



	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							
		DOCUMENT .NO							
	Surface preparation and painting Procedure	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 1 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019

Surface preparation and painting Procedure

Code1	<input type="checkbox"/> Approved: Vendor shall issue "AFC"/ "FIN" status.
Code2	<input type="checkbox"/> Approved as noted: Vendor to amend and submit the "Issued for Approval" status.
Code3	<input type="checkbox"/> Commented: Vendor to amend and submit the "Issued for Approval" status.
Code4	<input type="checkbox"/> Rejected: (vendor to resubmit with same revision)
The above checking result by Purchaser shall in no way relieve Vendor of any liability, obligation and responsibility out of the purchase order and the mutual agreement in writing	
 中国石化工程建设有限公司 SINOPEC ENGINEERING INCORPORATION	 شرکت طراحی و ساختمان نفت OIL DESIGN & CONSTRUCTION CO.
Date: Dept.: Signature:	
Only for internal review	
CV	PI EL IN ME MA
ST	MC PR SF HV TC

01	3-Aug-2019	ISSUED FOR APPROVAL	M. Amiri	M. Abbaszadeh	B. Sheikhbeigi
00	3-Mar-2019	ISSUED FOR APPROVAL	M. Amiri	M. Abbaszadeh	B. Sheikhbeigi
REV.	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED

Project No.:17176






	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							
		DOCUMENT .NO							
	<i>Surface preparation and painting Procedure</i>	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 3 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019

Table of Contents

1.	Scope	4
2.	Definition	4
3.	Reference.....	4
4.	Requirement	6
5.	General	6
6.	Surface preparation	7
7.	Storage, mixing and thinning of products	8
8.	Priming	9
9.	Painting application.....	10
10.	Galvanizing	11
11.	Inspection	11
12.	Quality control and testing	11
13.	.Repair of Defects or Damage.....	13
14.	Paint system	13
15.	Painting reports	14

 NIOEC	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							AAC
		DOCUMENT .NO							
 中国石化工程建设有限公司 SINOPEC ENGINEERING CORPORATION	Surface preparation and painting Procedure	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 4 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019

1. Scope

The following procedure covers the minimum requirements for surface preparation and paint application for **HP GAS AIR COOLER (E-5614)** and **LP GAS AIR COOLER (E-5615)** for "ABADAN REFINERY UPGRADING PROJECT".

2. Definition

Project: Abadan Refinery Upgrading Project

Employer: National Iranian Oil Engineering and Construction Company (NIOEC)

Contractor: Consortium of Sinopec Engineering Incorporation (SEI) and Oil Design and Construction Company (ODCC)

Purchaser: Consortium of Sinopec Engineering Incorporation (SEI) and Oil Design and Construction Company (ODCC)

Vendor: Aban Air Cooler Co.

3. Reference

3.1 - For undated references, the latest edition of the referenced document before the year 2010 (including any supplements and amendments) applies. For dated references, the edition cited applies. The applicability of changes in dated references that occur after the cited date shall mutually be agreed upon by NIOEC and the Vendor/Contractor.

3.2. The following design codes, standards and specification shall be used for the design and application of painting and protective coatings, where referred to in this specification.

ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)

ASTM D-3359 "Standard Test Methods for Measuring Adhesion by Tape Test

BSI (BRITISH STANDARDS INSTITUTION)

BS 381C (1988) "Colors for Identification, Coding and Special Purposes"



BS 6150 "Code of Practice for Painting of Buildings"

IPS (IRANIAN PETROLEUM STANDARDS)

IPS-M-TP-168 "Material and Equipment standard for Acrylic Silicone Finish Paint for Temperature Applications Up to 230°C"

IPS-M-TP-190 "Material and Equipment Standard for Coal Tar Epoxy Polyamide Paint as Primer, Intermediate and Top Coat"

IPS-M-TP-205 "Material and Equipment standard for Zinc Rich Epoxy Paint (Organic) as Primer, Intermediate and Top Coat"

