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**Chemical conversion coatings — Black  
oxide coating on iron and steel —  
Specification and test methods**

*Couches de conversion chimique — Finition noire de la fonte et de l'acier —  
Spécifications et méthodes d'essai*

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

International Standard ISO 11408 was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*, subcommittee SC 8, *Chemical conversion coatings*.

Annexes A and B of this International Standard are for information only.

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# Chemical conversion coatings — Black oxide coating on iron and steel — Specification and test methods

## 1 Scope

This International Standard specifies requirements for black oxide coatings on iron and steel (including cast and wrought iron, carbon steel, low alloyed steel and stainless steel). Black oxide coatings can be used to diminish friction between sliding or bearing surfaces or for decorative purposes or to reduce light reflection. Such coatings, with or without supplementary preservative treatment, may be used where a black surface is required. Only very limited corrosion protection is obtained under mildly corrosive conditions even with preservative treatment.

This International Standard does not specify requirements for the condition, finish or surface roughness of the substrate prior to black oxidizing.

## 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents listed below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 2064:1996, *Metallic and other inorganic coatings — Definitions and conventions concerning the measurement of thickness.*

ISO 4519, *Metallic and other inorganic coatings — Sampling procedures for inspection by attributes.*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests.*

ISO 9587, *Metallic and other inorganic coatings — Pre-treatments of iron and steel to reduce the risk of hydrogen embrittlement.*

ISO 9588, *Metallic and other inorganic coatings — Post-coating treatments of iron and steel for reducing the risk of hydrogen embrittlement.*

## 3 Term and definition

For the purposes of this International Standard, the following term and definition apply.

### 3.1 significant surface

part of the article covered or to be covered by the coating and for which the coating is essential for serviceability and/or appearance and where the coating has to meet all of the specified requirements

[ISO 2064:1996, definition 3.1]