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TATA

TSLMD/ENV/25-09/27

Date: 11/09/2025

To
The Environmental Engineer & Regional In-charge
West Bengal Pollution Control Board, Regional Office,
P.S: Bhabanipur, Raghunathchak,
PO: Barghasipur, Haldia,
Dist-Purba Medinipur, Pin-721657

W.B. Pollution Control Board • Received • Date.. 12/09/25 • Haldia Regional Office •

**Sub: Submission of Environmental Statement in FORM-V for the year 2024-2025**

Dear Sir,

We hereby submit the Environmental Statement of Tata Steel Limited, Metaliks Division (Formerly known as Tata Metaliks Limited) in FORM-V for the year 2024-2025.

Please, acknowledge & receive the same.

Thanks & regards,
**For Tata Steel Limited, Metaliks Division**

Ujjal Ghosh
Factory Manager & Chief Operations Metaliks (Iron Making & DIP)

Encl. as above

**Copy to:** Chief Engineer (O&E), West Bengal Pollution Control Board, Paribesh Bhawan, Kolkata 700106

# FORM V

**(See rule 14)**

## Environment Statement for the financial year ending with 31st March 2025

### *PART – A*

| | | |
|---|---|---|
| *i.* | Name and address of the owner / occupier of the industry | M/s Tata Steel Limited, Metaliks Division (Formerly known as Tata Metaliks Ltd.) Vill- Mahreshpur, P.O. - Samraipur, P.S.- Kharagpur (Local), Dist – Paschim Medinipur. West Bengal, Pin – 721301. |
| *ii.* | Industry category Primary- (STC Code) Secondary- (STC Code) | Red<br>21-500003 |
| *iii.* | Year of establishment | 1994 (Pig Iron Division) |
| | | 2010 (Ductile Iron Pipe Division) |
| *iv* | Production Capacity – Units | Hot Metal : 750000 TPA |
| | | Ductile Iron Pipe : 500000 TPA |
| *v.* | Date of last environment statement submitted: | 27th September 2024. |

### *PART – B*

**Water and Raw Material Consumption:**

| **i. Water consumption in $m^3$ / d** | | |
|---|---|---|
| | PI Division | DIP Division |
| | $m^3$ / d (appx.) | $m^3$ / d (appx.) |
| Process (including wash) | 989 | 1645 |
| Cooling | 1071 | |
| Domestic | 84 | 120 |
| Total | 2144 | 1765 |

| **Name of Products** | **ii. Process water consumption per unit of product output** | |
|---|---|---|
| | During the current financial year – 2023 – 24 | During the current financial year – 2024 – 25 |
| Hot Metal | 1.41 $m^3$/T of Hot Metal | 1.34 $m^3$/T of Hot Metal |
| Finished Pipe | 1.42 $m^3$/T of Finished Pipe | 1.43 $m^3$/T of Finished Pipe |

*iii.* ***Raw material consumption:***

| ***Raw material consumption*** | | | |
|---|---|---|---|
| **Name of raw materials*** | **Name of Products** | **Consumption of raw material per unit of output (kg/ton of output)** | |
| | | During current financial year-2023-24 | During current financial year-2024-25 |
| **For Pig Iron Division** | | | |
| 1. Iron Ore | Hot Metal | 491 | 405 |
| 2. Mn Ore | | 1.6 | 0.24 |
| 3. Limestone | | 171 | 7.53 |
| 4. Dolomite | | 90 | 4.58 |
| 5. Quartzite | | 38 | 44.92 |
| 6. Coke | | 497 | 497.29 |
| 7. Iron Ore Fines | | 859 | .. |
| 8. Coke Breeze | | 84 | .. |
| 9. Sinter | | .. | 1010.51 |
| 10. PCI (CDI) Non-Coking Coal | | 119 | 115.30 |
| 11. Ferro-Silico Manganese | | 2.56 | 3.35 |
| **For Ductile Iron Pipe Division** | | | |
| 1. Hot metal (T/T) | Ductile Iron Pipe | 0.920 | 0.928 |
| 2. Steel scrap (T/T) | | Not used | Not used |
| 3. Ferro silicon (T/T) | | 0.0035 | 0.0060 |
| 4. Calcium Carbide | | Not used | Not used |
| 5. Mg wire & ingot (T/T) | | 0.0011 | 0.0010 |
| 6. Silica Sand (T/T) | | 0.036 | 0.034 |
| 7. Resin (ml/T) | | 0.00051 | 0.00049 |
| 8. Hardener (ml/T) | | 0.00050 | 0.00047 |
| 9. Catalyst (ml/T) | | 0.00010 | 0.00008 |
| 10. Core Paint (ml/T) | | 0.00072 | 0.00073 |
| 11. Zinc wire (T/T) | | 0.00354 | 0.00354 |
| 12. Cement (T/T) | | 0.0731 | 0.0743 |
| 13. River Sand (T/T) | | 0.129 | 0.130 |
| 14. Black Bitumen (ml/T) | | 0.0030 | 0.0033 |

**Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.*

## *PART – C*

***Pollutant discharged to Environment / unit of output*** *(Parameter as specified in the consent issued)*

### (a) Water

| S.N. | Parameter | UoM | Waste water treatment plant Outlet at CPP-3 (reused in the process) | ETP Outlet at Ductile Iron Pipe Plant (reused in the process) | ETP 450KLD Outlet at Hot Metal Division (reused in the process) |
|---|---|---|---|---|---|
| 1. | pH | -- | 7.97 | 8.18 | 6.85 |
| 2. | Total Suspended Solids (TSS) | mg/l | 6.25 | 11.9 | <2.0 |
| 3. | Chemical Oxygen Demand (COD) | mg/l | 32.85 | 25.25 | 12.65 |
| 4. | Bio-chemical Oxygen Demand (BOD) | mg/l | 4.27 | 3.2 | <2.0 |
| 5. | Oil & Grease | mg/l | <2.0 | <2.0 | <2.0 |

Remarks:

1. No process wastewater is discharged outside the plant.
2. No deviation from Prescribed standard.
3. Treated wastewater is being reused for process make up for MBF & captive power plant & for dust suppression (high pressure fog & dry fog system) at work zone areas, road dust suppression by mobile tankers & Fog canon system.
4. Treated wastewater from ETP of Ductile Iron pipe making plant is recycled back in process as well as used for service water purpose.
5. Another effluent treatment plant of 450 $m^3/d$ has been installed & under operation to reuse treated water as CPP-4 MW for cooling tower makeup.

**(b) Air: Stack emission-**

| S.N. | Pollutants | Quantity of Pollutants discharged (mass/day) | Concentration of pollutants discharged (mass/volume) | Percentage of variation from prescribed standards with reasons |
|---|---|---|---|---|
| | Particulate Matter | Kg/day | mg/ $Nm^3$ | Below than the prescribed standard. |
| 1. | MBF Stove – I | 22.40 | 9.69 | (-) 90.3 % |
| 2. | MBF Stove - II | 14.92 | 7.19 | (-) 92.8 % |
| 3. | MBF#1- Casthouse Fume extraction System | 60.39 | 21.88 | (-) 78.1 % |
| 4. | MBF#2- Casthouse Fume extraction System | 31.58 | 7.40 | (-) 85.2 % |
| 5. | CPP-4MW (BFG fired) | 16.12 | 9.97 | (-) 90.0 % |
| 6. | CPP-15 (Coke oven WHRB & BFG) | 110.09 | 43.97 | (-) 70.7 % |
| 7. | Sinter Head ESP | 192.81 | 40.06 | (-) 59.9 % |
| 8. | Sinter Tail ESP | 70.40 | 18.75 | (-) 81.3 % |
| 9. | RMHS-1 Sinter storage bin | 67.90 | 18.99 | (-) 81.0 % |
| 10. | RMHS-2 Sinter storage bin | 9.88 | 11.85 | (-) 88.2 % |
| 11. | Flux crusher stack | 4.87 | 5.61 | (-) 94.4 % |
| 12. | RFP bag filter | 64.64 | 44.17 | (-) 55.8 % |
| 13. | MGT & IF (Common) Stack. | 3.66 | 18.74 | (-) 81.3 % |
| 14. | Zn Coating m/c FL-1 | 1.96 | 5.92 | (-) 94.1% |
| 15. | Barrel & Socket Grinders Stack | 2.52 | 6.09 | (-) 93.9 % |
| 16. | Zn Coating m/c FL-2 | 3.35 | 6.67 | (-) 93.3 % |
| 17. | Tri-Grinding Stack FL-2 | 2.40 | 6.62 | (-) 86.8 % |
| 18. | Zn Coating m/c FL-3 | 2.66 | 6.88 | (-) 86.2 % |
| 19. | Tri-Grinding Stack FL-3 | 1.02 | 6.49 | (-) 87.0 % |
| 20. | Annealing Furnace regeneration unit | 3.99 | 6.89 | (-) 93.1 % |
| 21. | Annealing WHR Boiler 8 TPH | 2.63 | 6.52 | (-) 93.5 % |
| 22. | Sand Cleaning System stack | 0.65 | 4.64 | (-) 95.4 % |
| 23. | Induction furnace Stack (LDP) | 2.50 | 5.23 | (-) 89.5 % |
| 24. | Magnesium Converter (LDP) | 3.33 | 4.58 | (-) 90.9 % |
| 25. | Zn Coating Stack FL-4 | 9.30 | 9.53 | (-) 81.0 % |
| 26. | Tri-grinding Bag filter FL4 | 3.30 | 6.45 | (-) 87.1 % |
| 27. | Zn Coating Stack FL-5 | 5.55 | 8.93 | (-) 82.2 % |
| 28. | Tri-grinding Bag filter FL5 | 3.04 | 7.60 | (-) 84.8 % |
| 29. | Core Shop (LDP) | 1.57 | 5.45 | (-) 89.1 % |
| 30. | Mould Shop (LDP) | 1.17 | 4.07 | (-) 91.9 % |
| 31. | Annealing Furnace Air Chimney flue gas exit (LDP) | 4.56 | 6.33 | (-) 87.4 % |