 NIOEC	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							AAC
		DOCUMENT .NO							
 中国石化工程建设有限公司 SINOPEC ENGINEERING CORPORATION	Surface preparation and painting Procedure	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 5 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019

IPS-M-TP-210 "Material and Equipment standard for Zinc Silicate (inorganic) Paints as Primer, Intermediate and Top Coat"

IPS-M-TP-215 "Material and Equipment standard for Epoxy Polyamide Primer"

IPS-M-TP-220 "Material and Equipment standard for Epoxy Polyamide Intermediate Paint"

IPS-M-TP-225 "Material and Equipment standard for Epoxy Polyamide Paint as Top Coat"

IPS-M-TP-235 "Material and Equipment standard for Two Pack Aliphatic Polyurethane Paint as Top Coat"

ISO (INTERNATIONAL ORGANIZATION FOR STANDARDIZATION)

12944(1998) "Paints and Varnishes-Corrosion Protection of Steel Structures by Protective Paint System"

8501-1(1988) "Rust Levels of Steel Structure and Quality Levels for Preparation of Steel Surfaces for Rust Protecting Surfaces"

ISO (INTERNATIONAL ORGANIZATION FOR STANDARDIZATION)

12944(1998) "Paints and Varnishes-Corrosion Protection of Steel Structures by Protective Paint System"

8501-1(1988) "Rust Levels of Steel Structure and Quality Levels for Preparation of Steel Surfaces for Rust Protecting Surfaces"

NIOEC-SP (NIOEC SPECIFICATION)

NIOEC-SP-00-10 "NIOEC Specification for units"

1071-00-ED-MC-SP-8002-A3 Latest revision of Job specification for painting



SSPC (STEEL STRUCTURE PAINTING COUNCIL)




SSPC-Vol. 1(1994) "Good Painting Practice"

SSPE-Vol. 2(1994) "Systems and Specification"



API 661: Air-Cooled Heat Exchangers for General Refinery Services, Latest revision

SPECIFICATION FOR PAINTING: 1071-00-ED-MC-SP-8002

	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							
		DOCUMENT .NO							
	Surface preparation and painting Procedure	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 6 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019

4. Requirement

4.1) Coating for the protection of air cooler shall be designed and applied; for the application over the specified minimum surface preparation standards detailed in this procedure.

4.2) The paint system shall generally be based on the operating temperature of the equipment and reference specification.

5. General




All surfaces shall receive an appropriate paint system as with the following exceptions:

- any equipment furnished completely painted by the manufacturer unless it is specially required to match a color scheme or to repair damage to the paint film;
- hot-dip galvanized steel, weathering steel, stainless steel and non-ferrous metals, monel, brass, copper, aluminum jacketing;
- nonmetallic surface;
- nameplates, code stampings and push-buttons;
- surfaces to be fireproofed;
- concrete, brickwork, tile, glass and plastics, unless specially required;
- machined surfaces;
- insulation weatherproofing material or sheeting;
- rubber, hoses, belts, flexible braided connectors, stainless steel tubing and fittings, gages, valves, and motor shafts;
- and any surface particularly indicated as not to be painted.

5.1) The manufacturer shall provide and maintain in good condition all plant, equipment and tools necessary to carry out the work in and tools necessary to carry out the work in an efficient manner.

5.2) The manufacturer shall provide, unless otherwise instructed, all paints and thinners necessary to carry out the work. *The painting material shall be purchased by manufacturer/ vendor himself. The sub vendor shall comply with Owner's/contractor's requirement.*

5.3) The manufacturer shall provide skilled and experienced personnel to carry out the work together with competent and qualified supervision.

	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							
		DOCUMENT .NO							
	Surface preparation and painting Procedure	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 7 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019

5.4) The manufacturer shall comply fully with this specification unless otherwise approved by the contractor. Additionally, the work will be subject to continuous inspection by the inspector who will be at liberty to check at every stage that the work is being carried out in accordance with all aspects of this specification.

