

ELECTROSTEEL CASTINGS LIMITED

Vill : Kashberia, P. O. : Shibramnagar, Haldia, Dist. : Purba Medinipur 721 635, India

Tel : 03224 277 721, Fax : 03224 278107

CIN : L27310OR1955PLC000310

Web : www.electrosteelcastings.com

PIONEERING



Ref: ECL/MOEFCC/FA/Haldia/01/22-23

Date: 21/05/2022

To
The Deputy Director(S),
Ministry of Environment, Forest & Climate Change,
Eastern Regional Office,
A/3, Chandrasekharpur,
Bhubaneswar – 751023.

Ref: EC Letter No.-J-11011/02/2016-IA-II(I), dated 12.04.2017.

Sub: Half Yearly Compliance Report of the conditions of Environmental Clearance issued by Ministry of Environment & Forest, New Delhi for Proposed installation of the Ferro Alloy Plant through setting up of 1X6MVA & 1x9MVA submerged Arc Furnace for production of Ferro Manganese (38,156TPA) or Silico Manganese (27,109 TPA) or Ferro Silicon (10,421 TPA) by M/s- Electrosteel Castings Ltd, Located at Haldia, Dist –Purba Medinipur, West Bengal for the **Period October-21 to March-22.**

Respected Sir,

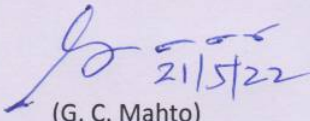
This has reference to the Environmental Clearance letter no-J-11011/02/2016-IA-II(I), dated 12.04.2017 issued by Ministry of Environment, Forest & Climate Change, New Delhi.

We enclose herewith Compliance Report for the Period of **October-2021 to March-2022** for your perusal.

This is for your information.

Thanking you,
Yours faithfully,

For **ELECTROSTEEL CASTINGS LIMITED,**


(G. C. Mahto)

AVP - HW

- Encl: a) EC Compliance Report-(Annexure-1).
b) Report of Stack Monitoring (Annexure-2).
c) Report of AAQM (Annexure-3).
d) Report of Ambient Noise (Annexure-4).
e) Report of Neurological & Periodical Health check-up (Annexure-5).

Follow the Electrosteel Group on



H.O. : 19, Camac Street, Kolkata 700 017

Tel : 91 33 7103 4400, 2283 9990, Fax : 91 33 2289 4340

Regd. Office : Rathod Colony, Rajgangpur, Sundergarh, Odisha 770 017



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PIONEERING



- CC: -
- 1) Regional Director,
Central pollution control board,
Southend conclave, Block 502,
5th & 6th floor 1582 Rajdanga main road,
Saratpark, Bose pukur, Kasba.
Kolkata-700107.
 - 2) Regional Director,
GOI, MOEF & CC,
Integrated Regional Office,
Kolkata, 1b-198, Salt Lake City,
Sector -III, Kolkata-700106.
 - 3) The Asst. Environmental Engineer & In- charge.
West Bengal Pollution Control Board,
Haldia Regional Office,
Raghunathchak, P.O:- Barghasipur,
P.S:-Bhabanipur,
Medinipur (East)-721657.

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**ENVIRONMENT CLEARANCE SIX MONTHLY COMPLIANCE REPORT
(FROM OCTOBER-2021 TO MARCH-2022)**

Project Name :- Proposed installation of the Ferro Alloy Plant through setting up of 1 x 6 MVA & 1 x 9 MVA submerged Arc Furnace for production of Ferro Manganese (38,156 TPA) or Silico Manganese (27,109 TPA) or Ferro Silicon (10,421 TPA) by M/s. Electrosteel Castings Ltd., located at Haldia, Dist. Purba Medinipur, West Bengal.
Environment Clearance: J-11011/02/2016-IA-II (I), dated 12.04.2017

	CONDITION OF ENVIRONMENTAL CLEARANCE	STATUS OF COMPLIANCE
PART A- Specific Conditions		
i.	The project proponent should install 24x7 air monitoring devices to monitor air emission, as provided by CPCB and submit report to Ministry and its Regional Office.	OCEMS has been installed in two stacks one is connected with Furnace stack & another one is connected with raw material handling stack. OCEMS connectivity of Furnace bag filter stack with CPCB server through M/s- Forb Marshal has been completed. Now real time online data is available in CPCB web portal.
ii.	Bag filters to be installed to reduce the emission of Particulate Matter (PM). PM emission should not exceed 100 mg/m ³ . Gaseous emission levels including secondary fugitive emissions from all the sources shall be controlled within the permissible limits which have been most recently prescribed by the Ministry and regularly monitored. Guidelines/Code of Practice issued by the CPCB should also be followed.	Two bag filters have been installed. One is attached with the 9MVA Submerged Electric Arc Furnace (SEAF) & another with raw material handling system. Stack monitoring reports of CPCB approved 3 rd party is attached in "Annexure-2" & the results are within the limit.
iii.	Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.	Is being followed and records maintained.
iv.	Neurological Evaluation of workers exposed to Manganese should be monitored annually and the report should be submitted to the Ministry of Environment, Forest and Climate Change and its Regional Office.	Is being followed and records maintained. (Annexure-5)
v.	Measures shall be taken to reduce PM levels in the ambient air. Stack of adequate height & diameter with continuous stack monitoring facilities for all the stacks should be provided. In addition, sufficient air pollution control devices viz. bag house, bag filters etc. should be provided.	Following measures have been taken to reduce PM level in the ambient air. i) Two Stationary sprinklers & one mobile water sprinkler have been deployed for dust suppression. ii) Installed two stacks of adequate height & diameter with continuous stack monitoring facility in both stack. All stacks are connected with suitable PC device (Bag filter).



vi.	Dust extraction system comprising of pulse jet type bag filter, centrifugal fan and motor, duct work including suction hoods, dust supports, stack, duct hopper, rotary air lock valves etc. should be installed to control the primary and secondary emission.	Adequate dust extraction system comprising of required equipment has been installed to control the primary and secondary emission during commissioning of plant& presently in operation.
vii.	Water sprinkling arrangements as well as dry fog system to control fugitive emission shall put up. Water sprinkling should be carried out at the raw material stockyard to control fugitive dust emissions.	Stationary water sprinklers, mobile water sprinkler & Dry Fog System have been installed to control fugitive emissions. One Mobile water sprinkler has been provided to carry out water sprinkling in the raw material yard to control fugitive emission.
viii.	Efforts should be made to use maximum water from the rain water harvesting sources .If needed ,capacity of the reservoir shall be enhanced to meet the maximum water requirement .Only balance water requirement shall be met from others .Use of air cooled condensers shall be explored and closed circuit cooling system shall be provided to reduce water consumption. Water requirement should be modified accordingly.	One rain water harvesting tank has been constructed to use rain water. Close circuit cooling system has been provided to reduce water consumption.
ix.	10-15 m wide green belt should be developed all along the boundary of the plant and in all 33% of the area should be developed green by planting native and broad leaved species in consultation with local DFO and local communities as per the CPCB guidelines. The entire plantation work should be completed in 3 years.	Green belt development activity is continuing in consultation with Forest Range Office at Balughata under Nandakumar forest range office and local communities. Green belt cover is being maintained continuously throughout the year within the project site as well as outside the plant premises along the HDA road.
x.	All the Ferro alloy slag shall be used in the preparation of building materials.	All Ferro Alloy Slags are being used for road making & construction purpose only.
xi.	The Company shall submit within three months their policy towards Corporate Environment Responsibility which shall inter-alia address i) Standard operating process/procedure to being into focus any infringement/deviation/violation of environmental or forest norms/conditions, ii) Hierarchical system or Administrative order of the Company to deal with environmental issues and ensuring compliance to the environmental clearance conditions and iii) System of reporting of non-compliance/violation environmental norms to the Board of Directors of the company and/or stakeholders or shareholders.	Environmental policy has been already Submitted to MoEFCC on 10.01.2018. Standard operating procedure will be followed as stated in EMP. Already Submitted on 10.01.2018. All the environmental issues are communicated to the top management in monthly MIS meeting and also to the Board of Directors quarterly through a systematic structured format by Head – Environment.



