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by James E. Houck and David R. Broderick

The EPA is considering a Green Label program for wood stoves. It would be similar to that agency's Energy Star programs, and could become a basis for increased change-outs of older stoves.

A GREEN LABEL for Wood Stoves?

As most of us know, when a consumer purchases a new major appliance, office equipment, some types of residential heating and cooling equipment and even home electronics, the Energy Star label often plays a big role in the purchasing decision. Energy Star is a voluntary labeling program introduced by the U.S. Environmental Protection Agency (EPA) that is designed to promote energy-efficient products and to reduce air emissions.

The Energy Star program has been a great success and, since its inception in 1992, has grown to incorporate over 35 product categories. To most consumers an Energy Star label means that the product will deliver the same or better performance as comparable models without the label while using less energy and, importantly, saving money.

"This [success of voluntary programs] demonstrates the power of personal choice. From light bulbs to entire homes, people purchasing energy efficient products were able to protect the environment and save money. Our corporate partners, too, are demonstrating that helping the environment can help their bottom line."

> – Mike Leavitt EPA Administrator

o, how about an energy/environmental label for wood stoves? The concept recently captured the attention of the EPA, and is now referred to as the Green Label Wood Stoves Project. However, some people in the hearth industry question the concept's efficacy for wood stoves and are being very cautious. Because OMNI Consulting Services and its sister companies, OMNI Environmental Services and OMNI-Test Laboratories, have been in the wood stove testing and research business since 1979, and that line of work probably will remain one of our mainstays in the foreseeable future, we decided to get opinions from both sides.

To do this we interviewed the key players in the EPA, as well as John Crouch, director of Public Affairs for the Hearth, Patio & Barbecue Association (HPBA). Four EPA staff members were interviewed. They were as follows: Karen Blanchard, the Program Implementation and Review Group leader, is the manager for numerous regulatory and voluntary projects, including this project and others that are being explored for wood stoves; Larry Brockman is the team leader for the



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Wood Stove/Smoke Reduction Initiative that is now under consideration; Gil Wood is the staff lead for the potential voluntary Green Label Wood Stoves Project; Mike Toney is the staff lead for the consensus efficiency test method for wood stoves and consensus emission test method for fireplaces.

First we interviewed the EPA staff.

OMNI: Could you provide an overview of the proposed program for Green Label Wood Stoves?

LARRY BROCKMAN: "The Green Label Wood Stoves program actually is part of a larger effort our office has recently started. We have begun a Volmunity groups and regulators; a Readyto-Go Media Outreach Package for the media to use during pre-wood stove/fireplace burning seasons and pre/post-storm news events, and more wood stove change-out programs, recognizing this is where we can make the biggest difference for the environment if we can implement it nationwide.

"We believe the Green Label Wood Stoves program could have direct benefits as consumers choose the 'greenest' stoves, and also could help generate more enthusiasm and interest in the changeout programs. Also, we are participating with HPBA, individual fireplace and wood stove manufacturers, NSPS (New Source Performance Standards)-accredited wood stove testing laboratories, and **OMNI:** How did the EPA get interested in the concept of Green Label Wood Stoves?

GIL WOOD: "Fine particulate is a big health issue, and we were looking for good, voluntary programs that could possibly help communities get ahead of the curve, as they may need additional fine particulate emission reduction measures to attain the new fine particulate ambient air quality standard. We were especially looking for ideas that could use the power of the marketplace to both help protect public health and potentially help small businesses.

"The Research Triangle Park area in North Carolina suffered a bad ice storm in December of 2002. During the storm,



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> — Larry Brockman, Environmental Protection Specialist, Office of Air Quality Planning and Standards

untary Wood Stove/Fireplace Smoke Reduction Initiative aimed at improving public health from exposure to wood smoke. As *Hearth & Home* readers know, wood smoke is made up of a complex mixture of toxic gases, such as benzo(a)pyrene, and fine particles.

"In the last several years, there has been heightened concern regarding health effects of fine particles. We feel there are opportunities to partner with a variety of stakeholders to help address fine particles and toxic pollutants with this overall initiative, especially in areas where communities may be interested in voluntary measures. We hope this will reduce the need for additional regulations in some areas.

