DIN EN ISO 2063-1:2019-07 (E)

Thermal spraying - Zinc, aluminium and and their alloys - Part 1: Design considerations and quality req uirements for corrosion protection systems (ISO 2063-1:2019)

Contents

Page

European foreword 4

Foreword 5

Introduction 6

1 Scope 7

2 Normative references 7

3 Terms and definitions 8

4 Criteria for corrosion and corrosion protection by thermal-sprayed coatings 9
4.1 General 9
4.2 Corrosivity categories and environment conditions 9
4.3 Corrosion rate 9
4.4 Coating materials and corrosion behaviour 9
4.4.1 General 9
4.4.2 Zinc and zinc alloys 10
4.4.3 Aluminium and aluminium alloys 10

5 Requirements for the corrosion protection systems and their planning 10
5.1 General rules -- Technical requirements 10
5.2 Used spray materials and coating thickness 11
5.2.1 Spray materials 11
5.2.2 Coating thickness 11
5.3 Construction design requirements for iron and steel components for thermal spraying 12
5.3.1 General 12
5.3.2 Recommendations for the design of the part -- Avoidance of corrosion creating areas 12
5.3.3 Requirements for welding in combination with thermal-sprayed protective coatings 12
5.3.4 Thermal spraying of corrosion protected fastenings 12

6 Pre-conditions and requirements for the manufacturing process 12
6.1 General -- Requirements 12
6.2 Reference areas 12
6.3 Preparation of the surface to be coated 13
6.4 Thermal spraying 13
6.5 Sealing of thermal-sprayed coatings 13
6.6 Metallic coatings and additional organic top coatings 14
6.7 Requirements for the tests -- Test procedures 14
6.7.1 General 14
6.7.2 Visual inspection -- Appearance 14
6.7.3 Coating thickness 14
6.7.4 Adhesion strength 15
6.7.5 Metallographic investigation 15

7 Requirements for the manufacturer 15
7.1 General 15
7.2 Coating specification -- Requirements for the spray coating 16

8 Documentation 16

Annex A (informative) Corrosivity categories -- Environment conditions -- Exposure 17

Annex B (informative) Summary of the corrosion behaviour of thermal-sprayed coatings of zinc, aluminium and their alloys 19

Annex C (informative) Recommended values for the thickness of the metallic coating 21

Annex D (informative) Examples of design and explanations 23

Annex E (informative) Example test certificate for work specimen for thermal sprayer used on-site in accordance with ISO 2063-2 28

Annex F (informative) Appearance of surfaces in different treated conditions 30

Annex G (informative) Checklist for this document -- Work and test steps and connection to relevant standards or recommendations 31

Bibliography 33