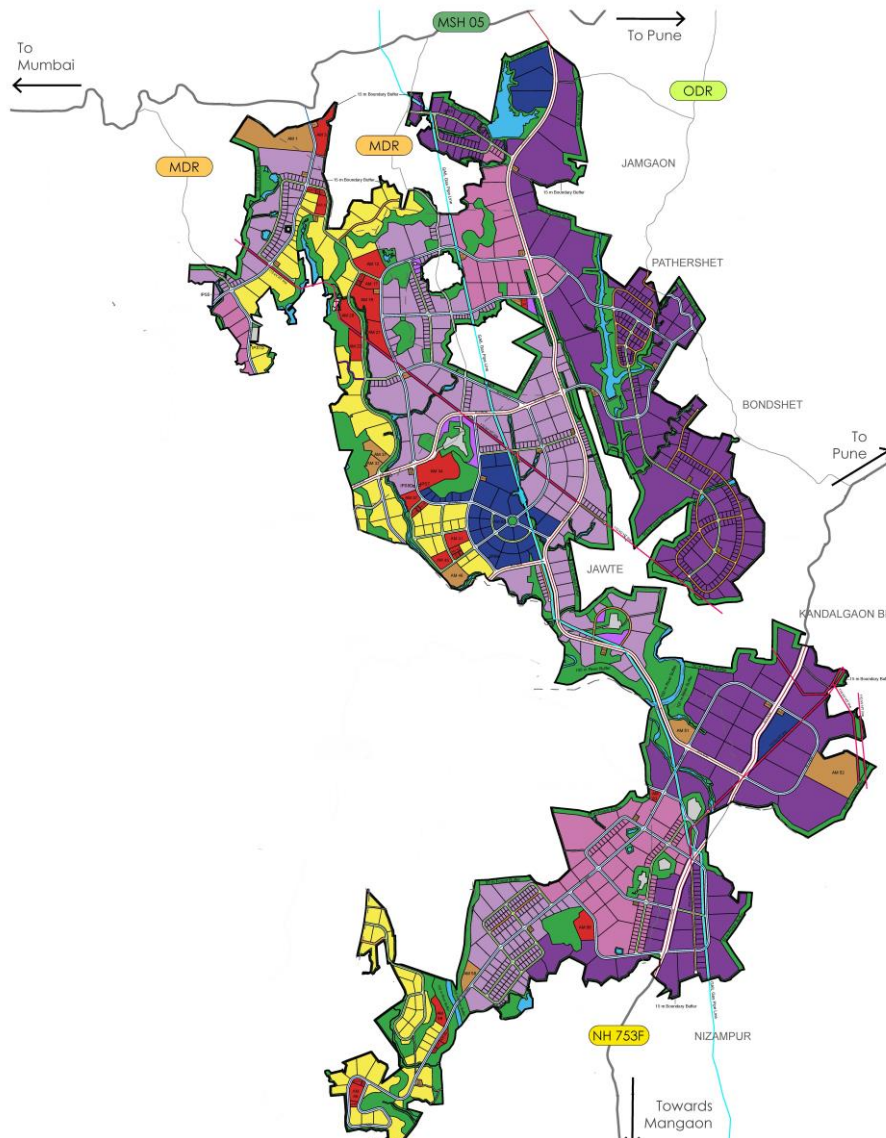


# Maharashtra Industrial Township Limited (MITL)

## Design, Construction, Testing, Commissioning, Operation and Maintenance of Infrastructure Works at Dighi Port Industrial Area (DPIA) Phase 1 on EPC Basis

### Volume II: Technical Specifications Part I - Repair and Rectification Schedule

July 2025



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## 1 Repair/Rectification of Defects and Deficiencies

The Contractor shall repair and rectify the Defects and deficiencies specified in this Schedule I within the time limit set forth in the table below. These time limits are a minimum requirement and the same shall be further discussed and mutually agreed with the Employer before the start of the Operation and Maintenance period.

