

# ENVIRONMENTAL MONITORING

## Stack Emission Monitoring

### What is Stack?

A stack is a structure for venting hot flue gases or smoke from a boiler, generator set, furnace or fireplace to the outside atmosphere at a great height. The dispersion of polluted air at a higher altitude helps to reduce the influence of pollutants in the surroundings and at the ground.



*Stack monitoring is performed by inserting a measuring device into the stack to obtain a sample of flue.*

### Why need to perform stack emission monitoring?

Stacks from boilers and industrial processes will carry pollutants such as SO<sub>x</sub>, NO<sub>x</sub>, particles, solvents and other dusts and gases. These can have a detrimental effect on local air quality and for this reason such emissions are often regulated.

In Malaysia, the emission levels from the stack is monitored for compliance with **Malaysian Environmental Quality (Clean Air) Regulation**.

## Indoor Air Quality (IAQ) Monitoring

### PURPOSE OF MONITORING

- To identify sources of indoor air pollutants either within the place of work or from outside air.
- To evaluate the exposure of office occupants to the indoor air contaminants.
- To recommend suitable control measures to improve the indoor air quality.

### Sources of Poor IAQ

Many sources contribute to the deterioration of indoor air quality. These pollutants range from mere bad odors to **toxic hazards**, and include kitchen smells, sewer emission, tobacco smoke, allergens, Legionella and volatile organic compounds (found in cleaning agents, paint, solvents, glue, etc).



### PARAMETERS

- Air Temperature
- Relative Humidity
- Air Movement
- Carbon Monoxide
- Formaldehyde
- Ozone
- Respirable Particulates
- Total Volatile Organic Compounds (TVOC)
- Total Bacterial Counts
- Total Fungal Counts
- Carbon Dioxide

### Effects of Poor IAQ

Poor indoor air quality can cause **health problems** such as allergic reactions, respiratory problems, eye irritation, sinusitis, bronchitis and pneumonia.

## Noise Monitoring

### Boundary Noise Monitoring

Boundary noise monitoring is conducted to measure the noise level emitted at the boundaries of a premise.

The findings of boundary noise monitoring are usually compared against *The Planning Guidelines For Environmental Noise Limits and Control* by Department of Environment (DOE).



*Noise Exposure monitoring is mandatory under Factories and Machinery (Noise Exposure) Regulations.*

### Noise Exposure Monitoring

Noise exposure monitoring is the most important part of a workplace hearing conservation and noise control program.

It helps to identify work areas where there are noise problems, workers who may be affected, and where additional noise measurements need to be made.

