Cerakote™ CERAMIC COATINGS

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WITH CERAKOTE HIGH TEMP.

Cerakote™ C-7300 Black Velvet as a Thermal Barrier for Class 8 Truck Exhaust Systems

Cerakote™ high-temperature coatings are durable, heat-resistant coatings characterized by excellent long-term performance. These products provide corrosion and wear resistance, reduce part-metal oxidation, and act as a thermal barrier. Cerakote™ high temperature coatings are available in a variety of colors. Of these, C-7300 Black Velvet is the most popular due to its satin finish (25 gloss units at 60°) and deep jet black color. C-7300 Black Velvet is most commonly used on headers and exhaust components for OEM and aftermarket motorcycles and passenger vehicles. Due to growing interest in the heavy-duty truck market, C-7300 Black Velvet was tested on a Class 8 truck exhaust system. The experimental setup for this test is shown in figure 1. For this test the coated exhaust was cycled through a series of temperature changes representative of class 8 exhaust temperatures as seen during typical use. The exhaust gas was initially heated to 1050° F and maintained at that temperature for the duration of 30 minutes. The average temperature drop between the exhaust gas and skin temperature was 400° F. Next, the exhaust gas temperature was elevated to 1540° F and held constant for 30 minutes. At this point, the temperature drop between the skin and exhaust gas was recorded at 800° F. At exhaust gas temperatures of 1050° F and 1540° F, the Cerakote™ C-7300 Black Velvet contributed to temperature drops of 38% and 52% respectively. After completing the test, the coating was analyzed to confirm that no changes in gloss, color, or adhesion occurred. Overall, Cerakote™ C-7300 Black Velvet exhibited no signs of degradation at elevated temperatures and performed well as a thermal barrier.

Figure 1. A class 8 exhaust stack was coated with Cerakote™ C-7300 SC and tested to determine the durability, performance, and thermal barrier capabilities at elevated temperatures.

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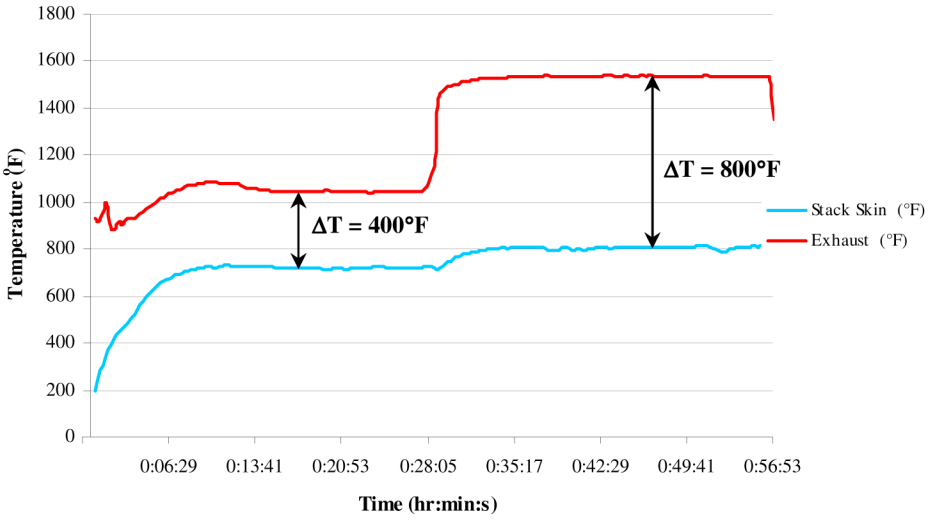

Figure 2. The temperature change of the exhaust gas was compared to that of the stack skin at two temperatures, 1050°F and 1540°F. The change in temperature across the surface of the coated pipe was 400°F and 800°F at each of these respective exhaust gas temperatures.