

THERMAL BARRIER RESULTS FOR W- 207 CHROMEX TESTING

Customer:	N/A
Material:	Chromex
Date:	8/09/11

Test Summary:

A thermal barrier test was performed to determine the temperature capabilities of W – 207 Chromex. In order to determine the performance, NIC Industries, Inc, tested an exhaust system (Figure 3) coated with W – 207 and collected temperature data. The exhaust system was blasted using 100 grit garnet sand. Next, the exhaust system was coated with Cerakote W – 207 Chromex, then cured and polished in accordance with application guide specifications. Following the cure cycle, the exhaust system was heated to 800 °F, 1000 °F, 1200 °F, and 1400 °F, with data collected at each temperature.

Test Results:

As the exhaust system was run at the temperatures previously described, the internal and external temperatures of the exhaust system were measured. Measurements were taken every 15 seconds. Measurement locations were 2 inches from the head flange (Location 1 in Figure 3), and 25 inches from the head flange (Location 2 in Figure 3). The temperatures related to that area 2 inches from the head flange was further examined, and the average temperature drop for each level tested was calculated (Figure 1). The W – 207 Chromex provides on average a temperature drop of 405 – 563 °F, or about a 40-51% decrease. With relation to the area 25 inches from the head flange, the W – 207 Chromex provides an average temperature drop of 230 – 337 °F, or about a 31 – 40% decrease (Figure 2).

Exhaust System Coated with W - 207

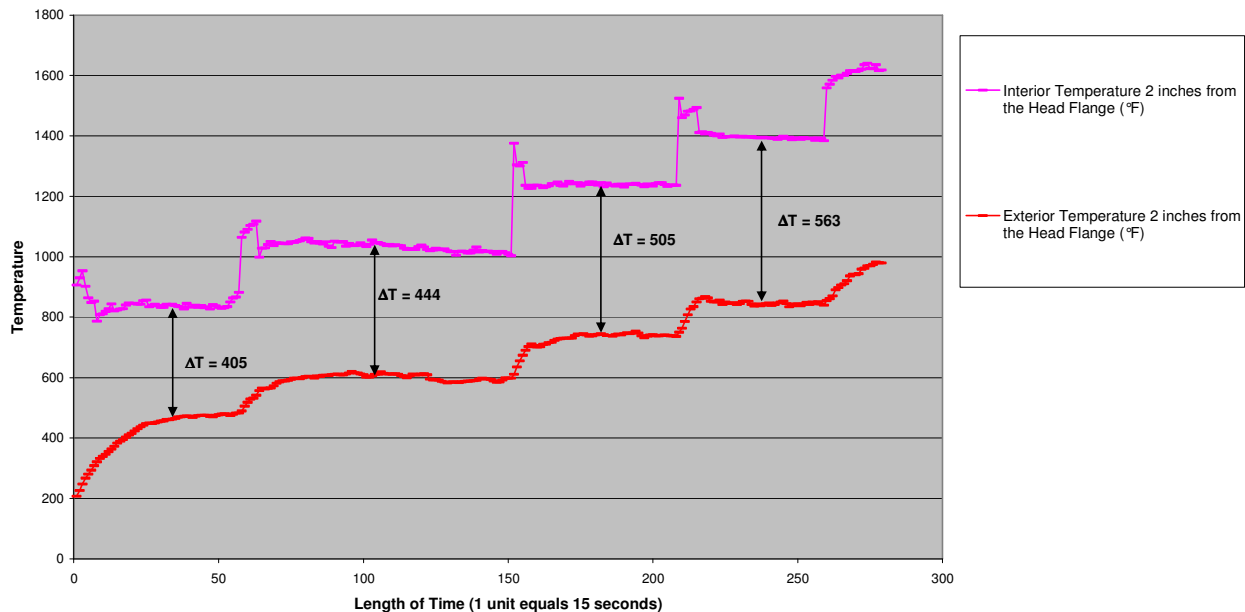


Figure 1. Analysis of Average Temperature Drop 2 inches from the Head Flange.

Divisions of NIC: Prismatic Powders, Cerakote™, Prismatic Liquids, Thermo Dyne

Exhaust System Coated with W - 207

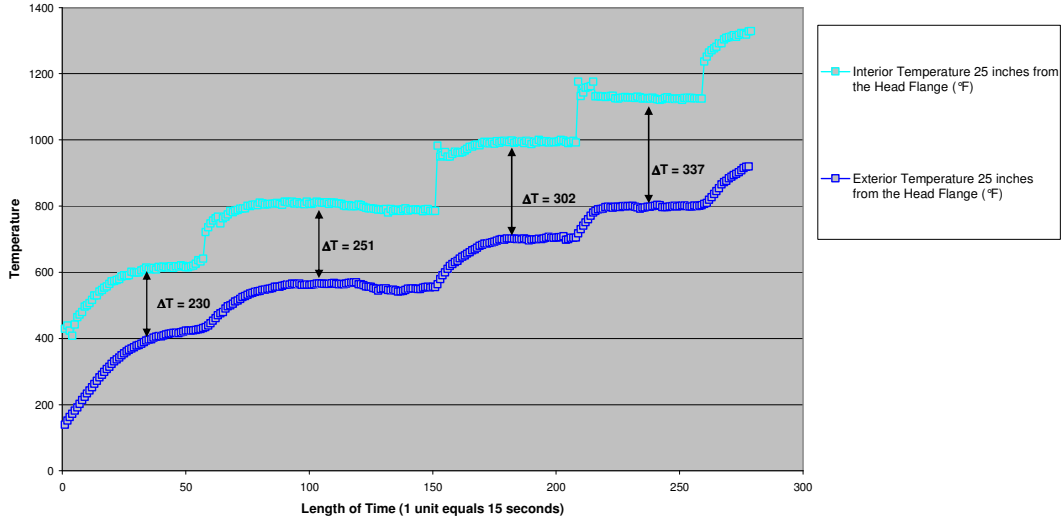


Figure 2. Analysis of Average Temperature Drop 25 inches from the Head Flange.

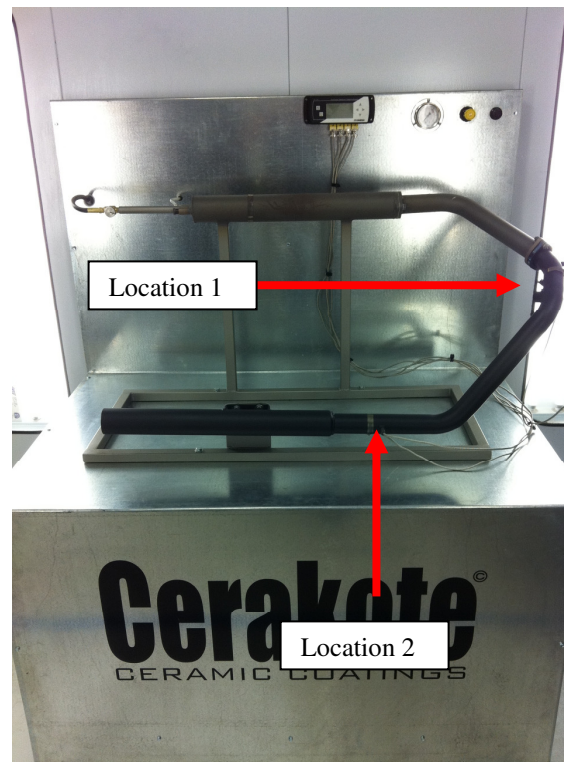


Figure 3. Exhaust Simulator used to test thermal barrier performance (W – 207 Chromex not shown).