

Painting Works

Scope of Work

**FIDIC RED
BOOK**

SPECIFICATION SECTION

PAINTING SYSTEM

SURFACE PREPARATION	COATING SYSTEM	NO. OF COATS	DRY FILM THICKNESS (µm)	REMARKS
Surface Preparation	Sa 2½	1	75	Min.
Intermediate Coat	Epoxy Zinc Rich Primer	2	150	Each Coat
Finish Coat	Epoxy MIO (High Build)	2	150	Min.
Finish Coat	Polyurethane Finish	1	50	Min.
	Total DFT		275	Min.
COLOUR	As per Drawings / Specification			

NOTES:

1. All materials shall be as per Specification.
2. Surface preparation and application shall be in accordance with Manufacturer's recommendations.
3. Inspection and testing shall be carried out as specified.



FIDIC RED BOOK CONSTRUCTION CONTRACT

SCOPE OF WORK**PAINTING, COATING & SURFACE PREPARATION WORKS**

Employer:	[.....]
Project:	[.....]
Contract No.:	[.....]
Document No.:	[.....]
Revision:	A
Date:	[...../...../.....]
Discipline:	Painting / Coating / Surface Preparation (SP)
WBS Discipline Code:	SP

1. INTRODUCTION AND PURPOSE

This Scope of Work (SOW) defines the full extent of painting, coating, and surface preparation works required under the FIDIC Red Book Construction Contract. The CONTRACTOR shall supply all materials, labour, equipment, consumables, and supervision necessary to execute the Works in strict accordance with this SOW, the Project Specifications, the applicable Standards, and the Approved for Construction (AFC) drawings.

This SOW is to be read in conjunction with the General Preambles, the Painting/Coating/ Surface Preparation Discipline Preambles (Section 3.5), the Schedule of Unit Rates (Schedules SP0–SP8), and the Work Breakdown Structure (WBS) coding framework defined in Section 2 of the Pricing Preambles document.

In the event of any conflict between this Scope of Work and any other Contract Document, the order of precedence shall be as defined in the Contract. The Preambles shall take precedence over the Schedule of Rates descriptions.

2. DEFINITIONS AND ABBREVIATIONS

2.1 Definitions

The following definitions shall apply throughout this Scope of Work:

Term	Definition
EMPLOYER	The party identified as the Employer in the Contract Agreement.
CONTRACTOR	The party engaged to execute the Works under the Contract.
Works	All painting, coating, surface preparation, galvanising, and fireproofing activities described herein.
AFC Drawings	Approved for Construction drawings issued by the Employer.
Paint System	The complete sequence of surface preparation and coating applications as specified in the Project Paint Specification.
DFT	Dry Film Thickness – the thickness of a cured paint coating, measured in microns (µm).
SSPC / ISO 8501	Industry standards for surface preparation of steel prior to coating.
MTO	Material Take-Off – a quantified schedule of materials required to execute the Works.
WBS	Work Breakdown Structure – the Employer's coding system for identifying work scope items.
NDE	Non-Destructive Examination.
CS	Carbon Steel.
SS	Stainless Steel.
HDG	Hot Dip Galvanised.

2.2 Abbreviations

Abbrev.	Meaning	Abbrev.	Meaning
m	Linear Metre	m²	Square Metre
kg	Kilogram	no	Number / Each
µm	Microns	SP	Surface Preparation / Painting discipline
SOW	Scope of Work	QA/QC	Quality Assurance / Quality Control
ITP	Inspection & Test Plan	PFD	Process Flow Diagram

3. APPLICABLE DOCUMENTS AND STANDARDS

3.1 Contract Documents

The Works shall be executed in accordance with, but not limited to, the following Contract documents:

- FIDIC Red Book – Conditions of Contract for Construction (current edition as specified in Contract)
- General Preambles – Unit Rates for Construction Site
- Discipline Preambles – Section 3.5: Painting/Coating/Surface Preparation
- Schedule of Unit Rates – Painting/Coating/Surface Preparation (Schedules SP0 through SP8)
- Work Breakdown Structure (WBS) Coding Reference
- Project Paint Specification (as issued with tender documents)
- Project Scope of Work and Technical Requirements
- Approved for Construction (AFC) Drawings

