

Paint Test Equipment

Bresle Test Kit Data Sheet





Complies with International Standards

ISO 8502-6	AS 3894.6-A
ISO 8502-9	

Bresle Test

Steel when blast-cleaned can be contaminated by water-soluble salts and corrosion products. These compounds are almost colourless and are localized at the lowest point of the rust pits. If they are not removed prior to painting, chemical reactions can result in blister formation and accumulations of rust that destroy the adhesion between the substrate and the applied protective coating. This contamination can be tested quickly and easily using the Bresle Test.

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 $\mu\text{g}/\text{cm}^2$ also known as ppm, or by 4 for the quantity of salts $\mu\text{g}/\text{m}^2$.

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.

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.

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

Supplied in a Industrial Foam-Filled Carrying Case with 50 Bresle Patches, 50 Bresle Patches Plus, Conductivity Meter, Calibration Solution, 3 x 5ml Syringes, 25ml Beaker and 500ml Distilled Water.

Bresle Test Kit Specifications

Part No	Patches Supplied	Conductivity Meter Range	Conductivity Meter Resolution	Conductivity Meter Accuracy	Conductivity Solution Cal Cert Part No	Bresle Patch Conformance Cert Part No
P2005	50 Standard 50 High Adhesion	0–199 $\mu\text{S}/\text{cm}$ 0.20–1.99mS/cm	1 $\mu\text{S}/\text{cm}$ 0.01mS/cm	±2%	NP001	NPC04
PS001	Spare Bresle Patches (pack of 50) Standard Adhesion					NPC04
PS002	Spare Bresle Patches Plus (pack of 50) High Adhesion					NPC04
PS003	Spare Deionised Water (500ml)					
PS004	Spare Syringes (pack of 3)					
PS005	Spare Conductivity Meter Calibration Solutions (2 Solutions, 1 Deionised Water)				NP001	
PS006	Spare 25ml Beaker					

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.

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. Press the adhesive side of the patch against the test surface in such a way that the minimum amount of air is trapped in the circular test chamber.

Fill the syringe with 2.5ml of deionized water from the beaker and insert the syringe needle at an angle of about 30° to the test surface near the outer edge of the patch so it passes through the adhesive foam body and into the circular test chamber.

If the patch is in a position which makes access to the Patch test chamber difficult, bend the syringe needle as required.

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 $\mu\text{g}/\text{cm}^2$ or by 4 for results in mg/m^2 .

Example:

The deionized water measurement taken is $4\mu\text{S}/\text{cm}$.

The contaminated water measurement taken is $54\mu\text{S}/\text{cm}$.

The difference is therefore $50\mu\text{S}/\text{cm}$.

Multiply the difference ($50\mu\text{S}/\text{cm}$) by 0.4 and the result is $20\mu\text{g}/\text{cm}^2$.

Or multiply it ($50\mu\text{S}/\text{cm}$) by 4.0 and the result is $200\text{mg}/\text{m}^2$.

Micrograms per centimeter squared ($\mu\text{g}/\text{cm}^2$) 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.



About us

Paint Test Equipment are manufacturers of a comprehensive range of specialist instruments for the Industrial Coatings and Finishings Industries and have been supplying instruments to customers worldwide for over 25 years.

During this time Paint Test Equipment have established a reputation for manufacturing quality instruments to the highest specification, to meet the demanding requirements of the Industrial Painting Industry.

Recalibration

Paint Test Equipment can service and recalibrate all applicable products that we supply.

We recommend that the equipment is returned on a 12-monthly basis to Paint Test Equipment for service and recalibration.

Calibration Certificates will have traceability to UKAS or BAM. The Certificate is supplied in a paper format and is available online through the Calibration Portal (under Browse Categories) on our website. The Calibration Portal will list all your equipment that is calibrated by Paint Test Equipment, showing the renewal dates and allowing Calibration Certificates to be viewed at any time.

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