	PROJECT	Standby SRU & Additional Tanks	
				IOCL Paradip Refinery	
			CLIENT	INDIAN OIL CORPORATION LIMITED	
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SPECIFICATION FOR DISTEMPERING, PAINTING AND POLISHING

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1. INTRODUCTION

INDIAN OIL CORPORATION LIMITED (IOCL) has awarded Fax of Acceptance (FOA) dated 29th August 2019 to M/s. Technip India Limited (TPIL) for Consultancy services (PMC/EPCM services) for overall project management, FEED Review / FEED, Detailed Engineering, Procurement & expediting services, Tendering & award, Construction Management & Supervision, Assistance in start-up, Commissioning & performance test runs for installation of a Standby SRU of 525 TPD capacity and execution of Additional tanks for Paradip Refinery, Odisha, India.

2. DEFINITIONS & ABBREVIATIONS

Abbreviation	Definition /Expanded form
IOCL/ CLIENT	Indian Oil Corporation Limited
PMC/ CONSULTANT	Technip India Limited
LICENSOR	Party selected by IOCL for process technology ownership for any UNIT
CONTRACTOR	Party whose services are obtained for performing the works specified as part of LSTK / packages.
EPCM	Engineering, Procurement & Construction Management Services.
LSTK	Lump Sum Turn Key portion of the work to be executed by CONTRACTOR
FEED	Front End Engineering Design
AUTHORISED REPRESENTATIVE	IOCL's/ CONSULTANT's representative authorized to act for and on behalf of them.
VENDOR	Any third party supplying the equipment/materials for setting up the Plant
PROJECT	Indicates Standby SRU and Additional tanks Project, Paradip Refinery
SITE	Indicates Paradip Refinery in Odisha, India
UNIT	Indicates any particular portion of the project to be built which can be Process related or Utilities/Offsites related
SRU	Sulphur Recovery Unit
BIS	Bureau of Indian Standards

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3. SCOPE

This specification covers the general requirement for executing white/colour washing, distempering and painting of surfaces.



This JSS covers typical General specification for some standard items only and the CONTRACTOR shall comply with the requirement as given in 080557C-000-JSD-1700-001/002 for specific cases and for any other items not mentioned/specified in this JSS. The requirement for various type of Buildings /Unit / Structures etc., as specified in the document 080557C-000-JSD-1700-001/002 shall be the governing one.

The CONTRACTOR shall submit the detailed specification for the items not covered in this specification for Approval by OWNER'S/ENGINEER IN CHARGE during execution.

4. MATERIALS & CODES

The Indian Standard codes applicable to this section shall include but not limited to the following:

- ◆ IS 6278 : Code of practice for white washing and colour washing.
- ◆ IS 2395 : Code of practice for painting concrete, masonry and plaster surfaces.
- ◆ IS 712 : Specification for building limes.
- ◆ IS 55 : Specification for Ultramarine blue for paints.
- ◆ IS 63 : Specification for whiting for paint and putty.
- ◆ IS: 5411 : Specification for plastic Emulsion paint for interior use.
- ◆ IS: 2338 : Code of practice for finishing of wood, and wood based materials.
- ◆ IS: 5410 : Cement paint, colour as required.
- ◆ IS: 384 : Brushes, paints and varnishes, flat.
- ◆ IS: 486 : Brushes, sash, tool, for paints and varnishes.
- ◆ IS: 110 : Ready mixed paint, brushing, grey filler enamels for use over primers.
- ◆ IS: 426 : Paste filler for colour coats.
- ◆ IS: 345 : Wood filler, transparent liquid.
- ◆ IS: 3585 : Ready mixed paint, alum brushing priming water resistant for woodwork.
- ◆ IS: 426 : Paste filler for colour coats.
- ◆ IS: 106 : Ready mixed paint, brushing, priming for enamels, for use on metals.
- ◆ IS 2395 Part-1: Painting of Concrete, Masonry and Plaster Surfaces - Code of Practice, Part 1: Operations and Workmanship.
- ◆ IS 2395 Part-2: Code of practice for painting concrete, masonry and plaster surfaces, Part 2: Schedules.

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All materials required for the execution of painting work shall be obtained direct from approved manufacturers and shall be brought to the site in makers drums, bags etc with seals unbroken. In case of ready mixed paints, thinning if necessary, the brand of thinner shall be as per recommendations of the manufacturer.

Paint shall be applied by brushing or spraying. Spray machine used may be of high-pressure type or low pressure depending on the nature and location of work. The paint containers, when not used shall be kept close and free from air. After finishing of the work, the adjacent surfaces not intended to be washed/distempered/painted/polished shall be thoroughly cleaned of all paint patches and finished in accordance with finishing of such surfaces.