"We have spoken with a number of stakeholders, including the Hearth, Patio & Barbecue Association, to determine what EPA should include in our initiative. As a result, we are considering the following: a new Fireplace/Wood Stove web site geared toward consumers, comothers via an ASTM (American Society for Testing and Materials) committee to develop a consensus test method for testing fireplace emissions."

OMNI: What is the purpose of the proposed program specifically for Green Label Wood Stoves?

KAREN BLANCHARD: "It's a little premature to call this a proposed program. It is really a concept we are exploring. The most important reason for the program would be to take another step in protecting the health of people who are now breathing unhealthy air. If we can do this in a way that provides an incentive for manufacturers by energizing the market, that provides an incentive for the consumer by providing information about the most efficient and least polluting stoves available, and this results in less air pollution in a non-regulatory way, then this will be a success."

there were massive power outages and a lot of wood smoke in the air, because many people were burning their wood stoves and fireplaces. At the time, there was non-stop attention given by the media to the power outages, and there were a lot of op-ed pieces about portable generators and people looking for alternative ways of heating their homes, including wood stoves and fireplaces.

"We wondered if there might be ways to use the power of the media to help wood stove and fireplace users understand the air pollution impacts of how they operate their wood stoves and fireplaces, and how they can make a difference for the environment by purchasing greener stoves and using best practices for burning.

"We took a quick look at some of the available fine particulate emission inventory data, and wood stoves were high on the list in several areas. So this effort seemed to be a good candidate for a voluntary program, i.e., it could help

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consumers understand what their actions were doing in terms of emissions, so they could make the right choices. It also would use the power of the marketplace to reduce these emissions and, in this case, help the consumer's pocketbook by reducing the amount of cordwood they would consume by owning a more efficient wood stove."

OMNI: What do you see as the pros and cons of the program, both for the nation and for the hearth industry?

WOOD: "The huge pro is that the industry will market higher efficiency, lower emitting appliances. There are estimated to be about 9.6 million wood stoves in the U.S. and, of those, only about one million are NSPS-certified.

model for this project. I would like to add that this has nothing to do with the NSPS certification; this would be a completely separate, voluntary program."

OMNI: If the program is developed in consensus with the hearth industry, how do you pragmatically foresee working with representatives of the various manufacturers and the HPBA?

WOOD: "I foresee that there will be lots of telephone conversations and meetings as resources and time allow. Travel budgets are tight for us right now. We are planning on participating in the Anaheim trade show, so we will be there to participate in a session; we also will take time to talk with individual companies. Star program; it is good business for manufacturers. There will be a discussion about relative rankings and criteria set."

OMNI: If the program were to be put in place, what group within the EPA most likely would administer it?

WOOD: "It is a little too early to tell; we are still trying to determine what the program will be."

OMNI: If EPA makes the decision to implement it, when do you estimate it might be in place? I know this is a difficult question.

WOOD: "It is pretty tough because we don't know what the program will



"I think the bottom line is this. If it does not work for the manufacturers, then it's not going to work for us."

— Karen Blanchard Program Implementation and Review Group Leader EPA Office of Air Quality Planning and Standards

Getting people to move to cleaner stoves will be a great thing for the nation; it will reduce overall emissions. The big advantage for industry will be the potential to sell more stoves."

Ed. Note: Industry's best estimate is that there are 9.6 million wood stoves in place in the U.S., plus 7.1 million woodburning fireplace inserts, for a total of 16.7 million woodburning heating appliances. Of these, approximately 2.4 million are NSPS-certified.

OMNI: Do you see it as a voluntary or mandatory program for wood stove manufacturers?

WOOD: "Absolutely voluntary! We see great value in partnering with industry to move the marketplace to cleaner technology wood stoves. We have had great success with the Energy Star program, and that may be a good

"I foresee lots of open discussions. It is going to be very important for us to get input from industry, because it is not us, but industry, that has the knowledge and capabilities to design and market the green stoves. We have had good success with other voluntary wood stove programs, e.g., EPA Region 5 has worked with industry on a very successful change-out program."

OMNI: How similar might the program be to the Energy Star program currently used with other appliances?