***PART – D***

***HAZARDOUS WASTES:***

*[As Specified under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016]*

| S.N. | Hazardous Wastes | Total Quantity (Kg) | |
|---|---|---|---|
| | | During the current financial year (2023-24) | During the current financial year (2024-25) |
| 1. | From Process | Used Oil – 8.345 MT (from PI Division)<br>Waste Oil – 5.58 MT (from DI Pipe) | Used Oil – 4.82 MT (from PI Division)<br>Waste Oil – 22.73 MT (from DI Pipe) |
| 2. | From Pollution Control Facilities | Flue gas dust & GCP sludge - 29086 T (appx.).<br>Zinc Dust – 545.0 MT<br>Resin, Hardener – 4.384MT<br>Empty container/Paint Drum – 6.394MT | Flue gas dust & GCP sludge - 27458 T (appx.)<br>Zinc Dust – 728.0 MT<br>Resin, Hardener – 3.47MT<br>Empty container/Paint drum– 13.688 MT |
| 3. | Spent Ion Exchange Resin | 2.85 MT | 0 MT |

***PART – E***

***SOLID WASTES:***

| S.N. | Solid Wastes | Total Quantity (Ton) | |
|---|---|---|---|
| | | During the current financial year (2023-24) | During the current financial year (2024-25) |
| a. | From process | 257350.37 Ton appx. (Iron sweepings, slag & iron scraps, DI pipe scrap)<br>Waste core sand-14265 MT | 315195.39 Ton appx. (Iron sweepings, slag & iron scraps, DI pipe scrap)<br>Waste core sand-14688.25 MT |
| b. | From Pollution Control Facility | Flue gas dust & GCP sludge - 29086 T (appx.).<br>Magnesium Oxide – 57 MT.<br>Zinc Dust – 545.0 MT. | Flue gas dust & GCP sludge - 27458 T (appx.)<br>Magnesium Oxide – 90 MT.<br>Zinc Dust – 728.0 MT. |
| c.<br>1) | Quantity recycled or reutilized within the unit | 6894.89 MT (pipe scrap)<br>Magnesium Oxide – 57 MT. | 12439.64 MT (pipe scrap)<br>Magnesium Oxide – 90 MT. |
| 2) | Sold | 250455.48 Ton appx. | 302755.75 Ton appx. |
| 3) | Disposed | Nil | Nil |
| 4) | Stored | Nil | Nil |

## *PART – F*

***Please specify the characteristics (in terms of concentration and quantum) of hazardous as well as solid waste and indicate disposal practice adopted for both these categories of wastes.***

The waste oil/ used oil is being stored in the MS drum on the concrete floor with secondary containment facility & finally disposed of through authorized external agencies.

| Other Solid Wastes | Composition/ Nature of waste | Disposal Practices |
|---|---|---|
| Iron Ore Dust | Fe (61.1%)<br>$Al_2O_3$ (3%) | Reuse for Sinter making process |
| Scrap Iron (flashing and skulls) | Fe (90%) | Sale |
| Coke Dust | C (85%) | Reuse for Sinter making process |
| Dust from cyclone separator | Iron Ore (69%), coke, limestone dust and dust from other fluxes that are fed into blast furnace | Reuse for Sinter making process |
| Iron Scrap | Non Hazardous | Recycling or sell off as scrap |
| Magnesium Oxide Dust | Non Hazardous | Use in Sinter plant |
| Waste Core Sand | Non Hazardous | Land development within Plant premises & reuse in process. |
| Cement Sand dust | Non Hazardous | Low laying area filling within Plant premises. |
| Zinc Dust | Hazardous | Sell off to authorized agency |
| Used Oil | Hazardous | Sell off to authorized agency |
| Resin, Hardener | Hazardous | Disposed off through CHW-TSDF |
| Empty Barrel/container paint drum | Hazardous | Sell off to authorized agency or Disposed off through CHW-TSDF |
| Spent Ion Exchange Resin | Hazardous | Disposed off through CHW-TSDF |

