



Abu Dhabi Specification

معايير أبوظبي الفنية



ADS 24 /2019

م أف 2019/24

**Specification for Gas
Emissions from Iron and
steel Industries.**

**معايير الانبعاثات الغازية من صناعة الحديد
والصلب**



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Amendment Page

To ensure that each copy of this ADS contains a complete record of amendments, the Amendment Page is updated and issued with each set of revised/new pages of the document. This ADS is a live document which can be amended when necessary. QCC operates stack emission Working Group which prepared this document and can review stakeholder comments in order to review and amend this document, issuing an updated version when necessary.

<u>Amendment</u>			<u>Discard</u>		<u>Insert</u>	
<u>No</u>	<u>Date</u>	<u>*Sections Changed</u>	<u>Page(s)</u>	<u>Issue no</u>	<u>Page(s)</u>	<u>Issue no</u>
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About the Abu Dhabi Quality and Conformity Council

The Abu Dhabi Quality and Conformity Council (QCC) was established by law No. 3 of 2009, issued by His Highness Sheikh Khalifa Bin Zayed Al Nahyan, President of the UAE.

QCC is responsible for the development of Abu Dhabi Emirate's quality infrastructure, which enables industry and regulators to ensure that products, systems and personnel can be tested and certified to UAE and international standards.

Products certified by QCC receive the Abu Dhabi Trustmark. The Trustmark is designed to communicate that a product or system conforms to various safety and performance standards that are set by Abu Dhabi regulators.

1. Foreword

The QCC stack emission working group was established February 2018 with a view to reviewing all the existing standards related to the gas emissions from iron and steel Industries. With the object of harmonizing the required standard to be agreed by all the relevant entities at the level of Abu Dhabi Emirate. Abu Dhabi Specifications (ADS) will be developed on subjects that have no specifications or local legislation and will then be put forward to ESMA as proposed UAE Standards, and in alignment with Federal Laws and Regulations and Cabinet Decisions.

2. Purpose

The objective of the project is to recommend relevant and appropriate gas emissions from iron and steel Industries specifications, to be considered as limits based on best international practices for the long-term air pollution control and protecting life and human health, and taking into consideration available data at the Environment Agency- Abu Dhabi (EAD).



3. Acknowledgement

QCC would like to thank the members of the Working Group listed below.

Name	Entity
1. Mohamad Alam	Environment Agency - Abu Dhabi (EAD)
2. Khawaja Hassan	Industrial Development Bureau- Department of Economic (IDB-DED)
3. Mutasim Kabashi	Industrial Development Bureau- Department of Economic (IDB-DED)
4. Latifa Al Shamsi	Department of Health (DoH)
5. Khalid Khalfan	Zones Corp
6. Tariq Al Afeefi	Emirates Steel
7. Abdel Moneim Tawfik	Emirates Steel
8. Carmina Clavero	Emirates Steel
9. Vidya Sagar	Al Ghurair Iron Steel LLC



4. Scope

These specifications apply to all iron and steel Industries Abu Dhabi Emirates.

5. Terms and Definitions

TERM	DEFINITION
Concentration-Based Emissions Limit	The maximum concentration of a Regulated Air Pollutant allowed in exhaust gas from an Affected Source.
Construction	Construction refers to the planning and funding of capital projects for fabrication, erection, or installation of a New Affected Facility and New Affected Source, as well as projects to alter combustion systems or air pollution Control Devices on Existing Affected Sources.
Emissions Standards	The legal requirement to limit the release of Regulated Air Pollutants into the atmosphere. Emissions Standards may be expressed in different formats, such as Concentration-Based Emissions Limits, Work Practices, or Equipment Standards.
Equipment Standard	A requirement to install and/or operate specified equipment to reduce the release of a Regulated Air Pollutant into the atmosphere.
Fugitive Emissions	A Regulated Air Pollutant released to the atmosphere that is not discharged through a system of equipment that is specifically designed to capture pollutants at the source, convey them through ductwork, and exhaust them to a Control Device or the atmosphere using forced ventilation. Fugitive Emissions may be released through windows, doors, vents, building openings, or are released to the atmosphere through other general building ventilation or exhaust systems not specifically designed to capture Regulated Air Pollutants.
Iron Facility	An Iron Facility includes Iron Foundries and Direct Reduced Iron Furnaces.
Particulate Matter (PM).	Mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Others are so small they can only be detected using an electron microscope.
Monitoring Systems	Any system used to measure, quantify, and record activities of an Affected Source or Affected Facility, including Continuous Emissions Monitoring Systems, Continuous Parameter Monitoring Systems, and Bag Leak Detection Systems.