3.2 Industry Standards

Where not superseded by the Project Specification, the following industry standards apply:

- ISO 8501 – Preparation of Steel Substrates Before Application of Paints and Related Products
- ISO 8502 – Assessment of Surface Cleanliness
- ISO 8503 – Surface Roughness Characteristics of Blast-Cleaned Steel Substrates
- ISO 12944 – Paints and Varnishes – Corrosion Protection of Steel Structures by Protective Paint Systems
- SSPC (Society for Protective Coatings) Surface Preparation Standards
- NACE International Coating and Lining Standards
- BS EN ISO 19840 – Measurement and Inspection of Dry Film Thickness
- Manufacturer's technical data sheets and application instructions for all specified coatings

4. WORK BREAKDOWN STRUCTURE (WBS) CODING

All painting and coating work items shall be coded in accordance with the Employer's WBS coding framework. The Level 3 discipline code for Painting/Coating/Surface Protection is SP. The table below summarises the Level 4 (material/grade) codes applicable to this discipline.

WBS L4 Code	Material / Category	Description
SP0	Carbon Steel	Pipework, pipe supports, steelwork supports, and structural steelwork in carbon steel.
SP1	Stainless Steel	Pipework, steelwork supports, and structural steelwork in stainless steel.
SP2	Carbon Steel Galvanise	Galvanised carbon steel pipework.
SP3	Any Material	Valves of all types (relief, butterfly, control, ball, gate, globe, motor operated).
SP4	Special Pipe Supports	Clamp type, spring hanger (constant/variable) and PTFE shoe type supports.
SP5	Insulated	General surfaces of insulated equipment and vessels.
SP6	Non-Insulated	General surfaces of non-insulated equipment and vessels.
SP7	Galvanising	Hot dip galvanising to structural steelwork.
SP8	Fireproofing	Supply and application of fireproofing to structural steelwork.

The Level 5 activity codes applicable to this discipline are:

WBS L5 Code	Activity Description
400	Supply, prepare surface and apply coating including touch-up in accordance with the project paint system/specification.
401	Hot dip galvanising in accordance with the project specification.
402	Supply, surface preparation and apply fireproofing as per project specification.

5. SCOPE OF WORK

The CONTRACTOR shall carry out all painting, coating, surface preparation, galvanising, and fireproofing work as defined in the Schedule of Unit Rates (Schedules SP0–SP8). The scope encompasses all new construction activities and includes any touch-up and remedial coating work required up to final handover. The following sub-sections define the work categories in detail.

5.1 Carbon Steel Pipework (WBS: SP0 / L5: 400)

Supply of all coating materials, preparation of all carbon steel pipe surfaces, and application of the complete specified paint system to all carbon steel pipework. Work shall be executed in accordance with the project paint system/specification and shall include all touch-up works. Pipework diameters covered range from ¼" to 44" as itemised in the Schedule of Rates.

Measurement: Linear metre (m) along the pipe centreline through all in-line fittings (bends, elbows, tees, reducers, branches, flanges and joints), excluding in-line equipment such as valves and flow meters, which are measured separately.

5.2 Stainless Steel Pipework (WBS: SP1 / L5: 400)

Supply of all coating materials, preparation of all stainless steel pipe surfaces, and application of the complete specified coating system to stainless steel pipework. The CONTRACTOR shall take full account of the surface preparation requirements specific to stainless steel (e.g. pickling, passivation, solvent degreasing) as required by the Project Specification. Diameters ¼" to 44" as itemised in the Schedule of Rates.

Measurement: Linear metre (m) – same basis as carbon steel pipework above.

5.3 Galvanised Carbon Steel Pipework (WBS: SP2 / L5: 400)

Supply of all coating materials, surface preparation, and application of the specified coating system to galvanised carbon steel pipework, including touch-up. Surface preparation shall be appropriate to galvanised substrates (sweep blast or etch primer) as specified. Diameters ¼" to 44" as itemised in the Schedule of Rates.

