

Complies with International Standards

ISO 8502-6

ISO 8502-9

# **Bresle Test**

Many coatings fail due to salts such as chlorides and sulphates contaminating the surface prior to the coating application. This contamination can be tested quickly and simply using the Bresle Test.

The Bresle Patches used in the Bresle Kit are manufactured to the highest quality with materials that contain no chlorides, and are guaranteed to adhere to blast-cleaned surfaces and not leak.

Easy to use, pour 10mls of distilled water into the beaker and determine the conductivity using the Conductivity Meter. Take a Bresle Patch and apply to the test surface. Fill the syringe with 2.5mls of test water and insert through the adhesive foam into the test chamber. Inject the contents, then extract back into the syringe. Repeat ten cycles of injecting and extracting, then transfer the test water back into the beaker. Measure the test water with the Conductivity Meter and deduct the initial conductivity reading from the result. Multiply the readings by 0.4 to give the quantity of salts in  $\mu$ g/cm<sup>2</sup> also known as ppm, or by 4 for the quantity of salts  $\mu$ g/m<sup>2</sup>.

The maximum permissible surface density of salts on the steel surface prior to surface treatment depends on the type of paint to be applied and what the finished material or product is to be used for. Surface treatment specifications must, therefore, state the highest permissible surface density of salts for each particular application.

Additional packs of Bresle Patches can be purchased to carry out further tests using this kit.

When high adhesion strength patches are required for testing on very corroded or coarse-grade blasted steel, the Bresle Patches Plus are available as an alternative to the standard Bresle patches.

Calibration Certificates traceable to UKAS are available for the Conductivity Meter, and Conformance Certificates are available for the Bresle Patches.

Supplied with 50 Bresle Patches, Conductivity Meter, Calibration Solution, 3 x 5ml Syringes, 25ml Beaker, 250ml Distilled Water and foam-filled Carrying Case.

Part No	Patches Supplied	Conductivity Meter Range	Conductivity Meter Resolution	Conductivity Meter Accuracy	Conductivity Solution Cal Cert Part No	Bresle Patch Conformance Cert		
P2004	50	0–199µS/cm 0.20–1.99mS/cm	1µS/cm 0.01mS/cm	±2%	NP001	NPC04		
PS001	Bresle Patches (	NPC04						
PS002	Bresle Patches Plus (pack of 50) High Adhesion					NPC04		

#### Bresle Test Kit Specifications

Coating Thickness Gloss Porosity Adhesion Surface Roughness Surface Cleanliness Climatic Conditions Electrostatic Inspectors Accessories

# Operation

### **Conductivity Meter Calibration**

Place 3 to 4 droplets of the 1.41mS Conductivity Solution into the green cell, ensuring that the solution is in both sections of the cell with no air bubbles. Check the displayed reading which is shown when the Smiley Face comes on and if this is not 1.41 then calibrate as follows:

Press Cal / Mode button and the CAL indicator appears: the Conductivity Meter will now auto calibrate, the CAL indicator will go off and a smiley face will appear to show calibration complete.

#### **Moistening Procedure**

For first use on a new Conductivity Meter, moisten the green cell electrode with 3 to 4 droplets of the moistening solution and allow to sit for approximately 10 minutes, then the cell should be washed in tap water and dried. Place a small amount of deionized water in the cell and replace the sensor cap. If the sensor has not been used for a long period of time, or if the sensor has been left extremely dry, then use this moistening procedure.

#### **Taking Measurements**

Pour 10ml of deionized water into the beaker.

Completely fill the syringe with the deionized water from the beaker, and then empty the syringe back into the beaker and stir.

Using the syringe, withdraw a small amount of deionized water from the beaker (approximately 1ml) and place 3 to 4 droplets into the green cell on the Conductivity Meter, ensuring that the deionized water is in both sections of the cell and is free of air bubbles. Record the conductivity of the water and shake the water droplets back into the beaker. Also empty the remaining water in the syringe into the beaker.

Take a Bresle Patch and remove the protective paper and the punched-out centre foam. Stick the Bresle Patch against the test surface, ensuring that the minimum amount of air is trapped in the patch test chamber.

Using the syringe, withdraw 2.5ml of deionized water from the beaker and insert through the foam body of the patch into the circular test chamber.

Inject the syringe contents ensuring that it wets the entire test surface, then without removing the syringe needle from the patch, suck the contents of the patch back into the syringe. Repeat until at least 10 injection-sucking cycles have been completed.

At the end of the 10th cycle retrieve the contaminated water from the patch with the syringe and transfer to the beaker, restoring its content to nearly the original volume. Stir the now contaminated water in the beaker and using the syringe withdraw a small amount from the beaker (approximately 1ml) then place 3 to 4 droplets into the green cell on the Conductivity Meter ensuring that the contaminated water is in both sections of the cell with no air bubbles. Record the conductivity displayed by the meter.

Subtract the initial water conductivity reading from the contaminated water conductivity reading, and multiply this value by 0.4 for results in  $\mu$ g/cm<sup>2</sup> or by 4 for results in mg/m<sup>2</sup>.

#### Example:

The deionized water measurement taken is  $4\mu$ S/cm. The contaminated water measurement taken is  $54\mu$ S/cm. The difference is therefore  $50\mu$ S/cm. Multiply the difference ( $50\mu$ S/cm) by 0.4 and the result is  $20\mu$ g/cm<sup>2</sup>.

Or multiply it (50 $\mu$ S/cm) by 4.0 and the result is 200mg/m<sup>2</sup>.

Micrograms per centimeter squared ( $\mu$ g/cm<sup>2</sup>) also means parts per million (ppm).

When you have finished using the Conductivity Meter, the cell should be washed in tap water and dried. Then place a small amount of deionized water in the cell and replace the sensor cap. Also ensure the syringe and beaker are cleaned to remove any contamination.

## **Replacing Batteries**

To replace the batteries on the Conductivity Meter, pull out the sensor while pressing the catch located on the rear of the instrument. Replace with 2 lithium CR-2032 batteries, ensuring correct polarity.

#### **Shelf Life**

The only degeneration on the Bresle patches is the adhesive if exposed to extremes of temperature. We would recommend that the patches are used within a 12-month period from date of purchase.

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