First edition 2017-09

## Thermal spraying — Zinc, aluminium and their alloys —

Part 2:

## **Execution of corrosion protection systems**

Projection thermique — Zinc, aluminium et alliages de ces métaux — Partie 2: Exécution des système de protection contre la corrosion





## COPYRIGHT PROTECTED DOCUMENT

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office Ch. de Blandonnet 8 • CP 401 CH-1214 Vernier, Geneva, Switzerland Tel. +41 22 749 01 11 Fax +41 22 749 09 47 copyright@iso.org www.iso.org

Co	contents					
Fore	eword		v			
1	Scop	e	1			
2	-	native references				
3		Terms and definitions				
4	_	Requirements for the manufacturer				
	4.1	General				
	4.2	Qualification of the manufacturer				
		4.2.1 Qualification of the equipment				
		4.2.3 Qualification of spraying personnel				
		4.2.4 Qualification of test personnel	3			
	4.3	Coating specification for the thermal-sprayed coating				
	4.4	Assessment of the coating on the basis of reference areas				
_		ity assurance measures for the manufacturer				
5	<b>Quai</b> 5.1	General				
	5.1	Assessment of the design to coatability				
	5.2	Establishing the manufacturing instructions — Manufacturing sequence plan				
	5.4	Establishing the thermal spray procedure specification				
	5.5	Qualification of the TSPS and scope of the TSPS	5			
	5.6	Qualification of the TSPS by a specific job reference qualification	5			
	5.7	Special job qualification by performance on mock-ups, if required	5			
6	Man	ufacturing of thermal-sprayed coatings				
O	6.1	General	5 5			
	6.2	Preparation of the surface to be coated				
	0.2	6.2.1 Masking of areas not to be coated				
		6.2.2 Preparation of the surface to be coated by blasting				
		6.2.3 Testing of the prepared surface				
	6.3	Thermal spraying				
		6.3.1 General	6			
		6.3.2 Spray material	7			
		6.3.3 Pre-conditions for the execution of thermal spraying process				
		6.3.4 Execution of thermal spraying				
	<i>c</i> 4	6.3.5 Inspection after spraying				
	6.4	Sealing of the coating.	8 0			
	6.5	Advice for welding in combination with thermal spraying	8 0			
	6.6	Thermal spraying of corrosion protected fastenings				
7		s — Test procedures				
	7.1	General				
	7.2	Manufacturing of the accompanying specimens				
	7.3	Coating thickness				
		7.3.1 General 7.3.2 Coatings with a surface below 1 m <sup>2</sup>				
		7.3.3 Coatings with surfaces greater than 1 m <sup>2</sup>				
		7.3.4 Number of thickness test points				
		7.3.5 Measurement of the coating thickness				
	7.4	Appearance of the coating surface and tests				
		7.4.1 Visual inspection				
		7.4.2 Roughness				
		7.4.3 Adhesion strength	11			
		7.4.4 Metallographic examination of the coating				
	7.5	Defects in the coating and their repair				
		7.5.1 Defects on the surface and in the coating and their repair	11			

		7.5.2	Reasons for the rejection of a defective sprayed coating	12			
8	Health	and sat	fety and environment protection	12			
9	Additional requirements for working on-site						
	9.1	General		12			
	9.2	Supervi	sion of spraying on-site	12			
	9.3	9.3 Job reference qualification for spray personnel working on-site					
	9.4	9.4 Execution of spray works in the case of planned work on-site or not planned					
			on new manufactured parts				
		9.4.1	General				
		9.4.2	Surface preparation				
		9.4.3	Masking				
		9.4.4	Thermal spraying				
		9.4.5	Spraying of accompanying specimens				
		9.4.6	Sealing	13			
10	Execution of spray works on-site in the case of planned maintenance of a service						
			ing				
	10.1						
	10.2		pection for assessment of the repair possibility applied by thermal spraying				
	10.3		on of repair-works by thermal spraying				
			General				
		10.3.2	Quality control after repair				
11	Tests -	— Test p	rocedures	14			
12	Docum	nentatio	on of the procedure and tests in the case of maintenance	15			
13	Health	and sa	fety and environment protection on-site	15			
Annex			Adhesion testing using the pull-off test in accordance with ISO 4624				
Annex			Documentation of the applied maintenance procedure, the thermal are and test results in the case of a planned maintenance	18			
Annex			Documentation of the applied thermal spray procedure and test case of a new manufacturing	21			
Anney	<b>D</b> (info	rmative	Test certificate for job reference qualification for thermal sprayers				
Timex	worki	ng on-si	te in accordance with ISO 2063-2	23			
Annex	E (info	rmative)	Test specimens — Spray positions	25			
			Assessment of the coatability				
Annex	<b>G</b> (info	rmative	Bend test and its execution	29			
Annex	H (info	ormative	Additional information for surface preparation	31			
	Annex I (informative) Further details for sealing						
	•	-	Further instructions for safety and activities on-site				
			Repair procedures of service loaded coatings and recommended				
	repair	proced	ures	34			
Biblio	Bibliography						

## 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 <a href="www.iso.org/directives">www.iso.org/directives</a>).

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 <a href="https://www.iso.org/patents">www.iso.org/patents</a>).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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: <a href="https://www.iso.org/iso/foreword.html">www.iso.org/iso/foreword.html</a>.

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

This document, together with ISO 2063-1:2017, 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.