

Abstract

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Impact of Cement Factories Stacks Diameter and Distribution on the Dispersion of Released Pollutants

The great development witnessed by the world right now accompanied by a large industrial progress to keep pace with the requirements of civilization. This leads to a large consumption of raw materials to be manufactured as materials necessary for the life of contemporary abstraction; oil refining; production of electric power; cement plants; food plants. Pollutants released from cement industry are various, such as sulphur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO), carbon dioxide (CO₂), particulate matter (PM); others. Therefore, all organizations of environmental impact assessment (EIA) tries to predict the risk on the environment; human life before implementation this industry. This paper is to introducing; building model using AERMOD package to study the effect of stack diameter considering maximum hourly Prediction of SO₂ NO₂; PM₁₀ concentrations at different receptor points emitted from preconstruction plants with different numbers of stacks depending on the fixed stacks height 120m; exist velocity 20m/sec. the study was carried out for 14 * 14 km area. Based on the optimum diameter, the effect of stacks distributions on pollution dispersion was studied. The study showed that the diameter 3.5m is the optimum,; non significantly effect for stacks distribution. The research results are irrespective of background emissions reading caused by other industries; human activities.