



CITY OF EKURHULENI  
DEPARTMENT OF ENVIRONMENTAL DEVELOPMENT  
ATMOSPHERIC EMISSION LICENCE/PROVISIONAL ATMOSPHERIC EMISSION LICENCE  
AS CONTEMPLATED IN SECTION 43 OF THE NATIONAL ENVIRONMENTAL  
MANAGEMENT: AIR QUALITY ACT, 2004 (ACT NO. 39 OF 2004)

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**APPLICATION FORM FOR ATMOSPHERIC EMISSION LICENCE / PROVISIONAL ATMOSPHERIC  
EMISSION LICENCE IN TERMS OF CHAPTER 5 OF THE NATIONAL ENVIRONMENTAL  
MANAGEMENT: AIR QUALITY ACT, 2004 (ACT NO. 39 OF 2004)**

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**Name of Enterprise:** Fortune Steels

Declaration of accuracy of information provided:

Application for an atmospheric emission licence / provisional atmospheric emission licence as envisaged in chapter 5 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004).

I, **Gaurav Bansal** [*delegated by the Accounting Officer*], declare that the information provided in this application or attached to the application is, to the best of my knowledge, in all respects factually true and correct. I am aware that the supply of false or misleading information in the application form is a criminal offence in terms of section 51(1)(f) of the Act.

Signed at **Boksburg** on this **2<sup>nd</sup>** day of **April 2014**

**In the Capacity of Director**

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*NB: Please complete all sections. KINDLY Mark with an X in spaces where applicable. If the space provided is insufficient, the required information may be submitted in the form of a memorandum. Attach required maps and sketches. Graphics must be clear, labeled and, where applicable.*

## 1 TYPE OF APPLICATION

<input checked="" type="checkbox"/>	New Application	<input type="checkbox"/>	Transfer
<input type="checkbox"/>	Renewal	<input type="checkbox"/>	Variation/Amendment/Review

Current APPA Permit / Atmospheric Emission Licence Number:	<b>Not applicable</b>
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## 2 ENTERPRISE INFORMATION

Enterprise Name	<b>FORTUNE STEELS PTY LTD</b>
Trading As	<b>Fortune Steels</b>
Type of Enterprise, e.g. Company/Close Corporation/Trust, etc	<b>COMPANY</b>
Company/Close Corporation/Trust Registration Number (Registration Numbers if Joint Venture)	<b>2012/139989/07</b>
Registered Address	<b>54 MAIN REEF ROAD, ANDERBOLT EXT 15, BOKSBURG 1459</b>
Postal Address	<b>SAME AS ABOVE</b>
Telephone Number (General)	<b>011 892 5244</b>
Fax Number (General)	<b>086 600 6847</b>
Industry Type/Nature of Trade	<b>Steel recycling and processing</b>
Land Use Zoning as per Town Planning Scheme	<b>Industrial</b>
Land Use Rights if outside Town Planning Scheme	<b>Not applicable</b>

Responsible Person Name or Emission Control Officer (where appointed)	<b>Mr G Bansal</b>
Telephone Number	<b>011 892 5244</b>
Cell Phone Number	<b>072 169 1777</b>
Fax Number	<b>086 600 6847</b>
E-mail Address	<b><a href="mailto:gaurav@fortunemetaliks.co.za">gaurav@fortunemetaliks.co.za</a></b>
After Hours Contact Details	<b>072 169 1777</b>

### 3 SITUATION AND EXTENT OF PLANT

#### 3.1 Location and extent of plant

Physical Address of the Plant	12 & 53 Johnson Road, Nigel
Description of Site (Where No Street Address)	Not applicable
Coordinates of Approximate Center of Operations	North-south: 26°25.444'S East-west: 28°26.335'E
Extent (km <sup>2</sup> )	0.035
Elevation Above Mean Sea Level (m)	1573
Province	Gauteng
Metropolitan Municipality	Ekurhuleni
Local Municipality	Not applicable
Designated Priority Area	Highveld Priority Airshed (HPA)

#### 3.2 Description of surrounding land use (within 5 km radius)

Provide a description of the surrounding land use within a 5 km radius, specifically noting the names and proximity of residential and commercial areas in relation to the site of the works.

Please refer to Annexure A.

Attach map(s), satellite image(s) or aerial photograph(s) detailing location of premises in relation to surrounding community.

### 4 NATURE OF PROCESS

#### 4.1 Process description

Please provide a detailed description of the entire production process including reference to the overall balance sheet of inputs, outputs and emissions at the site of the works.

Please refer to Annexure B.