Tata Steel Ltd. Metaliks Division(TSLMD) has been accorded authorization for Hazardous Waste storage and disposal. Hazardous wastes are mainly sold to authorized agency or reused inside plant premise or disposed off through CHWTSDF. All the required statutory documents and records are being maintained in prescribed format and submitted as per the statute (Form 10 & Form 4) within stipulated timeframe.

## *PART – G*

***Impact of the pollution control measures taken on conservation of natural resources and consequently on the cost of production.***

1. Energy conservation initiatives including solid fuel, liquid fuel, electrical & thermal energy conservation were executed thereby minimizing greenhouse gas emission.
   a. DIP2-180 KW Cold well pump energy saving by installing VFD. (2 running, 1 stand-by).
   b. Installation of another 1.8 MWp roof top solar power plant at new ductile iron pipe unit shed
   c. Installation of Coke Drying unit (25 TPH) to reduce coke moisture using hot exhaust air from sinter cooler zone 3&4, thereby reducing MBF-2 Coke Rate.
   d. Install Hot Exhaust Air Based Boiler at Cooler Zone 1&2 and Generate Steam to Use in New DI Plant (9TPH, 10 kg/cm2 pressure and 185 Deg C temperature).
   e. Increasing Feed water temperature through a HP heater to reduce THR and BFG consumption at CPP-2 boiler.
   f. Installation of fan less zero drift loss cooling tower for MBF1 and DIP-1 (Power saving 120 KW)
   g. Optimization of BFG (blast furnace gas) done in Annealing Furnace thereby minimizing oil consumption
   h. Reduce energy consumption and improving power factor by installing Harmonic Filters in DIP-1 LTPCC
   i. Nut Coke consumption with lime & ESP dust coating to improve RI (Reducibility index) for fuel rate reduction
   j. HSD consumption reduction in annealing furnace & power plant by burner modification
   k. Tower Crane installation is in progress in weigh bridge to reduce excavator engagement time & HSD consumption.
   l. Installed variable-frequency drives (VVFDs) in various HT (high tension) & LT (low tension) loads at Sinter Plant, MBF & CPP
   m. Furnace top camera in MBF-1 for continuous gas flow monitoring inside furnace for improving Fuel rate by stable F/C operation.
   n. Skid upgradation & Pipeline modification in O2 Plant to maintain 6% O2 enrichment in both furnace after MBF-2 start-up
   o. Increase Sinter Burden in MBF-1 by changing Sinter Plant screen size from 5 mm to 4 mm.
   p. Pressure Optimization of air compressor (3 No.s) at MBF-2 (7.5 kg/cm2 to 5 kg/cm2)

2. Installation of MBF#2 Fume extraction de-dusting system & stack connected at cast house.

3. Installed higher efficiency Electrostatic Precipitator (ESP) at Sinter Plant (Head ESP) to significantly reduce emissions.

4. Cyclone separator assembly was retrofitted to the existing de-dusting system of Ductile Iron Pipe unit & Sinter plant thereby reducing point source emission.

5. Online Connectivity of Continuous Emission Monitoring System has been done for 36 analyser in the Real Time Data Monitoring System portal of Central Pollution Control Board. Comprehensive Annual Maintenance Contract has been provided to 3rd party as well as OEM of analyser for regular monitoring maintenance, data transmission and calibration of the equipment.

6. 5516 nos. of tree saplings are done for green belt development inside plant premises in FY'25.

7. Wind Shelter fencing has been installed for raw material yards to prevent fugitive dust emission.

8. Fixed type water sprinklers, mobile tankers & truck mounted Fog canon system are being used for dust suppression using recycled water.

9. Construction of covered shed has been made in coal yard area to reduce fugitive dust emission in surrounding area.

10. Installed of 4 nos. Continuous Ambient Air Quality Monitoring System inside & outside of plant & data displaying through digital display board at Main gate of plant for stakeholders..

11. Another effluent treatment plant of 450 m3/d is under operation at Iron making unit. Installation of 30 m3/Hr RO plant at Ductile Iron Pipe unit for reuse water in process.

