
Corrosion of metals and alloys — Procedures to determine and estimate runoff rates of metals from materials as a result of atmospheric corrosion

*Corrosion des métaux et alliages — Modes opératoires pour déterminer
et évaluer le taux d'entraînement par les eaux de ruissellement
des métaux présents dans des matériaux soumis à la corrosion
atmosphérique*





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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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Introduction

Runoff testing is carried out in order to obtain data on the release rates of metals of different materials under atmospheric exposure conditions. It involves exposure of specimens at a test site and, in addition, continuous collection of runoff water samples and is therefore more demanding than standardized corrosion tests.

Standardized corrosion tests cannot be used for obtaining these data since, on a long-term perspective, the runoff rate is always less than or equal to, and frequently much less than, the corrosion rate. The difference is the metal incorporated in the corrosion products. In contrast to standardized corrosion tests, runoff testing can be performed on real product surfaces or on any kind of surface-treated material, e.g. pure metals, alloys or different coatings (i.e. metallic coatings, metal-including organic coatings), as long as the history and surface finish and characteristics of the specimen are documented.

The result of this field test is the metal release rate to the collected rain water that has impinged the material surface. Further possible transformations of the metal in its different chemical forms and interactions with the environment are beyond the scope of this International Standard.

Procedures to establish runoff rates can be carried out either by determination (normative) based on exposure of specimens or by estimation (informative), taking into account the conditions in a particular application.

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