Measurement: Linear metre (m).

5.4 Coating of Valves – Any Material (WBS: SP3 / L5: 400)

Surface preparation and coating of all valve types listed below, including touch-up on completion. Valves are measured individually (enumerated) and described by type and nominal bore (¼" to 20"). The following valve types are included in the scope:

- Relief Valves
- Butterfly Valves
- Control Valves
- Ball Valves

- Gate Valves
- Globe Valves
- Motor Operated Valves (MOVs)

Measurement: Number (no) – enumerated per valve by type and diameter.

5.5 General Pipe Supports – Carbon Steel (WBS: SP0 / L5: 400)

Surface preparation and application of the specified coating system to general pipe supports fabricated from carbon steel. Supports are classified by weight category as follows:

- Not exceeding 5 kg each support
- Exceeding 15 kg but not exceeding 25 kg each support
- Exceeding 25 kg but not exceeding 50 kg each support
- Exceeding 50 kg but not exceeding 100 kg each support
- Exceeding 100 kg in total weight

Measurement: Kilogram (kg) – weight of supports to be coated, including attachment plates and brackets.

5.6 Special Pipe Supports (WBS: SP4 / L5: 400)

Surface preparation and coating of special pipe supports, enumerated by type and pipe nominal diameter (2" to 30"). The following types of special pipe support are included:

- Clamp Type
- Spring Hanger – Constant Type
- Spring Hanger – Variable Type
- Shoe PTFE Type

Measurement: Number (no) – per support, classified by type and nominal pipe diameter.

5.7 Steelwork Supports (WBS: SP0 & SP1 / L5: 400)

Surface preparation and coating of general steelwork supports in both carbon steel (SP0) and stainless steel (SP1), classified by weight category (same bands as Section 5.5 above).

Measurement: Kilogram (kg).

5.8 General Structural Steelwork (WBS: SP0 & SP1 / L5: 400)

Surface preparation and application of the specified coating system to general and isolated surfaces of structural steelwork in carbon steel and stainless steel.

- Work on general surfaces of steelwork
- Work on isolated surfaces of steelwork

Measurement: Square metre (m²) – net area as executed, with no deduction for voids not exceeding 1.0 m². Measured irrespective of the girth of the member coated.

5.9 Equipment and Vessel Surfaces (WBS: SP5 & SP6 / L5: 400)

Surface preparation and coating of insulated (SP5) and non-insulated (SP6) equipment and vessel surfaces.

- Work on general surfaces of equipment
- Work on general surfaces of vessels

Measurement: Square metre (m²) – net surface area as executed.

5.10 Hot Dip Galvanising to Structural Steelwork (WBS: SP7 / L5: 401)

Supply and execution of hot dip galvanising to structural steelwork in accordance with the Project Specification and applicable standards (e.g. BS EN ISO 1461). The work includes all surface preparation, degreasing, pickling, and fluxing prior to immersion, and all post-galvanising inspection.

Measurement: Kilogram (kg) – all galvanised surfaces.

5.11 Fireproofing to Structural Steelwork (WBS: SP8 / L5: 402)

Supply and application of all fireproofing materials to structural steelwork, including surface preparation, primer application, all fixing accessories (mesh, bands, mastic, sealant), application of the fireproofing material to the specified thickness, and touch-up, all in accordance with the Project Specification.

Measurement: Square metre (m²) – net area of steelwork surface to be fireproofed, irrespective of girth of the member.

6. METHOD OF MEASUREMENT

The following measurement rules shall apply and are consistent with Section 3.5 (Painting/Coating/Surface Preparation Preambles) of the Contract Preambles.

6.1 General Rules

1. Coating to general surfaces shall be measured in square metres (m²) irrespective of the girth of the member coated, except for supports which are measured in kilograms (kg).
2. Coating shall be measured net as executed in final installed position. No deductions shall be made for voids not exceeding 1.0 m² in area.
3. All individual measurements shall be made to two decimal places and totals expressed to two decimal places.
4. All dimensions shall be expressed in metric units. Where imperial dimensions are used in the Schedule of Rates (pipe diameters in inches), these shall be as described in the schedule item.
5. Items of work added by the CONTRACTOR to facilitate its method of working shall not be measured separately and shall be deemed included in the unit rates.