#### 4.2 Listed activities

List all Listed Activities, as published in terms of section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), proposed to be conducted at the premises in terms of this application:

Listed Activity Number	Category of Listed Activity	Sub-category of the Listed Activity	Name of the Listed Activity	Description of the Listed Activity
FS2/FS3	4	4.7	Electric arc furnaces	Electric arc furnaces in steel making industry
FS6/FS7	4	4.2	Combustion installations	Combustion installations not used primarily for steam raising and electricity generation

Despite the repeal of the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965), list all Scheduled Process(es), as was or were set out in the Second Schedule of the repealed Atmospheric Pollution Prevention Act, 1965, currently conducted at the premises:

APPA Registration Certificate Number	Date of Registration Certificate	Scheduled Process Number	Scheduled Process Description
None	None	30	Iron and Steel Processes

#### 4.3 Unit processes

List all unit processes associated with the listed activities in operation at the premises by the atmospheric emission licence holder, highlighting unit processes proposed in respect of this application:

Unit Process	Unit Process Function	Batch or Continuous Process
FS1	Raw material storage and batching – Processing (cutting, shearing, sorting and bailing) of scrap delivered by road transport vehicles.	Batch
FS2/FS3	Steel melt – Melting of scrap in two 6MVA coreless induction furnaces.	Batch
FS4	Continuous casting – Production of intermediate product using a four strand radius caster.	Batch
FS5	Billet storage – Billet cooling and storage.	Continuous
FS6/FS7	Re-heating - Re-heating of mild steel billets in two furnaces using coal tar as combustion fuel.	Continuous
FS8/FS9	Rolling - Three phase hot rolling process including roughing, intermediate milling and finishing.	Continuous
FS10	Finished products - Completed parts are cut-to-length and allowed to cool before strapping and loading for despatch via road transport vehicles.	Continuous

\*Unit process means a single component (equipment) with identifiable inputs and outputs within a process flow. A series of unit processes make up the full manufacturing process, for example, boiler, furnace, distillation column, etc.

Please provide any other unit processes currently conducted at the site of works.

Name of the Unit Process	Description of the Unit Process
No other unit processes	

#### 4.4 Hours of operation

Provide the hours of operation of all unit processes associated with the listed activities in operation at the premises by the atmospheric emission licence holder, highlighting unit processes proposed in respect of this application:

Unit Process	Operating Hours	Number of Days Operated per Year
--------------	-----------------	----------------------------------

FS1	24-hours	320
FS2/FS3	24-hours	320
FS4	24-hours	320
FS5	24-hours	320
FS6/FS7	24-hours	320
FS8/FS9	24-hours	320
FS10	24-hours	320

#### 4.5 Graphical process information

Attach the following for the entire operation being undertaken at the site of the works:

- Simplified block diagram with the name of each unit process in a block; showing links between all unit processes or blocks.
- Process flow chart(s) clearly indicating inputs, outputs and emissions at the site of works, including points of potential fugitive emissions and emergency releases.
- Site layout diagram (plan view and to scale) indicating location of unit processes, plants, buildings, stacks, stockpiles and roads (include true north arrow and scale).

**NB:** Indicate clearly on the above graphics the listed activity or activities applied for in this application. Alternatively, provide additional graphics for the listed activity or activities applied for.

Please refer to Annexure C.

## 5 RAW MATERIALS AND PRODUCTS

Provide raw material information, production and by-production rates and emissions information.

### 5.1 Raw materials used

Raw Material Type	Maximum Permitted Consumption Rate (Quantity)	Design Consumption Rate (Quantity)	Actual Consumption Rate (Quantity)	Units (Quantity/Period)
Processed mild steel scrap	70378	70378	70378	tons per annum
Ferro manganese	852	852	852	tons per annum
Silicon manganese	355	355	355	tons per annum
Calcined lime	577	577	577	tons per annum
Electrode paste	46	46	46	tons per annum
Argon	14500	14500	14500	NM <sup>3</sup> per annum

## 5.2 Production rates

Production Name	Maximum Production Capacity Permitted (Quantity)	Design Production Capacity (Quantity)	Actual Production Capacity (Quantity)	Units (Quantity/Period)
Mild steel billets	63116	63116	63116	tons per annum
Rolled products	60000	60000	60000	tons per annum

By-Product Name	Maximum Production Capacity Permitted (Quantity)	Design Production Capacity (Quantity)	Actual Production Capacity (Quantity)	Units (Quantity/Period)
Slag and scrap	7857	7857	7857	tons per annum
Scale	1891	1891	1891	tons per annum
End cutting scrap	1550	1550	1550	tons per annum

## 5.3 Materials used in energy sources

The applicant must specify the materials used in energy sources, namely, coal, oil, gas or wood.

