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Thermal spraying — Zinc, aluminium and their alloys —

Part 1: Design considerations and quality requirements for corrosion protection systems

*Projection thermique — Zinc, aluminium et alliages de ces métaux —
Partie 1: Considérations de conception et exigences de qualité pour les
systèmes de protection contre la corrosion*



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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 107, *Metallic and other inorganic coatings*.

This document, together with ISO 2063-2:2017, cancels and replaces ISO 2063:2005, which has been technically revised.

A list of all the parts in the ISO 2063 series can be found on the ISO website.

Introduction

In order to protect iron- and steel-based structures (e.g. for steel construction, bridge construction, steel structures for water construction, onshore and offshore wind energy constructions, petrol and natural gas industry) against corrosion, protective coatings are usually deposited. Corresponding to type, shape and required functionality of the part, numerous procedures are available. The deposition of corrosion protection coatings or coating systems can be done by applying hot-dip galvanizing, organic coatings or thermal spraying of zinc, aluminium and their alloys. Using combinations of metallic and organic coatings, duplex corrosion protection coating systems can be produced.

Thermal-sprayed corrosion protection coatings made of zinc, aluminium and their alloys can be sprayed onto all steels which make up the components used in the relevant industrial application. This may be carried out on-site, as well as in the workshop, regardless of the article's size. Due to the usually low heat input into the surface of the part, only a slight thermal loading of the substrate occurs, so that changes in steel properties and deformation of the part do not occur.

Corrosion protection coatings can be used as repairs or rework of defects of other coatings (e.g. uncoated hot-dip zinc galvanized areas) or worn coatings where thermal spraying can be applied on the spot. Due to relative low investment costs, thermal spraying can also be economically applied for single parts.

The ISO 2063 series applies to thermal-sprayed metallic coatings to protect iron and steel against corrosion by deposition of zinc, aluminium or their alloys onto the uncoated surface to be protected.

This document targets designers of components. It covers the planning engineering of the corrosion protection system and deals with the basic rules for planning of corrosion protection systems and for the constructive design of the components to be protected, if the protection system is based upon a thermal-sprayed metallic coating.

ISO 2063-2 targets manufacturers of corrosion protection systems. It deals with the requirements for the execution of the corrosion protection works by thermal spraying in the workshop and on-site.