PERFORMANCE AS A FACTOR FOR SUSTAINABILITY OF THE CEMENT INDUSTRY

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Reference- CBU-2005-17

ABSTRACT

Following the growing demand for cement, the world production of cement has significantly increased in the past 10 years. This trend is the most significant factor affecting technological development and updating manufacturing facilities in the cement industry. At the same time, the existing technology of production of cement clinker is ecologically unfriendly: it consumes much energy and natural resources, and emits a number of undesirable air pollutants.

A new approach to the production of blended or High Volume Mineral Additive (HVMA) cement helps to improve its ecological compatibility. HVMA cement technology is based on the intergrinding of the portland cement clinker, gypsum, mineral additives, and a special complex admixture. This new method increases the compressive strength of ordinary cement, improves durability of the cement-based materials; and at the same time it permits the utilization of a high volumes of inexpensive indigenous mineral additives or industrial by-products. This phenomenon leads to the reduction of the energy consumption per unit of the cement produced. Higher strength, better durability, reduction of pollution at the clinker production stage, and decrease of the landfill area occupied by industrial by-products, all provide ecological advantages for HVMA cement.