TERM	DEFINITION
Opacity	The degree to which emissions of Regulated Air Pollutants reduce the transmission of light and obscure the view of an object in the background.
Reference Method	As agreed or / and approved by ESMA and / or EAD.
Visible Emissions Limit	Observations of emissions (opacity) or optical density pursuant to US EPA Method 22 above the threshold for a specified duration.
Volatile Organic Compounds	Volatile Organic Compounds means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, that participates in atmospheric photochemical reactions.
Work Practice	A written description of how to perform a task or operation to reduce the release of Regulated Air Pollutants into the atmosphere.
Normal cubic meter (Nm³)	Volume of air at a temperature: 0 °C and pressure: 1.01325 barA.

6. Technical Requirements

- The owner/operator of the industry shall comply with the following gas emission limits, as mentioned in Table (1):

Affected Source	Regulated Air Pollutant	Emissions Standard Format	Emissions Standard
Iron and Steel Foundries: All			
Scrap supply	Lead; dioxins and furans	Work Practice	Scrap Pollution Prevention Plan
Material handling and storage piles (e.g., scrap, flux) and by-product handling and storage piles (e.g., slag, dust), including loading and unloading	PM	Work Practice	Fugitive Dust Control Plan
Metal casting operations	PM	Equipment Standard	Operation of hood ventilation system and appropriate PM Control Device so there are no visible emissions



Affected Source	Regulated Air Pollutant	Emissions Standard Format	Emissions Standard
Iron and Steel Foundries: Throughput Greater Than 20,000 MT/yr			
Melting furnaces	PM	Emissions Limit	30 mg/Nm ³
Pouring stations	PM	Emissions Limit	25 mg/Nm ³
Iron and Steel Foundries: Throughput Greater Than 100,000 MT/yr			
Mold and core-making operations using organic chemicals	VOCs	Emissions Limit	20 mg/Nm ³
Mold and core-making operations using organic chemicals	Triethylamine	Emissions Limit	3 mg/Nm ³
Steelmaking Furnaces: All Furnaces			
Scrap supply	Lead; dioxins and furans	Work Practice	Scrap Pollution Prevention Plan
Material handling and storage piles (e.g., scrap, flux) and by-product handling and storage piles (e.g., slag, dust), including loading and un-loading	PM	Work Practice	Fugitive Dust Control Plan
Steelmaking, decarburization vessels, and ladle metallurgy	PM	Emissions Limit	15 mg/Nm ³
Steelmaking fume treatment plant	PM	Opacity Limit	5% for any 6-minute period
Charging and tapping operations	PM	Equipment Standard	Operation of hood ventilation system and appropriate PM Control Device so there are no visible emissions
Direct Reduced Iron Furnaces: All Furnaces			
Material handling and storage piles (e.g., iron ore pellet and fines) and by-product handling and storage piles (e.g., slag, dust), including loading and unloading	PM	Work Practice	Fugitive Dust Control Plan



Affected Source	Regulated Air Pollutant	Emissions Standard Format	Emissions Standard
Process Gas Heater, Reformer and Pneumatic Transfer System.	CO	Emission Limit	350 mg/Nm ³ .
Process Gas Heater, Reformer and Pneumatic Transfer System.	NOx	Emission Limit	250 mg/Nm ³ .
Process Gas Heater, Reformer and Pneumatic Transfer System.	PM	Visible Emissions	No visible emissions
Direct Reduced Iron Furnaces: Existing Furnaces			
Process Gas Heater.	PM	Emission Limit	50 mg/Nm ³ Annually measurement
Direct Reduced Iron Furnaces: New Furnaces			
Process Gas Heater.	PM	Emission Limit *	5 mg/Nm ³

*The calculation of the source emissions can take into account the background PM mass (i.e. the PM mass in the incoming combustion air) and its contribution to the source's PM exhaust gas concentration.



7. References

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