

## **We Can Save the Wood Burning Fireplace**

By Dave Kelly of Clear Skies Unlimited

There is nothing like the smell of a wood burning fireplace on a cold winter morning. It wasn't that long ago that most new homes included a wood burning fireplace. How things have changed! Now many areas of the country have banned the wood burning fireplace from new home construction. In most metropolitan areas of California (Los Angeles, San Francisco and Sacramento) you can't build or buy a new house with a wood burning fireplace. A gas log set is about as good as it gets! Needless to say, if this trend continues, it puts the future of the wood burning fireplace in jeopardy, especially in California.

According to U.S. Environmental Protection Agency, wood smoke emissions are currently one of the most significant health risks in the US. While stricter regulatory standards for wood burning fireplaces have helped to reduce particulate emissions, there are still 20 million existing unregulated masonry wood burning fireplaces that will continue to pollute the air we breathe. According to EPA, these 20 million masonry fireplaces are producing hundreds of thousands of tons of deadly particulates annually. We cannot afford to have these wood burning fireplaces banned by air quality regulators around the country.

To address the wood burning fireplace problem, the EPA is revising the Federal New Source Performance Standard (NSPS) to include wood burning fireplaces. The Federal Clean Air Act requires the EPA to establish federal emission standards for source categories, like wood burning fireplaces, which cause or contribute significantly to air pollution. These standards are intended to promote the use of the Best Available Control Technology (BACT), weighing the cost of the technology against the projected air quality, health and environmental improvements derived from the technology.

The EPA maintains enforcement authority for the NSPS but the regulatory standard is implemented and mandated by each of the states as a matter of law. The EPA is currently revising the 20-year old NSPS. The EPA has created a test and certification program for every type of appliance that burns wood, including wood stoves, wood boilers and of course . . . wood burning fireplaces. The ASTM and EPA, working with the Hearth Patio and Barbecue Association established a Performance Specification for wood burning fireplaces. ASTM E-2558 has been accepted as the industry standard for emissions testing of wood burning fireplaces

It is expected that by 2012, wood burning fireplaces will be required to meet the new NSPS projected @ 5.1 grams of particulates for each kilogram of wood burned (g/kg) or even lower. If this plan is implemented by EPA and a fireplace doesn't meet this new standard, it can't be legally installed or operated. Builders, homeowners and wood burning Americans across the country should be paying close attention.

EPA readily admits that, although there are technological solutions for most wood fired appliances including low mass fireplaces (factory built), there has not been a technological solution for wood burning masonry fireplaces to meet the projected Phase 2 emissions limit of the EPA New Source Performance Standard.... UNTIL NOW!

Clear Skies Unlimited began working on a solution to the problem of wood burning fireplace pollution over 10 years ago. Knowing that EPA would eventually regulate wood burning fireplaces nationwide, we began a research and development effort that involved years of emissions testing on every conceivable fireplace type, design and configuration with special emphasis on the open hearth fireplace.

Our goal was to design, develop and test a totally passive emission control device for wood burning fireplaces that was easily installed, affordable to the consumer and acceptable to the EPA for wood burning fireplace retro-fit installations across the United States. We accomplished

# ***Sweeping*** *Journal of Chimney & Venting Technology*

our goal and exceeded all expectations with the development of the revolutionary HearthCAT™ Fireplace Technology.

The HearthCAT™ Emission Control Technology is a patented catalytic system designed especially for wood burning fireplaces. The HearthCAT is positioned directly above the fireplace grate and attached to the walls of the firebox. The HearthCAT Hood captures the smoke and particulates while most of the dilution air bypasses the hood and travels up the primary flue system. The HearthCAT System provides secondary ignition for the combustibles before they leave the firebox as harmful pollution. The direct flame on the catalytic surface actually cleans the catalytic system. This is the only passive technology available for reducing wood burning fireplace emissions. No gas or power is required and there are no moving parts.

For four consecutive years, *Hearth & Home Magazine* had issued the *Vesta Challenge* to hearth product manufacturers for the creation of a low-emission, wood-burning fireplace retrofit technology. For the first three years, the challenge was not met. Again in 2009, *Hearth & Home* challenged the hearth industry to develop a retro-fit technology that would dramatically reduce particulate emissions in wood-burning fireplaces without creating any smoke spillage or adversely affecting indoor air quality. In March of 2009, Clear Skies Unlimited met the *Vesta Challenge* with their HearthCAT Fireplace Technology. The technology was unanimously voted as the winner of the coveted *Vesta Challenge* and was presented with the *Vesta Challenge Award* by Gil Wood from US EPA.

