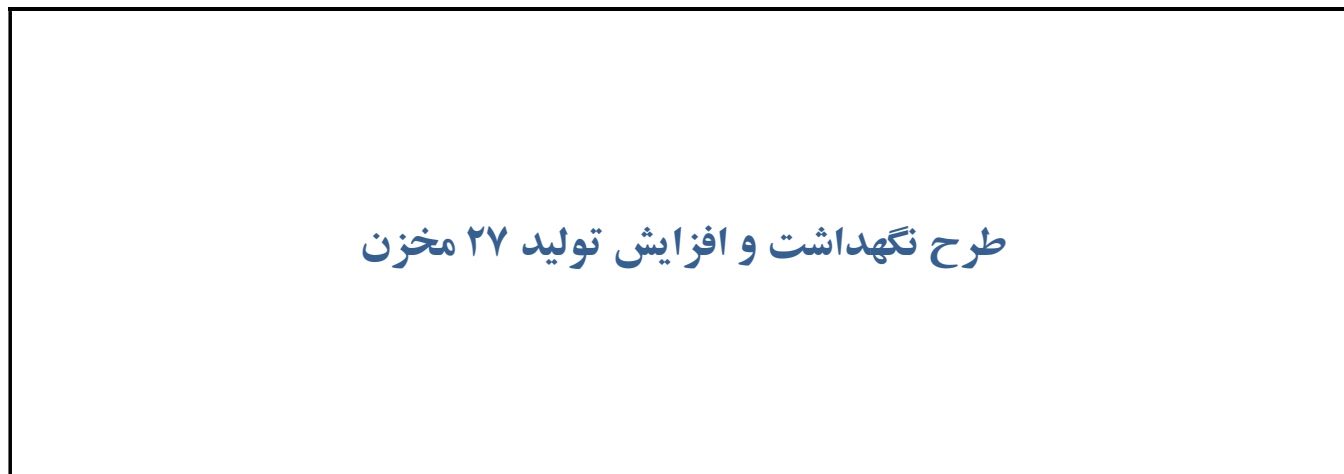


 NISOC	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض</p> <p>خرید پکیج پمپ های آب آتشنشانی ایستگاه تقویت فشار گاز بینک (قرارداد BK-HD-GCS-CO-0023_00)</p>																									
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SURFACE PREPARATION AND PAINTING PROCEDURE

نگهداشت و افزایش تولید میدان نفتی بینک

V01	FEB. 2025	AFC	Kalaye Pump	M.Fakharian	S.Faramarzpour	
V00	NOV. 2024	IFA	Kalaye Pump	M.Fakharian	M.Sadeghian	
Rev.	Date	Purpose of Issue/Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

Status:

IFA: Issued for Approval
IFI: Issued for Information
AFC: Approved for Construction

 NISOC	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض</p> <p>خرید پکیج پمپ های آب آتشنشانی ایستگاه تقویت فشار گاز بینک (قرارداد BK-HD-GCS-CO-0023_00)</p>																									
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REVISION RECORD SHEET

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1.0 INTRODUCTION

Binak oilfield in Bushehr province is a part of the southern oilfields of Iran, is located 20 km northwest of Genaveh city.

With the aim of increasing production of oil from Binak oilfield, an EPC/EPD Project has been defined by NIOC/NISOC and awarded to Petro Iran Development Company (PEDCO). Also, PEDCO (as General Contractor) has assigned the EPC-packages of the Project to "Hirgan Energy - Design and Inspection" JV.

2.0 GENERAL DEFINITION

The following terms shall be used in this document.

CLIENT:	National Iranian South Oilfields Company (NISOC)
PROJECT:	Binak Oilfield Development – Supply Of Fire Water Pumps
EPD/EPC CONTRACTOR (GC):	Petro Iran Development Company (PEDCO)
EPC CONTRACTOR/PURCHASER:	Joint Venture of: Hirgan Energy – Design & Inspection (D&I) Companies
VENDOR:	Kalaye Pump Company
EXECUTOR:	Executor is the party which carries out all or part of construction and/or commissioning for the project.
TPI:	Third Party Inspector.
SHALL:	Is used where a provision is mandatory.
SHOULD:	Is used where a provision is advisory only.
WILL:	Is normally used in connection with the action by CLIENT rather than by an EPC/EPD CONTRACTOR, supplier or VENDOR.
MAY:	Is used where a provision is completely discretionary.