5.5) Prior to the commencement of work, the manufacturer shall submit for the approval of company, fully detailed procedure as to how he intends to carry out the work within the frame work of this specification & Document.

5.6) The equipment listed below shall be shielded to prevent : damage during surface preparation and painting operations. All opening, including those which are flanged or threaded. Shall be sealed to prevent entry of sand, dust, or coating materials

- Name plates and notices
- Packing glands
- Packing seal
- Pressure gauges
- Gauges glasses
- Instrument dials

5.7) All equipment which should be heat treated, shall be painted after heat treatment. Machined and threaded surfaces shall be protected with temporary rust preventative paint.

5.8) In case of any deviation between 1071-00-ED-MC-SP-8002 and current specification, *Manufacturer shall write official letter to contractor for further clarification. The purchasing work cannot be done until obtaining contractor's reply.*



6. Surface preparation

6.1) Paint life depends primarily on surface preparation. surface preparation should remove foreign bodies to allow the type of priming paint used to wet the surface thoroughly and develop adequate adhesion.



6.2) All rough edged cuts & welds, weld spotters, indentations, all surfaces & protrusion must be ground to smooth out the contour before the surface is prepared for painting .Any grinding performed after blast cleaning ,must be re-blast to required roughness.

6.3) All bolt holes shall be drilled and blunted before blasting.

6.4) Prior to surface preparation, the surface shall be inspected for spotting oil and grease deposits or pollution on the surface. If any, the deposits of oil or grease shall be removed from the surface by solvent cleaning prior to further surface preparation.

6.5) Required Cleanliness

All surfaces prepared for coatings shall satisfy:

 NIOEC	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							AAC
		DOCUMENT .NO							
 中国石化工程建设有限公司 SINOPEC ENGINEERING CORPORATION	Surface preparation and painting Procedure	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 8 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019

- SA 2 1/2 for temperature up to 120 and SA 3 for above 120 °C according to Swedish Standard SIS 05 5900 or,
SA 2 1/2: Near white blast cleaning

SA 3: White blast cleaning

6.6) Required Roughness

6.6.1) - All surfaces shall be blast cleaned to obtain a total angular roughness included:

- between 30 and 50 microns when total thickness of the coats of paint applied is less than 400 microns,
- between 50 and 80 microns when total thickness of the coats of the paint applied is greater than 400 microns.

6.6.2) The prepared surfaces should be cleaned using dry air or clean brush.

6.7) Surface preparation shall not take place in the following conditions:

a- At temperature below 10 °C

b- When the relative humidity is greater than 85%

If the air's relative humidity exceeds 80 %, the Applicator must obtain permission from the Company to proceed with or continue with surface preparation. The applicator must provide a hygrometer to measure the air's relative humidity.

c- When the metal surface temperature is less than 3 °C above the ambient dew point.

d- Paint material shall not be applied in rain , snow , fog or mist , nor to wet damp surfaces or to frosted or ice coated surfaces.

6.8) All abrasives shall be free of dust, dirt and other foreign matter. They shall be of a reusable type and to be kept dry at all times.

Abrasive material for blast cleaning, consisting solely of steel shot shall not be used. A mixture consisting of steel shot and at least 25% by weight steel grit is acceptable.

6.9) Chipping, scraping and steel wire brushing using manual or power driven tools shall only be used where blast cleaning is impractical, with the approval of owner authorized inspector.




7. Storage, mixing and thinning of products

7.1) STORAGE CONDITION

7.1.1)-All paints and thinner containers shall be kept closed before use and stored under shelter.

7.1.2)-The settlement of heavy paints shall be lessened by rolling the drums in which they are stored every six weeks. Turning the drums on their ends is not allowed. The normal finishing paints & drum paints do not require rolling during the storage period.