Materials for Energy	Sulphur Content of the Material (%)	Ash Content of Material (%)	Maximum Permitted Consumption Rate (Quantity)	Design Consumption Rate (Quantity)	Actual Consumption Rate (Quantity)	Units (Quantity/Period)
Electricity	Not applicable	Not applicable	Not applicable	Not applicable	4,800,000 Units	Annum
Coal tar fuel	0.6	1.5	2030 kilolitre	2030 kilolitre	2030 kilolitre	Annum

#### 5.4 Sources of atmospheric emission (including all tiers of greenhouse gas)

Provide emissions averaging periods that correspond to the averaging periods as set out in the national ambient air quality standards published under Government Notice No. 1210, Gazette No. 32816 dated 24 December 2009, and/or the minimum averaging periods of the relevant pollutant in relation to its health impact.

##### 5.4.1 Point source parameters

Unique Stack ID	Source Name	Latitude (decimal degrees)	Longitude (decimal degrees)	Height of Release Above Ground (m)	Height Above Nearby Building (m)	Diameter at Stack Tip / Vent Exit (m)	Actual Gas Exit Temperature (°C)	Actual Gas Volumetric Flow (m <sup>3</sup> /hr)	Actual Gas Exit Velocity (m/s)
FS2/FS3	Bag house	-26.424852°	28.438340°	30	6.5	1.5	80	150000	23.5
FS6/FS7	Scrubber	-26.424185°	28.439700°	35	11.5	0.5	50	6000	8.5

\*Point source means a single identifiable source and fixed location of atmospheric pollution, e.g. stack, chimney, etc.

##### 5.4.2 Point Source Emissions

Provide emission values as being measured under normal conditions of 273 K, 101.3 kPa, specific oxygen percentage and dry gas.

As per 5.4.1 ID	Pollutant Name	Maximum Release Rate				Emissions Hours	Type of Emissions (Continuous / Routine but Intermittent / Emergency Only)
		(mg/Nm <sup>3</sup> )	(mg/Am <sup>3</sup> )	g/s	Averaging period		
FS2/FS3	Total particulates	33.730	24.564	0.197	24-hours	00H00 – 24H00	Continuous
	Sulphur dioxide	7.876	5.736	0.046	24-hours	00H00 – 24H00	Continuous
	Nitrogen dioxide	7.876	5.736	0.046	24-hours	00H00 – 24H00	Continuous
	Carbon monoxide	195.019	142.020	1.139	24-hours	00H00 – 24H00	Continuous
	Total volatile organic compounds	11.643	8.479	0.068	24-hours	00H00 – 24H00	Continuous



As per 5.4.1 ID	Pollutant Name	Maximum Release Rate				Emissions Hours	Type of Emissions (Continuous / Routine but Intermittent / Emergency Only)
		(mg/Nm <sup>3</sup> )	(mg/Am <sup>3</sup> )	g/s	Averaging period		
FS6/FS7	Total particulates	12.534	9.975	0.080	24-hours	00H00 – 24H00	Continuous
	Sulphur dioxide	124.400	99.002	0.794	24-hours	00H00 – 24H00	Continuous
	Nitrogen dioxide	74.734	59.476	0.477	24-hours	00H00 – 24H00	Continuous
	Carbon monoxide	6.737	5.362	0.043	24-hours	00H00 – 24H00	Continuous
	Carbon dioxide	33946.250	27015.835	216.667	24-hours	00H00 – 24H00	Continuous
	Total volatile organic compounds	1.723	1.372	0.011	24-hours	00H00 – 24H00	Continuous
	Methane	1.410	1.122	0.009	24-hours	00H00 – 24H00	Continuous
	Nitrous oxide	0.783	0.623	0.005	24-hours	00H00 – 24H00	Continuous
	Polycyclic organic matter	0.157	0.125	0.001	24-hours	00H00 – 24H00	Continuous

#### 5.4.3 Point source current emissions monitoring

Provide information on emission monitoring requirements.

As per 5.4.1 ID	Emission Sampling / Monitoring Method	Sampling Frequency	Sampling Duration	Measured Parameters
FS2/FS3	EPA Method 5, 6, 7 & 18	Annual	8-hours	PM, SO <sub>2</sub> , NO <sub>x</sub> & Total VOCs
FS6/FS7	EPA Method 5, 6, 7 & 18	Annual	8-hours	PM, SO <sub>2</sub> , NO <sub>x</sub> & Total VOCs

#### 5.4.4 Point source emission estimation information

As per 5.4.1 ID	Basis for Emission Rates

As per 5.4.1 ID	Basis for Emission Rates
FS2/FS3	European IPPC Bureau BAT for Smitheries and Foundries & Australian Government, Department of Environment and Heritage, National Pollutant Inventory, Emission Estimation Technique Manual for Ferrous Foundries, Version 1.2, September 2004 & US EPA, AP-42, Volume I, 5 Edition, Chapter 12.13 & Appendix B.2.
FS6/FS7	US EPA, AP-42, Volume I, 5 Edition, Chapter 1.3.

