

Abstract

This doctoral thesis encompassed within the doctoral program in construction engineering follows the research line in sustainability and construction management.

The research has focused on the development of alkaline activated cements (AAC) obtained from waste to reduce the economic and environmental cost. This fact would imply a reduction in the use of raw materials in the case of precursors, and chemical reagents in the case of activators. The doctoral thesis that is presented studies the use of different waste mixtures as precursors: sanitary ceramics, spent fluid cracking catalyst, blast furnace slag and fly ash from thermal power plants in the preparation of mortars. Likewise, also is used CAA obtained from residues in soil stabilization. In the latter case, residues have also been used in the activators preparation, such as the ashes obtained in the combustion of biomass.

The results obtained show the viability in the use of residues for CAA preparation, and the possibility of being used even in underdeveloped contexts.