7.1.3)-Any paint for which the shelf life is expired shall not be used. The maximum storage time for paints shall be in accordance with manufacturer's recommendations. Paints shall not be stored in open containers, even for a short time.

	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							
		DOCUMENT .NO							
	<i>Surface preparation and painting Procedure</i>	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 9 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019

7.1.4)-Paint shall be stored in a well ventilated room, free from excessive heat or direct rays of the sun & maintained at a temperature of between 4 °C and 27 °C. Open air storage shall be avoided particularly of heavy paints such as primers and undercoats.

7.2) Mixing

7.2.1) Before opening the can, the paint should be checked if it complies with the specification.

7.2.2) Material inspection should be conducted on real paint, and when the **vendor** opens the can for the first time, the client's inspector should witness it as a rule. Client will inspect the batch.

7.2.3) Paint-can should be opened just before using as a rule: the paint-can once opened, should be securely closed for storage, and better finished early.

7.2.4) Any paint skin, which has formed in the container, shall be cut and removed, if the skin is thicker than 2 mm the paint shall not be used.

7.2.5) The paint in opened can should be stirred sufficiently until it becomes uniform. Up to 20 liters of paint should be stirred manually, and over 20 liters use a machine. No stirring is allowed with compressed air.

7.2.6) Special paints, such as “epoxy resin paint” and “zinc rich paint”, which are supplied as two or more components in separate containers shall be mixed together immediately before their use. The mixed paints shall be applied within their pot life.

7.2.7) When thinner is necessary, unspecified thinner should not be used. Also, the amount should not be exceeded.

7.2.8) For color, it is necessary to use paints mixed to the specified color at the production plant.

7.3) Thinning




7.3.1) No thinners are to be added unless necessary for proper application, thinning must never exceed manufacture recommendations.

7.3.2) Thinners used must be those suggested by the manufacturer.

7.3.3) When use of thinner is authorized by the manufacture, it shall be added during mixing. Thinners must be added under the guidance of the specialist who is thoroughly familiar with the quantity and type of added thinner.

8. Priming

8.1) Prepared surface should be primed generally within four hours or before visible re-rusting occurs. Cleaned surface shall never be left overnight prior to coating, in such case re-blasting or re-cleaning is necessary.

 NIOEC	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							
		DOCUMENT .NO							
 中国石化工程建设有限公司 SINOPEC ENGINEERING CORPORATION	Surface preparation and painting Procedure	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 10 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019

8.2) In order to minimize contamination between successive coat of paint, over coating of the preceding coat shall be done as soon as it is permitted by the particular specification, and not delayed beyond the period specified.

8.3) The primer to finishing coat paint shall be from the same manufacturer for each system to ensure compatibility.

9. Painting application

9.1) Procurement and storage

The quantities of paint and thinners required to perform the entire job shall be procured before the work commences, except in cases where the shelf life of the product is less than the anticipated duration of the work. Thinners, solvents, etc. shall be stored in a suitably ventilated fireproofed building, separate from other painting consumables.

The products shall be delivered in their original sealed packaging and stored in such conditions as to avoid their degradation. The packaging shall be clearly marked with the product description, the batch number, the fabrication date and the expiry date.

9.2) Application

9.2.1) General

Paint shall always be applied to surfaces that are dry, clean and degreased, for both coating on substrate and previous coat.

In the following cases, no painting work should be done as a rule.

(1) Humidity: 85% or higher

(2) Rainy weather




(3) Temperature: below 5°C

(4) Strong wind and severe sand dust

(5) Painted surface temperature: 35 °C or higher

(6) When the temperature of the surface is less than 3°C above the dew point of the surrounding air, and/ or the relative humidity is higher than 80%

(7) When there is the likelihood of an unfavorable change in weather conditions within two hours after coating **VENDOR** shall keep a daily record of the dew point, relative humidity, ambient atmosphere and substrate temperatures (all measured before the work commences and twice per shift and when ambient conditions are obviously changing) to ensure that conditions are acceptable. These records shall be kept and made available to **COMPANY**. Application shall be by airless spray

	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							
		DOCUMENT .NO							
	<i>Surface preparation and painting Procedure</i>	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 11 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019

10. Galvanizing

10.1) Hot -dip galvanizing shall be in accordance with ASTM A123 on products fabricated from rolled, pressed and forged steel snaps, plates, bars and strips except that pipes for hand railing shall meet ASTM A-153.