#### 5.4.5 Area and/or line source parameters

Unique Area Source ID	Source Name	Source Description	Latitude (decimal degrees) of SW corner	Longitude (decimal degrees) of SW corner	Height of Release Above Ground (m)	Length of Area (m)	Width of Area (m)	Angle of Rotation from True North (°)
FS1	Raw material storage and batching	Processing (cutting, shearing, sorting and bailing) of scrap delivered by road transport vehicles.	-26.424602°	28.438978°	0	22	66	-5°
FS2/FS3	Steel melt	Melting of scrap in two 6MVA coreless induction furnaces.	-26.424670°	28.438075°	0	44	66	-5°
FS4	Continuous casting	Production of intermediate product using a four strand radius caster.	-26.424403°	28.438959°	0	22	40	-5°
FS5	Billet storage	Billet cooling and storage.	-26.424379°	28.439321°	0	22	22	-5°
FS6/FS7	Re-heating.	Re-heating of mild steel billets in two furnaces using coal tar as combustion fuel.	-26.424364°	28.439501°	0	66	22	-5°
FS8/FS9	Rolling	Three phase hot rolling process including roughing, intermediate milling and finishing.	-26.424277°	28.438039°	0	44	110	-5°
FS10	Finished	Completed parts are cut-to-length and allowed to cool before strapping	-26.423882°	28.438000°	0	22	132	-5°

Unique Area Source ID	Source Name	Source Description	Latitude (decimal degrees) of SW corner	Longitude (decimal degrees) of SW corner	Height of Release Above Ground (m)	Length of Area (m)	Width of Area (m)	Angle of Rotation from True North (°)
	products	and loading for despatch via road transport vehicles.						

\*Area source means air pollution source from a specified area, e.g., pollution from a landfill site, fugitive dust from a process.

\*Line source means a moving source of pollutants, e.g., motor vehicles.

#### 5.4.6 Area and/or line source emissions

As per 5.4.5 ID	Pollutant Name	Maximum Release Rate (quantity per period)	Average Annual Release Rate (quantity per period)	Emission Hours	Type of Emission (Continuous / Intermittent)	Wind Dependent (Yes / No)
FS1	Total particulates	0.013 g/s	0.359 ton	00H00 – 24H00	Continuous	No
FS2/FS3	Total particulates	0.063 g/s	1.740 ton	00H00 – 24H00	Continuous	No
FS4	Total particulates	0.060 g/s	1.657 ton	00H00 – 24H00	Continuous	No
FS5	Total particulates	0.095 g/s	2.624 ton	00H00 – 24H00	Continuous	No
FS6/FS7	Total particulates	0.004 g/s	0.110 ton	00H00 – 24H00	Continuous	No
FS8/FS9	Total particulates	0.007 g/s	0.193 ton	00H00 – 24H00	Continuous	No
FS10	Total particulates	0.007 g/s	0.193 ton	00H00 – 24H00	Continuous	No

#### 5.4.7 Area and/or line source – management and mitigation measures

Provide information on management and mitigation measures.

As per 5.4.5 ID	Description of Specific Measures	Timeframe for Implementation of Specific Measures	Method of Monitoring Measure Effectiveness	Contingency Measure

As per 5.4.5 ID	Description of Specific Measures	Timeframe for Implementation of Specific Measures	Method of Monitoring Measure Effectiveness	Contingency Measure
FS1	General housekeeping	Ongoing	Dust fall monitoring	Mobile pneumatic system
FS2/FS3	General housekeeping	Ongoing	Dust fall monitoring	Mobile pneumatic system
FS4	General housekeeping	Ongoing	Dust fall monitoring	Mobile pneumatic system
FS5	General housekeeping	Ongoing	Dust fall monitoring	Mobile pneumatic system
FS6/FS7	General housekeeping	Ongoing	Dust fall monitoring	Mobile pneumatic system
FS8/FS9	General housekeeping	Ongoing	Dust fall monitoring	Mobile pneumatic system
FS10	General housekeeping	Ongoing	Dust fall monitoring	Mobile pneumatic system

