



## Stack Air Emission Test Report

**Client Name** : GMS COMPOSITE KNITTING IND. LTD.  
**Client Address** : Shardagonj, Kashimpur, Gazipur  
**Sampling Date** : 09 June 2016  
**Reporting Date** : 11 June 2016

### Description of Sampling:

**Name of the combustion Unit: Dyeing Finishing (Dryer)**

**Fuel Type: Natural Gas**

Key information of Device:	Dyeing Finishing	
Location of the device	Ground Floor	
Device	Dryer	
Device Name	Dilmenler	Santex ag
Country	Turky	Switzerland
Fuel	Gas Line	Gas Line

Sampling was done by automatic sampler connected with the analyzer. During the sampling procedure, all the instruction stated in the WI-01 was followed. The machine probe was set to the center point of the exhaust. Sampling was done for specific time intervals mentioned in the work instruction and recorded in a field data collection Sheet.





**Description of the methods:**

All the tests have been performed using continuous stack emission monitoring (CEMS) test methods. Kane-940 continuous analyzer was used to monitor CO, SO<sub>2</sub>, CO<sub>2</sub>, NO and NO<sub>2</sub>. The Analyzer is designed to meet the BS EN 50319 standard method. CO, NO and SO<sub>2</sub> is measured using Electrochemical sensors and CO<sub>2</sub> is measured using Non-Dispersive Infra-Red (NDIR), Method.

**Description of instrument:**

Parameter	Regulation	Accuracy	Range
Temp Measurement	1.0°C/F	±2.0°C±0.3%reading	0-600°C
Flue Temperature with probe	.01°C/F	±1.0°C±0.3%reading	32-1112°F
Inlet temperature			
Pressure	0.01mbar	±2% of full scale	+150mbar to 150mbar
<b>Gas Measurement</b>			
Carbon Monoxide (Standard Compensated)	0.1% 1ppm	±2% ±20ppm<400ppm ±5%<5000ppm ±10%>5000ppm	0-21% 0-10000ppm
Carbon Monoxide (High Range)	0.01%	±5% reading from 0.1% to 10%	0-10%
Nitric Oxide (Standard)	0.01%	±5ppm>100ppm ±5%>100ppm	0-5000ppm
Nitric Oxide (Low range)	1ppm	±5ppm<30ppm ±5ppm<30ppm	0-100ppm
Nitrogen Dioxide	1ppm	±5ppm<100ppm ±10ppm<500ppm ±5%500ppm	0-1000ppm
Sulphur Dioxide	1ppm	±5ppm<100ppm ±5%>100ppm	0-5000ppm
Ambient Operation rang		0°C to 45°C/10% to 90%rh non condensing	





**Instrument Calibration:**

The temperature probe has been calibrated by temperature simulator EX/R/117. The CO<sub>2</sub> Sensor has calibrated by using CO Test gas, CO standard certified gas, the CO sensor has calibrated by ambient air and standard certified gas for both lower and higher detection limit respectively. The pressure sensor has calibrated by dead wrights taster and E/C/100 for both lower and higher detection limit respectively. The measured flow rate is tested by TL529 and pump suction is calibrated by EX/X/186.

**Measurement Uncertainties:**

The Uncertainty Assigned to the above measurement is 2<sup>0</sup>C for temperature, ±2% for gas measured and 0.05% for pressure.

**Table-1: Result of Air Emission Monitoring.**

Run (10 minutes interval)		Measured Pollutants					
		O %	CO mg/Nm <sup>3</sup>	CO <sub>2</sub> %	NO mg/Nm <sup>3</sup>	NO <sub>x</sub> mg/Nm <sup>3</sup>	SO <sub>2</sub> mg/Nm <sup>3</sup>
Run-1	Dilmenler <sub>1</sub>	1.7	251	6.8	644	85	00
	Santex ag <sub>2</sub>	2.1	326	4.2	411	76	00
Run-2	Dilmenler <sub>1</sub>	1.7	255	6.7	654	86	00
	Santex ag <sub>2</sub>	2.1	324	4.2	415	77	00
Run-3	Dilmenler <sub>1</sub>	1.7	256	6.7	654	85	00
	Santex ag <sub>2</sub>	2.1	328	4.2	417	76	00



