

# [This of the geopolymer artificial aggregate are also](https://assignbuster.com/this-of-the-geopolymer-artificial-aggregate-are-also/)

This process involves addition of some chemical likecement, lime or gypsum in agglomeration stage. This induces bonding property inthe material. The green pellets are then cured in pressurised saturated steamat a temperature of 1400C. This process helps in reducing bonding material inpellet formation and curing time (Bijen, 1986). But the strength and durabilityproperties does not show much difference compared to normal curing (Manikandanand Ramamurthy, 2008). 2. 6.

3    ColdBondingIt is the process of normal water curing at ordinaryroom temperature (Bijen, 1986). This process helps avoiding energy utilization. Niyazi Ugur Kockal et al.

says that cold bonded aggregate shows poor propertiescompared 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 arecomparable with autoclaving and steam curing. 2. 6. 4    GeopolymerThere also researcher to implement geopolymerisationprocess bonding during agglomeration by granulation of manufactured aggregates(Gomathi, 2014).

Geopolimerisation is an inorganic polycondensation reactionwhich is yielding three-dimensional zeolitic framework to produce geopolymercement (Razak, 2014). The hardening mechanism of geopolymeration process iswhen the aluminium and silicate oxides in any raw material react with alkalipolysilicates. The physical and mechanical properties of the geopolymerartificial aggregate are also affected by the molarities and quantity of thealkaline activator use.

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