6.2 Pipework

6. Coating to pipework shall be measured in linear metres (m) along the centreline of the pipe through all in-line fittings such as bends, elbows, tees, reducers, branches, flanges, and joints.
7. Items of in-line equipment such as valves, flow meters, and bellow units are excluded from the linear metre measure and shall be measured and enumerated separately.
8. Measurement shall be by nominal pipe diameter as identified in the Schedule of Rates.

6.3 Steelwork Surfaces

9. Coating to general surfaces of steelwork (structural and supports) shall be measured in square metres (m²) irrespective of the girth of the member.
10. Coating to profiled or corrugated surfaces shall be measured to the net plan/elevation area with no allowance made for the additional surface area arising from the profile.
11. Coating to ladders and handrails shall be measured in linear metres (m) of the completed item.

6.4 Pipe Supports and Steelwork Supports

12. Coating to general pipe and steelwork supports (SP0 carbon steel) shall be measured in kilograms (kg) including attachment plates, brackets, and similar items, classified by weight band as defined in Section 5.5.
13. Special pipe supports (SP4) shall be enumerated (no) by type and nominal pipe diameter.

6.5 Equipment and Vessels

14. Coating to equipment and vessel surfaces shall be measured in square metres (m²) of the net outer surface area as executed.

6.6 Hot Dip Galvanising

15. Galvanising shall be measured in kilograms (kg) of steelwork galvanised.

6.7 Fireproofing

16. Fireproofing shall be measured in square metres (m²) of steelwork surface area treated, irrespective of the girth of the member.

7. RATE INCLUSIONS AND EXCLUSIONS

7.1 General Inclusions

All unit rates entered in the Schedule of Rates shall be deemed fully inclusive of all costs necessary to execute and complete the Works as described, regardless of difficulty, location, complexity, or quantity. Without limitation, the rates shall include for:

- Supply of all coating materials, primers, intermediate and finish coats, hardeners, thinners, and all other consumables in accordance with the project paint specification.
- All surface preparation including solvent washing, power-tool cleaning, abrasive blast cleaning, sweep blasting, and any other cleaning method specified, together with disposal of all blast media and waste.
- Masking and protection of all adjacent surfaces, equipment, nameplates, instruments, flanges, machined faces, and areas not to be coated, and subsequent removal.
- Application of all coating layers to achieve the specified dry film thickness (DFT) at each coat and in total, including any stripe coats.
- Measurement and recording of DFT at all stages using approved gauges, and testing for continuity, adhesion, and compliance with ambient conditions as specified.
- Preparation and coating of all welds prior to hydrotesting where applicable.
- All touching-up and making good of damaged or defective coatings at any stage of construction through to final handover.
- Colour coding, identification banding, flow arrows, product legends, and stencilling of identification on all major items as required by the Project Specification and relevant standards.
- Coating of all joints, fittings, stiffeners, straps, bolts, nuts, rivets, and similar items.
- All working at heights, including the provision, erection, maintenance, adaptation, and subsequent dismantling of scaffolding, staging, and access equipment as necessary.
- All temporary weather protection screens and enclosures as required to maintain the specified ambient conditions (temperature, relative humidity, dew point) during surface preparation and coating application.
- All management, supervision (below general foreman level), QA/QC, ITP compliance, inspection, testing, and documentation.
- Protection and maintenance of all completed coated surfaces throughout the construction period.
- All cleaning up and disposal of coating waste in accordance with applicable environmental regulations.

7.2 Specific Inclusions — Fireproofing (SP8)

- Supply of all fireproofing materials (intumescent, cementitious, or other as specified).
- All fixing accessories including reinforcing mesh, banding, mastic sealants, edge trims, and any other items required for a complete, durable fireproofing installation.
- Application of primer coat to steelwork surface prior to fireproofing.

- Touch-up and repair of any damaged fireproofing prior to handover.