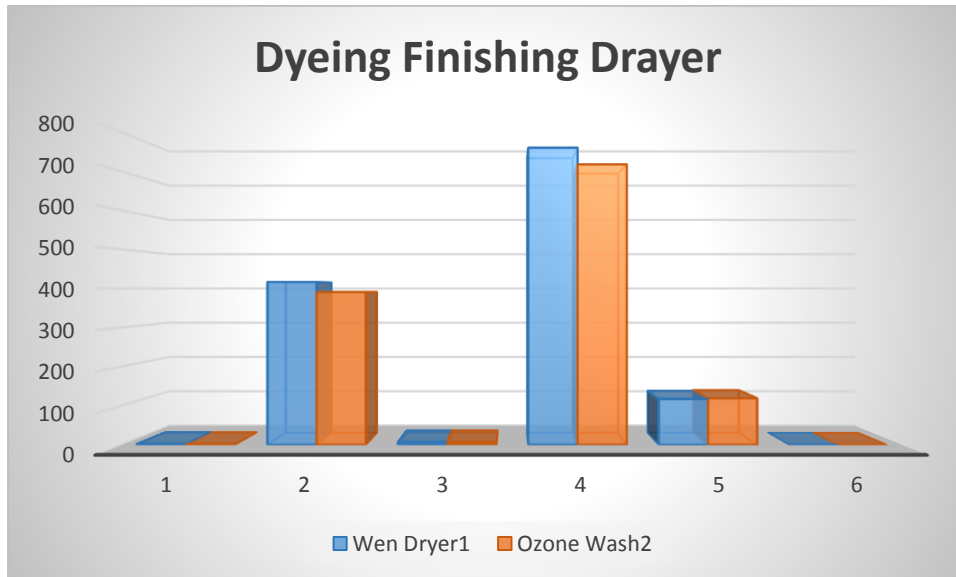


**Table-2: Standard Permissible of Air Emission.**

Agency	Pollutants					
	O %	CO mg/Nm <sup>3</sup>	CO <sub>2</sub> %	NO mg/Nm <sup>3</sup>	NO <sub>x</sub> mg/Nm <sup>3</sup>	SO <sub>2</sub> mg/Nm <sup>3</sup>
DoE	NYS	0-500	NYS	NYS	150 (Gas) 300(Oil)	NYS
US EPA	0-30%	0-1000	NYS	NYS	150 (Gas) 300(Oil)	NYS
World Bank	NYS	NYS	NYS	NYS	320 (Gas) 460 (Liquid)	NYS (GAS) 2000 (Liquid)

- \*NYS** = Not Yet Set
- US EPA** = US Environmental Protection Agency
- DoE** = Depart of Environment (Bangladesh)
- O<sub>2</sub>** = Oxygen
- CO<sub>2</sub>** = Carbon dioxide
- NO<sub>x</sub>** = Oxide of Nitrogen [NO+NO<sub>2</sub>]
- SO<sub>2</sub>** = Sulfur Dioxide
- CO** = Carbon Monoxide

**Sampling Graph**



**Table-2: Result Shown As Graph**





**Compliance Enviro Comment:**

The Stack Emission From the stack point of the generator has been analyzed for the parameter of NO<sub>x</sub>, SO<sub>2</sub>, CO & CO<sub>2</sub> to evaluate the effect of the plant's emission while running on 100% Diesel on the air environment. From the analysis, it has been observed that the emission of CO and SO<sub>2</sub> is within the standard limit of DoE, US EPA and World Bank.

All are tested flue gas are found in acceptable limit.

It is recommended that gas-musk should be provided to related workers to avoid occupational health hazard.

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Compliance Enviro Services







## Testing Equipment:

Air Pollution contamination of the atmosphere caused by the discharge, accidental or deliberates of a wide range of toxic substances. Often the amount of the released substance is relatively high in a certain locality, so the harmful effects are more noticeable. The major sources of air pollution are transportation engines, power and heat generation, industrial processes and the burning of solid waste. A new source of air pollution is an increasing 'hole' in the ozone layer in the atmosphere above Antarctica, coupled with growing evidence of global ozone depletion. Air pollution has also long been known to have an adverse effect on human beings, plants, livestock and aquatic ecosystem through acid rain.

Recently as in other parts of the world air pollution has received priority among environmental issues in Asia. This problem is acute in Dhaka, the capital of Bangladesh and also the hub of commercial activity.

Compliance Enviro Services high quality equipment are available to assess your indoor air quality. Now most of the customers are committed to environmental aspect. As a result Air Quality test is a vital requirement of customers. So Compliance Enviro Services is also committed to assess your indoor Air Quality with transparency & Quality. To assess this Air Quality we have to follow some standards, such as ECR, 1997, WHO, DoE, World Bank etc. Compliance Enviro Services has a air emission quality testing machine from Testo and the model is –TESTO 340-Flue Gas Analyzer.



**Testo 340- Flue Gas Analyzer.**

