

Test Report
on
Indoor Air Quality Assessment

Prepared
For

Cotton Clothing (BD) Ltd.

Kazi Tower, 27 Road, Gazipura, Tongi, Gazipur, Bangladesh.

Report No. XSIAQ_20160087



Prepared by

Indoor Air Quality Assessment

at

Cotton Clothing (BD) Ltd.

Kazi Tower, 27 Road, Gazipura, Tongi, Gazipur, Bangladesh.

Report No.	XSIAQ_20160087
Sampling Date	November 12, 2016
Sampling Time	02:00 p.m.- 04:30 p.m.
Reporting Date	November 15, 2016

Environmental Conditions:	
Temperature	30.1°C
Humidity	58.2 % RH
Visibility	Winter and Sunny Atmosphere

Method of Sampling:

Analysis of the Indoor air emission was done using direct reading instruments. So, there is separate sampling for this analysis. During the analysis, a standard work instruction stated in the SWI-04, SWI-05 and SWI-06 was followed

Description of Instruments:

Nine calibrated direct reading instruments designed to measure the Carbon Dioxide, Carbon Monoxide, Sulfur Dioxide, Nitrogen Dioxide, Suspended Particular Matter, SPM (PM 10, PM 2.5,) was used to assess the indoor air quality.

Methods of Analysis:

The following methods were used to analyze the indoor air quality parameters.

Parameters	Methods
CO (Carbon Monoxide)	Electrochemical
CO ₂ (Carbon Dioxide)	NDIR (Non Dispersive Infrared)
SO ₂ (Sulfur Dioxide)	Electrochemical
NO ₂ (Nitrogen di-Oxide)	Electrochemical
SPM (Suspended Particulate Matter)	Laser
PM 10 (Particulate Matter)	Laser
PM 2.5 (Particulate Matter)	Laser

Measurement Uncertainties:

The following measurement uncertainties were assigned to the respected parameters.

CO (Carbon Monoxide)	± 0.2 ppm
CO ₂ (Carbon Dioxide)	2% of Rdg. ± 10 ppm
SO ₂ (Sulfur Dioxide)	± 0.5 ppm of rdg
NO ₂ (Nitrogen Di-Oxide)	± 0.5 ppm of rdg
SPM (Suspended Particulate Matter)	± 0.4%
PM 10 (Particulate Matter)	± 0.4%
PM 2.5 (Particulate Matter)	± 1.1%

Team:

All the experiments and reporting have been done under the supervision of

Mohammad Kabir Hossain (MSc in Environment & Sustainable Technology, Manchester, UK).

Team members involved in field experiments and reporting:

- ❖ **Mohammad Faridul Islam** (BSc & MSc in Environment Science)

Lab Analyst, 3R Environmental Consulting Limited

- ❖ **Mohammad Mosarof Hossain**

Assistant Technical officer, 3R Environmental Consulting Limited

Results of Analysis:

Location	Section	Parameters							
		SPM	PM2.5	PM10	CO	CO ₂	NO ₂	SO ₂	O ₂
		µg/m ³	µg/m ³	µg/m ³	ppm	ppm	ppm	ppm	%
Production Building Ground Floor	Generator Room	440	64	145	0	283	0	0	20.7
Ground Floor	Boiler Room	417	62	146	0	214	0	0	20.7
Ground Floor	Compressor Room	441	62	143	0	189	0	0	20.8
1 st Floor	Dining Hall	463	57	141	0	221	0	0	20.8
2 nd Floor	Cutting Section	432	59	143	0	265	0	0	20.8
3 rd Floor	Finishing Section	427	56	138	0	149	0	0	20.8
3 rd Floor	Packing Section	442	58	132	0	232	0	0	20.8
3 rd Floor	Spot Removing Room	419	147	142	0	294	0	0	20.8
4 th Floor	Sewing Section	496	53	141	0	177	0	0	20.8
5 th Floor	Sewing Section	453	54	144	0	278	0	0	20.7

Standard Parameters for Indoor Air Quality as following:

Parameters	SPM	PM2.5	PM10	SO ₂	CO	CO ₂	NO ₂
Units	µg/m ³	µg/m ³	µg/m ³	µg/m ³	ppm	ppm	µg/m ³
DOE Standard (National)	500	65	150	365	5	NYS	100
ASHRAE Standard	NYS	NYS	NYS	NYS	9	1000	470
OSHA standard	NYS	NYS	NYS	5	50	5000	NYS
WHO Standard	NYS	25	50	20	9	1000	200

NYS= Not Yet Set

PPM= Parts per million

µg/m³=Micrograms per cubic meter

OSHA- Occupational Safety and Health Administration (USA)

ASHRAE- American Society of Heating, Refrigerating and Air Conditioning Engineers

WHO-World Health Organization

Remarks

According to the result of analysis, it has been observed that the indoor air quality of the factory is under the standard limit of national or international guidelines.

Prepared by

MD. FARIDUL ISLAM
M.Sc. (NSU), B. Sc (Hon's, MBSTU)
Dept. of Environment Science
Lab Analyst
3R Environmental Laboratory

Checked by

MD. MAHASIN ALI
M.Sc. (Thesis), B.Sc. (Hon's)
Dept. of Chemistry, Rajshahi University
Lab Incharge
3R Environmental Laboratory
3R Environmental Consulting Limited

Approved by

MD. NAZRUL ISLAM
Chief Executive
3R Environmental Consulting Limited

Work Place Air Quality Testing Picture	Work Place Air Quality Testing Picture
	
Generator Room Air Quality Testing Picture	Work Place Air Quality Testing Picture
	