INSPECTION

11. Inspection

11.1) **Vendor** shall advise the owner inspector before commencing specific paint applications. 01

11.2) Inspector shall have the right to inspect the paint work at all stages and to reject any and all tools, instruments, material, staging or equipment of work which do not conform to the specification.

11.3) Each coat paint shall be free from defects and damage. Finished paint shall have the correct shade, degree of gloss and evens and be free from tackiness after drying/curing and from cracks, holidays, runs, sags, wrinkles, patchiness brush or roller marks or any defects that may be deleterious to the quality of the coating.

11.4) Prior to final acceptance of completed work, a joint inspection shall be made by **vendor** and owner inspector and an agreed inspection report to be signed by both parties. 01

11.5) Inspection by the paint manufacture or an independent inspection service shall not relieve the **vendor** of responsibility for ensuring that the work is carried out in accordance with the specification.

11.6) Before commencement of shop preparation and painting, a meeting between the coating manufacturer, **vendor** and company's representative shall be convened, to establish and agree, when necessary, visible blast standard, blast profile, satisfactory application the coating and agreement and calibration of inspection equipment. 01

11.7) Each coat shall be inspected prior to application of the next coat, Areas found to contain runs, over spray, roughness, cracks or other signs of improper application shall be repaired or recoated in accordance with the authorized inspector recommendation.

12. Quality control and testing




12.1) **Vendor** shall submit his proposed quality control and testing procedures covering all phases of surface preparation and paint application to company for approval. 01

12.2) Manufacturers of all materials shall supply test certificates of all tests performed and certificate of compliance stating that the material meets the requirements of the applicable specification.

12.3) Before paint application the prepared surface shall be inspected visually by Quality Control Inspector and if the result is satisfactory the parts can be released for painting.

12.4) After paint application following test shall be performed by Quality Control Departments:

- Visual check

 NIOEC	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							AAC
		DOCUMENT .NO							
 中国石化工程建设有限公司 SINOPEC ENGINEERING CORPORATION	Surface preparation and painting Procedure	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 12 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019
 ترک طراحی و ساختمان نفت OHL DESIGN & CONSTRUCTION CO.									

- Thickness check

- Adhesion test

12.5) Visual Check

Coating film should be inspected visually after each application, before application and before application of the next coat in order to verify that the whole surface is free of defect as:

- Mud cracking

- Inclusion and cleanliness

- Holidays

- Bubble

- Mechanical damage

- Runs/Sags

- Over spray

12.6) Thickness Check

Dry film thickness measuring procedure:

(1) Checking equipment:

Micro tester

Electromagnetic film thickness gauge

(2) Checking procedure:

For paint coat accepted in dry-state test, thickness of specified number of coat should be measured in specified places separately. For measuring, the electromagnetic film thickness gauge should be used where applicable. When it is, however, difficult to measure in specific measurement conditions or installation conditions, a micro tester may be used. In any case, the same measuring instrument should be used in the whole process as a rule.

(3) Checking process and period

The paint coat should be measured when the coating film is in dry-hard state after completion of the undercoating and the final coating.

(4) Judgment method




It should be judged whether the measured film thickness is same to specified film thickness.

(5) Criterion

The average specified film thickness should be obtained.

- On each spot, make 5 measurements by moving the probe a short distance for each new gage reading. Take the average of the five gage reading as the spot measurement. Each coat thickness and total thickness shall be checked. Make five separate spot measurements spaced evenly over each section of the structure 10 m² in area.

