
**Corrosion tests in artificial
atmospheres — Accelerated corrosion
tests involving alternate exposure to
corrosion-promoting gases, neutral
salt-spray and drying**

*Essais de corrosion en atmosphères artificielles — Essais de corrosion
accélérée par expositions alternées à des gaz oxydants ou au
brouillard salin neutre et à un séchage*

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Foreword

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The committee responsible for this document is ISO/TC 156, *Corrosion of metals and alloys*.

This second edition cancels and replaces the first edition (ISO 21207:2004), of which it constitutes a minor revision. It also incorporates the Technical Corrigendum ISO 21207:2004/Cor 1:2008.

Introduction

Corrosion of metallic materials with or without corrosion protection is influenced by many environmental factors, the importance of which can vary with the type of metallic material and with the type of environment. Laboratory tests are designed to simulate the effects of the most important factors that enhance the corrosion of metallic materials.

The accelerated corrosion test methods described in this International Standard, methods A and B, are designed to simulate and enhance the environmental influence of exposure to an outdoor climate where salt-contaminated conditions and corrosion-promoting gases from an industrial or a traffic environment occur which might promote corrosion. Test method A simulates a moderately aggressive traffic environment while test method B simulates a more severe industrial or traffic environment.

Test method A involves exposure of the test objects to the following test cycle:

- a) neutral salt spray testing (ISO 9227) for 2 h in a mist of a sodium chloride salt solution of mass fraction 5 % at 35 °C, followed by drying for 22 h in a standard laboratory climate;
- b) exposure for 120 h in a test atmosphere containing a mixture of corrosion-promoting gases, volume fraction of NO₂ equal to $1,5 \times 10^{-6}$ and of SO₂ equal to $0,5 \times 10^{-6}$, at a relative humidity of 95 % and at a temperature of 25 °C, followed by drying for 24 h in a standard laboratory climate.

Test method B involves exposure of the test objects to the following test cycle:

- a) neutral salt spray testing (ISO 9227) for 2 h in a mist of a sodium chloride salt solution of mass fraction 5 % at 35 °C, followed by drying for 22 h in a standard laboratory climate;
- b) exposure for 48 h in a test atmosphere containing a mixture of corrosion-promoting gases, volume fraction of NO₂ equal to 10×10^{-6} and of SO₂ equal to 5×10^{-6} , at a relative humidity of 95 % and at a temperature of 25 °C;
- c) neutral salt spray testing (ISO 9227) for 2 h in a mist of a sodium chloride salt solution of mass fraction 5 % at 35 °C, followed by drying for 22 h in a standard laboratory climate;
- d) exposure for 72 h in a test atmosphere containing a mixture of corrosion-promoting gases, volume fraction of NO₂ equal to 10×10^{-6} and of SO₂ equal to 5×10^{-6} , at a relative humidity of 95 % and at a temperature of 25 °C.

The results obtained do not permit far-reaching conclusions on the corrosion resistance of the tested product under the whole range of environmental conditions in which it may be used.