



Comparison between Polyester and Fiber Glass as Filter Media to Collect Silica Fumes: Case Study

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Abstract: The National Research Center (NRC) in Cairo and Aqua Misr Co. for Investment Equipments were invited by kima Co. for ferrosilicon production to study, investigate and provide a solution to the problem encountered with the main bag house filter used for dust & fume extraction and collection. Silica fume, also referred to as micro-silica or fumed silica, is a by-product from silica metal manufacturing. During the process, a fraction of the feedstock quartz vaporizes from the high temperature furnaces. With high efficient dust capture system, the vaporized quartz (i.e. silica dioxide) is collected in cloth bags (bag house dust collectors). High grade of quartz used in silicon metal production can result in high purity of silica fumes (typically >94 %) and amorphous form ^{(1),(2),(3)}. One of the most beneficial uses for silica fume is concrete. Due to its chemical and physical properties, it is a very reactive pozzolan. Concrete that contains silica fumes can have very high strength and be very durable.

Key words: Polyester, Fiber Glass, Filter Media, Collect Silica Fumes.

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