NOTE: Average of spot measurements \geq specified DFT

 NIOEC	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							AAC
		DOCUMENT .NO							
 中国石化工程建设有限公司 SINOPEC ENGINEERING CORPORATION	Surface preparation and painting Procedure	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 13 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019
 ترک طراحی و ساختن نفت OHL DESIGN & CONSTRUCTION CO.									

All individual measurements $\geq 90\%$ of specified DFT

12.7) Adherence Check

Adhesion test shall be performed according to ASTM D4541 or ASTM D3359.

12.8) Inspection Results

All quality control results shall be written up into reports.

All reports shall be submitted to the authorized inspector for approval.

13. .Repair of Defects or Damage

Touch up work on damaged surfaces:

Surface is damaged as substrate material is seen:

The surfaces shall then be prepared to the standard as originally specified (for large damaged areas), or prepared to the highest possible standard using mechanically operated tools (for small local damaged spots up to 1 square meter

After surface preparation, primer layer is applied and after considering required interval for recoating, top coat will be executed.

(2) Surface is scratched:

At first, all oil and grease shall be removed from the surface then top coat will be applied.

(3) Damaged surface touching up could be done with paint brush for small surfaces and spray for large surfaces (in this case, surrounding of damaged surfaces shall be covered to prevent from contacting with intact surfaces).

Where touching up prior to top coating of zinc based primers is involved, this shall be preceded by thorough cleaning with solvent or an emulsion type cleaner or remove all oil and grease. This shall be followed by thoroughly hosing down with clean potable water which in the case of surfaces that have not been tie coated shall be carried out in conjunction with manual scrubbing with stiff brushes in order to remove all surface dirt and other contaminants, zinc corrosion products (with rust) etc.




14. Paint system

14.1) Organic zinc rich primer two component epoxy based zinc rich primer. The metallic zinc content is a minimum 80% by weight of total solids & provides sacrificial protection & high anti-corrosive stability to steel surfaces. Continuous heat resistance is achieved in the temperature range up to 150 °C.

Epoxy: Two component polyamide cured epoxy paint. Generally it has good resistance to chemicals & exhibits good durability. Continuous heat resistance is achieved in the temperature range up to plus 120 °C.

Polyurethane: Two component isocyanate-free, aliphatic type polyurethane top coat. Generally this paint product extremely hard & good chemical, weather resistance & excellent durability & gloss retention.



This document belongs to NIOEC and is confidential and shall be used according to provisions of Abadan Refinery Upgrading Project, Islamic Republic of Iran.
Contract No.: 1071/GC-GN/CON/EPCS

	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							
		DOCUMENT .NO							
	<i>Surface preparation and painting Procedure</i>	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 14 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019

14.2) Paint system applicable shall be in accordance with A.

15. Painting reports

See Attachment 1.

 NIOEC	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							AAC
		DOCUMENT .NO							
 中国石化工程建设有限公司 SINOPEC ENGINEERING CORPORATION	Surface preparation and painting Procedure	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 15 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019

Paint System Determination




Item No.	Material	Operating Temperature (°C)	Paint System
E-5614	Incoloy UNS N08825	157.7	NA
E-5615	Incoloy UNS N08825	154	NA
Steel Structures and Side Frame (all items)	Carbon Steel	Ambient	A
Plenum and fan ring	Carbon Steel	Ambient	Hot dip galvanized

