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| OWNER:  شرکت سست و سویی توهمه ایرانیان (سهامی عامه) | BUSHEHR PETROCHEMICAL COMPANY MEG PLANT | | | | | | EPC CONTRACTOR:  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT | | |
| | SURFACE PREPARATION AND PAINTING PROCEDURE | | | | | |  | | |
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SURFACE PREPARATION AND PAINTING PROCEDURE

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|------|------------|--------------------------|----------|---------|----------|----------|----------|
| | | | | | | | |
| 02 | 29/10/2021 | Approve For Construction | KP | LDM | PW | | |
| 01 | 20/09/2021 | For approval | KP | LDM | PW | | |
| 00 | 07/12/2020 | For approval | KP | LdM | PW | | |
| Rev. | Date | Purpose of Issue | Prepared | Checked | Approved | AC Code | |
| | | | | | | Class: 1 | Phase: P |

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| Owner Document Number: 17811-18 | Project BU | Area 20 | Phase VD | Unit 303 | Dis. PI | Doc. DCR | Seq. 0010 | Contract No : 52-98/445 <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Rev.:</td> <td style="width: 50%; text-align: center;">Page</td> </tr> <tr> <td style="text-align: center;">02</td> <td style="text-align: center;">3 of 8</td> </tr> </table> | | Rev.: | Page | 02 | 3 of 8 |
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1. References

Reference is made to the following documents.

- Offer 17811-COM

2. General

Quality if paint is guaranteed by Airpack

Our paint system is based on a or brush/roller application. Painting will be done by Airpack painting specialists. As offered, Airpack equipment will be painted according to the paint schedule below.

- Galvanized steel grating does not require painting. This is only galvanized part in this package.
- Zinc plated and stainless steel bolts do not require painting.
- Stainless steel 316 equipment does not require painting. There are no SS304 components
- Instrumentation paint will be according manufacture standard.





3. Surface preparation

- All structures and equipment are designed and built in accordance with ISO standards for high durability of the paint systems.
- All oil or grease shall be removed by washing the item to be painted with appropriate solvents or any other suitable means before beginning blast cleaning operations. This includes bolt holes in piping assemblies.
- Weld spatter and remains of temporary welds, deposits or surface defects shall be eliminated appropriately.
- Airpack shall protect all equipment that is not to be painted or liable to be affected by the presence of abrasives or paint. Special attention will be paid to avoid splashes of zinc paint on equipment made of austenitic steels.
- Surface preparation shall be inspected by Airpack Quality Control prior to application of paint.

4. Blast cleaning of carbon steel

All surfaces to be coated, will be blast-cleaned according to:

- the grade of cleanliness, SA 2.5
- the surface profile, to be evaluated using SSPC-VIS 1
- as painting is Airpack standard, no blast clean record is available.

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After blast-cleaning, all dust must be removed using a vacuum cleaner before applying the paint. All blast-cleaned surfaces shall be coated before the deterioration of the "grade of cleanliness". In any case, any surface that has been blast-cleaned shall be coated on the same day.

5. Paint Application

Coating system will be from paint manufacturer Jotun.

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

Painting work shall not proceed if:

- Temperature of the substrate is less than 3°C above the dew point;
- The relative humidity is more than 85% RH (90% RH for inorganic zinc silicates);
- The weather is rainy or foggy, except under shelter, and subject to verification of the atmospheric conditions;
- The minimum or maximum temperature of the ambient atmosphere and the substrate are outside the limits given in the product data sheets.

Application shall be by or brush/roller. Stripe coats shall be applied by brush to all angles, corners, and all the welds with the same product than this to be applied on the surface to be painted. Different colours shall be used for all successive coats of the paint system. The finishing coat of the required colour shall be opaque to cover the shade of the undercoat. The thickness of each coat, including frequency shall be checked by Airpack. The values will be recorded and made available.

6. Painting report





A paint report as attached (see attachment 1) will be provided with a final coating check during FAT. Dry film thickness will be checked using a calibrated Fisher Dual scope MPOR SN040003992. Calibration certificate will be made available during FAT.