WOOD: "It is still early in the conception phase and there are still lots of things to be determined, but it is a possible option to have a very similar program. The EPA is very happy with the Energy Star program; it would be a good model for the Green Label Wood Stove program. Industry is also very happy with the Energy

be. It would be at least two to three years to really get the program in place. There will be lots of advance notice for the industry to look at designing and producing stoves that would achieve the Green Label. Perhaps there would be some phasing in of the program.

"One-on-one conversations with manufacturers have indicated that there are some very, very good stoves that are either on the market or that could come to the market very soon. We want as many of these small-business manufacturers to participate in this process as possible."

OMNI: Has the EPA considered including wood-fired furnaces, wood-fired boilers, masonry heaters and pellet stoves in the Green Label program?

WOOD: "Right now it seems to make sense to include pellet stoves because

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they are known to be efficient and produce low emissions. As for the others, we have no specific plans to include them at this point. We would welcome their manufacturers' input in this project, but those appliances are not what we are looking at this time. We have to focus our limited resources."

BLANCHARD: "In the future, after we have better defined this program, we may examine the other appliance types."

OMNI: What might the criteria be for a Green Label Wood Stove?

BLANCHARD: "If it ends up validating the status quo, I'm not sure that we will have advanced the goal of a cleaner environment."

WOOD: "I think the green labeling may increase the enthusiasm about a change-out program, which is another effort we have underway."

OMNI: As you know, there is concern about efficiency in that there have been a number of ways to measure and report it, but none of them has been considered "the" way to measure efficiency. Also it has been argued that none of

nical concerns about a lab dynamometer test under very precise driving conditions not being representative of the real world and the many varying ways that individuals drive, i.e., different speeds, jack rabbit starts, riding with a foot on the brake pedal, etc. Now almost everyone accepts that, for a given driver, the numbers provide credible rankings among vehicles even though the individual driver may or may not get the absolute EPA mileage.

"Similarly, although Energy Star efficiency ratings strive to be as representative of the real world as possible, and do provide credible relative rankings,



"It is definitely an improvement on the default, which is no efficiency testing at all."

> — Gil Wood Environmental Engineer EPA Office of Air Quality Planning and Standards

WOOD: "Efficiency and emissions will be the starting point. It will be a challenge to address this to every one's satisfaction; at this point we want to gather information and explore it."

OMNI: How would the EPA determine what the target thresholds would be for efficiency and air emissions for the program?

WOOD: "Using the Energy Star model for this project, and as a starting point for discussion, the concept might be to look at the best 10 percent. That would encourage the other 90 percent to move up in performance."

BLANCHARD: "We could end up with another percentage. We would be interested in hearing from our stakeholders on ideas that they have for a criterion."

WOOD: "The advice from the Energy Star people is to shoot for a percentage, like 10 percent, and that would encourage the marketplace to move to the best stoves." them, including the Canadian Method B415.1-00, produce efficiency values that are representative of real-world, in-home efficiencies. What are your thoughts on these concerns?

WOOD: "Yes, we are aware of the situation and we want to talk about it further. The information that is coming to us seems that the Canadian method is a good starting point for those discussions. There seems to be agreement among test labs and some of the manufacturers that it is a good starting point. It is not necessarily what real life would be, but we need to talk about it further.

"It is definitely an improvement on the default, which is no efficiency testing at all. And as far as real world vs. laboratory, if we could get good consistency then the relative rankings should be valid even if the absolute values are not correct.

"Let me give you a couple of examples that are familiar to most of us: automobiles and refrigerators. When EPA first established automobile gasoline mileage ratings, there were many techthey do not take into account the homeowner who opens his refrigerator 100 times a day and leaves it open while he does other things. Nevertheless, for a given consumer's practices, the relative rankings are credible.

"This is probably a good time for me to also mention that the Voluntary Wood Stove/Fireplace Smoke Reduction Initiative includes a substantial effort toward consumer education regarding operating practices that affect emissions and efficiency. We hope this will help all users to be aware of their practices and that there will be smoke reductions due to improved burning practices.

"We want to make sure we have a credible test method that people will believe and trust, and that will give the consumer the right information so he or she can make the right choice for their situation. Discussions are open; maybe we would have different rankings for hardwoods and softwoods."

OMNI: Similarly, it is generally believed among engineers and scientists who have worked with wood stoves

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that the particulate emission rates produced by the test methods 5G, 5H and 28 in support of the New Source Performance Standards (NSPS) are not representative of emission rates of wood stoves in real-world usage in homes. How might this issue be addressed?

