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(844) 467-6654 | E: info@smokiusa.com

www.smokiusa.com

CREOSOTE REDUCTION IN HEARTH-TYPE BRICK PIZZA OVENS VIA SMOKE ZAPPER:

Direct Chimney Connection versus Kitchen Hood

Creosote is a prime source of chimney fires in wood-burning hearth-type pizza ovens. This substance may be deposited on the walls of any wood burning kitchen appliance. "Creosote can be seen as a dark brown or black material and has an unpleasant odor. Combined with droplets of water vapor, it comes out the chimney as smoke. The creosote will condense at any point in the pipe or chimney where the temperature drops below 250ºF... Creosote clings firmly to the pipe and chimney walls, causing buildup of a very flammable material." [1]

It is essential to maintain a hotter duct temperature than 250ºF to reduce creosote condensation within the duct. Commercial kitchen hoods placed above hearth-type pizza ovens promote cooler duct temperatures due to the introduction of conditioned make up air. This rapidly cools the flue gasses and allows for creosote buildup beyond the kitchen hood. Creosote condensation can be mostly avoided by use of an inline Smoke Zapper and directly connected chimney.

UL 2162, Standard for Commercial Wood-Fired Baking Ovens – Refractory Type, the appropriate listing standard for hearth-type brick pizza ovens, and Chapter 14 of NFPA 96, governing solid fuel cooking operations, both provide for directly connecting a chimney to the exhaust manifold per manufacturer's instructions. The direct connection of a chimney reduces excess make up air and maintains a flue temperature above 250ºF for a greater distance.

"The best way to control creosote is to prevent its buildup by maintaining a briskly burning fire with dry, well-seasoned wood. Maintain a flue temperature exceeding 250 degrees Fahrenheit to prevent creosote condensation." [2]

The addition of a Smoke Zapper as close as possible to the oven exhaust manifold greatly reduces the possibility of creosote buildup. Temperatures should be maintained above 250ºF before reaching the inlet port of the Smoke Zapper. The Smoke Zapper will then dramatically cool the flue gases, safely depositing creosote within the water tank. In 3rd party testing, the Smoke Zapper was shown to reduce 500ºF inlet temperatures to below 125ºF. [3] The deposited creosote will then be eliminated entirely from the chimney system via the water tank drain.

References:

1. *S. S. Holland, L. R. Piercy, D. G. Colliver and E. S. Holmes. "Wood Burning and Creosote Buildup." University of Kentucky, College of Agriculture, Cooperative Extension Service, Department of Agricultural Engineering.*
2. *David E. Baker. "Wood Stove Maintenance and Operation." University of Missouri, Department of Agricultural Engineering.*
3. *Smoki USA, Inc. "Cooling of Flue Gases in the Smoke Zapper 250." http://smokiusa.com/CoolingFlueGasesSmokeZapper.pdf.*

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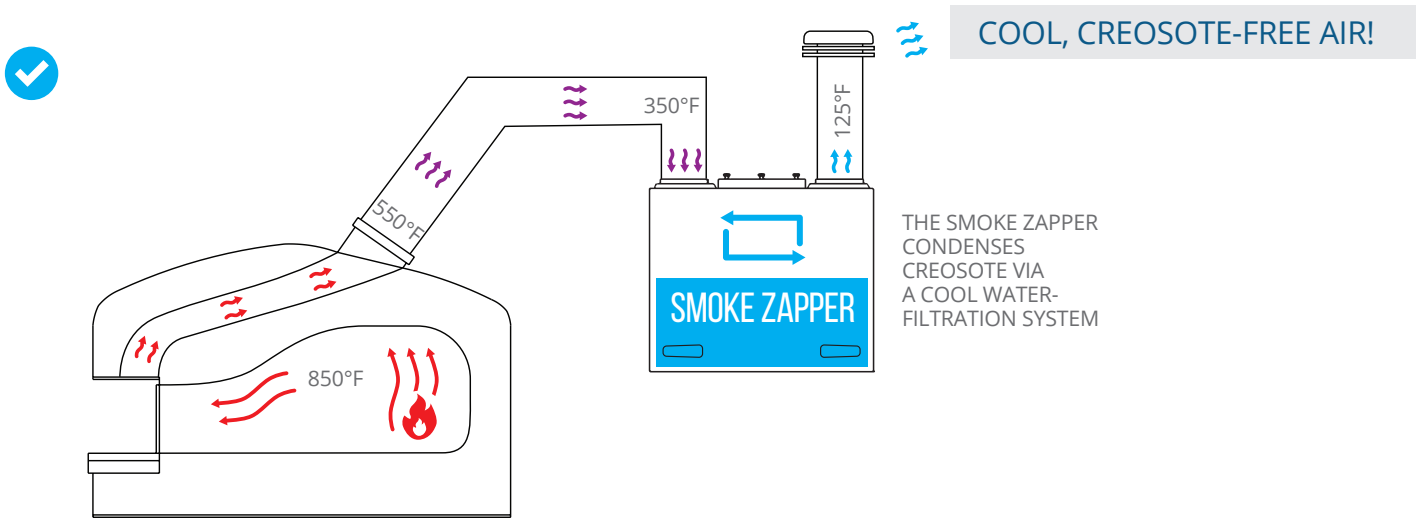
DIRECT CHIMNEY CONNECTION WITH SMOKE ZAPPER:



KITCHEN HOOD WITH MAKE UP AIR: