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AIR POLLUTION CONTROL THROUGH KILN RECYCLING BY-PASS DUST IN A CEMENT FACTORY

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Abstract:

Air pollution is a major problem in the industrial areas. Cement dust is one of the important environmental pollutants. In this study the possibility of dust recycling especially kiln dust which has significant importance regarding air pollution in the cement plant, was examined. Tehran cement factory is one of the most important Iranian factories which is located in Tehran. This factory produces high volume of pollutants that are released to in environment. The possibility of reusing of kiln by pass returned dust has been examined in this factory. Different percentages of kiln by-pass dust of this factory were added to products and outcomes of its presence in parameters such as chemical compound, granulation, primary and final catch time, volume expansion, consumed water and resistance of mortar were surveyed. The result indicated that by adding the amounts of 3-8 dust the mortar resistance increase, but adding more than 15%, the mortar resistance has been decreased. Survey in consumed water proved that adding dust to cement, the trend for consuming water is decreased. After dust addition dust, primary and final catch time were compared in different samples and data which showed decrease in dust added samples. Cements with dust added showed increase in auto clave expansion. Overall, results proved that, the best percentage rate of dust addition to the cement was 15%.

Keywords:

Cement , by pass dust , kiln , volume expansion

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