

GENERAL SPECIFICATION

CORROSION

GS EP COR 355

**External protection of piping and equipment by
thermal spray coating**

02	10/2012	Update following the EP reorganization, March 2011
01	01/2011	General review - New paint Supplier
00	10/2009	First issue
Rev.	Date	Purpose of the revision

Owning entity: DEV/TEC

Managing entity: DEV/TEC/COR

General Specification		GS EP COR 355
External protection of piping and equipment by thermal spray coating		
Rev.: 02	Effective date: 10/2012	Page: 2 of 15

Contents

1. Scope	4
2. Reference documents.....	4
3. Surfaces to be coated.....	5
4. Items not to be coated	6
5. Choice of wires, rods and cords.....	6
6. Sealing	6
7. Certification of personnel.....	6
7.1 Operators.....	6
7.2 Inspectors	7
8. Technical content of tenders	7
9. Surface preparation	7
9.1 Design and preparation before blasting of surfaces to be coated	7
9.2 Quality of abrasives	8
9.3 Blast cleaning of carbon steel	8
9.4 Blast cleaning of stainless steels.....	8
10. Thermal Spray Coating application	9
10.1 Procurement and storage.....	9
10.2 Samples for QA/QC purposes.....	9
10.3 Qualification of application procedure of thermal Spray Coating	9
10.4 Kick off meeting	9
10.5 Thermal Spray Coating application	10
10.6 Repairs	10
11. Checks, inspection and acceptance.....	11
11.1 Checks.....	11
11.2 Inspection test plan	11
11.3 Company inspection	11
11.4 Provisional acceptance	12



General Specification		GS EP COR 355
External protection of piping and equipment by thermal spray coating		
Rev.: 02	Effective date: 10/2012	Page: 3 of 15

11.5	Guarantee.....	12
11.6	Final acceptance.....	12
12.	Technical file	12
	Bibliography.....	13
Appendix 1	List of approved Suppliers for the sealer (tie coat).....	14
Appendix 2	List of approved sealers (tie coats)	15

1. Scope

This General Specification defines the technical requirements for the execution of Thermal spray works of new built offshore or coastal piping and equipment. The specification is based on high durability protection - more than 15 years.

This general specification does not cover protection systems for temporary equipment or equipment with design life less than 10 years.

Thermal spray coatings can be used as the protective coatings for atmospheric exposure, under thermal insulation, hot surface and all others conditions describe in particular specification approved by Company.

Thermal spray coatings use high heat, and aluminium dust can ignite and explode under certain conditions. Rigorous safety precautions shall be taken when thermal spray coatings are applied, particularly automated thermal spray aluminium coatings ([ISO 14713](#)).

2. Reference documents

The reference documents listed below form an integral part of this General Specification.

External Documents

Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the effective date of this document.

Reference	Title
ACQPA	"Association pour la Certification et la Qualification en Peinture Anticorrosion". Painting systems certified by ACQPA www.acqpa.com
ASTM D 4940	Standard test method for conductimetric analysis of water soluble ionic contamination of blasting abrasives
ISO 11124 (Parts 2; 3; 4)	Preparation of steel substrates before application of paints and related products. Specifications for metallic blast-cleaning abrasives - Parts 2; 3; 4
ISO 11125 (Parts 1; 2; 3; 4; 5; 6; 7)	Preparation of steel substrates before application of paints and related products. Methods for testing metallic blast-cleaning abrasives - Parts 1; 2; 3; 4; 5; 6; 7
ISO 11126 (Parts 7; 8; 10)	Preparation of steel substrates before application of paints and related products. Specifications for non-metallic blast-cleaning abrasives: fused aluminium oxide, olivine sand, and garnet - Parts 7; 8; 10
ISO 11127 (Parts 1; 2; 3; 4; 5; 6; 7)	Preparation of steel substrates before application of paints and related products. Methods for testing non-metallic blast-cleaning abrasives - Parts 1; 2; 3; 4; 5; 6; 7

Reference	Title
ISO 12944 (Parts 1; 2; 3; 4; 7; 8)	Paints and varnishes - Corrosion protection of steel structures by paint systems - Parts 1; 2; 3; 4; 7; 8
ISO 14713	Protection against corrosion of iron and steel in structures - zinc and aluminium coatings - Guidelines
ISO 14919	Wires, rods and cords for flame and arc spraying - Classification - Technical supply conditions
ISO 19840	Paints and varnishes corrosion protection of steel structures by protective paint systems. Measurement of, and acceptance criteria for the thickness of dry films on rough surfaces
ISO 2063	Metallic and other inorganic coatings - Thermal spraying - Zinc, aluminium and their alloys
ISO 209	Aluminium and aluminium alloys - Chemical composition
ISO 2808	Paints and varnishes. Determination of film thickness
ISO 4628 (Parts 1; 2; 3; 4; 5; 6)	Evaluation of paint and varnish defects. Designation of intensity, quantity and size of common types of defect - Parts 1; 2; 3; 4; 5; 6
ISO 8501 (Parts 1; 2; 3)	Preparation of steel substrates before application of paints and related products. Visual assessment of surface cleanliness - Parts 1; 2; 3
ISO 8502 (Parts 1; 2; 3; 4; 6; 9)	Preparation of steel substrates before application of paints and related products. Tests for the assessment of surface cleanliness - Parts 1; 2; 3; 4; 6; 9
ISO 8503 (Parts 1; 2; 3; 4)	Preparation of steel substrates before application of paints and related products. Surface profile of abrasive blast-cleaned steel - Parts 1; 2; 3; 4
ISO 8504 (Parts 1; 2; 3)	Preparation of steel substrates before application of paints and related products. Methods for surface preparation - Parts 1; 2; 3

Total General Specifications

Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published in the applicable yearly collection.

Reference	Title
Not applicable	

3. Surfaces to be coated

The thermal spray coatings and sealers shall be applied in accordance with the principles of good workmanship described in [ISO 2063](#).