



**FERRO ALLOYS PLANT, BALASORE**

Ref. No.: FAMD/FAPBL/17/FY25

Dt.- 22/07/2024

To  
The Member Secretary  
State Pollution Control Board, Odisha Paribesh Bhawan  
A/118, Nilakantha Nagar, Unit-VIII  
Bhubaneshwar-751012

**Sub: Submission of Environmental Statement of Ferro Alloy Plant, Balasore for the period of 2023-2024.**

Dear Sir,

We are submitting one set of annual environmental statement in Form-V dully filled in for the year 2022-2023 in respect of M/s Ferro alloy Plant, Balasore by Tata Steel for your kind consideration.

We wish to maintain the necessary control measures installed and adopted to minimize the impact on environment.

We look forward to further your guidance which shall certainly help us in endeavoring further improvements in our Environmental Management Practices.

This is for your  
perusal.

Yours faithfully  
For: TATA STEEL LTD

Head,  
Ferro Alloys Plant, Balasore  
Encl.- as above

CC: The Regional Officer, Balasore, Ganeswarpur, P.O – Januganj, Balasore



**TATA STEEL**

Ferro Alloy Plant, Balasore, Tata Steel Limited, Plot No. Z-1 & Z-3, IDCO  
HD Center, Remuna, Somanathpur, Balasore, Baleshwar, Odisha, 756019  
Registered Office Bombay House 24 Homi Mody Street Fort Mumbai 400 001 India  
Tel 91 22 6665 8282 Fax 91 22 66657724  
Corporate Identity Number L27100MH1907PLC000260 Website www.tatasteel.com



# ENVIRONMENT STATEMENT

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FOR THE FINANCIAL YEAR 2023-24

Submitted to SPCB under Rule 14 of The Environment (Protection) Rules 1986

**TATA STEEL LIMITED**

FERRO ALLOYS PLANT

BALASORE

# **ENVIRONMENTAL STATEMENT**

**OF**

**FERRO ALLOYS PLANT (TATA STEEL LIMITED)**

**BALASORE**

**FOR THE YEAR  
2023-2024**

**PREPARED BY**

**THE DEPARTMENT OF SAFETY & ENVIRONMENT**

**FERRO ALLOYS PLANT**

**Z1 IDCO IID CENTER, SOMNATHPUR, BALASORE-756019**

## **INTRODUCTION**

Ferro Alloys plant, Balasore (Previously known as Stork Ferro & Mineral Industries Pvt. Ltd.) was installed in 2011(Acquired by TATA STEEL LTD. In JULY,2022) as a captive source of supply of High Carbon Ferro Manganese & High Carbon Silico Manganese Alloys to steel Works. The plant was set up in technical collaboration with GHALSASI SMELTING PRIVATE LIMITED, one of the world pioneers in smelting technology. The plant was set up with an installed capacity of 53,285 MT of FeMn, SiMn, FeCr, FeSi per year from two Furnaces of 33 MVA.

## **ABOUT THE PLANT**

### **PLANT LOCATION AND ACCESSIBILITY**

The site of the Ferro Alloys Plant is located at Plot No.- **Z1, IDCO IID CENTER, SOMNATHPUR, REMUNA, BALASORE, ODISHA, PIN-756019** and it is a part of Survey of India Topo Sheet No. 73-K/5 (F45014, F45015) bounded by the latitudes  $21^{\circ}29'57.8796''$  N and longitudes  $86^{\circ}51'18.60768''$ E and the plant site is at a distance of 3 KM from NH-5. The nearest Railway station is at a distance of 8 KM from plant, in East direction. The nearest airport is at Bhubaneswar at a distance of about 202 km in South-east direction. Nearest port is Paradeep at a distance of 220 km. The nearest township is Balasore which is 6 Km in East direction.

**ENVIRONMENTAL STATEMENT FORM - V**  
**(SEE RULE 14)**

**ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING ON 31<sup>ST</sup> MARCH 2023**

1. Name and address of the Owner/occupier of the industry, operation or process : Mr. T.V. Narendran  
MD, Tata Steel India & SEA  
AT/PO- 5c Road, Jamshedpur
2. Name and address of the Factory Manager : Mr. Sarbeshwar Nayak  
Head, Ferro Alloys Plant, Balasore
3. Industry Category : Large
4. Production Capacity of Ferro Alloys. : 53,285 MT
5. Year of establishment : 2011
6. Date of submission of previous Environmental Statement : N/A

**Water and Raw Material Consumption**

A. Water consumption:

<b><u>Consumption Head</u></b>	<b>2022-23 (in cu.m/Year)</b>	<b>2023-24 (in cu.m/Year)</b>
Industrial Cooling	N/A	N/A
Process	17720	680388
Domestic	300	16425
<b>Name of the product(s)</b>	<b>Process water consumption per unit of products</b>	
High Carbon SiMn	N/A	NA

**B. Raw material Consumption: -**

The raw material consumption for the production of FeMn is as follows:

Name of raw materials	Consumption of raw material		
		During the previous	During the current
	Unit	Financial Year (2022-2023)	Financial Year (2023-2024)
Manganese Ore	MT	24887.49	25538
Coke	MT	10906.96	19529
Dolomite	MT	4102.48	14314
Power Consumption	KWH	41383320	130017000
High MnO Slag	MT	3161.18	1763
Quartzite	MT	3912.05	13344
Production (SiMn)	MT	9412.24	36300

