**Why Flue Gas Desulfurization Gypsum (FGD GYPSUM) is utilized in Cement**

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Flue Gas Desulfurization Calcium Sulfate (FGD Gypsum) was evaluated as a setting time retarder to replace natural gypsum in the production of Portland cement. FGD Gypsum plays a crucial role in the manufacturing of Portland cement. Though FGD Gypsum is utilized in small quantity, its chemistry and purity role has a significant role in the quality of the end products. FGD Gypsum helps control the rates of setting and hardening of cement/concrete. FGD Gypsum slows down the hydration process of cement once it is mixed. The FGD Gypsum reaction with cement tricalcium aluminate (C3A) particles takes place to form ettringite. Thus, the cement mix remains plastic and workable. Researchers found that cements containing FGD Gypsum produced more ettringite than natural gypsum. In addition, the formation of ettringite at threshold levels accelerated the hardening process and hastened strength gain at early stages of hydration. Utilizing FGD Gypsum in the building industry has generated new construction markets.