WOOD: "That is not a part of this effort; this is a voluntary project not a regulatory project, so we are not getting involved in changing the NSPS methods."

MIKE TONEY: "It is too early to tell if we would use the NSPS certification values for ranking. There may be additional variables taken into account, but at this point those values are all we have for a starting point." **WOOD:** "These are all factors to consider when designing this potential program; it is part of the challenge that we design a program that appropriately considers these factors. The preliminary feedback I am getting from industry is that good standardized test methods can at least give us an initial ranking that gets us toward the right answer. We want to discuss this further with the labs and manufacturers."

BLANCHARD: "I want to emphasize that we are still early in the concept development phase."

Upon completion of our interview with the EPA staff, we turned our attention to the hearth industry. We talked with John Crouch, a spokesman for the HPBA.



OMNI: Wood stove usage in homes is very variable. There are different chimney heights and chimney configurations, homes are located at different elevations and in areas with different heating demands, different tree species are used for fuel, cordwood is seasoned differently from home to home and homeowner burning practices are simply a matter of preference. All these variables affect efficiency and air emissions. Is this inherent variability important and, if so, how might it be taken into consideration? **OMNI:** HPBA has been interacting with the U.S. EPA on their proposed program for Green Label Wood Stoves. Could you discuss what the HPBA has done so far and your understanding of the purpose of the program?

CROUCH: "We became aware of this proposed project at a meeting in August, which we had called to talk about the ASTM fireplace project. Our response has been consistent. First, that the EPA should talk to all of our manufacturers. We think they are getting ready to do

that. We hope they will be able to come to the show as they intend, and speak more directly with a wide variety of manufacturers. That way they will have a good cross-section of input.

"We have participated in a few of their conference calls and our understanding is that the project is still being thought through. I do understand that there is an interest in generating some additional excitement in the media and the general public around EPA-certified stoves by attempting to delineate some that are better then others."

OMNI: What might be the pros and cons of the proposed program for the hearth industry?

CROUCH: "I think the pro for the industry is that the EPA is finally paying attention to their own NSPS in a way that they have not really been able to do in over 10 years in the context of helping get the word out to consumers. I recognize that has a lot to do with the resources that the agency has had to devote to the MACT (Maximum Achievable Control Technology) standards, which is coming to a close now, leaving more resources for people to work on other things.

"The pro aspect is that the agency and the industry are having this discussion about how to accelerate the change-out program, if a program like this (Green Label) should be a part of that effort, and could this program even be created. It is too bad we did not have this conversation 15 years ago, but let's have it now.

"The con is that the hearth industry could spend a fair amount of resources and then encourage consumers to pay more for stoves that might not be that much different than the stoves being built today. Also that the industry and the EPA could get so caught up in the creation of this program that we would use resources that really need to be focused on change-outs.

"All of this for a program that I doubt will change wood stoves very much. There may be some tiny increases in efficiency that could be harvested here and there, but the increases might be so modest as to almost be an embarrassment to the agency. I don't have data to confirm this, but that's my gut feeling."

OMNI: Do you think it might increase or decrease the sales of wood stoves?

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CROUCH: "I think it would have a very modest impact on the sale of wood stoves. I don't think, in and of itself, it is a message that will move the change-out issue. After all, certified stoves already use 25-33 percent less wood then existing wood stoves, and that fact has not gotten every one to change the old stoves out.

"It is going to take a lot of different approaches to get what we all seek, which is change-out. Again, that is one of my concerns, that we will spend a lot of energy on a program that could have disappointing impacts in relation to the amount of energy spent on it."

OMNI: Do you think it might add significantly to the development cost of new wood stove models?

chimney in a home, it does not work as designed, so the installation of a new, lined chimney is one way consumers' costs could increase."

OMNI: If the program were to be put in place, would it be appropriate (or feasible) for the HPBA to lobby state and local tax authorities to provide a tax credit associated with the purchase of a Green Label Wood Stove?