PART-C

**POLLUTION DISCHARGED TO ENVIRONMENT/ UNIT OF OUTPUT**

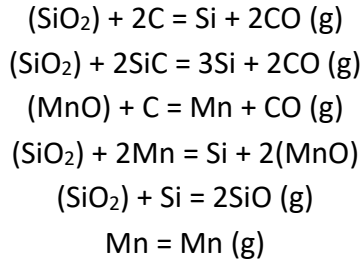
(Parameters as specified in consent issued)

**Brief description of the process producing SiMn:**

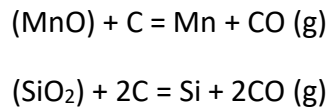
For Si-Mn production in SAF, C (coke and coal) is used as a reducing agent while the heat is supplied by the electricity. An electric current is sent through the charge, and heat is created according to  $P = I^2R$ , where P is the effect i.e. the heat created, R is the charge resistance and I is the current density.

In a SAF the electrode tips are submerged in a porous charge mix, and electrical energy is liberated by micro-arcing to a slag rich coke bed floating on top of a molten alloy bath. The heat requirement is supplied as electrical energy and the coke acts both as a reducing agent and electrical resistance element. The reactions which are taking place during the production of Si-Mn are given below.

The reduction of Si and Mn in the production of Si-Mn is takes place by the following series of different reduction steps.



The main equilibrium reactions which control the distribution of Si and Mn between the slag and Si-Mn alloy are the following.



**A. Water Pollutants:**

The water used for cooling several parts of the Furnaces as well as scrubbing the flue gas in the Gas Cleaning Plants is re-circulated to the system and is not discharged outside the Plant. However, during rainy season discharge of storm water is a natural process.

**B. Air Pollutants:** Due to the effective operation of Gas Cleaning Plant. (Avg. data of the Year)

Sl.No	Stack Details	Pollutants	Quantity of Pollutants discharged(mass/day)(Tons/day)	Concentration of Pollutants Discharged(mass/volume)(Mg/Nm3)	Percentage of variation from prescribed standard with reasons
1	ST-1	PM10(Mg /Nm3)	0.0047	39.68	-28.66

**PART – D**  
**HAZARDOUS WASTES**  
**(AS SPECIFIED UNDER THE HAZARDOUS WASTES)**

As specified under the Hazardous & Other Waste (Management & Trans boundary Movement) Rules, 2016 and amendment thereof)

Hazardous waste	Total Quantity Generated	
	During the Previous Year (2022-2023)	During the CurrentYear (2023-2024)
<b>1.From Processes</b>		
a. Used Transformer Oil	12000ltrs	5860
b. Waste Oil (Lubricants, etc)	NA	NA
c. Waste batteries	3Tons	2.99
<b>2. From Pollution Control Facility</b>		
GCP Dust	2000 ton	1103.24

**PART – E**  
**SOLID WASTES**

SL No	Sources	TOTAL QUANTITY	
		During the previous financial year (2021- 2022)	During the previous financial year (2022-2023)
a	From Process	NA	NA
b	From Pollution Control Facility.	NA	NA
c	1. Quantity recycled or Reused within the unit (MnSi Slag)	NA	NA
	2.Quantity sold (MnSi Slag)	NA	NA
	3.Quantity Disposed (MnSi Slag)	NA	NA



**PART – F**

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

Hazardous/ Solid Wastes	Characteristics	Method of disposal
MnSi Slag	SiO <sub>2</sub> , MnO, Al <sub>2</sub> O <sub>3</sub> ,CaO,MgO	Used in plant road development project
GCP Dust	SiO <sub>2</sub> , MnO, Al <sub>2</sub> O <sub>3</sub> ,CaO,MgO	25MT sent to R&D in house for briquette feasibility with the approval of regional pollution board
Used Batteries	Lead-Acid	Separate Storage provided suitable dealer is in search
Used Transformer Oil	Hydrocarbon	Separate Storage provided

**PART - G**

**IMPACT OF THE POLLUTION ABATEMENT MEASURES TAKEN ON CONSERVATION OF NATURAL RESOURCES AND ON THE COST OF PRODUCTON:**

M/s Ferro Alloy Plant, Balasore has spearheaded the pursuit for Environmental Protection by implementing an effective environmental management system. To this effect, the Plant has undertaken the following measures:

- I. Plantation in and around the plant is in process along with construction of dedicated ~~pathway~~.
- II. On a monthly basis environmental monitoring is being carried out.
- III. Mobile water sprinklers is provided all round the clock.

**PART – H**

**ADDITIONAL MEASURES/ INVESTMENT PROPOSAL FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT OF POLLUTION, PREVENTION OF POLLUTION**

- I. Revamping of fume extraction system is still in the pipeline.
- II. Installation of dust analyzer will be done by this October first week.
- III. Tree plantation will continue in the year 2024-25.

**PART – I**  
**ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF THE ENVIRONMENT**

- Ferro Alloys Plant of TATA Steel Ltd. is certified for the Integrated Management System (ISO- 9001:2015, ISO-14001:2015 & OHSAS-45001:2018 and SA:8000) from last two decades. The unit has obtained various prestigious accolades from various agencies.
  
- Various awareness programs throughout the year are conducted in the area which included celebration of World Environment Day, Ozone Day, Earth Day, Sustainability Month etc. in which environment awareness programs, competitions are conducted every year.
  
- All above efforts make the plant clean - green and sustainable.