

Emisshield™ Coatings Thermal Properties

Emisshield™ Coatings are based on the technology of Protective Ceramic Coating; a coating patented by NASA for the re-usable launch vehicles: X-33 and X-34. The following is technical information about PCC (and therefore Emisshield™ Coatings) as determined by NASA.

		Notes:
Thermal Conductivity:	1.4 W/m/K at 350°C	By Dr. Rex Churchward, former NASA employee, inventor of PCC and reported to Wessex Inc. on July 31, 2002
Emissivity:	0.94¹ at 2000°F	By Dr. Demetrius Kourtides, former NASA employee and inventor of PCC
Dielectric Constant	K = 3.9 at 1 Hz	By Dr. John Dillard, Virginia Tech Chemistry Professor and consultant to Wessex Inc.

Notes:

¹Emissivity will range from 0.85-0.95 depending on temperature and wavelength

Results from ASTM G-65 Method 65C for Abrasion Resistance:

Third Party Testing Facility: Climax Research Services of Wixom, Michigan
 Sample (Coupon) Substrate: Cold Rolled Steel
 Coupons Tested: One Coated and One Uncoated (Control)
 Emisshield™ Coatings Used: Metal M-1, Sintered at 800°C

<u>Test</u>	<u>M-1 Coated Coupon Weight Loss</u>	<u>Control (No Coating) Weight Loss</u>
Raw Weight Loss	29mg	109mg
Normalized Weight Loss	27mg	103mg

The test specimen coated with Emisshield™ Metal M-1 resisted the abrasive nature of the test better than the Control; by a factor of almost four (4).

Boiler tubes, tube shields and other components in a boiler would be more abrasion resistant if coated with Emisshield™ Metal M-1.

Please contact your Emisshield™ Coating representative for more information.



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