xii.	An amount equal to Rs. 125 Lakhs, which is 2.5% of the total project cost (Rs. 50 Crores) shall be earmarked towards the Enterprise Social Commitment based on issues raised during the Public Hearing and needs of local people. Item-wise detailed plan with time bound action plan would be prepared as indicated by the project proponent and this plan shall be implemented. Action taken report in this regard shall be submitted to the Ministry's Regional Office.	(1) An amount of Rs. 25500 /- handed over to 10 BPL students in the month of Dec-21 & March-22 respectively. This will be continued on quarterly basis. Therefor total disburse amount is Rs. 51000/- for the period October-21 to March-22. (2) Construction of one community hall is completed at Gandhi Asram in Raja Rampur village, Haldia and expense Rs. 7.5 lakhs. Till date we have completed three community Hall out of four community hall. Total expense Rs.12.01 lakhs in this period (Oct-21 to March-22). <u>Total cumulative expenses for the period September 2018 to March 2022:-</u> Rs. 60.49/-Lakhs.
xiii.	The project proponent shall provide for solar light system for all common areas, street lights, villages, parking around project area and maintain the same regularly.	Six Solar street lights have been installed within project site with all necessary arrangement.
xiv.	The project proponent shall fully provide for LED lights in their offices and residential areas.	LED light has been installed throughout the plant.
xv.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	All facilities & infrastructures has been provided as per the requirement.

PART B – General Conditions

i.	The project authorities must strictly adhere to the stipulations made by the West Bengal Pollution Control Board and the State Government.	Following all stipulated guideline of WBPCB & the state Government.
ii.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment Forest and Climate Change (MoEF&CC).	We will not do any further expansion or modification in the plant without prior approval of MoEF&CC.
iii.	At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of PM ₁₀ , PM _{2.5} , SO ₂ , NO _x are anticipated in consultation with the SPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and the SPCB/CPCB once in six month.	Four AAQ monitoring stations have already been installed at different locations based on wind direction in consultation with SPCB. AAQ monitoring has been started from March 2019 on wards & the results are within limit value. Month wise summary report of AAQ is being attached for the said period in (Annexure-3).



iv.	Industrial waste water shall be properly collected treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. The treated waste water shall be utilized for plantation purpose.	Industrial waste water is being collected inland pond through surface drain & utilized it for plantation & dust suppression purpose.
v.	The overall noise levels in and around the plant area shall be kept well within the standards (85 dbA) by providing noise control measures including acoustic hoods ,silencers , enclosures etc. on all sources of noise generation .The ambient noise levels should conform to the standards prescribed under EPA Rules ,1989 viz.75 db A (day time) and 70 dbA (night time).	In house Ambient noise monitoring report as well as approve 3 rd party report is being attached in (Annexure -4). Results are within limit.
vi.	Occupational health surveillance of the worker shall be done on a regular basis and records maintained as per the Factories Act	Occupational Health Surveillance programme is being done as per Factory Rules & records is being maintained as per Factories Act.
vii.	The company shall develop rain water harvesting structure to harvest the rain water for utilization in the lean season besides recharging the ground water table.	We have constructed a pond inside the plant. All rain water are collected in the pond through surface drain and utilize it for dust suppression, water sprinkling & gardening purpose.
viii.	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA /EMP report .Further the company must undertake socio –economic development activities in the surrounding village like community development programme ,educational programme ,drinking water supply and health care etc.	Complying as per EIA/EMP report.
ix.	Requisite funds shall be earmarked towards capital cost and recurring cost /annum for environment pollution control measures to implement the conditions stipulated by the Ministry Of Environment, Forest and Climate Change (MoEFCC) as well as the State Government .An implementation schedule for implementing all the conditions stipulated herein shall be submitted to the Regional Office of the Ministry at Bhubaneswar. The funds so provide shall not be diverted for any other purpose.	Complied as per documents already submitted on 10.01.2018.
x.	A copy of clearance letter shall be sent by the proponent to concerned Panchayats, Zila Prishad / Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions / representations, if any were received while processing the proposal. The clearance letter shall also be put on the web site of the Company by the proponent.	Copy of clearance letter had already been Submitted to concern authority and it is also put on the web site of the company.
xi.	The project proponent shall upload the status of compliance of the stipulated environment clearance	Is being done.



	conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Officer of the MoEF&CC at Bhubaneswar. The respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM ₁₀ , SO ₂ , NO _x (ambient levels as well as stack emissions) or critical sectoral parameters indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	
xii.	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Officer of MoEF&CC, the respective Zonal Office of CPCB and the SPCB. The Regional Office of this Ministry at Bhubaneswar /CPCB/SPCB shall monitor the stipulated conditions.	Is being followed.
xiii.	The environmental statement for each financial year ending 31st March in Form- V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environmental (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Office of the MoEF&CC at Bhubaneswar by e-mail.	Environmental statement report for the financial year 2021- 2022 will be submitted in Form-V before 30/09/2022. This will also be uploaded in company's website & will send to all concerned as per EC conditions.
xiv.	The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of Environment, Forests and climate Change (MoEF&CC) AT http://envfor.nic.in . This shall be advertised within seven days from the date of issue of the clearance in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional Office at Bhubaneswar.	Already complied. Copy of which Submitted to your office on 10.01.2018.
xv.	Project authorities shall inform the Regional Office as well as the Ministry: i)The date of financial closure. ii)Final approval of the project by the concerned authorities iii) The date of commencing the land development work.	Project to be done out of internal accrual. 1) Received NOC from WBPCB valid up to 31.08.2024. 2) Received Consent to Operate from WBPCB on 30.05.19 & valid up to 31.03.2024. 3) Started on 02.04.2018.





