulation Contractors Association of America (ICAA), a trade association representing residential and light commercial building insulation contractors and manufacturers. In light of evidence of continued cheating in all parts of the country, ICAA has urged utilities and building departments to incorporate the Plan's provisions into their inspection procedures.

The ICAA Plan offers two approaches to cheating. The first and simpler approach, "inches = R-value," recommends the use of insulation that is guaranteed by thickness. Some cellulose, rock wool, and fiberglass products carry a guarantee that a designated thickness equals a designated R-value. These insulations cannot be overblown, or in some cases cannot be overblown without increasing the installer's time and labor to the point where the cheating isn't worth the cost, according to Michael Kwart, executive director of the ICAA.

The second method of ensuring that adequate insulation is installed involves random inspections by an independent third party. This third party is selected by the agency that wishes to police the installations–for example, a building inspection department or a utility. The insulation contractor pays for the inspections. Any deficiencies discovered by the auditor are remedied and paid for by the contractor, and contractors may be subject to more frequent inspections if their work fails.

An insulation sample taken with a cookie cutter is measured for volume and weight. The data are entered into a series of equations or a software program that correlates thermal conductivity with material density for fiberglass, rock wool, or cellulose.

The ICAA Plan offers two levels of inspection. If a contractor uses a manufacturer's material that is guaranteed to yield a given R-value if the proper number of inches are installed, only 10% of that contractor's jobs are randomly selected for inspection. If a contractor does not have a "guaranteed" relationship with a manufacturer, 100% of that contractor's jobs are inspected. Because the plan relies on independent audits paid for by the contractor, it does not increase costs for local building inspection agencies. Kwart estimates that the third-party inspection process could add 2%-3% to the price of an insulation job.

trying to use the "inches equals R-value" concept in marketing with their Delta Blowing Wool. Their guarantee reads as follows:

If Delta Blowing Wool is blown to its guaranteed thickness, and it is determined, by an industry accepted method, not to weigh the minimum weight per ft2 for the corresponding R-value shown on the Delta Fact Sheet, Rock Wool Manufacturing Company will arrange to have insulation added to exceed the minimum weight per ft2 up to one-third at no added cost.

Marketing material for Sloss Blowing Wool goes after blown fiberglass. "When you invest in Sloss Blowing Wool, you'll receive exactly what you pay for. Unlike other insulation, Sloss Blowing Wool cannot be fluffed or overblown." This kind of commitment to product integrity is unusual in the insulation industry. Why don't all manufacturers of insulation follow this lead?

Batts to the Rescue?

Don't jump to the conclusion that batts are the solution to loose fill insulation problems. We often see batts installed in such a fashion that they can't possibly achieve half their rated R-value. The batts are not in contact with the sheet rock. They rest on top of 2x4 truss ties, electrical wires, plumbing vents, sprinklers systems, vacuum systems, and stereo and alarm wires. Missed kneewalls and misaligned pressure envelopes and thermal envelopes are very common problems found in attics. The best place for batts in an attic, if the design and climate permits, is wired up against the underside of the roof sheathing in a cathedralized approach. This way the batts are not competing against all of the wires, pipes, and framing that compromise their installation.

Another major shortcoming with batts is the way the installers are typically paid to install them–by piecework. A quality insulation company should not pay piecework wages. Piecework places all of the emphasis on quantity and not on quality. Taking the time to do an excellent installation job penalizes the installer who is rewarded for quantity.

Pseudo Quality Control

To date, neither attic cards, nor attic depth rulers, nor utility program guarantees, nor inspections by building inspectors have consistently and accurately verified that specified R-values have been achieved. I've been in several Good Cents homes that had R-38 specified where the low spots measured only three inches. A building official in Surprise, Arizona–a municipality with an insulation inspection program–says his inspectors can't climb around in attics due to liability concerns. The building official said inspectors weren't permitted to actually inspect the attic insulation, because of the risk of damaging the insulation during the inspection or of someone getting hurt by falling through a ceiling. At Advanced Insulation, we know that nothing takes the place of someone climbing and crawling into the far reaches of the attic to verify that the specified R-value has been achieved.

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Depth gauges are no guarantee of quality if an installer ignores it, as happened in this attic.

Some professionals in the building industry advocate that the bag count method is the best way to verify that the proper amount of insulation has been installed. The bag count method of estimating and installing loose fill insulation is a flawed system for several reasons. In attics with vaulted ceilings, sky light wells, duct work, and other hard-to-reach places, the bag count method is an inaccurate way of achieving the specified R-value. An installer in a hot, tight attic, which will most likely never be inspected, does not want to be stopping and climbing back to the attic access to find out how many bags have been blown. Often the installer is directed by an estimator or supervisor to blow 50 bags in an attic, and that is what the installer does–regardless of the fact that 50 bags is not enough. An installer in an attic should install by inches and not by bag count.

Another fact that makes the bag count method flawed is that estimators are often inaccurate in their take-offs. "In one manufacturer-conducted tests of insulation contractor blueprint take-off reliability, manufacturers were surprised and embarrassed to find differences of as much as 100% among take-offs for a simple house," according to the ICCA Plan. The bag count method is predicated on a quality take-off. If the take-off underestimates the amount of material, the bid will be lower–and the low bid usually gets the job.

