

Product Specification



PES 203 Super Flow Ceramic Fluid

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Ceramic Fluid is an erosion-corrosion-resistant coating used principally in fluid-flow situations to improve flow efficiency. The material can be applied directly to abrasive blasted steel or surfaces previously rebuilt with PES 101 Power Metal Repair Paste or 201 Ceramic Repair Paste.

Typical applications

Suitable for the coating of worn impellers, damaged valves, separator housings, damaged pump casings, eroded pipe work, propellers, bow thrusters, rudders, corroded water boxes, end plates, and tube sheets.

Characteristics

Appearance

Base: Light Grey, Red, or Blue paste

Activator: Straw-colored liquid

Mixed: Light Grey, Red, or Blue

Mixing Ratio

By weight: 5:1

By volume: 3:1

Density

Base: Activator: 1.67

Mixed: 1.05

1.52

Volume Capacity

40in³ (657cc/Kg)

Solids content

100%

Sag Resistance

Nil at 16mils

Coverage

1kg (2.2lb) of thoroughly mixed product will give the following coverage rates – 34.77ft² at 8mils

23.52ft² at 12mils

Please note that the coverage rates quoted are theoretical and do not consider the profile or condition of the surface being repaired.

Cure Times

The applied material should be allowed to harden for the times indicated below before being subjected to the conditions noted:

50°F 10 minutes

68°F 20 minutes

86°F 10 minutes

104°F 5 minutes

Minimum overcoating time

50°F 4 hours

68°F 2 hours

86°F 1 hour

104°F 30 mins

Maximum overcoating time

50°F 12 hours

68°F 6 hours

86°F 3 hours

104°F 90 mins

Full Cure

50°F 4 days

68°F 2 days

86°F 1 day

104°F 12 hours

Storage life

Five years if unopened and stored in normal dry conditions (59-86°F)

Mechanical Properties

Abrasion Resistance

Taber CS17 Wheels/1

Kg load

24mm³ loss/1000 cycles

Adhesion

Tensile Shear to ASTM D1002 on abrasive blasted mild steel with 3mil profile 2650psi (187kg/cm²)

Pull off Adhesion to ASTM D4541 on abrasive blasted mild steel with 3mil profile. 2880 psi (202kg/cm²)

Compressive strength

Tested to ASTM D695
10450psi (735kg/cm²)

Corrosion Resistance

Tested to ASTM B117
Minimum 5000 hours

Flexural Strength

Tested to ASTM D790
8100psi (570kg/cm²)

Hardness

Rockwell R to ASTM D785
85

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Heat Distortion

Tested to ASTM D648 at 264psi fiber stress.
68°F Cure 115°F
212°F Cure 180°F

Heat Resistance

Suitable for use in immersed conditions at temperatures up to 158°F. Resistant to dry heat up to 392°F, dependent on load.

Food Contact

USDA compliant for incidental food contact.

Approvals

Approved by BUREAU VERITAS for Surface Protection and Cold Repair Products applied to Marine Vessels.
Certificate No: 55258/AO BV
Expiry: 24th March 2024

Chemical Resistance

The product resists attack by various inorganic acids, alkalis, salts, and organic media. For more detailed information, refer to the PES Technical Center for advice.

Quality

All PES Products are supplied under the scope of the company's fully documented quality system.

Warranty

PES warrants that the product's performance will conform to the typical descriptions quoted within this specification provided material is stored correctly and used according to the procedures detailed in the Technical Data Sheet.

Health and Safety

Please ensure good practice is always observed during the mixing and application of this product. Protective gloves and other recommended personal protective equipment must be worn during the mixing and application of this product. Before mixing and applying the material, please ensure you have read and fully understood the detailed Material Safety Data Sheet.

Legal Notice: The data contained within this Product Specification is furnished for information only and is believed to be reliable at the time of issue. We cannot assume responsibility for results obtained by others over whose methods we have no control. It is the customer's responsibility to determine the product's suitability for use. PES accepts no liability arising from the use of this information or the product described herein.