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Annexure-2
JAN-2022
elaci elaci
إدارة الممارسات العالمية للتقنيات
Eurasia International Accreditation Center
ISO 9001:2015



TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	: Electro Steel Castings Ltd. (Ferro Alloy Plant)	Type of Industry	: Ferro Alloy Plant
Address	: Kashberia, P.O. - Shibram Nagar, Haldia, Purba Medinipur - 721635	Sampling Date	: 27.01.2022
		Period of Analysis	: 29.01.2022 - 29.01.2022
		Date of Issue	: 31.01.2022
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No
Sample ID No.	: ENV/68/Jan./A/I	Report No.	: ENV/68/Jan./TR(A)/I/21-22
		Type of Sample	: Stack Emission

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	: SEAF - I
Shape of Stack	: Circular
Materials of Construction	: M.S.
Capacity	: Rated - 9.0 MVA Running - 9.0 MVA
Emission Due to	: Melting of Coke, Coal, Mn-Ore, Quartz & Dolomite
Fuel Used	: Electrically Operated
Working Fuel Consumption	: N.A.
Pollution Control Device	: Bag Filter
Permanent Platform & Ladder	: Yes

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Flue Gas Temperature	°C	IS : 11255 (Part 1)	94.0
2.	Barometric Pressure	mm of Hg.	--	760.0
3.	Velocity of Gas flow	m/s	IS : 11255 (Part 3)	12.74
4.	Quantity of Gas flow	Nm³/hr.	IS : 11255 (Part III)	93531.67
5.	Concentration of SO₂	mg/Nm³	IS 11255 (Part 2) 1985 RA 2003	148.11
6.	Concentration of NOₓ	mg/Nm³	IS : 11255 (Part 7) 2005 & ASTM D 1608-98 reapproved 2009 : Sec 11 (Vol. 11.07) : 2011	77.83
7.	Concentration of O₂	% (v/v)	IS 13270 1992 RA 2003	17.0
8.	Concentration of CO₂	% (v/v)	IS 13270 1992 RA 2003	1.8
9.	Concentration of CO	% (v/v)	IS 13270 1992 RA 2003	<1.0
10.	Moisture	%	Emission Control Part - III, CPCB	1.32
11.	Concentration of Particulate Matter	mg/Nm³	IS 11255 (Part - 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec 11(Vol. 3 11.07) : 2011	10.29

Remarks :

Reviewed By :

Indrani Bhattacharyya

Approved By :

Dr. AJOY PAUL

Quality Manager

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

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Overseas : UAE ■ Qatar ■ Netherlands





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TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	: Electro Steel Castings Ltd. (Ferro Alloy Plant)	Type of Industry	: Ferro Alloy Plant
Address	: Kashberia, P.O. - Shibram Nagar, Haldia, Purba Medinipur - 721635	Sampling Date	: 27.01.2022
		Period of Analysis	: 29.01.2022 - 29.01.2022
		Date of Issue	: 31.01.2022
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No
Sample ID No.	: ENV/68/Jan./A/II	Report No.	: ENV/68/Jan./TR(A)/II/21-22
		Type of Sample	: Stack Emission

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	: Raw Material Handling System	Height of Stack (mtr.) (from G. L.)	: 30.0
Shape of Stack	: Circular	Stack I.D. at sampling point (mtr.)	: 0.6096
Materials of Construction	: M.S.	Height of sampling port (mtr.) (from G.L.)	: 12.18
Capacity	: --		
Emission Due to	: Process Activity (Handling of Raw Materials)		
Fuel Used	: N.A.	Permanent Platform & Ladder	: Yes
Working Fuel Consumption	: Nil		
Pollution Control Device	: Bag Filter		

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Flue Gas Temperature	°C	IS : 11255 (Part 1)	34.0
2.	Barometric Pressure	mm of Hg.	--	760.0
3.	Velocity of Gas flow	m/s	IS : 11255 (Part 3)	22.29
4.	Quantity of Gas flow	Nm ³ /hr.	IS : 11255 (Part III)	22762.83
5.	Concentration of Particulate Matter	mg/Nm ³	IS 11255 (Part - 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol. 3 11.07) : 2011	15.95

Remarks :

Reviewed By :

Indrani Bhattacharya

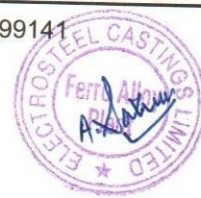
Approved By :

Dr. Ajoy Paul

Dr. AJAY PAUL
Quality Manager

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

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TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	: Electro Steel Castings Ltd. (Ferro Alloy Plant)	Type of Industry	: Ferro Alloy Plant
Address	: Kashberia, P.O. - Shibram Nagar, Haldia, Purba Medinipur - 721635	Sampling Date	: 27.01.2022
		Period of Analysis	: 29.01.2022 - 29.01.2022
		Date of Issue	: 31.01.2022
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No
Sample ID No.	: ENV/68/Jan./A/III	Report No.	: ENV/68/Jan./TR(A)/III/21-22
		Type of Sample	: Stack Emission

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	: D. G. - 250 KVA (Acoustic Enclosure attached)
Shape of Stack	: Circular
Materials of Construction	: M.S.
Capacity	: 250 KVA
Emission Due to	: Combustion of H.S.D
Fuel Used	: H.S.D
Working Fuel Consumption	: 57 liter./hr.
Pollution Control Device	: Nil
Height of Stack (mtr.) (from G. L.)	: 10.36
Stack I.D. at sampling point (mtr.)	: 0.1524
Height of sampling port (mtr.) (from G.L.)	: 7.92
Permanent Platform & Ladder	: Yes

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Flue Gas Temperature	°C	IS : 11255 (Part 1)	109.0
2.	Barometric Pressure	mm of Hg.	--	760.0
3.	Velocity of Gas flow	m/s	IS : 11255 (Part 3)	12.11
4.	Quantity of Gas flow	Nm ³ /hr.	IS : 11255 (Part III)	618.67
5.	Concentration of SO ₂	mg/Nm ³	IS 11255 (Part 2) 1985 RA 2003	60.74
6.	Concentration of NO _x	mg/Nm ³	IS : 11255 (Part 7) 2005 & ASTM D 1608-98 reapproved 2009 : Sec 11 (Vol. 11.07) : 2011	78.57
7.	Concentration of CO ₂	% (v/v)	IS 13270 1992 RA 2003	7.2
8.	Concentration of O ₂	% (v/v)	IS 13270 1992 RA 2003	12.0
9.	Concentration of CO	% (v/v)	IS 13270 1992 RA 2003	<1.0
10.	Concentration of Particulate Matter	mg/Nm ³	IS 11255 (Part - 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec 11 (Vol. 3 11.07) : 2011	28.37

Remarks :

Reviewed By :

Indrani Bhattacharya

INDRANI BHATTACHARYA
Dy. Technical Manager, Chemical

Approved By :

Dr. AJOY PAUL
Quality Manager

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Oct-2021

TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	: Electro Steel Castings Ltd. (Ferro Alloy Plant)	Type of Industry	: Ferro Alloy Plant
Address	: Kashberia, P.O. - Shibram Nagar, Haldia, Purba Medinipur - 721635	Sampling Date	: 29.10.2021
		Period of Analysis	: 30.10.2021 - 01.11.2021
		Date of Issue	: 04.11.2021
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No
Sample ID No.	: ENV/50/Oct./A/IV	Report No.	: ENV/50/Oct./TR(A)/IV/21-22
		Type of Sample	: Stack Emission

