General guidelines

The construction industry is a major source of pollution, responsible for a significant portion of particulate emissions, water pollution incidents, and thousands of noise complaints every year. Although construction activities also pollute the soil, the main areas of concern are air, water, and noise pollution.

Measures to Prevent Pollution

Good construction site practice can help to control and prevent pollution. The first step is to prepare environmental risk assessments for all construction activities and materials likely to cause pollution. Specific measures can then be taken to mitigate these risks:

- To prevent erosion and run-off, minimise land disturbance and leave maximum vegetation cover.
- Control dust through fine water sprays used to dampen down the site.
- Screen the whole site to stop dust spreading, or alternatively, place fine mesh screening close to the dust source.
- Cover skips and trucks loaded with construction materials and continually damp down with low levels of water.
- Cover piles of building materials like cement, sand, and other powders, regularly inspect for spillages, and locate them where they will not be washed into waterways or drainage areas.
- Use non-toxic paints, solvents, and other hazardous materials wherever possible
- Segregate, tightly cover, and monitor toxic substances to prevent spills and possible site contamination.
- Cover up and protect all drains on site.
- Collect any wastewater generated from site activities in settlement tanks, screen, discharge the clean water, and dispose of remaining sludge according to environmental regulations.
- Use low sulphur diesel oil in all vehicle and equipment engines and incorporate the latest specifications of particulate filters and catalytic converters.
- No burning of materials on site.
- Reduce noise pollution through careful handling of materials; modern, quiet power tools, equipment, and generators; low impact technologies; and wall structures as sound shields.

Small breathable particles that may affect human health:

PM10

Particles on the order of 10 micrometers or less (PM10) can penetrate the deepest part of the lungs such as the bronchioles or alveoli or settle in the bronchi and lungs and cause health problems.

- Fly ash
- Cement dust
- Setting dust
- Mold spores
- Burned fossil fuel gas

PM 2.5

PM2.5, tend to penetrate into the gas exchange regions of the lung, and very small particles (< 100 nanometers) may pass through the lungs and enter blood circulation system to affect other organs.

- Mould spores
- House dust mite allergens
- Bacteria
- Setting dust
- Fly ash
- Oil smoke

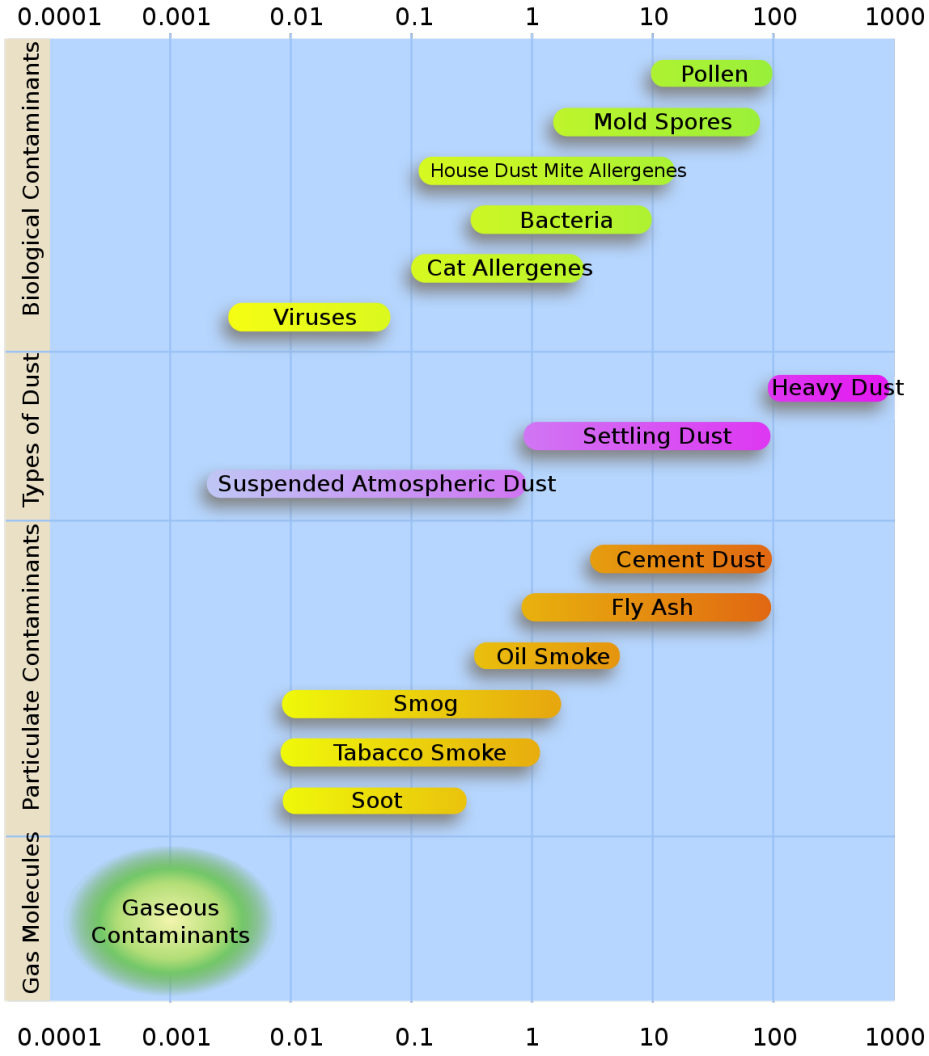

Figure 1: types, and size distribution in micrometres, of atmospheric particulate matter.

Workers in a construction site may be exposed to various hazardous substances and physical agents, like asbestos, lead, and silica dust (e.g. from cement dust). Excessive exposures to these substances/agents may result in chronic illness, cancer or even death. Loss of concentration at work and fatigue arising from poor health conditions may increase the risk of accidents.

PM10 Items	Potential Health Risk	Prevent Procedures
Wood dust	Carcinogenic	Wear protective respiratory masks and ensure equipment has dust collection vacuum and bag system.
Silica dust (e.g. from cement, concrete or similar)	Silicosis	Respiratory equipment suitable for silica dust equipment should be provided and worn by workers. Eliminate air-borne dust with sprinklers.
Lead dust	Chronic Health Effects	Contractors are required to take appropriate measures to control lead dust exposure and to inform the workers of the risks involved and to provide washing and changing facilities.
Asbestos dust	Asbestosis (diffuse fibrosis of the lung) Mesothelioma (cancer of the lining of the chest and abdomen) Lung cancer.	For all work involving asbestos, the required safety precautions are regulated by the Factories and Industrial Undertakings (Asbestos) Regulation and the Code of Practice on Safety and Health at work with Asbestos.