5. **OIL BOUND DISTEMPERING**

Oil bound distempering work shall be done in the following steps.

Preparation of surface

The surface shall be thoroughly brushed free from dust, dirt, grease, mortar droppings etc and made smooth by sand papering. In case of distempering over existing distempered surface, the existing distempering shall be scrapped by steel scrappers leaving a clean surface. All nails shall be removed. Pitting in plaster shall be made good with Plaster of Paris mixed with distemper of colour to be used. The surface then shall be rubbed down again with a fine grade sand paper and made smooth. A coat of distemper shall be applied over the patches. The surface shall be allowed to dry thoroughly. Surfaces affected by moss, fungus, algae, efflorescence shall be treated in accordance with IS: 2395.

Any unevenness shall be made good by applying putty made of approved quality Plaster of Paris mixed with water and then sand papering the same after it is dry. Scaffolding, wherever required, shall be erected in such a way that no part of the scaffolding rest against the surface to be painted.

Primer coat



The primer coat shall be alkali resistant primer or distemper primer and shall be of the same manufacture as oil bound distemper.

Base preparation

After the primer coat, the base preparation shall include applying two or more coatings of oil based putty in paste form made from chalk powder mixed with linseed oil, white zinc, varnish etc. as per manufacturers recommendations. After each coat of putty, sandpapering of the surfaces shall be done.

Application of Distemper

After the base preparation coats have dried, the surface shall be lightly sand papered and dusted off so that rubbing off of the primer coat is avoided. The distemper shall conform to IS: 428 and shall be diluted with water or any other prescribed thinner recommended by the manufacturer. Minimum two coats of distemper shall be applied with brushes in horizontal strokes, followed immediately by vertical strokes, which together shall constitute one coat. The subsequent coats shall be applied after at least 24 hours between consecutive coats to permit proper drying of the preceding coat. The finished surface shall be even and uniform without patches, brush marks drops etc.

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Application of a coat in each room shall be finished in one operation. 140 mm double bristled distemper brushes shall be used. After each day's work brushes shall be thoroughly washed in hot water with soap solution and hung down to dry. Surfaces of doors, windows, floors etc. shall be protected from being splashed upon. Such surfaces shall be cleaned of distemper splashes.

6. **PLASTIC EMULSION PAINT**

Plastic Emulsion paintwork shall be executed as follows.

Preparation of surface

The surface shall be thoroughly brushed free from dust, dirt, grease, mortar droppings etc and made smooth by sand papering. Surfaces affected by moss, fungus, algae, efflorescence shall be treated in accordance with IS: 2395.

Any unevenness shall be made good by applying putty made of approved quality Plaster of Paris mixed with water over roughened plastered surfaces and then sand papering the same after it is dry. Plaster of Paris paste shall be in sufficient thickness to give absolutely smooth, plumb and straight surfaces. The surface then shall be rubbed down again with a fine grade sand paper and made smooth. Scaffolding, wherever required, shall be erected in such a way that no part of the scaffolding rest against the surface to be painted.

In case of plastic emulsion paintwork over an existing distempered/emulsion surface, the existing distempering/ emulsion shall be scrapped clean using steel scrappers. All nails shall be removed. Pitting in plaster shall be made good with Plaster of Paris mixed with the plastic emulsion to be used. A coat of plastic emulsion shall be applied over the patches and the entire surface allowed to dry thoroughly.

Primer coat



The primer coat shall be alkali resistant primer or emulsion primer and shall be of the same manufacturer as plastic emulsion paint.

Base preparation

After the Primer coat, the base preparation shall include applying two or more coatings of oil based putty in paste form made from chalk powder mixed with linseed oil, white zinc, varnish etc. as per manufacturers recommendations. After each coat of putty, sandpapering of the surfaces shall be done.

Application of Plastic Emulsion Paint

After the base preparation coats have dried, the surface shall be lightly sand papered and dusted off avoiding rubbing off of the primer coat. The plastic emulsion paint shall conform to IS: 5411 (Part- I) and shall be diluted prescribed thinner recommended by the manufacturer. Minimum two coats of plastic emulsion paint shall be applied with brushes in horizontal strokes followed by immediate vertical strokes, which together shall constitute one coat. The subsequent coats shall be applied after at least 24 hours between consecutive coats to permit proper drying of the preceding coat. The finished surface shall be even and uniform without patches, brush marks drops etc. Application of a coat in each room shall be finished in one operation. 140 mm double bristled distemper brushes shall be used. After each day's

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work brushes shall be thoroughly washed in hot water with soap solution and hung down to dry. Surfaces of doors, windows, floors etc. shall be protected from being splashed upon. Such surfaces shall be cleaned of splashes.