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	: SEAF - I	Height of Stack (mtr.) (from G. L.)	: 35.0
Shape of Stack	: Circular	Stack I.D. at sampling point (mtr.)	: 1.80
Materials of Construction	: M.S.	Height of sampling port (mtr.) (from G.L.)	: 30.0
Capacity	: Rated - 9.0 MVA Running - 6.6 MVA		
Emission Due to	: Melting of Coke, Coal, Mn-Ore, Quartz & Dolomite		
Fuel Used	: Electrically Operated		
Working Fuel Consumption	: N.A.	Permanent Platform & Ladder	: Yes
Pollution Control Device	: Bag Filter		

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Flue Gas Temperature	°C	IS : 11255 (Part 1)	84.2
2.	Barometric Pressure	mm of Hg.	--	756.0
3.	Velocity of Gas flow	m/s	IS : 11255 (Part 3)	11.26
4.	Quantity of Gas flow	Nm ³ /hr.	IS : 11255 (Part III)	84688.45
5.	Concentration of SO ₂	mg/Nm ³	IS 11255 (Part 2) 1985 RA 2003	42.85
6.	Concentration of NO _x	mg/Nm ³	IS 11255 (Part 7) 2005 & ASTM D 1608-98 reapproved 2009 : Sec 11 (Vol. 11.07) : 2011	25.78
7.	Concentration of O ₂	% (v/v)	IS 13270 1992 RA 2003	16.8
8.	Concentration of CO ₂	% (v/v)	IS 13270 1992 RA 2003	1.6
9.	Concentration of CO	% (v/v)	IS 13270 1992 RA 2003	<1.0
10.	Moisture	%	Emission Control Part - III, CPCB	0.95
11.	Concentration of Particulate Matter	mg/Nm ³	IS 11255 (Part - 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec 11 (Vol. 3 11.07) : 2011	6.0

Remarks :

Reviewed By :

Indrani Bhattacharya

Approved By :

Dr. AJAY PAUL
Quality Manager

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TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	: Electro Steel Castings Ltd. (Ferro Alloy Plant)	Type of Industry	: Ferro Alloy Plant
Address	: Kashberia, P.O. - Shibram Nagar, Haldia, Purba Medinipur - 721635	Sampling Date	: 29.10.2021
		Period of Analysis	: 30.10.2021 - 01.11.2021
		Date of Issue	: 04.11.2021
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No
Sample ID No.	: ENV/50/Oct./A/V	Report No.	: ENV/50/Oct./TR(A)/V/21-22
		Type of Sample	: Stack Emission

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	: D. G. - 250 KVA (Acoustic Enclosure attached)	Height of Stack (mtr.) (from G. L.)	: 10.36
Shape of Stack	: Circular	Stack I.D. at sampling point (mtr.)	: 0.1524
Materials of Construction	: M.S.	Height of sampling port (mtr.) (from G.L.)	: 7.92
Capacity	: 250 KVA		
Emission Due to	: Combustion of H.S.D		
Fuel Used	: H.S.D		
Working Fuel Consumption	: 57 liter./hr.	Permanent Platform & Ladder	: Yes
Pollution Control Device	: Nil		

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Flue Gas Temperature	°C	IS : 11255 (Part 1)	123.0
2.	Barometric Pressure	mm of Hg.	--	756.0
3.	Velocity of Gas flow	m/s	IS : 11255 (Part 3)	15.78
4.	Quantity of Gas flow	Nm ³ /hr.	IS : 11255 (Part III)	774.55
5.	Concentration of SO ₂	mg/Nm ³	IS 11255 (Part 2) 1985 RA 2003	68.25
6.	Concentration of NO _x	mg/Nm ³	IS : 11255 (Part 7) 2005 & ASTM D 1608-98 reapproved 2009 : Sec 11 (Vol. 11.07) : 2011	76.40
7.	Concentration of CO ₂	% (v/v)	IS 13270 1992 RA 2003	7.0
8.	Concentration of O ₂	% (v/v)	IS 13270 1992 RA 2003	12.0
9.	Concentration of CO	% (v/v)	IS 13270 1992 RA 2003	<1.0
10.	Concentration of Particulate Matter	mg/Nm ³	IS 11255 (Part - 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec 11(Vol. 3 11.07) : 2011	18.50

Remarks :

Reviewed By :

Indrani Bhattacharya

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Dy. Technical Manager, Chemical

Approved By :

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TEST REPORT

FORMAT NO : ENV/FM/38

Name of the Industry	: Electro Steel Castings Ltd. (Ferro Alloy Plant)	Type of Industry	: Ferro Alloy Plant
Address	: Kashberia, P.O. - Shibram Nagar, Haldia, Purba Medinipur - 721635	Sampling Date	: 29.10.2021
		Period of Analysis	: 30.10.2021 - 01.11.2021
		Date of Issue	: 04.11.2021
Sampling Plan & Procedure	: ENV/SOP/01	Deviation from the Sampling Method and Plan	: No
Sample ID No.	: ENV/50/Oct./A/VI	Report No.	: ENV/50/Oct./TR(A)/VI/21-22
		Type of Sample	: Stack Emission

A. GENERAL INFORMATION ABOUT STACK PROVIDED BY THE INDUSTRY

Stack Attached to	: Raw Material Handling System	Height of Stack (mtr.) (from G. L.)	: 30.0
Shape of Stack	: Circular	Stack I.D. at sampling point (mtr.)	: 0.6096
Materials of Construction	: M.S.	Height of sampling port (mtr.) (from G.L.)	: 12.18
Capacity	: --		
Emission Due to	: Process Activity (Handling of Raw Materials)		
Fuel Used	: N.A.		
Working Fuel Consumption	: Nil	Permanent Platform & Ladder	: Yes
Pollution Control Device	: Bag Filter		

B. RESULTS

SL. NO.	PARAMETERS	UNIT	METHOD NO.	RESULTS
1.	Flue Gas Temperature	°C	IS : 11255 (Part 1)	45.0
2.	Barometric Pressure	mm of Hg.	--	756.0
3.	Velocity of Gas flow	m/s	IS : 11255 (Part 3)	17.91
4.	Quantity of Gas flow	Nm ³ /hr.	IS : 11255 (Part III)	17530.39
5.	Concentration of Particulate Matter	mg/Nm ³	IS 11255 (Part - 1) 1985 RA 2003 & ASTM D 3685/D 3685M-98 (reapproved 2005) : Sec. 11 (Vol. 3 11.07) : 2011	16.20
Remarks :				

Reviewed By :

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AMBIENT AIR QUALITY

SUMMARY REPORT

October 2021 - March 2022

**Electrosteel Castings Ltd.
Ferro Alloy Plant
Haldia, Kasberia, P.O. – Shivramnagar,
Pin - 721635**



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ISO 14001:2015
ISO 45001:2018

**Electrosteel Castings Limited (Ferro Alloy Plant) Haldia,
Kasberia, P.O. – Shivramnagar, Pin – 721 635
SUMMARY REPORT - OCTOBER, 2021**