CROUCH: Sure, it would be appropriate, but would it be feasible? There are lots of states right now with deficits, so it may not be feasible. If the EPA thought it was appropriate to lobby the states, we would certainly join them. But the lead would have to come from the EPA. Again, we could do this thing, and

stove/chimney/operational variables to make a simple efficiency value measured in the laboratory meaningful. The operational variables, including all the fuel issues, are at least as great as those of the stove and chimney, and the operational variables will *swamp* any differences in efficiency from stove to stove as measured in the laboratory.

"When we produce an emissions value, as mandated by the EPA, the consumer has to take us at our word. They have no way of knowing what the real world emissions are or how their emissions would compare with a neighbor's. But when it comes to efficiency, the consumer *thinks* they can tell a difference between stoves, based on how much wood they use. Now whether they can really tell is very



"The issue of variability in home use is the crux of the problem; there are too many variables in the net delivered efficiency caused by the combination of wood stove/chimney/operational variables to make a simple efficiency value measured in the laboratory meaningful."

> — John Crouch Director of Public Affairs Hearth, Patio & Barbecue Association

CROUCH: "It might. I don't think we know because we don't know what the goal would be. If the EPA were successful in coming up with something blindingly simple, then it might not add cost, but that takes a lot of understanding of how we develop and build wood stoves. It is always hard to make these things simple."

OMNI: Do you think it might add significantly to the consumer's cost for a wood stove?

CROUCH: "Perhaps not for a wood stove, but it might for the cost of their chimney. The wood stove is only part of the system. It is certainly possible, under this type of program, that a higher efficiency wood stove, perhaps only a few percentage points higher, would be even *less* forgiving of existing chimneys than EPA-certified wood stoves currently are. When a stove is less tolerant of a

stoves could become a little bit more efficient, but it might not make any difference in the change-out of stoves."

OMNI: There are a number of technical issues regarding how to realistically measure efficiency, how to realistically measure air emissions of particles, and how to take the variability in wood stove usage among homes into consideration. Has the HPBA evaluated these issues and will it make recommendations to the EPA?

CROUCH: "That's an understatement! A good example of the technical difficulties is that, when the EPA focused on efficiency at the close of the NSPS process, they were unable to come up with a simple, workable method. The issue of variability in home use is the crux of the problem; there are too many variables in the net delivered efficiency caused by the combination of wood

problematic, but they *think* they can tell the difference.

"What they will see is how much wood they use, which is a very crude and gross way to measure what is going on. This kind of a focus, a Green Label program, when applied to wood stoves will give consumers the idea that the only variable in determining efficiency is the stove. They already have enough problems with that type of simplistic assumption, and such a program will reinforce their inaccurate assumptions about stoves.

"The worst-case scenario I see coming out of all this is that the industry will spend a good deal of money and, with the promotion of Green Label stoves by the EPA, two consumers side by side will each buy a new wood stove, one a Green Label stove and the other not.

"First of all, the actual difference in efficiency in the laboratory is probably rather modest, but consumers are going

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to miss that. The consumers will expose those two stoves to different conditions, including chimney height, operations variables, fuel type, fuel storage and all those other gross variables. But the perception of those two families at the end of the first year of owning those stoves will be a function of those two woodpiles, which may, or may not, meet the expectations created by the Green Label.

"That will be a burden the program will have to carry – either positive or negative. Let's hope positive, for both the EPA's reputation and the industry's reputation. But if it is negative, this could set back the change-out of old stoves, and that would be truly tragic."

OMNI: Has the HPBA formally or informally polled their membership to obtain the consensus opinion among wood stove manufacturers, distributors and retailers on a Green Label Wood Stove program? If so, do the people who make a living from wood stoves think it is a good idea?

CROUCH: "No, it is just too early to poll our members. I don't think it is appropriate to poll our membership until they have heard directly from the EPA.



I think our staff's inclination is that this is going to be a long, hard road to produce something worth the amount of effort involved."

OMNI: I know this is a difficult question, but what do you see as the best path forward for the hearth industry on this issue?



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CROUCH: "I think the next step is for the EPA to make this case directly to the manufacturers. At that point the manufacturers will tell the HPBA what they want us to do. And the EPA will decide how to respond to that."

OMNI: I have a question that the EPA staff specifically suggested I ask industry. What would make a wood stove Green Label attractive to industry?

CROUCH: "I suspect it might be attractive if it were a simple program, both to create the label and to communicate it to the public. There also needs to be good solid data to show that the label is truly predictive of real world performance across a wide variety of households."