### 1.1 Time limit of Defects and Deficiencies

Nature of Defect or Deficiency		Time Limit for Repair/Rectification
<b>Roads</b>		
(a)	Carriageway and Paved Shoulders	
(i)	Breach or blockade	Temporary restoration of traffic within 24 hours; permanent restoration within 15 (fifteen) days
(ii)	Roughness value exceeding 1,800 mm in a stretch of 1 km (as measured by a calibrated bump integrator)	120 (one hundred and twenty) days
(iii)	Potholes	24 hours
(iv)	Any cracks in the road surface	15 (fifteen) days
(v)	Any depressions, rutting exceeding 10 mm in road surface	30 (thirty) days
(vi)	Bleeding/skidding	7 (seven) days
(vii)	Any other defect/distress on the road	15 (fifteen) days
(viii)	Damage to pavement edges	15 (fifteen) days
(ix)	Removal of debris, dead animals	6 hours
(b)	Granular Earth Shoulders, Side Slopes, Drains and Culverts	
(i)	Variation by more than 1 % in the prescribed slope of camber/cross fall (shall not be less than the camber on the main carriageway)	7 (seven) days
(ii)	Edge drop at shoulders exceeding 40 mm	7 (seven) days
(iii)	Variation by more than 15% in the prescribed side (embankment) slopes	30 (thirty) days
(iv)	Rain cuts/gullies in slope	7 (seven) days
(v)	Damage to or silting of culverts and side drains	7 (seven) days
(vi)	De-silting of drains	24 hours
(vii)	Railing, parapets, crash barriers	7 (seven) days (Restore immediately if causing safety hazard)
(c)	Roadside Furniture Including Road Sign and Pavement Marking	
(i)	Damage to shape or position, poor visibility, or loss of retro-reflectivity	48 hours
(ii)	Painting of km stone, railing, parapets, crash barriers	As and when required/Once every year
(iii)	Damaged/missing road signs requiring replacement	7 (seven) days
(iv)	Damage to road mark ups	7 (seven) days
(d)	Road Lighting	

Nature of Defect or Deficiency		Time Limit for Repair/Rectification
(i)	Any major failure of the system	24 hours
(ii)	Faults and minor failures	8 hours
(e)	Other Project Facilities and Approach Roads	
(i)	Damage in approach roads, pedestrian facilities, truck lay-byes, bus-bays, bus-shelters, electrical, water,	15 (fifteen) days
(ii)	Damaged vehicles or debris on the road	4 (four) hours
(iii)	Malfunctioning of the mobile crane	4 (four) hours
<b>Bridges/ Buildings/Culverts</b>		
(a)	Superstructure	
(i)	Any damage, cracks, spalling/ scaling Temporary measures Permanent measures	within 48 hours within 15 (Fifteen) days or as specified
(b)	Foundations	
(i)	Scouring and/or cavitation	15 (Fifteen) days
(c)	Piers, Abutments, Return Walls, and Wing Walls	
(i)	Cracks and damages including settlement and tilting,	30 (Thirty) days
(d)	Bearings (Metallic) of Bridges	
(i)	Deformation, bearings damages, tilting shifting of	Greasing of metallic bearings once in 15 (Fifteen) days
(e)	Joints	
(i)	Malfunctioning of joints	15 (Fifteen) days
(f)	Other Items	
(i)	Deforming of pads in elastomeric bearings	7 (seven) days
(ii)	Gathering of dirt in bearings and joints clogging of	3 (three) days
(iii)	Damage or deterioration in kerns, parapets, handrails, and crash barriers	3 (three) days (Immediately within 24 hours if posing threat)
(iv)	Rain-cuts or erosion of banks of the side slopes	7 (seven) days
(v)	Damage to wearing coat	15 (fifteen) days
(vi)	Damage or deterioration in approach slopes pitching	30 (thirty) days
(vii)	Growth of vegetation affecting the structure obstructing the waterway	15 (fifteen) days
<b>Potable Water, Wastewater, Recycle Water and Fire Fighting system</b>		
(a)	Transmission mains	
(i)	Bursts/Breakage in the pipelines.	6 hrs. from the occurrence
(b)	Network pipelines	
(i)	Bursts/Breakage in the distribution network pipelines	4 hrs. from the occurrence
(ii)	Flushing of the distribution main	Once in 6 months
(iii)	SCADA System for all services	Within 2 hrs. of the occurrence
(iv)	Water Meter	Within 2 hrs. of the occurrence
(c)	Control & Protection	
i)	Photoelectric controller	8 hrs.

Nature of Defect or Deficiency		Time Limit for Repair/Rectification
ii)	Communication failure	8 hrs.
(d)	Power	
i)	Supply including SCADA	2 hrs.
ii)	Fault	2 hrs.
(f)	Instrument failure	4 hrs
(g)	Instrument replacement	72hrs
<b>ICT</b>		
(a)	Civil Infrastructure related to ICT	
(i)	Civil damages to POP Building such as Leakage, cracks etc	Temporary measures within 48 hours Permanent measures within 15 (Fifteen) days or as specified
(ii)	Damages to ICT cable tray	24 hrs
(iii)	Damages to Manholes	48 hrs
(iv)	Damages/Blockage of Cross Ducts	12 hrs
(b)	Power Supply for ICT Equipment	
(i)	Fault at IPFBs	2 hrs
(ii)	Fault at POP rooms	2 hrs
(c)	SCADA Integration with ICCC	
(i)	Communication failure	6hrs
<b>POWER</b>		
(a)	Fuse blown out or MCCB tripped. For LT supply	2 hrs
	Fuse blown out or MCCB tripped. For MV supply	2 Hrs
(b)	Service line broken/ Service Line Snapped from the Pole	6 hrs
(c)	Fault in distribution line/system	Rectification of fault and thereafter Restoration of normal power supply within 12 hours. Temporary Supply to be restored within 4 hours from an alternate source.
(d)	Distribution transformer failed/ burnt	Replacement of failed transformer: within 24 hours, Temporary Restoration of supply through mobile transformer or another backup source within 8 hours.
(e)	HT mains failed	Rectification of fault within 12 hours. Temporary restoration of power supply within 4 hours,
(f)	Problem in 33 kV Distribution/Switching substation	Repair and restoration of supply within 48 hours. Restoration of supply from alternate source, within 6 hours, wherever feasible. Roaster load shedding may be carried out to avoid overloading of alternate source.
(g)	Failure of Power Transformer	Rectification action plan to be intimated to the Concerned Authority within 72 hours. Rectification to be completed within the time frame approved by the Concerned Authority. Restoration of supply from alternate source