Parameters	Dakshin Kashberia- South side of the Factory (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	01.10.2021	04.10.2021	07.10.2021	17.10.2021	21.10.2021	24.10.2021	27.10.2021	30.10.2021		
PM _{2.5} (µg/m ³)	39.2	38.5	35.1	46.8	48.5	45.3	49.8	53.5	44.59	60
PM ₁₀ (µg/m ³)	71.5	78.2	73.6	81.5	82.6	79.5	83.50	86.1	79.56	100
SO ₂ (µg/m ³)	5.20	6.80	6.50	8.20	7.80	6.52	5.80	9.20	7.00	80
NO _x (µg/m ³)	26.50	28.50	25.0	32.50	28.50	30.0	26.50	33.50	28.87	80
Parameters	Main Gate of Ferro Alloy Plant (Inside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	01.10.2021	04.10.2021	07.10.2021	17.10.2021	21.10.2021	24.10.2021	27.10.2021	30.10.2021		
PM _{2.5} (µg/m ³)	46.2	51.6	54.2	50.1	49.5	53.1	54.8	50.1	51.2	60
PM ₁₀ (µg/m ³)	86.2	91.5	92.5	87.2	80.1	85.2	86.3	80.1	86.14	100
SO ₂ (µg/m ³)	8.20	9.50	10.8	11.5	7.80	8.50	7.50	7.20	8.87	80
NO _x (µg/m ³)	35.0	36.20	35.0	36.50	30.00	32.50	28.50	26.50	32.52	80
Parameters	Kashberia Uttarpally (North Side) (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	01.10.2021	04.10.2021	07.10.2021	17.10.2021	21.10.2021	24.10.2021	27.10.2021	30.10.2021		
PM _{2.5} (µg/m ³)	36.5	38.2	42.6	41.5	39.2	38.5	49.8	51.2	42.19	60
PM ₁₀ (µg/m ³)	73.6	78.5	83.2	80.1	78.5	76.1	84.5	86.2	80.09	100
SO ₂ (µg/m ³)	5.80	6.50	7.20	6.80	6.50	6.20	8.20	8.50	6.96	80
NO _x (µg/m ³)	23.50	25.0	28.2	23.5	21.8	20.0	28.5	30.0	25.06	80
Parameters	Kishmat Shibramnagar West side (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	01.10.2021	04.10.2021	07.10.2021	17.10.2021	21.10.2021	24.10.2021	27.10.2021	30.10.2021		
PM _{2.5} (µg/m ³)	38.2	35.1	41.8	54.8	53.2	51.8	46.5	45.1	45.81	60
PM ₁₀ (µg/m ³)	78.2	69.5	79.5	82.3	85.2	80.1	76.5	74.5	78.22	100
SO ₂ (µg/m ³)	6.80	5.60	6.20	8.20	8.50	7.50	6.20	6.50	6.94	80
NO _x (µg/m ³)	25.0	23.50	26.50	30.0	32.50	28.50	26.50	25.0	27.19	80

Continued page - 2

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SUMMARY REPORT - NOVEMBER 2021

Parameters	Dakshin Kashberia- South side of the Factory (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	01.11.2021	03.11.2021	09.11.2021	12.11.2021	15.11.2021	19.11.2021	22.11.2021	25.11.2021		
PM _{2.5} (µg/m ³)	43.2	40.1	42.8	49.2	46.8	42.5	42.8	44.5	43.99	60
PM ₁₀ (µg/m ³)	83.6	80.1	79.2	86.5	85.2	82.5	84.2	80.1	82.67	100
SO ₂ (µg/m ³)	8.25	7.86	7.20	8.50	8.20	8.10	9.25	8.15	8.19	80
NO _x (µg/m ³)	28.50	29.20	26.58	32.50	31.85	30.00	35.8	31.50	30.74	80
Parameters	Main Gate of Ferro Alloy Plant (Inside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	01.11.2021	03.11.2021	09.11.2021	12.11.2021	15.11.2021	19.11.2021	22.11.2021	25.11.2021		
PM _{2.5} (µg/m ³)	52.6	54.1	50.1	52.8	49.5	42.8	41.6	45.8	48.66	60
PM ₁₀ (µg/m ³)	86.2	89.5	81.5	83.2	79.5	83.2	82.5	80.2	83.22	100
SO ₂ (µg/m ³)	6.80	7.20	8.56	6.25	7.82	7.58	8.20	7.60	7.50	80
NO _x (µg/m ³)	32.50	35.00	30.00	31.85	26.50	30.00	26.50	28.25	30.07	80
Parameters	Kashberia Uttarpally (North Side) (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	01.11.2021	03.11.2021	09.11.2021	12.11.2021	15.11.2021	19.11.2021	22.11.2021	25.11.2021		
PM _{2.5} (µg/m ³)	39.5	46.8	42.8	48.2	46.1	42.8	39.2	38.5	42.99	60
PM ₁₀ (µg/m ³)	79.2	81.5	82.5	83.6	85.1	80.1	78.2	76.5	80.84	100
SO ₂ (µg/m ³)	6.85	7.20	6.50	8.25	8.20	6.80	6.50	6.20	7.06	80
NO _x (µg/m ³)	26.20	28.50	23.50	32.50	31.85	30.00	28.50	25.00	28.26	80
Parameters	Kishmat Shibramnagar West side (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	01.11.2021	03.11.2021	09.11.2021	12.11.2021	15.11.2021	19.11.2021	22.11.2021	25.11.2021		
PM _{2.5} (µg/m ³)	46.2	40.8	39.2	45.8	49.1	48.5	43.2	45.1	44.74	60
PM ₁₀ (µg/m ³)	82.5	80.1	78.5	79.2	86.5	85.1	80.2	83.5	81.95	100
SO ₂ (µg/m ³)	8.20	7.85	7.22	6.85	8.50	7.20	8.50	8.25	7.82	80
NO _x (µg/m ³)	28.50	26.20	30.00	28.50	32.85	32.50	31.85	35.00	30.67	80

