

This of the
geopolymer artificial
aggregate are also



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This process involves addition of some chemical like cement, lime or gypsum in agglomeration stage. This induces bonding property in the material. The green pellets are then cured in pressurised saturated steam at a temperature of 140°C. This process helps in reducing bonding material in pellet formation and curing time (Bijen, 1986). But the strength and durability properties does not show much difference compared to normal curing (Manikandan and Ramamurthy, 2008). 2. 6.

3 Cold Bonding It is the process of normal water curing at ordinary room temperature (Bijen, 1986). This process helps avoiding energy utilization. Niyazi Ugur Kockal et al.

says that cold bonded aggregate shows poor properties compared to sintered aggregates (Niyazi Ugur Kockal and Turan Ozturan, 2011). But in contrary, Manikandan et al. (2008) says when curing time is increased, the aggregate properties are comparable with autoclaving and steam curing. 2. 6. 4

Geopolymer There also researcher to implement geopolymerisation process bonding during agglomeration by granulation of manufactured aggregates (Gomathi, 2014).

Geopolymerisation is an inorganic polycondensation reaction which is yielding three-dimensional zeolitic framework to produce geopolymer cement (Razak, 2014). The hardening mechanism of geopolymerisation process is when the aluminium and silicate oxides in any raw material react with alkaline polysilicates. The physical and mechanical properties of the geopolymer artificial aggregate are also affected by the molarities and quantity of the alkaline activator use.

The geopolymer fly ash shows an increase in strength after exposing to 100000C (Abdullah, 2012). The porosity of the artificial aggregate is decreasing after the heat treatment is increasing (Ruzaid, 2013). The source materials also had a huge role in geopolymer properties according to the reactivity and chemical composition. Lower compressive strength can be seen in cold bond geopolymer artificial aggregate using only fly ash show compared with the geopolymer lightweight aggregate blends with ground granulated blast slag and rice husk ash (Bui, 2012).