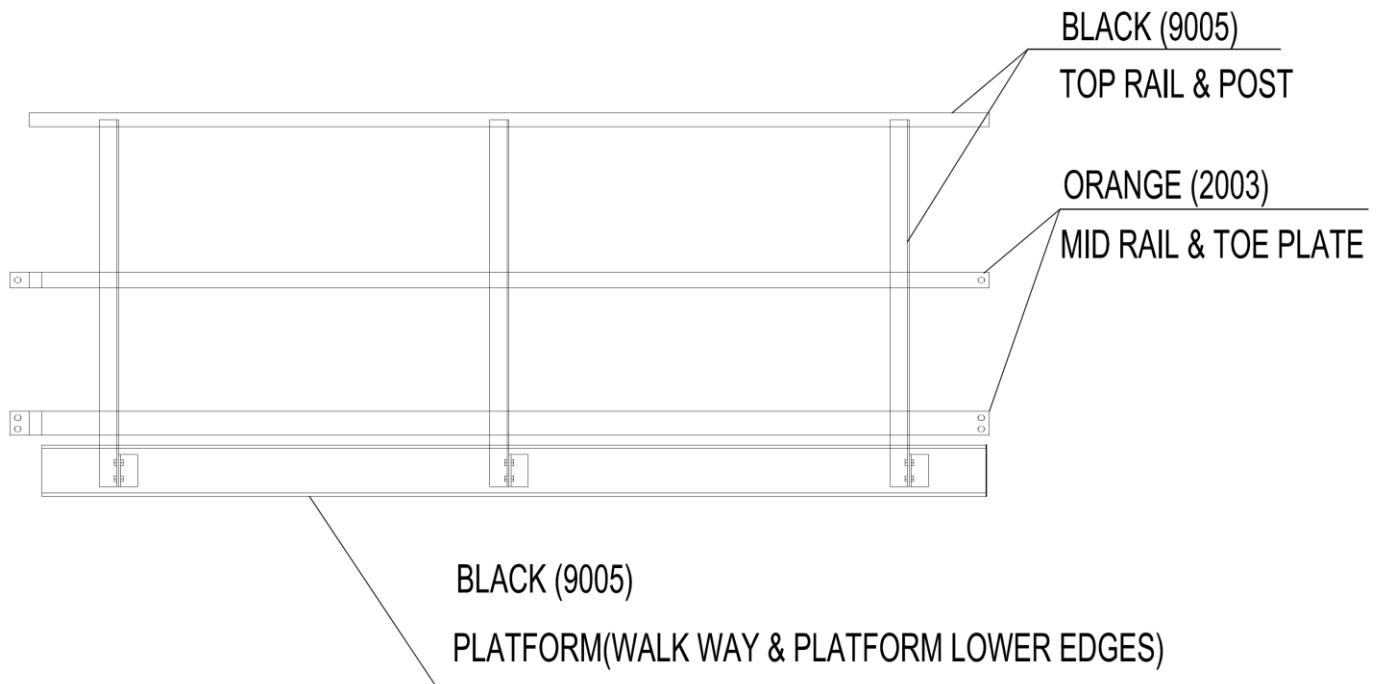
Paint system A:




Item: Side Frame (all items)			Operating Temperature:	Up to 120 °C
Minimum surface preparation				SA 2 1/2
Paint and DFT (microns)	Primer	zinc-rich epoxy		75
	Intermediate	epoxy polyamide		150
	Finishing	two-pack polyurethane		50
Total DFT (microns)				275
Finishing RAL	Main Steel Structure (side frame, Column, Brace ,Beam , Pipe Support , Walk Way Support, Motor Support, Bearing Block)*, **			1011, Brown beige
	Hand Rail (Toe plate and mid-rail), safety gate and safety devices			2003, Orange
	Hand Rail (Excluding toe plate and mid-rail), top rail, ladder, Platforms lower edges(walkway)			9005, Black