Continued page - 3

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ISO 45001:2018

SUMMARY REPORT – DECEMBER, 2021

Parameters	Dakshin Kashberia- South side of the Factory (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	03.12.2021	07.12.2021	10.12.2021	13.12.2021	16.12.2021	22.12.2021	25.12.2021	28.12.2021		
PM _{2.5} (µg/m ³)	46.2	45.8	42.6	48.5	45.2	43.8	49.5	45.2	45.85	60
PM ₁₀ (µg/m ³)	78.6	76.5	72.8	79.5	76.2	75.1	80.1	75.2	76.75	100
SO ₂ (µg/m ³)	7.25	7.85	7.65	8.50	7.20	7.48	7.80	6.85	7.57	80
NO _x (µg/m ³)	26.5	29.85	26.50	32.82	30.0	31.85	32.50	30.0	30.0	80
Parameters	Main Gate of Ferro Alloy Plant (Inside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	03.12.2021	07.12.2021	10.12.2021	13.12.2021	16.12.2021	22.12.2021	25.12.2021	28.12.2021		
PM _{2.5} (µg/m ³)	48.20	45.65	51.20	50.12	50.15	48.50	49.20	45.0	48.5	60
PM ₁₀ (µg/m ³)	82.50	80.15	85.20	82.65	86.50	81.20	88.23	81.50	83.49	100
SO ₂ (µg/m ³)	8.20	7.50	8.50	8.25	8.52	9.25	9.50	7.20	8.36	80
NO _x (µg/m ³)	32.50	30.0	35.0	31.85	32.50	35.0	32.85	28.50	32.27	80
Parameters	Kashberia Uttarpally (North Side) (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	03.12.2021	07.12.2021	10.12.2021	13.12.2021	16.12.2021	22.12.2021	25.12.2021	28.12.2021		
PM _{2.5} (µg/m ³)	43.20	42.50	49.25	51.20	52.85	45.20	46.25	45.85	47.04	60
PM ₁₀ (µg/m ³)	78.20	76.50	81.25	84.50	86.85	80.12	81.50	83.25	81.52	100
SO ₂ (µg/m ³)	6.50	6.25	7.50	7.25	6.80	7.50	7.80	8.25	7.23	80
NO _x (µg/m ³)	25.0	23.50	25.65	24.80	26.50	28.20	30.0	31.85	26.94	80
Parameters	Kishmat Shibramnagar West side (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	03.12.2021	07.12.2021	10.12.2021	13.12.2021	16.12.2021	22.12.2021	25.12.2021	28.12.2021		
PM _{2.5} (µg/m ³)	45.20	48.25	42.85	40.18	42.85	45.85	43.25	42.50	43.87	60
PM ₁₀ (µg/m ³)	76.25	81.50	78.50	72.50	73.65	78.5	75.20	79.50	76.95	100
SO ₂ (µg/m ³)	6.80	8.20	7.20	6.85	6.20	8.25	7.50	8.20	7.4	80
NO _x (µg/m ³)	26.50	31.25	30.0	26.85	25.0	32.50	30.0	31.85	29.24	80

Continued page - 4

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SUMMARY REPORT - JANUARY, 2022

Parameters	Dakshin Kashberia- South side of the Factory (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	05.01.2022	08.01.2022	11.01.2022	14.01.2022	17.01.2022	20.01.2022	24.01.2022	27.01.2022		
+PM _{2.5} (µg/m ³)	51.6	50.8	46.5	48.2	53.2	50.8	52.8	51.8	50.71	60
PM ₁₀ (µg/m ³)	83.2	80.1	78.5	79.2	85.2	81.2	84.5	82.5	81.8	100
SO ₂ (µg/m ³)	6.80	7.50	6.50	7.20	8.20	7.20	7.50	7.20	7.26	80
NO _x (µg/m ³)	30.0	32.50	28.50	31.50	35.00	32.50	30.00	32.50	31.56	80
Parameters	Main Gate of Ferro Alloy Plant (Inside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	05.01.2022	08.01.2022	11.01.2022	14.01.2022	17.01.2022	20.01.2022	24.01.2022	27.01.2022		
PM _{2.5} (µg/m ³)	53.2	50.1	54.8	52.1	50.2	48.6	53.8	54.8	52.2	60
PM ₁₀ (µg/m ³)	82.5	80.6	86.5	82.6	81.5	76.2	84.5	86.2	82.57	100
SO ₂ (µg/m ³)	6.80	9.20	10.50	8.50	11.80	6.50	12.50	10.0	9.47	80
NO _x (µg/m ³)	30.0	32.50	35.0	31.80	32.50	30.0	35.0	31.80	32.32	80
Parameters	Kashberia Uttarpally (North Side) (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	05.01.2022	08.01.2022	11.01.2022	14.01.2022	17.01.2022	20.01.2022	24.01.2022	27.01.2022		
PM _{2.5} (µg/m ³)	49.2	48.5	45.8	51.8	50.8	53.2	51.8	52.3	50.42	60
PM ₁₀ (µg/m ³)	80.2	81.6	78.2	82.5	79.2	86.5	80.1	82.5	81.35	100
SO ₂ (µg/m ³)	8.50	6.80	7.50	8.20	6.80	11.80	10.50	11.20	8.91	80
NO _x (µg/m ³)	32.50	30.0	28.50	30.00	28.50	35.00	32.50	31.50	31.06	80
Parameters	Kishmat Shibramnagar West side (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	05.01.2022	08.01.2022	11.01.2022	14.01.2022	17.01.2022	20.01.2022	24.01.2022	27.01.2022		
PM _{2.5} (µg/m ³)	49.2	46.5	48.2	51.8	50.2	46.5	45.8	48.5	48.33	60
PM ₁₀ (µg/m ³)	80.5	76.2	78.5	81.3	80.5	76.8	75.2	79.5	78.56	100
SO ₂ (µg/m ³)	6.80	6.50	7.20	8.50	8.20	6.50	6.80	7.20	7.21	80
NO _x (µg/m ³)	26.50	25.0	30.0	31.50	32.50	25.0	26.50	26.80	27.97	80

Continued page - 5

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SUMMARY REPORT - FEBRUARY, 2022

Parameters	Dakshin Kashberia- South side of the Factory (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	01.02.2022	04.02.2022	09.02.2022	12.02.2022	15.02.2022	18.02.2022	21.02.2022	24.02.2022		
PM _{2.5} (µg/m ³)	43.8	45.20	38.20	40.2	39.20	41.8	42.8	49.5	42.59	60
PM ₁₀ (µg/m ³)	80.2	83.5	76.2	78.5	79.2	83.6	80.1	85.6	80.86	100
SO ₂ (µg/m ³)	8.20	7.50	6.80	6.50	7.20	9.50	7.20	8.50	7.67	80
NO _x (µg/m ³)	26.50	25.0	23.80	25.0	28.50	32.80	25.0	30.0	27.07	80
Parameters	Main Gate of Ferro Alloy Plant (Inside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	01.02.2022	04.02.2022	09.02.2022	12.02.2022	15.02.2022	18.02.2022	21.02.2022	24.02.2022		
PM _{2.5} (µg/m ³)	43.8	42.5	39.2	48.5	43.8	42.6	40.6	51.2	44.02	60
PM ₁₀ (µg/m ³)	86.5	82.1	80.6	87.5	85.1	84.2	83.6	85.1	84.34	100
SO ₂ (µg/m ³)	8.20	7.50	6.20	8.50	7.60	6.80	5.20	8.20	7.27	80
NO _x (µg/m ³)	26.50	25.0	23.80	29.50	25.0	24.50	23.50	32.80	26.32	80
Parameters	Kashberia Uttarpally (North Side) (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	01.02.2022	04.02.2022	09.02.2022	12.02.2022	15.02.2022	18.02.2022	21.02.2022	24.02.2022		
PM _{2.5} (µg/m ³)	43.5	42.8	48.5	46.2	49.1	51.2	43.6	47.5	46.55	60
PM ₁₀ (µg/m ³)	80.2	81.5	86.2	84.5	87.2	88.5	80.6	87.2	84.49	100
SO ₂ (µg/m ³)	6.80	7.50	8.20	8.50	9.20	8.50	7.20	7.50	7.92	80
NO _x (µg/m ³)	26.50	25.0	26.50	28.50	30.0	26.80	28.50	26.20	27.25	80
Parameters	Kishmat Shibramnagar West side (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	01.02.2022	04.02.2022	09.02.2022	12.02.2022	15.02.2022	18.02.2022	21.02.2022	24.02.2022		
PM _{2.5} (µg/m ³)	43.2	48.5	43.2	51.8	46.5	45.8	42.8	48.2	46.25	60
PM ₁₀ (µg/m ³)	83.2	85.1	80.2	89.1	84.5	83.6	84.5	85.2	84.42	100
SO ₂ (µg/m ³)	9.20	8.50	7.80	9.50	7.80	7.20	7.50	8.20	8.21	80
NO _x (µg/m ³)	35.0	32.80	30.0	36.50	32.50	30.0	32.50	35.0	33.04	80