3.0 SCOPE

The aims of developing this executive instruction are enhancing the precision, improving the functional level and stating how to carry the painting operation among a variety of different pump types in accordance to maintaining their facial situation and quality against physical and atmosphere harmful factors.

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4.0 APPLICATION DOMAIN

The application domain of this instruction includes different kinds of manufactured and repaired pumps belonging to the pump Equipment Company.

5.0 REFERENCE

Painting operation of different pump types carries out according to "ASTM", "Oil & Grease Cleaning (SSPC-SP1)", and "Abrasive Blasting (ISO 8501:1)."

- Project painting specification
- ASTM D3359

6.0 METHODOLOGY

6.1 .Equipment

- 6.1.1 .Safety equipment including masks, gloves, and painting caps.
- 6.1.2 .Painting room equipped with suitable air ventilation .
- 6.1.3 .Painting method is manual using a wind Pistola (spray gun).

6.2 .Surface preparation

- 6.2.1 .Resulting embosses from welding, moulding waste ... is polished.
- 6.2.2 .To primary washing and remove the remaining grease, and gas oil, ... from the surface, in the first step wash the surface with an alkaline solution (Detergent) and immediately wash it with water and dry it with airflow.
- 6.2.3 .To be sure of removing oil and fat completely from the surface, wash it using a solvent T210 (WASHING SOLVENT OF TINNER FAMILY) completely.
- 6.2.4. After Washing, the surface shall be sandblasting to achieve a profile of the blast-clean surface of about 50-75 micron (SA 2 1/2). Abrasive blasting: min Sa2.5- ISO 8501:1 by copper slug.
- 6.2.5 .Cover up any surfaces which should not be painted, using grease or paper glue including.
 - A) Junctions of input-output flanges and internal pump surfaces.
 - B) Identification plaque and attached icons on the pump.
 - C) Devices of the shaft are located outside the coupling and electromotor.
 - D) Coupling devices of all electromotors, excepting the coupling of electromotors.
 - E) Any air vacuuming junctions and evacuating, cooling, and mechanical seal junctions and bypass return tube.

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	BK	GCS	KP	120	QC	PR	0002	
							V01	

6.3 .Painting Schedule

6.3.1. Painting systems for devices exposed to fresh air (fire fighting pumps): The considering paint color is Red which is corresponding to RAL 3001: (3 layers)

A) Transzinc epoxy uniprimer 155 color layer with 40-80 micron thickness.

B) Transpoxy master MIO primer intermediate 165 intervals with 90-140 micron thickness.

C) Transothane finish series-365 final layer with 60-70 micron thickness.

6.4 .Painting Condition

The painting operation carries out under these conditions.:

- Humidity below 80% RH.
- Temperature of the paint before application: min: 5°C, max: 30°C.
- Substrate temperature: min: 1°C, max: 35°C.
- The temperature of the substrate should be at least 3°C above the dew point of the air. Air temperature and relative humidity must be measured in the vicinity of the substrate.

6.5 .Readiness announcement to quality control (Q.C)

6.5.1 .In the case of requirement, the product color is provided according to the customer's order and application.

6.5.2 .Paint system of the skid is similar to the pump.

7.0 ADHESION TEST

According ASTM (designation: D3359)

7.1 .Methodology

These test methods cover procedures for assessing the adhesion of coating films to metallic substrates by applying and removing pressure-sensitive tape over cuts made in the film.

7.2 .Equipment

- Elcometer
- Tape

7.3 .Test

7.3.1 .Place the cutting tool on the sample, press down gentle, and pull the tool towards you in one steady movement to make a series of parallel cuts approximately 20 mm long. Apply sufficient pressure to ensure that you cut through the coating to the substrate.

7.3.2 .Place the cutting tool on the sample at 90° to the first cut and repeat step (1) to create a lattice pattern on the coating.

