

FERROXYL TEST KIT

Easy reagent test to determine if austenitic stainless steel surfaces contain embedded iron contamination

The Ferroxyl test is designed to determine whether austenitic stainless steel needs to be pickled or whether it has been pickled correctly. When structure on the surface of austenitic stainless steel has not been evenly restored, an excess of metallic iron will be present (so-called embedded iron) which will adversely affect the properties of the stainless steel. This can be left by carbon steel tools or welding (material).

The presence of iron particles in stainless steel surfaces disturbs the chromium oxide layer, reducing the corrosion resistance locally. When embedded iron particles are not removed, serious (pit) corrosion is most likely to set in.

PINCIPLE OF MEASUREMENT

The test is based on a reaction of potassium ferricyanide with iron in a strongly acid medium. The excess iron dissolves in this strongly acid medium as ferrous ion to form a blue complex, known as Prussian Blue.

When during this test this blue discoloration becomes visible, it means that the surface of the stainless steel does not yet have the correct structure and has been insufficiently pickled.

The Ferroxyl Test Kit contains:

- 1 transparent 25 ml dropping bottle
- 1 measuring scoop
- 1 pack Ø 11 cm filter paper
- pack latex gloves
- 1 pack shoe covers
- 1 mixing bottle
- 1 demineralizer bottle (incl. resin)

Reagents:

- Ferroxyl reagent I
- Ferroxyl reagent II

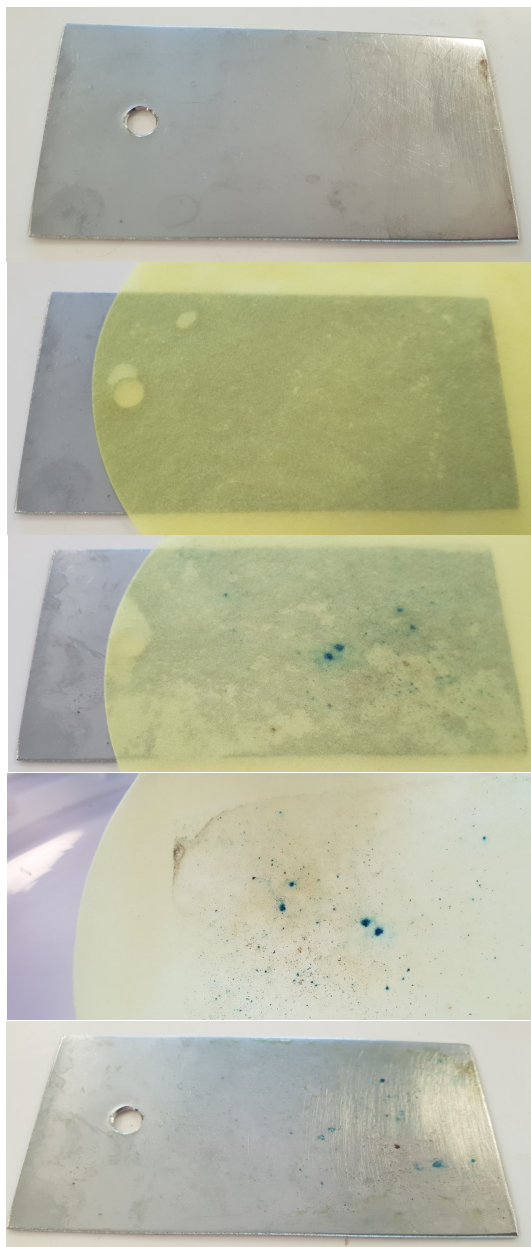


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INSTRUCTIONS FOR USE

1. Ensure you wear the proper PPE's (gloves, glasses) and create a proper working area where the components of the test kit can safely be stalled.
2. Place 5 measuring scoops Ferroxyl reagent I in the dropping bottle. Add 25ml Ferroxyl reagent II to the scale mark. Close and shake bottle until the reagent I is dissolved.
3. Moisten a filter paper with 5 drops of the solution and place the moist filter paper on the surface to be tested. Wait for 60 seconds.
4. When blue discoloration of the filter paper starts to appear, the tested surface contains embedded iron and the pickling has not been done correctly (or the surface was afterwards contaminated again)
5. When no discoloration appears, remove the filter paper and rinse the surface with demineralized water (tap water can be mixed with the demineralizer resin to create demineralized water).

Note: the reagent solution can only be used for 2 hours for reliable results. After this time, a new solution needs to be made.



Test surface should be dust free, if needed, whipe with moist cloth before applying the Ferroxyl test paper

Make sure the test paper wetted with the Ferroxyl reagent is in full contact with the tested surface, avoid air bubbles by whipping them away.

After 60 seconds the first blue spots will appear if embedded iron particles are present.

Remove the test paper from te surface.

In case of larger particles, the blue discoloration will also be visible on the tested surface. It can be removed by pickling and/or passivation liquid.

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