12. Installation of Sonic Soot Blowing technology for increasing the collecting efficiency in Head ESP & RFP bag house of Sinter Plant

13. Installation of dedusting unit for Tri Grinding Finishing line 2, Bitumen Coating stack with Venturi scrubber.

During FY'25 the environmental parameters stipulated by MoEF&CC, WBPCB have been monitored and was found to be within the permissible limit. The report has been submitted to RO, MoEF&CC and WBPCB, Haldia as well as Kolkata office along with the six-monthly Environment Clearance compliance report.

## *PART – H*

***Additional measures / investment proposal for environmental protection including abatement of pollution.***

*Environment protection measures in FY'25*

| *S.N.* | *Description of environment protection measure executed/ in advanced stage of completion in FY'25* | *Investment Amount (₹ in lakh) (order placed/ expenditure made)* |
|---|---|---|
| 1. | Installing 25 TPH coke drying unit at RMHS#2 bunkers | 900.0 |
| 2. | Hiring of truck mounted fog canon system for water sprinkling to control fugitive dust for Raw material Stock, inside and out side plant road. | 16.06 |
| 3. | CMC of CAAQMS | 31.8 |
| 4. | CMC & Calibration of CEMS | 80.0 |
| 5. | Installation of grid connected battery less 1.8 MW solar power system at DIP-2 unit | 700.0 |
| 6. | Installation of Sonic Soot Blowing technology for increasing the collecting efficiency in Head ESP at Sinter Plant | 4.4 |
| 7. | Enhancing Bag Filter Performance of RFP by Installation of Sonic Soot Blowing Technology | 1.9 |
| 8. | Tail ESP upgradation by HFTR installation for performance enhancement and emission control | 78.0 |
| 9. | Construction of ZED (Zero Effluent discharge) network | 200.0 |
| 10. | Installation of Tri-grinding FL-2 de-dusting system | 44.0 |
| 11. | Environmental monitoring through accredited agency | 10.8 |
| 12. | Electrical Energy Conservation initiatives through power generation through microturbine with PRDS unit in CPP-2 | 180.0 |

| | | |
|---|---|---|
| 13. | Install sinter cooler WHRB (9TPH) 10.5 Kg/cm2 to generate & supply stream for DIP -2 curing therefore save BFG & generate 1.6 MW power- Under construction | 700.0 |
| 14. | Green belt augmentation (5516 nos. of saplings) inside plant & for plantation at nearby community (1888 nos. of saplings) for FY'25 | 11.0 |
| 15. | Wind shelter fencing is constructed near Iron ore yard & horizontal deployment | 5.0 |
| 16. | Installation of Fanless & finless cooling tower (under construction) | 150.0 |
| 17. | RO plant (Cap-30m3/Hr) installation is under progress for Ductile Iron Pipe unit | 38.0 |
| 18. | IoT Based Smart Ultrasonic Water Flow Meters Installation for all borewells | 26.0 |
| 19. | Installation of micro turbine with pressure reducing system | 210.0 |
| 20. | Upgradation of Induced Draft (ID) fan at tail side of Electrostatic Precipitator (ESP) in Sinter Plant | 74.0 |
| 21. | Hiring of Road Sweeping Machine (DULEVO- 5000) for reduction of fugitive dust on inside plant road. | 78.0 |

## *PART – I*

***MISCELLANEOUS:***

***Any other particulars for improving the quality of the environment.***

Industry had engaged NEERI (National Environment Engineering Research Institute) for carrying out air quality study within plant. Based on the recommendation, point source emission & fugitive emission control measures are being further upgraded, augmented & installed.

TSLMD (erstwhile TML) carried out detailed GHG emission inventorisation & third-party verification of the same. TML has also independently disclosed the Climate change information through CDP (not-for-profit organization that runs the global disclosure system). TML received 4.5 star and 2d runner up award for CII – ENCON Energy Excellence Award.

TSLMD (erstwhile TML) has been awarded for Gold rating in GreenCo assessment by CII- Sohrabji Godrej Green Business Centre. This is a performance-based assessment framework launched in 2013 by CII Godrej GBC (Green Business Centre) to define & assess how green a unit is.

Environment Audit is carried out by accredited agency.

A separate Environment Management Cell is set up under the control of plant Head to oversee effective implementation of environment protection measures and to monitor the routine environmental performance within the premises.

We organize a weeklong event to celebrate World Environment Day through which we create a lot of awareness among employees and nearby villagers on the importance of protecting our environment, considering the current global and local environmental issues & tree plantation drive within plant and surrounding community.

Authorised Signatory