7.3 Specific Inclusions — Hot Dip Galvanising (SP7)

- All surface preparation including degreasing, acid pickling, and fluxing.
- Hot dip galvanising bath immersion in accordance with BS EN ISO 1461 or as specified.
- Post-galvanising quench, inspection, and repair of any bare or defective areas using approved zinc-rich paint system.
- All transport to and from the galvanising plant.

7.4 Exclusions

The following items are expressly excluded from the painting and coating unit rates:

- Insulation of pipework, equipment, or steelwork (measured under the Insulation discipline – HI).
- Fabrication and supply of the steelwork, pipework, or equipment to which the coating is applied (measured under the relevant supply/fabrication discipline).
- Statutory permits and approvals (included in Preliminaries or Fixed Fee).
- Specialist chemical cleaning / pickling of pipework interiors (unless specifically included in a line item description).

8. MATERIALS AND PAINT SYSTEM

8.1 General

All coating materials shall be from manufacturers approved by the Employer and shall comply fully with the Project Paint Specification. The CONTRACTOR shall submit manufacturer's technical data sheets, safety data sheets (SDS), and certificates of compliance for all proposed coating products prior to commencement of any coating work.

Substitution of any approved coating product with an alternative product shall only be permitted with the prior written approval of the Employer. The CONTRACTOR shall bear all costs associated with any re-testing or re-qualification required for substitute products.

8.2 Paint System Documentation

The CONTRACTOR shall maintain the following documentation for all coating works:

- Approved paint system schedule cross-referenced to the relevant line or equipment tag numbers.
- Batch numbers and certificates of all coating materials used.
- Surface preparation reports signed by the CONTRACTOR's coating inspector and the Employer's representative.
- Daily environmental monitoring records (air temperature, substrate temperature, relative humidity, dew point).
- DFT measurement records for each coat and the total system, at the frequency required by the ITP.
- Holiday (pinhole) test records where applicable.
- Adhesion test records where required.
- Non-conformance reports (NCRs) and associated corrective action records.

8.3 Material Supply

The supply of all coating materials is the CONTRACTOR's responsibility unless specifically designated as Employer-furnished material in the Contract. Rates for material supply shall include for all costs defined as 'Supply' in the General Preambles, including procurement, QA/QC, packing, transport, storage, preservation, and delivery to the Work Site, together with an allowance for waste.

9. QUALITY ASSURANCE AND INSPECTION

9.1 Inspection and Test Plan (ITP)

Prior to the commencement of coating works, the CONTRACTOR shall prepare and submit for the Employer's review and approval an Inspection and Test Plan (ITP) covering all coating activities. The ITP shall identify all hold, witness, and review points and shall reference applicable standards, acceptance criteria, and documentation requirements.

9.2 Coating Inspector Qualifications

All coating inspection activities shall be carried out by personnel holding a current NACE/AMPP Coating Inspector Level 2 (or equivalent, e.g. BGAS Painting Inspector Grade 2) qualification, or as otherwise specified in the Project Quality Requirements. Certificates shall be submitted to the Employer prior to commencement.

9.3 Pre-Application Checks

The CONTRACTOR's coating inspector shall verify and document the following before each coat is applied:

- Surface preparation standard achieved (cleanliness and anchor profile) is as specified.
- Ambient conditions (temperature, humidity, dew point) are within the paint manufacturer's specified application window.
- Substrate temperature is at least 3 °C above the dew point.
- All previous coats have achieved full cure as per the paint manufacturer's data sheet.
- All masking, protection, and contamination removal is complete.

9.4 Non-Conformances

All non-conforming work shall be recorded on an NCR and shall be rectified by the CONTRACTOR at no additional cost to the Employer. Rectification methods shall be approved by the Employer prior to implementation. The cost of all repair, re-testing, and re-inspection arising from non-conforming coating work is deemed included in the unit rates.

10. HEALTH, SAFETY, SECURITY AND ENVIRONMENT (HSSE)

The CONTRACTOR shall comply with all applicable national and local health, safety, security, and environmental legislation, as well as the Employer's HSSE requirements and the Project HSSE Plan. The CONTRACTOR shall prepare and submit its own HSSE Plan specific to painting and coating activities for Employer approval prior to commencement.

