

Surface Preparation and Painting Procedure


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Surface Preparation and Painting Procedure

REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
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INSPECTION

1- APPROVED

2- APPROVED AND NOTED

3- NOT APPROVED

BY: M. REZAEI DATE: 14 Sep 2023

Signature: *M. Rezaei*

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BY: M. REZAEI DATE: 19 Sep 2023	
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 <p>شرکت توسعه صنایع گوارا Lavan Industry Development Company</p>	<p>LIDCO, Pars SEE Zone, Assaluyeh, Integrated Methanol and Ammonia Plant 3000 MTPD MeOH / 900 MTPD NH3 PROJECT</p>						
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1. References

Reference is made to the following documents.

- Offer 17735-COM
- Specification N278-000-PI-JSD-2300-005 Specification for Painting (colour codes only)

2. General

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

- Galvanized steel grating does not require painting.
- Zinc plated and stainless steel bolts do not require painting.
- Stainless steel equipment does not require painting.
- Instrumentation paint will be according manufacture standard.

All carbon and low alloy steel, stainless steel and galvanized steel piping, fittings and valves shall require painting.

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.
- Airpack will not perform any mechanical changes to flanges and flange bolt holes and use the delivered flanges.




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 ISO 8503-2
- As painting is Airpack standard, no blast clean record is available.

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.

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Vendor shall submit data sheet for different layers of coats in this procedure.

5. Paint Application

Coating system will be from paint manufacturer Jotun and interbond. 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 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 Quanix Automation 1311669. 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 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.

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As drawings or data sheets for below mentioned equipment and items has not been issued by vendor, therefore, below table will be checked accordingly.

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PAINT SCHEDULE					
	MATERIAL	DESCRIPTION	SYSTEM	TDFT [μm]	FINAL COLOR
C1	Carbon Steel	STRUCTURAL STEEL	1	320	RAL-9006
C2	Stainless Steel	PIPING COLD	Not painted	-	-
C3	Stainless Steel	PIPING HOT	Not painted	-	-
C4	Carbon Steel	PIPING WATER	1	320	RAL-9006
C5	Stainless Steel	Y-STRAINER	Not painted	-	-
C6	Stainless Steel	CHECK VALVE	Not painted	-	-
C7	Stainless Steel	VALVES IN MAIN PROCESS LINE	Not painted	-	-
C8	Carbon Steel	VALVES IN WATER PROCESS LINE	1	320	RAL-9006
C9	Carbon Steel	PRESSURE CONTROL VALVE	1	320	RAL-9006
C10	Carbon Steel	PRESSURE SAFETY VALVE COLD	1	320	RAL-9006
C11	Carbon Steel	PRESSURE SAFETY VALVE HOT	3	150	Metallic Gray
C12	Carbon Steel	PULSATION DAMPENER COLD	1	320	RAL-9006
C13	Carbon Steel	PULSATION DAMPENER HOT	3	150	Metallic Gray
C14	Carbon Steel	COMPRESSOR HOT PARTS	3	150	Metallic Gray
C15	Carbon Steel	COMPRESSOR COLD PARTS	1	320	RAL-6010
C16	Carbon Steel	INTER/AFTER COOLER SHELL	1	320	RAL-9006
C17	Aluminium	MAIN E-MOTOR	Mfr. std.	Mfr. std.	RAL-7030
C18	Aluminium	AUXILLIARY MOTOR	Mfr. std.	Mfr. std.	RAL-7030
C19	Carbon Steel	LOCAL PUSHBUTTON STATION	Mfr. std.	Mfr. std.	RAL-7035
C20	Carbon Steel	LOCAL JUNCTIONBOX	Mfr. std.	Mfr. std.	RAL-7035
C21	Stainless Steel	GENERAL	Not painted	-	-

* Possibilities for painting of materials with ATEX certification is limited

	
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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 -196 up to 650°C
- Available colours: Metallic Gray (matte)

Layer	Type of paint	Make	DFT
1	Multipolymeric Matrix coating	International Interbond 12024UCP	75 µm
2	Multipolymeric Matrix coating	International Interbond 12024UCP	75 µm
		Total DFT	150 µm

	
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PAINT REPORT

Customer : Lavan Industry Development Company (LIDCO)
 Purchase order number : LIDCO-PO-NEC-278-6019
 Equipment : High Pressure Air Compressor
 Equipment item no. : K-020
 Airpack ref. no. : 17735-COM
 Serial no. : T-2023-00799
 Test location : Zierikzee
 Test date :

 Item : SKID
 Paint system : 1

MEASUREMENTS According to Attachment #1

EXAMPLE

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