Continued page - 6

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SUMMARY REPORT - MARCH, 2022

Parameters	Dakshin Kashberia- South side of the Factory (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	04.03.2022	07.03.2022	10.03.2022	14.03.2022	19.03.2022	22.03.2022	25.03.2022	27.03.2022		
PM _{2.5} (µg/m ³)	42.5	46.2	51.8	45.2	42.8	41.5	40.6	41.8	44.05	60
PM ₁₀ (µg/m ³)	76.2	78.5	80.2	73.2	75.2	78.2	72.5	71.5	75.69	100
SO ₂ (µg/m ³)	6.80	5.20	6.80	5.20	6.80	5.20	4.80	5.20	5.75	80
NO _x (µg/m ³)	30.0	28.5	32.6	25.0	28.5	26.5	23.8	25.0	27.49	80
Parameters	Main Gate of Ferro Alloy Plant (Inside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	04.03.2022	07.03.2022	10.03.2022	14.03.2022	19.03.2022	22.03.2022	25.03.2022	27.03.2022		
PM _{2.5} (µg/m ³)	41.5	48.2	45.6	46.2	41.8	43.5	40.2	43.8	43.85	60
PM ₁₀ (µg/m ³)	82.5	86.2	81.2	80.5	73.2	78.5	72.8	80.1	79.37	100
SO ₂ (µg/m ³)	6.50	7.20	6.80	5.80	6.20	6.50	6.20	6.80	6.5	80
NO _x (µg/m ³)	30.0	32.50	35.0	31.80	35.0	31.80	32.50	35.0	32.95	80
Parameters	Kashberia Uttarpally (North Side) (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	04.03.2022	07.03.2022	10.03.2022	14.03.2022	19.03.2022	22.03.2022	25.03.2022	27.03.2022		
PM _{2.5} (µg/m ³)	41.2	43.8	45.6	49.2	48.5	38.2	52.8	46.5	45.72	60
PM ₁₀ (µg/m ³)	74.5	73.2	78.5	81.2	80.5	72.6	84.5	79.2	78.02	100
SO ₂ (µg/m ³)	6.20	5.80	5.20	6.50	6.20	6.50	7.20	6.50	6.26	80
NO _x (µg/m ³)	26.50	25.0	23.50	25.0	30.0	26.80	31.80	30.0	27.32	80
Parameters	Kishmat Shibramnagar West side (Outside Factory Premises)								Avg	Limit as per NAAQ Standards (24 hours) (Schedule VII)
	04.03.2022	07.03.2022	10.03.2022	14.03.2022	19.03.2022	22.03.2022	25.03.2022	27.03.2022		
PM _{2.5} (µg/m ³)	36.2	38.5	41.6	42.5	51.8	50.2	49.2	45.8	44.47	60
PM ₁₀ (µg/m ³)	68.2	71.5	78.2	76.5	81.2	82.5	79.2	75.1	76.55	100
SO ₂ (µg/m ³)	6.80	7.20	6.20	5.80	7.80	7.20	6.50	5.80	6.66	80
NO _x (µg/m ³)	30.0	32.50	31.80	25.0	35.0	32.50	30.0	26.50	30.41	80

Date : 29.03.2022

Authorized Signatory:

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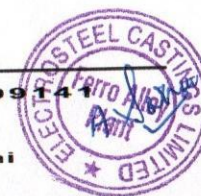
TEST REPORT

I.	Name of the Industry/Factory/Company	:	Electro Steel Castings Limited (Ferro Alloy Plant)
II.	Address	:	Works - Kashberia, P.O - Shivramnagar, Haldia, District - PurbaMedinipore, Pin - 721635
III.	Date of Sampling	:	04/03/2022
IV.	Reporting Date	:	10/03/2022
V.	Report No	:	407/EC/M/N/21-22
VI.	Method No	:	IS:9989 - 1981
VII.	Time of Duration of Noise	:	20 Minutes
VIII.	Height from Ground Level	:	4feet
IX.	Distance of Source	:	3 meter
X.	Type of Industry	:	Ferro Alloy Plant
XI.	Sample Monitoring by	:	Mr. Kaushik Podder

RESULT OF AMBIENT NOISE LEVEL STUDY

MONITORING IN FERRO-ALLOY PLANT (DAY TIME)

Sl. No.	Location	S1 7:00 A.M	S2 9:00 A.M	S3 11:00 A.M	S4 1:00 P.M	S5 3:00 P.M	S6 5:00 P.M	S7 6:00 P.M	S8 7:00 P.M	S9 8:00 P.M	S10 9:00 P.M	Min dB(A)	Max dB(A)	Average dB(A)	Leq dB(A)
1.	Main Gate (West Side)	58.2	59.4	60.2	61.2	63.0	62.8	62.6	61.8	59.9	60.6	58.2	63.0	60.97	61.37
2.	East Side Boundary Wall	60.2	62.4	63.4	62.8	68.2	63.1	64.4	63.2	62.4	63.7	60.2	68.2	63.38	63.88
3.	South Side Boundary Wall (Towards COP Coal Shed)	63.0	68.2	67.4	68.4	65.0	64.2	66.2	65.2	66.0	64.4	63.0	68.4	65.8	66.13
4.	North Side Boundary Wall (Towards Pattern Shop)	64.0	64.8	65.4	63.4	65.2	63.6	64.2	63.1	65.4	63.7	63.1	65.4	64.3	64.36
5.	Limit	75													





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RESULT OF NOISE LEVEL STUDY

MONITORING IN FERRO-ALLOY PLANT (NIGHT TIME)

Sl. No.	Location	S1 10:00 P.M	S2 10:30 P.M	S3 11:00 P.M	S4 11:30 P.M	S5 12:00 P.M	S6 12:30 A.M	S7 1:00 A.M	S8 1:30 A.M	S9 2:00 A.M	S10 2:30 A.M	Min dB(A)	Max dB(A)	Average dB(A)	Leq dB(A)
1.	Main Gate (West Side)	55.8	56.2	56.8	57.1	58.4	60.2	61.4	59.5	61.6	60.7	55.8	61.6	58.8	59.25
2.	East Side Boundary Wall	62.1	64.2	61.2	60.7	61.6	63.4	62.7	62.4	63.0	63.9	60.7	64.2	62.5	62.65
3.	South Side Boundary Wall (Towards COP Coal Shed)	63.0	62.4	62.1	61.0	61.7	63.1	61.6	62.4	62.0	61.5	61.0	63.1	62.1	62.13
4.	North Side Boundary Wall (Towards Pattern Shop)	60.1	63.4	62.4	63.1	63.4	62.8	61.7	61.9	62.0	63.3	60.1	63.4	62.4	62.51
5.	Limit	70													