It is clear from these interviews that the EPA staff is more optimistic regarding the outcome of a possible Green Label Wood Stove program than is the spokesman for the HPBA. It is also clear that the HPBA and manufacturers of wood stoves need to familiarize the EPA staff with some of the subtleties associated with the wood stove industry and the real-world use of wood stoves, which may tend to temper some of the optimism.

On the other hand, it appears from our prespective that a possible Green Label Wood Stove program offers considerable opportunities for the hearth industry, and these opportunities should be evaluated with an open mind.

It's encouraging to note that, when we asked the same "wrap-up" question to both the EPA staff and the HPBA spokesman, their responses were very similar concerning the desired outcome from this potential program – the change-out of all uncertified wood stoves in America.

OMNI: Sometime in the future, say five years, what would you like the Green Label Wood Stove Project to have accomplished; describe how you would like it to be functioning?

CROUCH: "If there is a Green Label for wood stoves in the future, I will know that EPA did the hard work of defining a process that was so elegant, so simple, and yet so predictive of real world performance that it convinced a lot of very skeptical people, and that the creation of this program didn't distract us from keeping our eyes on our mutual goal, which is to change-out *all* the old stoves in North America."

WOOD: "These "In five years I would like to see the program accomplish adding extra enthusiasm to changing-out old wood stoves to cleaner wood stoves that are the best, highest efficiency appliances available. I would like to see a response from industry and homeowners to make that

happen and, if we make a dent in the nine million dirty, old wood stoves out there, then we will have a reduction in emissions and improve the public health. And we will have given great opportunities to a lot of small businesses to use the marketplace to sell more wood stoves. Sounds like a win-win to me."

BLANCHARD: "I don't know if we can expect this in five years, but



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A Discussion With EPA Representatives Regarding a Potential Green Label Wood Stove Program

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my hope is that, if we get rid of the old clunker wood stoves, and get enough really good wood stoves on the market and into people's homes, we won't need additional regulation over the coming years. More importantly, the air quality will improve, not only from the reduction of wood stove smoke, but from other sources as well, so that all Americans can breathe healthy air."

When all is said and done, what should the hearth industry be doing regarding EPA's concept of a wood stove Green Label program? OMNI can offer a few suggestions based on the many hundreds of years of combined wood stove experience shared by its staff.

The hearth industry should conduct marketing research to see how much difference a green labeled wood stove will make to consumers. Will it really make a difference in sales?

Manufacturers of wood stoves should start positioning themselves to offer green products. This would include testing the efficiency of wood stove models with such *standardized* methods as B415.1-00. There currently are no certification requirements for efficiency with their concomitant costly paperwork and redundancy, so the testing is not cost prohibitive.

The manufacturers of masonry heaters and wood-fired furnaces and boilers need to provide EPA with data and information. It would be important for those involved with these appliances to have them included in the Green Label program.

Finally, and importantly, the hearth industry has a real opportunity to influence its own future. Every manufacturer, distributor and dealer of wood stoves should contact one or more of the EPA personnel mentioned here and share their knowledge and concerns.

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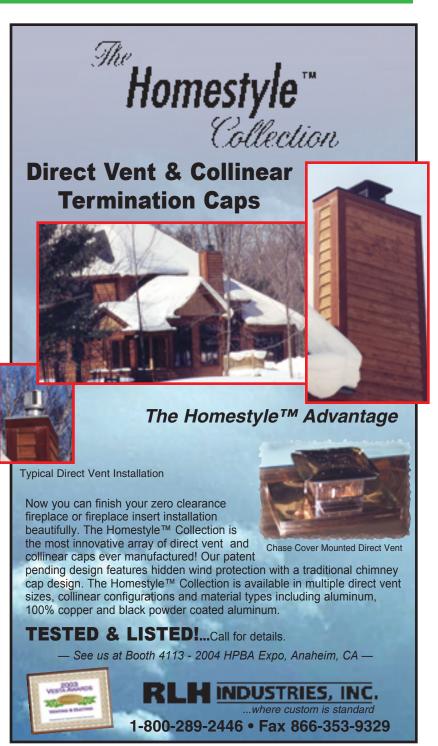
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