On May 26 2010, the EPA officially recognized Clear Skies Unlimited at its annual EPA Clean Air Excellence Awards Ceremony in Washington, DC by awarding its prestigious 2009 Clean Air Excellence Award for dedication to excellence in achieving clean air through new technology development. After considering hundreds of potential candidates, the Clean Air Excellence Award went to Clear Skies Unlimited based on the projected impact that the revolutionary HearthCAT Wood Burning Fireplace Emission Control Technology will have on future wood burning fireplace emissions nationwide.

Clear Skies Unlimited Inc. is a New Mexico small business specializing in innovative catalytic solutions for the most challenging air quality problems. The Clear Skies wood burning fireplace technology reduces particulate emissions in wood burning fireplaces by as much as 90 percent. The HearthCAT System has reduced PM2.5 in Isokern Modular Masonry Fireplaces to 2.9 g/kg, well below the EPA fireplace program Phase 2 emissions level of 5.1 g/kg. The HearthCAT equipped Isokern Fireplaces are the only clean burning masonry fireplaces currently qualified under the EPA Fireplace Program. The HearthCAT has also been successfully tested and qualified in FMI factory-built fireplaces. The HearthCAT Equipped FMI Craftsman 36 is the most affordable of any of the EPA Phase II Qualified Wood Burning Fireplaces and the HearthCAT Equipped FMI Georgian 50 is the "Worlds Cleanest Burning 50" Fireplace.

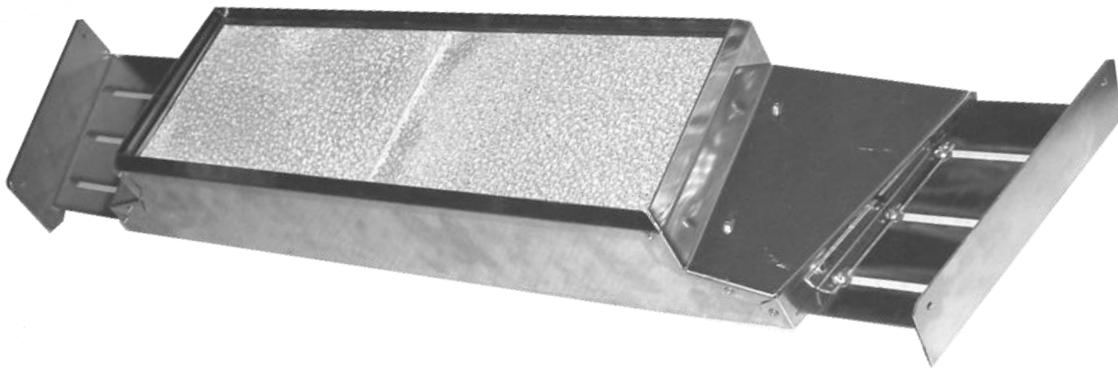
The HearthCAT technology has unlimited potential since it can be used in new construction or fireplace retro-fits, and in both open hearth masonry and low mass fireplaces. The HearthCAT is now approved for retro-fit applications in most of the major air districts in California.

Clear Skies will be distributing the HearthCAT System for wood burning fireplace retro-fit applications through a nationwide network of chimney sweeps. This strategic relationship will guarantee that the chimney is properly cleaned and inspected and the HearthCAT is properly installed. Working together, we create a "Win-Win-Win" partnership between Clear Skies Unlimited, the chimney sweep companies and the US Environmental Protection Agency but, best of all; we can save the wood burning fireplace from extinction.

# **Sweeping** *Journal of Chimney & Venting Technology*



**EPA Award Winning Technology**



**HearthCAT™ Adjustable Hood w/ Mounting Brackets**

This Fireplace is Equipped with a  
**Low Emissions  
Fireplace**  
Catalytic Emission Control System

**ASTM E-2558  
Qualified  
@ 4.3 g/kg**  
Particulate Emissions

Manufacturer: Clear Skies Unlimited  
Model Name: HearthCAT™  
Part Number: MFR-36 (Masonry)

The Catalytic Emission Control System in this fireplace has been tested and qualified IAW the ASTM Standard Test Method for Determining Particulate Matter Emissions from Fires in Wood-Burning Fireplaces.

**OMNI-Test  
Laboratories, Inc.**  
Test Report #165-F-05-3(1)



**HearthCAT™ Hang Tag for Masonry Retro-Fits**