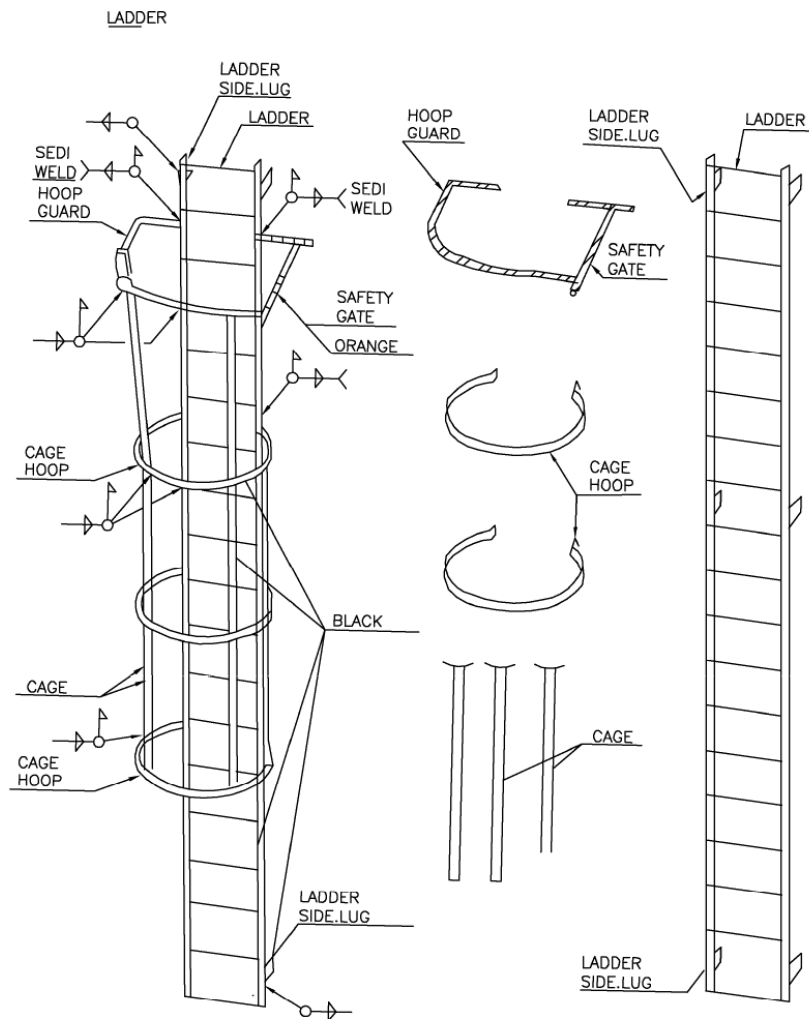
*** Plenum, Fan ring and fan guard shall be Hot - dip galvanized.**

**** Steel surfaces not in direct bonded contact, but inaccessible after assembly shall receive the full specified paint system before assembly. During assembly, if there are any damages to paint surface, it shall be repaired by suitable method.**




	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							
		DOCUMENT .NO							
	Surface preparation and painting Procedure	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 17 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019




	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							
		DOCUMENT .NO							
	Surface preparation and painting Procedure	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 18 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019



LADDER (ALL BLACK RAL 9005)
SAFETY GATE OR SAFETY DEVICE (ORANGE RAL 2003)

	ABADAN REFINERY UPGRADING PROJECT	PO.NUMBER : 1071-S2-ME-PO-039-4452-A0-0							
		DOCUMENT .NO							
	Surface preparation and painting Procedure	Proj	PO.No	Disc	Type	Cost Code	Ser. No	Rev	PAGE 19 of 19
		1071	S2ME039	ME	VPRC	4452	008	01	DATE: 3-Aug-2019

Attachment 1

	Quality Control					Report No.:		
	Painting Report					Date Of Exam. :		
PROCEDURE No. : DOCUMENT NO. : SAND BLAST : PRIMER : INTERMEDIATE : FINISHING : FINISH COLOR : Temperature :							TOTAL THK : THK : THK : Humidity :	Dew point temp :
ITEM NO:								
SR No.	Description	THK(mic)	Result	Date	TIME	Curing & adhesion		
1	Sand Blast							
2	Primer							
3	Intermediate							
4	Finish							
Note:								
Inspector	A.A.C Inspector	Purchaser			TPI Inspector			
NAME & SIGNATURE								
Qualification								
DATE								