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SMOKE ZAPPER 250 FILTRATION EFFICIENCY:

Statement of Particulate Emissions Exhaust Field Testing in a Commercial Wood-Fired Pizza Oven

This document describes a particulate matter field test performed on Wednesday, August 31st, 2016 at (street address redacted for privacy reasons) in the West Village neighborhood of New York City. The pizzeria is a well-known Neapolitan pizza chain with over 100 locations worldwide.

Under the supervision of the DEP (Department of Environmental Protection) of New York City and Smoki engineer, Tony Chiodi, the particulate matter test was performed during regular operating hours. The cooking equipment used was a commercial hand-built Neapolitan-type hearth brick pizza oven with an approximately 50" diameter baking floor, fired with natural dried wood logs. The oven was directly connected to a 10" diameter round steel chimney that exhausted to the roof exterior. A Smoke Zapper 250 was installed inline of the steel chimney.

The following test was performed both with the Smoke Zapper 250 in operation and turned off, to measure the reduction in particulate matter provided by the Smoke Zapper 250. The test method is based on *NIOSH Method 0500, Issue 2, August 15, 2004*.

A 20-liter exhaust gases sample was drawn into a glass fiber filter at the terminal exhaust point of the chimney stack. A sample was drawn for 5 minutes at 2 liters / minute pump speed. Four separate samples were collected; two samples while the Smoke Zapper 250 was in operation, and two samples while the Smoke Zapper 250 was disengaged. Samples were collected at 5 minute intervals.

The four complete glass fiber filter samples were then sent to an EPA accredited laboratory to be dried and analyzed by an Industrial Hygienist.

The following are the particulate matter weights collected from each glass fiber filter, in micro-grams:

	1ST SAMPLES	2ND SAMPLES
Smoke Zapper Engaged	5 µg	17 µg
Smoke Zapper Disengaged	89 µg	83 µg
Percent Reduction	94.38%	79.52%

This represents an **average particulate matter reduction of 86.95%** in this field test. Per the *NYC Air Pollution Control Code §24-149.5* regarding commercial wood-fired cooking ovens, a 75% reduction in particulate matter is the acceptable limit per the NYC DEP's internal rules.



COMPARATIVE SMOKE TEST:

Test performed with Smoke Zapper 200 &
Wood-fired Hearth Style Pizza Oven

	SMOKI ON:	SMOKI OFF:
FOR 5 MINUTES		
FOR 20 MINUTES		
FOR 1 HOUR		