**5.4.8 Area and/or line source emission estimation information**

As per 5.4.5 ID	Basis for Emission Rates
FS1	Australian Government, Department of Environment and Heritage, National Pollutant Inventory, Emission Estimation Technique Manual for Ferrous Foundries, Version 1.2, September 2004.
FS2/FS3	European IPPC Bureau BAT for Smitheries and Foundries.
FS4	US EPA, AP-42, Volume I, 5 Edition, Chapter 12.13 & Appendix B.2.
FS5	US EPA, AP-42, Volume I, 5 Edition, Chapter 12.13 & Appendix B.2.
FS6/FS7	US EPA, AP-42, Volume I, 5 Edition, Chapter 1.3.
FS8/FS9	European IPPC Bureau BAT for Smitheries and Foundries.
FS10	European IPPC Bureau BAT for Smitheries and Foundries.

## 6 APPLIANCES AND MEASURES TO PREVENT AIR POLLUTION

### 6.1 Appliances and control measures

Provide information on appliances and measures implemented to prevent air pollution for the entire operation at the site of the works, highlighting information for listed activity or activities proposed in respect of this application.

Appliances				Abatement Equipment Control Technology							
Associated Unique Stack ID	Appliance / Process Equipment Number	Appliance Type / Description	Appliance Serial Number	Abatement Equipment Manufacture Date	Abatement Equipment Name and Model	Abatement Equipment Technology Type	Commission Date	Date of Significant Modification / Upgrade	Design Capacity	Minimum Control Efficiency (%)	Minimum Utilization (%)
FS2/FS3	Induction Furnace	ID Fan	TBA	2014	TBA	Bag house	2014	None	150000m <sup>3</sup> /h	98	100
FS6/FS7	Re-Heating Furnace	Centrifugal Blower	TBA	2014	TBA	Scrubber	2014	None	6000m <sup>3</sup> /h	95	100

### 6.2 Start-up, maintenance and shut-down conditions

List potential start up, maintenance, shut down, upset conditions and associated responses related to the operations at the site of the works, highlight possible releases and responses for the proposed listed activity or activities in respect of the current application.

Unit Process	Description of Occurrence of Potential Releases	Pollutants and associated amount of emissions	Briefly Outline Back Up Plan
FS2/FS3	<ul style="list-style-type: none"> <li>- The Fan stops working</li> <li>- The Bags of Bag house malfunction, due to excessive dust or any reason</li> <li>- Damage or puncture in the duct from the furnace to the pollution control plant.</li> </ul>	PM, SO <sub>2</sub> , NO <sub>2</sub> , CO, TVOCs	<ul style="list-style-type: none"> <li>- The plant has a alternate and backup fan to use in situations</li> <li>- Stop the furnace immediately and replace bags.</li> <li>- Stop the furnace immediately and arrange for the duct to be repaired and plug the punctures.</li> </ul>

Unit Process	Description of Occurrence of Potential Releases	Pollutants and associated amount of emissions	Briefly Outline Back Up Plan
FS6/FS7	<ul style="list-style-type: none"> <li>- Damage or puncture in the duct from the furnace to the pollution control plant.</li> <li>- The Fan stops working</li> <li>- The Sprinkler pumps stop working</li> </ul>	PM, SO <sub>2</sub> , NO <sub>2</sub> , CO, CO <sub>2</sub> , TVOCs, N <sub>2</sub> O, CH <sub>4</sub> & PAHs	<ul style="list-style-type: none"> <li>- Stop the furnace immediately and arrange for the duct to be repaired and plug the punctures.</li> <li>- The plant has a alternate and backup fan to use in situations</li> <li>- Stop the Furnace immediately and arrange for the sprinkler pumps to be repaired.</li> </ul>

**6.3 Routine reporting and record-keeping**

**6.3.1 Complaints register**

Is a complaints register maintained at the site works?

<input checked="" type="checkbox"/>	Yes	
<input type="checkbox"/>	No	
<input type="checkbox"/>	To be initiated, by date: <b>Start of operations</b>	

Please provide a copy of complaints received and corrective actions taken over the past two years.

**7. DISPOSAL OF WASTE AND EFFLUENTS ARISING FROM ABATEMENT EQUIPMENT CONTROL TECHNOLOGY**

Provide the following information for any waste and effluent arising from abatement equipment control technology that are currently in place at the site of the works:

Unique Stack or Area ID (As per 5.4.1 or 5.4.5 above)	Waste / Effluent Type	Hazardous Components Present	Method of Disposal
FS2/FS3	Bag house dust	Metals	The metals are segregated and sold and the dust is disposed off using a recognised waste disposal company.
FS6/FS7	Scrubbing sludge	Calcium sulphite	To be disposed off with a recognised waste disposal company.