

VERIFICATION STATEMENT

GLOBE Performance Solutions

Verifies the performance of

CERMA with STM-3

Developed by CERMA Industries LLC
Denison, Texas, USA

Registration: GPS-ETV_VR2020-08-31_CERMA

In accordance with

ISO 14034:2016

Environmental Management —
Environmental Technology Verification (ETV)



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Vancouver, BC, Canada

Verification Body
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Performance claims

The Cerma with STM-3 technology provides 2.1% fuel savings. This claim is based on the test conducted according to the SAE J1321 Joint TMC/SAE Fuel Consumption Test Procedure – Type II (1986), which resulted in 2.1% fuel savings over the baseline for the test vehicle, a Class-8 engine truck, using the Cerma with STM-3 technology according to the supplier's instructions: engine oil 340 grams (12 oz); power steering system 28 grams (1 oz); differential 170 grams (6 oz); trailer wheels 28 grams (1 oz) per wheel.

Performance conditions

The fuel-consumption tests were performed on a high-speed test track (BRAVO) at the Transport Canada Motor Vehicle Test Centre in Blainville, Quebec. All testing was conducted by Program Innovation Transport (PIT)/FP Innovations of Pointe-Claire, Québec during the 8th Energotest Campaign in September 2011.

The track is a high-banked, parabolic oval that is 6.4 km (4 miles) long. The length of a test run was 15 laps (almost 100 km), with departure and arrival at the same position along the track. The test procedure was based on the SAE J1321 Joint TMC/SAE Fuel Consumption Test Procedure - Type II (SAE International 1986). The fuel-consumption test compared the fuel consumption of a test vehicle, operating under two conditions, with that of an unmodified control vehicle. Fuel consumption was accurately measured by weighing temporary tanks before and after each trip. The repeatability of the scale measurements was periodically checked during the tests using a set calibration weight.

For each test, control and test vehicles had the same general configuration and were coupled to the same semi-trailers for the base and test trials. The load weights remained the same throughout the entire test period. The vehicles were in good working condition, with all settings adjusted to the manufacturer's specifications.

It should be noted that the technology tested by FPInnovations Performance Innovations Transport (PIT) Group in 2011 was based on the 1986 version of the SAE J1321 standard, which was subsequently updated in 2012.

Technology description and application

CERMA with STM-3 technology is described on the corporate website, www.cermaoil.com, as follows:

“Cerma’s nano-molecules will bind with carbon chains within the metal sub-surface. Once fully cured, it yields a glass smooth sealed surface, eliminating surface flaws within the metals mating surfaces.

The surface boundary layers formed by Cerma have a submicronic molecular structure with characteristics that ensure extremely low levels of boundary friction between the surfaces.

Cerma with STM-3 is formulated with a ‘Surface Tension Modifier’ that will reduce temperature, pressure, and friction between moving surfaces, minimizing boundary friction and wear. When the temperature is altered up or down and/or the pressure or friction is increased, Cerma activates a succession of chemical reactions with carbon acids and H₂O to reduce the surface tension.”

With the exception of the FPIInnovations PIT test data, the company did not provide documentation on the scientific and engineering principles behind this technology.

CERMA with STM-3 Technology is a fuel engine additive which, when applied to Class 8 Truck Engines, has the potential to increase fuel efficiency of the vehicle subjected to the technology treatment.

Verification

This verification was first completed in August 2013 and considered valid for subsequent periods of three (3) years. Data and information were provided by OLA BREAUX 88254 7227 – DBA CERMA of Bas-Paquetville, NB (Canada) to support the performance claim, and were based solely on the *Energotest Fall 2011: Fuel Consumption Tests* conducted by PIT / FPIInnovations Pointe-Claire, QC (Canada) in 2011.

The original verification was completed by the Prairie Agricultural Machinery Institute (PAMI) of Humboldt, SK (Canada), contracted by GLOBE Performance Solutions, and using the Canadian ETV Program's General Verification Protocol (June 2012). This ETV renewal is considered to meet the equivalency of an ETV verification completed using the International Standard *ISO 14034:2016 Environmental Management – Environmental Technology Verification (ETV)*.

What is ISO 14034:2016 Environmental Management – Environmental Technology Verification (ETV)?

ISO 14034:2016 specifies principles, procedures and requirements for environmental technology verification (ETV), and was developed and published by the *International Organization for Standardization (ISO)*. The objective of ETV is to provide credible, reliable and independent verification of the performance of environmental technologies. An environmental technology is a technology that either results in an environmental added value or measures parameters that indicate an environmental impact. Such technologies have an increasingly important role in addressing environmental challenges and achieving sustainable development.

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Limitation of verification - Registration: GPS-ETV_VR2020-08-31_CERMA

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