

## UNDERSTANDING CEMENT MANUFACTURING

### What is Cement Manufacturing?



Cement is an important component for the production of concrete and mortar. It can be used as binding product in homes and infrastructure.

Emissions from the manufacturing process cause major health hazards such as **asthma and respiratory disease, neurological problems, and even premature death.**

### Making Cement is a Very Dirty Process



Cement plants are a major source of **sulfur dioxide, nitrogen oxide, carbon monoxide, and particulate matter (PM or soot)**, while heating limestone releases **lead and mercury.**

Cement production accounts for 7% of all greenhouse gas emissions worldwide. It is the **third largest source of industrial air pollution**, with no readily available replacement.

### Dangers to Those Working or Living Near a Plant

#### NO<sub>x</sub>

lung damage, smog, acid rain, climate change, poor water quality

#### SO<sub>2</sub>

breathing impairment, respiratory or cardiovascular disease, acid rain

#### CO

degrades blood oxygen, impairs cardiovascular and central nervous systems

#### Heavy Metals

kidney toxicity, asthma, heart attacks, cancer, groundwater contamination

#### Silica (Cement Dust)

nose and throat irritation, asthma, lung scarring, premature death

### Mitigating the Negative Impacts of Concrete Manufacturing

**Policy:** Reduce greenhouse gases (GHGs) and toxic pollution. Improve regulations, inspections, and air quality monitoring. Increase buffer zones.

**Facilities:** Switch to solid fuels (net zero emissions goal). Reduce cement use, improve kiln efficiency, use cleaner fuels.

**Waste:** Eliminate plastic waste incineration. Scale up reusables, recycling, and composting.

**Occupational:** Use dust suppression and ventilation for silica.

**Personal:** If near a cement plant: stay indoors, change HEPA filters often, test water yearly.