Nature of Defect or Deficiency		Time Limit for Repair/Rectification
		within 6 hours, wherever feasible. Roaster load shedding may be carried out to avoid overloading of alternate source.
(h)	Street Lighting System Failure	Rectification of line fault - 24 hours Replacement of Defective units - 7 days
(i)	Metering Problem	Inspection and checking the correctness of the meter within 7 working days of complaint.
(j)	Voltage Fluctuations	Local Problem-4 hours Tap of Transformer- within 3 days
<b>Water Treatment Plant</b>		
1	Contractor to submit the list of faults that may occur during operation, along with the time period for rectification of faults for the Employer's Engineer's review and Employer's acceptance prior to commissioning.	

## 1.2 General Preventive Maintenance Checks

General Preventive Operation and Maintenance Checks	
(a)	The following checks are to be performed daily by the Contractor's personnel
1	Whether there is a change in the sound of a running pump, abrupt changes in bearing temperature and seal leakage?
2	The pump capacity, pressure, power consumption and vibration level to check if outage is required to address the deterioration of specified performance values.
3	Rise in temperature of bearings in motor, in moving parts and other units, etc.
4	Working of gauges, sensors and other flow-measuring devices
5	Average power factor, KWH consumed
6	Pipeline and valve leakage
7	Functioning of non-return valve
8	Tightness of all electrical connections of all unit panels etc.
9	Tightness of all cable connections
10	Temperature rises due to loose connections
11	Operation of valves and sluice gates
12	Current and voltages in all electrical equipment
13	Average power factor, KWH consumed
14	Lights on/off
15	Leakage current for all power distribution
16	Battery voltage, battery charger, topping of distilled water, tightness of terminations etc.
17	Gland packing
18	Wear and tear of moving parts
19	Adoption of Electrical energy conservation methods and energy consumption
20	Electrical contacts
21	Motors windings etc.
22	Meggering of electrical equipment
23	Watering of earthen pits
24	Relay testing and calibration, if possible, of meters, gauges, instruments
25	Speed of motors
26	Level gauges and flow meters signals

General Preventive Operation and Maintenance Checks	
27	Cleaning, checking/tightening of L.T. Circuit / Panel
28	Auxiliary DB, Capacitor bank
29	Battery and Battery charger
30	Free movement of stuffing box glands, gland bolts to be cleaned & lubricated and packing to be Inspected to determine whether it requires replacement.
31	Pump and motor alignment should be checked and corrected if necessary.
32	Grease lubricated bearings should be checked to see that they contain the correct amount of grease and that it is still of suitable consistency
33	<ul style="list-style-type: none"> <li>a. Vibration should be reviewed. If the pump is tending towards unacceptable v levels:</li> <li>b. <math>\frac{3}{4}</math> the bearing should be removed, cleaned, and examined for flaws and wear</li> <li>c. <math>\frac{3}{4}</math> the bearing housing should be carefully cleaned</li> <li>d. <math>\frac{3}{4}</math> rolling element bearings should be examined for scratches and wear</li> <li>e. <math>\frac{3}{4}</math> immediately after cleaning, rolling element bearings that are considered acceptable for reinstallation should be coated with grease.</li> </ul>
34	The shaft sleeve and shaft should be examined for wear.
35	When coupling halves are disconnected for an alignment check, the vertical shaft movement of a pump with sleeve (journal) bearing should be checked at both ends with packing or seals removed. Any movement exceeding the original design clearance should be investigated to determine the cause. The endplay allowed by bearings should also be checked. If it exceeds that recommended by the manufacturer, the cause should be determined and corrected.
36	Stuffing boxes should be repacked, and the pump & motor should be realigned and reconnected
37	Overhauling requirements of all equipment
38	Improvement required if any in the operation of a plant
39	Testing and Calibration of all instruments
40	Transformer cleaning, checking silica gel, oil checking filtering/replacing
41	Contractor to submit general preventive operation and maintenance checks for WTP for Employer's Engineer's review and Employer's acceptance prior to commissioning.