
International Standard



6509

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Corrosion of metals and alloys — Determination of dezincification resistance of brass

Corrosion des métaux et alliages — Détermination de la résistance à la dézincification du laiton

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 6509 was developed by Technical Committee ISO/TC 156, *Corrosion of metals and alloys*, and was circulated to the member bodies in February 1980.

It has been approved by the member bodies of the following countries:

Australia	Finland	Portugal
Austria	France	Romania
Belgium	Germany, F.R.	South Africa, Rep. of
Brazil	Hungary	Spain
Bulgaria	India	Sweden
Canada	Mexico	United Kingdom
China	Norway	USA
Egypt, Arab Rep. of	Poland	USSR

The member body of the following country expressed disapproval of the document on technical grounds :

Czechoslovakia

Corrosion of metals and alloys — Determination of dezincification resistance of brass

1 Scope and field of application

This International Standard specifies a method for the determination of the dezincification resistance of brass exposed to fresh or saline waters.

The method may be used for control or research purposes, but the field of application is not specified.

2 Principle

Exposure of test pieces to copper(II) chloride solution followed by microscopic examination.

3 Reagents and materials

Use only reagents of recognized analytical grade and distilled water or water of equivalent purity.

3.1 Copper(II) chloride, 1 % (*m/m*) solution, freshly prepared.

Dissolve 12,7 g of copper(II) chloride dihydrate ($\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$) in water and make up the volume to 1 000 ml.

3.2 Phenolic resins, or other non-conducting material with similar properties, for embedding the test pieces.

3.3 Ethanol, for cleaning the test pieces.

4 Apparatus (see figure 1)

4.1 Beaker, of glass, covered with suitable plastic foil, for example polyethylene, secured with elastic thread or another method of sealing using non-metallic material.

4.2 Thermostatically controlled water or oil bath, capable of being controlled at 75 ± 5 °C.

4.3 Optical microscope, with a scale.

5 Test pieces

5.1 The test pieces shall be taken in such a way, for example by sawing and grinding with light pressure, that the properties of the materials are unaffected.

5.2 Not less than two test pieces shall be taken from each sample supplied for testing.

5.2.1 For forgings and castings, at least one test piece shall be taken from the area with the thinnest section and at least one from the area with the thickest section.

5.2.2 In the case of materials with a specific extrusion or rolling direction, for example plates or bars, surfaces both parallel and perpendicular to the extrusion or rolling direction shall be tested. In addition, in the case of rods, all test pieces, whether transverse or longitudinal, shall be cut in such a way as to include points midway between the axis and the periphery.

5.3 The area of each test piece to be exposed shall be approximately 100 mm². If the size of the component or the cross-section of the rod to be tested is too small to provide test areas of this size, the largest possible test area shall be taken.

6 Preparation of test pieces

6.1 The test pieces shall be embedded in the phenolic resin (3.2), and the test surfaces ground using wet abrasive paper, finishing with 500 grade or finer. (See figure 2.)

6.2 The test surfaces shall be cleaned with the ethanol (3.3) prior to testing.