

CEMENT INDUSTRY IN BRAZIL: GEOLOGICAL AND ECONOMICAL ASPECTS

1GOBBO,L.A.,2TANNO,L.C.and 2MOTTA,J.F.M. 1.Institute of Geosciences-USP; 2.Institute for Technological Research of São Paulo State-IPT; São Paulo, Brazil

Cement is one of the most important material in the civil engineering industry. With 39 million t cement production in 1998, Brazil is the 6th largest producer in the world. The cement plants are mostly concentrated along the east side of the country, mainly in the southeastern region, where besides the highest urban concentration, the largest waste and byproduct processing companies are also situated. Four stages are involved in the cement manufacture, and three of them are related to raw materials: a) mining; b) blending and milling; c) clinkerization; and, clinker milling and addition of other materials and gypsum. The most important raw material is the limestone, followed by clay and the distance of the quarry is a decisive factor to the plant installation. On the milling of the clinker, the gypsum and different kinds of additives are added. These additives are frequently natural materials (limestone filler and natural pozzolan) or industrial byproducts (fly ash and blastfurnace slag), saving fuel and raw material, and preserving the environment by the reduction of CO₂ emissions. Some industrial byproducts are widely used addition in the clinker and are concentrated in the southeast region (blastfurnace slag from steel industry) and in the south region (fly ash from power stations). Large percentage of gypsum comes from the northeast region of Brazil. This work has the aim to relate the cement plants to the economical and geological aspects. It is presented, in this side, the location of the most important Brazilian limestone reserves and byproduct generating companies involved in the cement manufacture process, and their availability in the country is discussed.