As a minimum, the CONTRACTOR shall address the following in its HSSE documentation:

- COSHH / hazardous substances assessments for all coating materials used on site, including dust from abrasive blasting.
- Risk assessments and method statements (RAMS) for all coating operations, including blast cleaning, spray application, work at height, confined space entry (where applicable), and hot work adjacent to or within completed coating works.
- Provision, maintenance, and enforcement of the use of appropriate personal protective equipment (PPE), including respiratory protection, eye protection, chemical-resistant gloves, and protective clothing.
- Storage, handling, and disposal of flammable solvents and coating materials in accordance with statutory requirements.
- Waste management plan for all coating waste, including contaminated blast media, paint tins, and solvent waste, ensuring compliance with applicable environmental regulations and safe disposal of hazardous waste.

- Fire prevention measures during and after coating application, particularly in confined or enclosed areas.
- Control of overspray and coating pollution in the vicinity of the work area.

11. PRICING AND COMMERCIAL REQUIREMENTS

11.1 Unit Rate Structure

Unit rates shall be entered by the CONTRACTOR in the Schedule of Rates for each item identified. Each composite rate shall be broken down into the following components as required by the Employer:

- Composite Rate (Euro) – the total all-in unit rate inclusive of materials, labour, overhead, and profit.
- Material Cost (Euro) – the unit cost of coating materials and consumables only.
- Labour Cost (Euro) – the unit cost of all direct and indirect labour.
- Man-hours per Unit (Mhrs/Unit) – the number of man-hours per unit of the item.

Where material is free-issued by the Employer, the CONTRACTOR shall leave the material cost column blank and price only for labour and consumables.

11.2 Fixed Rates

All rates and prices quoted shall remain firm and fixed for the duration of the Contract and shall not be subject to price escalation, unless otherwise provided for in the Contract.

11.3 Valuation of Changes

Changes in the scope of painting and coating works (additions or omissions) shall be valued using the rates and prices contained in the Schedule of Rates. The rates shall apply equally to work executed in large or small quantities, at all elevations, in all positions, and at all locations on the Work Site. Only where no applicable rate exists shall a new rate be negotiated in accordance with the Contract.

11.4 Preliminaries

All Preliminaries costs shall be included by the CONTRACTOR against the respective Lump Sum or Fixed Fee items and shall not be included within the Measured Work unit rates.

12. CONTRACTOR OBLIGATIONS AND RESPONSIBILITIES

17. The CONTRACTOR shall familiarise itself fully with the Scope of Work, Project Specifications, AFC Drawings, and all other Contract Documents prior to submission of its tender. No claim for additional payment on the grounds of unfamiliarity with the Contract Documents will be entertained after Contract award.
18. The CONTRACTOR shall be responsible for the preparation of all MTOs, procurement, QA/QC, expediting, and delivery of all coating materials required to execute the Works.
19. The CONTRACTOR shall provide and maintain sufficient coating equipment (blast machines, spray equipment, DFT gauges, holiday detectors, environmental monitoring equipment, etc.) to execute the Works in accordance with the programme.
20. The CONTRACTOR shall provide suitably experienced and qualified coating supervisors and inspectors at all times during coating operations.
21. The CONTRACTOR shall coordinate with other disciplines (pipework, structural steelwork, mechanical, insulation) to ensure that coating works are executed in the correct sequence and that completed coatings are adequately protected from damage by subsequent site activities.
22. Should the CONTRACTOR identify any work items not listed in the Schedule of Rates that it considers necessary for the complete execution of the coating scope, the CONTRACTOR shall

advise the Employer and propose an appropriate additional description and rate for the Employer's consideration and approval prior to executing the work.

23. The CONTRACTOR shall comply fully with the requirements of the Preambles; any cost imposed by compliance is deemed included in the unit rates.

13. DOCUMENT REVISION HISTORY

Rev.	Date	Author	Description of Revision
A	[...../...../.....]	[.....]	First Issue for Tender
B			
C			