**** Mean of Leq - Equivalent to Sound Energy**

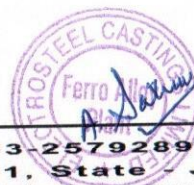
Limit in Leq dB(A)

Category Area	Day Time dB(A)	Night Time dB(A)
A. Industrial Area	75	70
B. Commercial Area	65	55
C. Residential Area	55	45
D. Silence Zone	50	40
**Day Time is reckoned in between 6:00 A.M & 10:00 P.M		**Night Time is reckoned in between 10:00 P.M & 6:00 A.M
(Central Pollution Control Board, Ministry of Environment & Forests Government of India) & (Department of Environment, Government of West Bengal)		

Report Print Date: 10/03/2022

Authorized Signatory with Stamp

>End of Report<



Kol - 28
Dr. AJAY PAUL
Scientist

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TEST REPORT

I.	Name of the Industry	:	Electro Steel Castings Limited (Ferro Alloy Plant)
II.	Address	:	Works - Kashberia, P.O - Shivramnagar, Haldia, District - PurbaMedinipore, Pin - 721635
III.	Date of Sampling	:	27/12/2021
IV.	Reporting Date	:	04/01/2022
V.	Report No	:	ENV/07/Dec./N/21-22
VI.	Method No	:	IS:9989 - 1981
VII.	Duration of Noise	:	20 Minutes
VIII.	Height from Ground Level	:	4feet
IX.	Distance of Source	:	3 meter
X.	Type of Industry	:	Ferro Alloy Plant
XI.	Sample Monitoring by	:	Mr. Koushik Podder

RESULT OF AMBIENT NOISE LEVEL STUDY

MONITORING IN FERRO-ALLOY PLANT (DAY TIME)

Sl. No.	Location	S1 7:00 A.M	S2 9:00 A.M	S3 11:00 A.M	S4 1:00 P.M	S5 3:00 P.M	S6 5:00 P.M	S7 6:00 P.M	S8 7:00 P.M	S9 8:00 P.M	S10 9:00 P.M	Min dB(A)	Max dB(A)	Average dB(A)	Leq dB(A)
1.	Main Gate (West Side)	60.1	61.4	62.3	61.6	62.0	66.7	61.8	62.8	61.6	61.2	60.1	66.7	62.15	64.55
2.	East Side Boundary Wall	62.8	62.1	62.4	67.5	64.2	63.4	64.8	62.7	63.8	64.3	61.5	67.5	63.80	65.46
3.	South Side Boundary Wall (Towards COP Coal Shed)	62.7	62.3	63.4	62.8	62.1	68.7	64.0	64.6	63.7	62.9	62.1	68.7	63.72	66.55
4.	North Side Boundary Wall (Towards Pattern Shop)	64.0	64.1	64.2	63.7	63.2	63.1	63.0	62.9	64.79	63.5	62.9	64.79	63.46	64.79
5.	Limit	75													





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RESULT OF NOISE LEVEL STUDY

MONITORING IN FERRO-ALLOY PLANT (NIGHT TIME)

Sl. No.	Location	S1 10:00 P.M	S2 10:30 P.M	S3 11:00 P.M	S4 11:30 P.M	S5 12:00 P.M	S6 12:30 A.M	S7 1:00 A.M	S8 1:30 A.M	S9 2:00 A.M	S10 2:30 A.M	Min dB(A)	Max dB(A)	Average dB(A)	Leq dB(A)
1.	Main Gate (West Side)	55.9	56.4	57.7	57.1	56.1	58.6	61.5	56.9	54.6	55.8	55.8	59.1	57.06	57.76
2.	East Side Boundary Wall	58.4	58.7	61.5	59.8	60.4	59.0	63.7	60.1	62.1	59.8	58.4	63.7	60.35	61.81
3.	South Side Boundary Wall (Towards COP Coal Shed)	61.3	61.5	61.9	63.4	61.5	60.9	61.8	62.5	61.1	64.5	60.9	64.5	62.04	63.06
4.	North Side Boundary Wall (Towards Pattern Shop)	60.2	60.7	61.4	61.8	62.4	64.4	63.7	63.1	63.8	64.0	60.2	64.4	62.55	62.79
5.	Limit	70													

** Mean of Leq - Equivalent to Sound Energy

Limit in Leq dB(A)

Category Area	Day Time dB(A)	Night Time dB(A)
A. Industrial Area	75	70
B. Commercial Area	65	55
C. Residential Area	55	45
D. Silence Zone	50	40

**Day Time is reckoned in between
6:00 A.M & 10:00 P.M

**Night Time is reckoned in between
10:00 P.M & 6:00 A.M

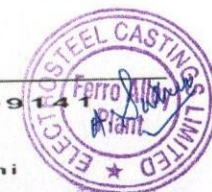
(Central Pollution Control Board, Ministry of Environment & Forests Government of India) &
(Department of Environment, Government of West Bengal)

>End of Report<



Approved By:

Quality Manager



NOISE MONITORING

Annexure-4

INTERNAL AMBIENT NOISE MONITORING IN FERRO-ALLOY PLANT (Day Time)

Sl No		AMBIENT NOISE LEVEL - db(A)					
1	Month	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22
2	Date & Time	21.10.2021 (10am-10.30am)	22.11.2021 (11am-11.30am)	20.12.2021 (10am- 10.30 am)	27.01.2022 (11 am -11.30 am)	26.02.2022 (10 am to 10.30 am)	10.03.2022 (9.30 am-10.00am)
3	LOCATION						
A	Main Gate (West Side)	71	69	62	64	65	62
B	East side Boundary wall	69	71	65	66	67	62
C	Near Furnace building (south side boundary wall)	68	72	62	61	64	67
D	North Side Boundary wall (Towards Pattern Shop)	70	69	64	65	66	65
4	LIMIT	75					

INTERNAL AMBIENT NOISE MONITORING IN FERRO-ALLOY PLANT (Night Time)

Sl. No.		AMBIENT NOISE LEVEL - db(A)					
1	Month	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22
2	Date & Time	21.10.2021 (11pm-11.30pm)	22.11.2021 (11pm-11.30pm)	20.12.2021 (11pm-11.30 pm)	27.01.2022 (11 pm -11.30 pm)	26.02.2022 (11 pm - 11.30 pm)	10.03.2022 (11 pm -11.30pm)
3	LOCATION						
A	Main Gate (West Side)	67	68	62	61	62	60
B	East side Boundary wall	66	65	65	64	63	64
C	Near Furnace building (south side boundary wall)	63	67	62	61	62	63
D	North Side Boundary wall (Towards Pattern Shop)	66	67	64	63	65	63
4	LIMIT	70					