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7.3.3 .Brush lightly to remove detached flakes or ribbons of coating.

7.3.4 .Inspect to ensure the cuts have penetrated all the way through the coating.

7.3.5 .Select the correct adhesive tape. Remove and discard two complete turns of adhesive tape. Remove an additional length of tape at a steady rate and cut a piece approximately 75 mm from this length.

7.3.6 .Centre the cut piece of tape over the lattice and smooth it into place using a finger. Rub the tape firmly using the eraser on the end of a pencil to ensure good adhesion between the tape and the coating .

7.3.7 .Within 90 seconds (± 30 seconds) of applying the tape, remove the tape by pulling in a single smooth action at an angle of 1800 to the coating surface.

7.3.8 .Assess the coating adhesion by viewing the lattice of cuts using an illuminated magnifier. Compare the lattice of cuts with the ISO and ASTM standards.

7.3.9 .Repeat the test at two other positions.

8.0 ACCEPTANCE STANDARDS

Classification 4A according to ASTM D3359

9.0 FINAL RELEASE

To issue the final release note, form no. KP-FRQC-21 will be filled out in presence of an official inspector.

10.0 REPAIR OF DAMAGE

10.1. Any defect or damage that may occur shall be repaired before the application of further coats and where necessary the particular surface (s) made paint free. Remedial work shall be carried out prior to packing for shipment.

10.2. Areas where due to inadequately prepared surfaces, solvent entrapment, excessive application of prime and/or finish coats and etc., the tested paint system consistently fails to meet the required test standards for adhesion/ cohesion, the contractor shall remove the affected area by blast cleaning and shall reapply the full paint system to meet the required standard.

10.3. Areas which are to be over coated shall be thoroughly cleaned free from grease, oil and other foreign matter and shall be dry. The surfaces shall then be prepared to the standard as originally

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specified (for large damaged areas), or prepared to the highest possible standard using mechanically operated tools (for small local damaged spots up to 1 m2).

10.4. Subsequently additional compatible coats shall be applies, until they meet the specification. These additional coats shall blend in with the final coating on adjoining area.

10.5. During the agreed maintenance period, any observed defective coatings, rusted areas or failures developing in the paint systems, shall be repaired to the satisfaction of the client inspector.

10.6. When factory painted or painted surfaces have been marked in handling, the damaged paint and non-adherent paint shall be removed and the surface thoroughly cleaned. The edges on the damaged area shall be smoothed. Surface preparation shall extend approximately 5 cm into the sound coat.

11.0 PRE-BLASTING PREPARATION

11.1. In order to primary washing and removing the remaining grease, gas oil, ... from surface, in the first step wash the surface with an alkaline solution (Detergent) and immediately wash it with water and dry it with air flow.

11.2. In order to be sure of removing oil and fat completely from surface, wash it using a solvent T210 (WASHING SOLVENT OF TINNER FAMILY) completely.

11.3. Sharp edges, fillets, corners, and welds shall be rounded or smoothened by grinding (minimum radius 2 mm).

11.4. Hard surface layers (e.g. resulting from flame cutting) shall be removed by grinding prior to blast cleaning.

11.5. The surfaces shall be free from any foreign matter such as weld flux, residue, slivers, oil, grease; salt etc. prior to blast cleaning. All surfaces should be washed with clean fresh water prior to blast cleaning.

11.6. Any oil and grease contamination shall be removed in accordance with SSPC/SSPM Volume 2, grade SP1, prior to blast operations.

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11.7. Any major surface defects, particularly surface laminations or scabs detrimental to the protective coating system shall be removed by suitable dressing. Where such defects have been revealed during blast cleanings, and dressing has been performed, the dressed area shall be re-blasted to the specified standard. All welds shall be inspected and if necessary repaired prior to final blast cleaning of the area. Surface pores, cavities etc. shall be removed by suitable dressing or weld repair.

12.0 ENVIRONMENTAL CONDITION

- Room temperature should not be less than 5°C
- Maximum relative humidity should not be higher than 80%
- Metal surface temperature not be less than 3°C above the ambient dew point