7. **PAINTING OF WOOD SURFACES (SYNTHETIC ENAMEL PAINT)**

Preparation of wood surface shall conform to IS: 2338 (Part-1) in general. All woodwork shall be dry and free from any foreign matter. Nails shall be punched well below the surface. The surface shall be smoothened off with abrasive paper used across the grain prior to painting, but with the grain prior to the staining. Knots and resinous or bluish sapwood, cutting out of which is not justified, shall be covered with red lead conforming to IS: 103. Plywood and block board shall be treated in the same manner as for woodwork. Particleboard surface shall be filled with a thin brushable filler and finished as for solid wood. Painting of wood surfaces shall consist of the following steps.

Priming

Priming shall be in accordance with IS: 2338 (Part I and II). Dirt or any other extraneous material on the surface shall be removed and the priming shall be applied by brushing. Priming shall be done on all exposed and unexposed surfaces. Unless specified otherwise all joinery work intended to be painted shall receive at least 2 coats of primer. Type of primer shall be in accordance with Table-1 and Table-2 of IS: 2338 (Part-II).

Stopping and Filling



Stopping and filling shall be done after priming. Stopping shall be made to the consistency of stiff paste and shall be used to fill holes and cracks. Filler shall be used to level up slight irregularities of the surface. Filler shall be applied with a putty knife and subsequently rubbed down to a level surface with abrasive paper. The filler coat shall be allowed to fully flatten and harden before subsequent coat is applied.

Application of Undercoat

Under coat shall be applied after the surface has been primed, stopped and filled, and rubbed down to a smooth surface. Under coat may be brushed or sprayed. After drying the coat shall be carefully rubbed down and wiped clean before the next coat is applied. The type of undercoat shall be depending upon the finishing and in accordance with Table 1 and Table-2 of IS: 2338 (Part II).

Finishing

The finishing paint shall be two or more coats of synthetic enamel paint and shall be applied either by the brush or by spraying to give a uniform, smooth and glossy finish. Reference shall be made to the Table-1 and Table-2 of IS: 2338 (Part-II).

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8. WATERPROOF CEMENT PAINT

The surface shall be thoroughly cleaned of all dirt, dust, mortar dropping and other foreign matter before paint is to be applied. Surfaces already white/colour washed shall be broomed down to remove all dust, dirt and loose scales of lime wash, or other foreign matters. Preparation of surface & scaffolding shall be same as white wash.

The surface so prepared shall be thoroughly wetted with clean water before the paint is applied. Waterproof cement paint of approved make shall be mixed with water and stirred to obtain a thick paste, which shall then be diluted to brushable consistency. The proportion of mixture shall be as per manufacturer's recommendations. The paint shall be mixed in quantities that can be used up within an hour of mixing to avoid setting and thickening of the paint. The surface shall be treated with minimum two coats of waterproof cement paint. No less than 24 hours shall be allowed between the successive coats, and only after the preceding coat has become hard to resist marking by subsequent brushing. The finished surface shall be even and uniform in shade without patches, brush marks, paint drops etc. Cement paints shall be applied with a brush with relatively short stiff hog or fiber bristles.

Curing shall be started after the paint has hardened. Curing shall be done by sprinkling with water two or three times a day. This shall be done between coats and for at least two days following the final coat. Surfaces of doors, windows, floors etc. shall be protected from being splashed upon. Such surfaces shall be cleaned of paint splashes.

9. ACRYLIC COPOLYMER AGGREGATE FINISH

Material



Material shall be acrylic based textured wall coating consisting of quartz and silica aggregate, inorganic pigment and other additives to form a crack-free, flexible, tough and waterproof coating.

Preparation of Surface

The surface to be coated shall be cleaned of all dirt, dust, grease and loose particles. Old textured surfaces shall be scrapped with a removing agent of approved quality.

Application

Bonding agent and water shall be mixed first and then flakes/ granules added and the entire mixture kneaded thoroughly until no lumps are present. The bonding agent, flakes/ granules and water shall be mixed in ratios specified by manufacturer, depending on the type of finish required. The dough shall be left for 20-30 minutes before starting application. The first application shall be using steel trowels and subsequently smoothened, if the specified finish requires, with plastic trowels.

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10. **PAINTING OF STEEL AND OTHER METAL SURFACES**

The painting of steel structure shall be as per painting specification 080557C-000-JSD-2300-001.

11. **PAYMENT (APPLICABLE FOR ITEM RATE TENDER)**

Payments for white/colour washing, distempering & every other type of painting shall be based on unit rate per square meter of surface covered, and the rate quoted shall be inclusive of all labor, materials, scaffolding, tools etc. required for the successful and satisfactory completion of work as per specifications including cleaning operations before and after the work, leaving the worksite free of all used materials/containers & other encumbrances, and any other safety measures required to be undertaken as directed by the OWNER'S/ENGINEER IN CHARGE.