

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-15  
Relating to Exemptions under Section 27156  
of the Vehicle Code

FIREWELL PRODUCTS CORPORATION  
"FIREWELL"

Pursuant to the authority vested in the Air Resources Board by Section 27156 of the Vehicle Code; and

Pursuant to the authority vested in the undersigned by Section 39023 of the Health and Safety Code;

IT IS ORDERED AND RESOLVED: That the installation of "Firewell" ignition system manufactured by Firewell Products Corporation has been found to not reduce the effectiveness of required motor vehicle pollution control devices and, therefore, is exempt from the prohibitions of Section 27156 of the Vehicle Code for 1966-1973 model-year vehicles. The device consists of a d-c to d-c converter, capacitor, and electronic switch (silicon controlled rectifier).

This Executive Order is valid provided that installation instructions for this device will not recommend tuning the vehicle to specifications different than those listed by the vehicle manufacturer.

Changes made to the design or operating conditions of the device as originally submitted to the Air Resources Board for evaluation that adversely affect the vehicle's pollution control devices shall invalidate this Executive Order.

Marketing of this device using an identification other than that shown in this Executive Order or marketing of this device for an application other than those listed in this Executive Order shall have prior approval of the Air Resources Board.

THIS EXECUTIVE ORDER DOES NOT CONSTITUTE A CERTIFICATION, ACCREDITATION, APPROVAL, OR ANY OTHER TYPE OF ENDORSEMENT BY THE AIR RESOURCES BOARD OF ANY CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF THE "FIREWELL" DEVICE.

No claim of any kind, such as "Approved by Air Resources Board may be made with respect to the action taken herein in any advertising or other oral or written communication.

Section 17500 of the Business and Professions Code makes unlawful, untrue or misleading advertising and Section 17534 makes violation punishable as a misdemeanor.

Section 39130 and 39184 of the Health and Safety Code provide as follows:

"39130. No person shall install, sell, offer for sale, or advertise, or, except in an application to the board for certification of a device, represent, any device as a motor vehicle pollution control device unless that device has been certified by the board. No person shall sell, offer for sale, advertise, or represent any motor vehicle pollution control device as a certified device which, in fact, is not a certified device. Any violation of this section is a misdemeanor."

"39184. No person shall install, sell, offer for sale, or advertise, or, except in an application to the board for accreditation of a device, represent, any device as a motor vehicle pollution control device for use on any used motor vehicle unless that device has been accredited by the board. No person shall sell, offer for sale, advertise, or represent any motor vehicle pollution control device as an accredited device. Any violation of this section is a misdemeanor."

Any apparent violation of the policy or laws will be submitted to the Attorney General of California for such action as he deems advisable.

Executed at Sacramento, California, this 27 day of August, 1973.

JOHN A. MAGA  
Executive Officer

State of California

AIR RESOURCES BOARD

August 16, 1973

Staff Report

Evaluation of Firewell Products Corporation  
"Firewell"  
Capacitive Discharge Ignition  
Systems for Exemption to the Prohibitions  
of Section 27156 of the Motor Vehicle Code

I. Introduction

Firewell Products Corporation, Northridge, California, has applied for exemption to the prohibitions of Section 27156 of the Motor Vehicle Code for the "Firewell" capacitive discharge ignition system. Section 27156 prohibits the installation of any device which reduces the effectiveness of motor vehicle emission control systems. The applicant intends to sell the device as an "add-on" part to the standard ignition system.

II. System Description

For a general description of capacitive discharge ignition systems, see staff report "Evaluation of Capacitive Discharge and Transistorized Ignition Systems for Compliance with the Requirements of Section 27156 of the Motor Vehicle Code", dated February 14, 1973.

The "Firewell" device consists of circuits for a d-c to d-c converter, storage capacitors and a silicon controlled rectifier which serves as an electronic switch, and a trigger conditioner. The manufacturer

states that the device produces up to 40,000 volts for secondary circuit output and 300 milijoules output energy with a voltage rise time of 40 microsecond and spark duration of 250 microseconds.

III. Emission Testing

The "Firewell" device was tested by the Air Resources Board Laboratory. The device was installed on a 1969 302 CID Ford. The vehicle engine and exhaust systems were checked to insure proper operation. For all tests, with and without the device, the engine settings were adjusted to the vehicle manufacturer's specifications.

Baseline and device hot start CVS and 60 MPH cruise tests were performed. Fuel consumption was measured during the CVS test. Engine RPM and total spark advance were recorded during the 60 MPH cruise test. Open circuit spark voltages were noted at idle and at 3,000 RPM.

The results of the ARB tests are shown below:

	Hot CVS Grams/Mile			Fuel Consumption Grams/Test
	<u>HC</u>	<u>CO</u>	<u>NOx</u>	
Baseline (Avg. of 3 tests)	4.07	23.21	5.5	1,331
Device	4.08	21.95	5.9	1,362

	60 MPH Cruise			Engine RPM	Total Spark Advance
	HC(ppm)	CO(%)	NOx(ppm)		
Baseline (Avg. of 3 tests)	197	0.37	2,666	2,400	32° BTDC
Device	192	0.78	*	2,400	32° BTDC

\* Equipment malfunction - CVS test results indicated a retest was not necessary.

	Open Circuit Spark Idle (550 RPM)	Voltage 3,000 RPM
	Baseline	26,000
Device	24,000	26,000

IV. Conclusions and Recommendations

It is the staff's opinion that the Firewell Products Corporation "Firewell" capacitive discharge ignition system will not adversely effect motor vehicle exhaust emissions when evaluated with respect to the exhaust emissions obtained with a conventional ignition system of a "tuned" engine. This device may also have a beneficial effect in the control of exhaust emissions if it maintains the "tuned" condition of the engine for a longer period of time. Therefore, the "Firewell" capacitive discharge ignition system should be exempt from the prohibitions of Section 27156 of the Motor Vehicle Code.