7. Paint systems

For a detailed overview of each item please refer to below paint schedule.

8. Repair procedure

In case a deviation or non-conformity has been found, this will be repaired as per below procedure. Where the coating has been scratched off, flaked, or in any other way damaged as to hamper its protective function, the coating will be grinded off 5 cm around the defect

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and paint will be re-applied to conform with the painting system defined in this painting procedure.





In case more than 5% of the equipment surface is not conform specifications, the entire part will be blasted and re-coated. Where blasting is not feasible, paint will be grinded off until the bare metal, after which it is re-coated.

Paint schedule

| MATERIAL | DESCRIPTION | SYSTEM | TDFT [μm] | FINAL COLOR |
|-----------------------|---|-------------|------------------------|-------------|
| Aluminium / cast iron | MAIN E-MOTORS | Mfr. std. | Mfr. std. | RAL-5010 |
| Carbon Steel | STRUCTURAL STEEL | 1 | 320 | RAL-1013 |
| Carbon Steel | VALVES <120°C | 1 | 320 | RAL-7035 |
| Carbon Steel | COOLER | 1 | 320 | RAL-7035 |
| Carbon Steel | PIPING COLD | 1 | 320 | RAL-7035 |
| Carbon Steel | PULSATION DAMPER COLD | 1 | 320 | RAL-7035 |
| Carbon Steel | PULSATION DAMPER COLD | 3 | 320 | RAL-7035 |
| Carbon Steel | PULSATION DAMPER HOT ² | 3 | 150 | Aluminium |
| Carbon Steel | COMPRESSOR HOT PARTS ² | 3 | 150 | Aluminium |
| Carbon Steel | COMPRESSOR | 3 | 320 | RAL-7035 |
| Carbon Steel | PRESSURE SAFETY VALVE | 3 | 150 | RAL-7035 |
| Carbon Steel | PIPING HOT ² | 3 | 150 | Aluminium |
| Aluminium | LOCAL CONTROL PANEL ¹ | Mfr. std. | 100 | RAL-7035 |
| Aluminium | LOCAL MCC (POWER DISTRIBUTION PANEL) ¹ | Mfr. std. | 100 | RAL-7032 |
| Stainless Steel | GENERAL | Not painted | - | |

1. Possibilities for painting of materials with ATEX certification is limited, Paint details not available

2. Hot parts are painted with a special paint which is only available in Aluminum.

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Paint system 1 (acc. ISO 12944-2 C5M-H table S7.04, & Jotun)





- Structural steel & Carbon steel piping
- Surface preparation Sa 2½
- Temperatures up to 120°C

| Layer | Type of paint | Make | DFT |
|-------|---------------|-----------------------|---------------|
| 1 | epoxy mastic | Jotamastic Smart Pack | 90 µm |
| 2 | epoxy mastic | Jotamastic Smart Pack | 90 µm |
| 3 | epoxy mastic | Jotamastic Smart Pack | 90 µm |
| 4 | Polyurethane | Hardtop XP | 50 µm |
| | | Total DFT | 320 µm |

Paint system 3

- High temperature / Carbon steel cycling use
- Surface preparation Sa 2½
- Temperatures -185 up to 650°C
- Available colours: Black, Grey and Aluminium effect

| Layer | Type of paint | Make | DFT |
|-------|-------------------------------|------------------|---------------|
| 1 | Multipolymeric Matrix coating | Jotatemp | 75 µm |
| 2 | Multipolymeric Matrix coating | Jotatemp | 75 µm |
| | | Total DFT | 150 µm |

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PAINT REPORT

Customer : ...
 Purchase order number : ...
 Equipment : ...
 Equipment item no. : ...
 Airpack ref. no. : XXXXX-COM
 Serial no. : ...
 Test location : Zierikzee
 Test date : ...

 Item : SKID
 Paint system : 1

MEASUREMENTS According to Attachment #1

EXAMPLE