On our jobs, the percentage of batts versus blown can vary considerably from the original estimate. If our fiberglass installation crew determines that a particular wing of the house can be blown instead of using batts, then they simply leave it for our blow crew. The company saves money if we can blow an attic, because blown insulation is less expensive than batts on a per square foot basis. Our attic blow crews know what the bag count is based on our coverage numbers, but they are instructed to bring extra material to the job and are instructed to blow sufficient depth in inches to deliver the specified R-value.

Substantive Quality Control

I know from first hand experience that even the best companies have quality control issues. Quality control takes time, and quality and time are at odds with production. At Advanced Insulation, we have established quality control procedures to help us maintain very high standards of

workmanship. Every time we stop to inspect one of our attics, which we do, we are not out making a sale. We accept this cost, because it is necessary to assure ourselves that we are delivering what we contracted for and stated in our guarantee. This quality control measure insures that the builder, and consequently the homeowner, get what they paid for.

Each installer's work is randomly inspected to verify and maintain quality. We randomly inspect one in four attics. The installer does not know which attic will be inspected. This policy and the feedback we give the installers lets our attic crews know that their work counts. The guarantee is as much for our installer, as it is for our customer, because it lets the installer know that their work matters to the company. At my company installers will never be paid piecework rates for insulating attics. Instead, we pay them based on an hourly rate. How can I realistically expect a worker to go the extra yard to blow behind a flex duct in a scissor truss configuration, if he is getting paid on a per bag basis.

At Advanced Insulation we have established practical procedures to ensure that we deliver quality work. Our installers in attics have high quality Petzl headlamps, measuring tapes, and a fluorescent light. The installers have my permission to use as much material as it takes to get the job done right. If the job calls for 100 bags and they blow 120 we simply record it on the daily attic work summary. The installers also bring fiberglass batts with them to catch any missed kneewalls, or to re-install the batts the sheet rockers pushed down.

Most contractors perform better when they know their work is going to be inspected. While recently testing an air distribution system prior to the installation of the sheet rock, a HVAC contractor stated to me and the builder, "There are three types of air distributions systems: standard, sealed, and sealed and tested. By far and away the best is sealed and tested." He also implied that when he knew that his work was going to be tested, he always did a better job. Insulation contractors are no different. Although every attic does not have to be inspected, inspections of attic insulation work should be a requirement. Repeated offenders should be required to make necessary repairs and pay a fine.

The Manufacturers

Ironically, manufacturers would sell more material if all coverage charts worked so that the customers always got what they paid for. This would also hold true if inches would equal R-value for blown fiberglass. An attic with 25% to 45% of the insulation material missing is a lost opportunity. Unfortunately, the competition between various types of insulation material is so great that manufacturing products that provide proper coverage or can't be fluffed and labeling them correctly doesn't seem to be in the best interest of any product manufacturer.

In regard to blown fiberglass it would be a lot easier to require that fiberglass carry the inches equal R-value guarantee than to start requiring core sampling as part of the inspection process. According to Helminiak, there are approximately 5,000 insulation contractor locations in the country, but only five main manufacturers of fiberglass. "Realistically, if you can make changes at the level of manufacturer, that is where the biggest impact will be." The change won't come until the process for engineering and labeling products for all types of materials are overhauled.

Manufacturers of fiberglass and cellulose should be forced to guarantee their products and coverage charts. A couple of large manufacturers of fiberglass and cellulose insulation already guarantee heating and cooling bills in their utility bill guarantee programs, so it shouldn't be a stretch to guarantee their coverage charts for specified R-values and their products against fluffing.

Leveling the Playing Field

There are great manufacturers and insulation companies working in North America. There are also manufacturers and installation companies who know they have problems and would like to change–but they won't, because they know that to lead in the insulation industry means being punished in the marketplace. The intent of this article was not to tarnish the companies doing good work, but to level the playing field, so that all manufacturers and contractors can sell on the strength of their product or coverage chart and not on its weakness.

The insulation industry is badly in need of more oversight. What the industry has proven from failed attempts to police itself is that effective and substantive change will not come from within the insulation industry.

Presently the federal government, state energy offices, utilities, and municipal building officials have not shown the will or tenacity to prevent cheating in attics. In fact, very few of these organizations seem to understand the magnitude of the product. The ICAA plan, although admirable, has not prevented cheating in the insulation industry.

Until insulation contractors and builders realize the consequence of cheating, these problems will persist. Litigation will probably have a more profound effect than any program I know of, including attic inspections. When facing the threat of a $10,000 fine per home with missing insulation in the attic, the cost of a quality attic insulation job is a pittance.

As an owner of a small insulation company, who would rather go out of business before I deliver the kind of work I routinely see out in the field, it is in my best interest to see that this story is told. With the exception of construction defect attorneys, almost every player involved in residential insulation, including the consumer and the environment, benefits from quality attic insulation work.

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Core sampling tool is available from:
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