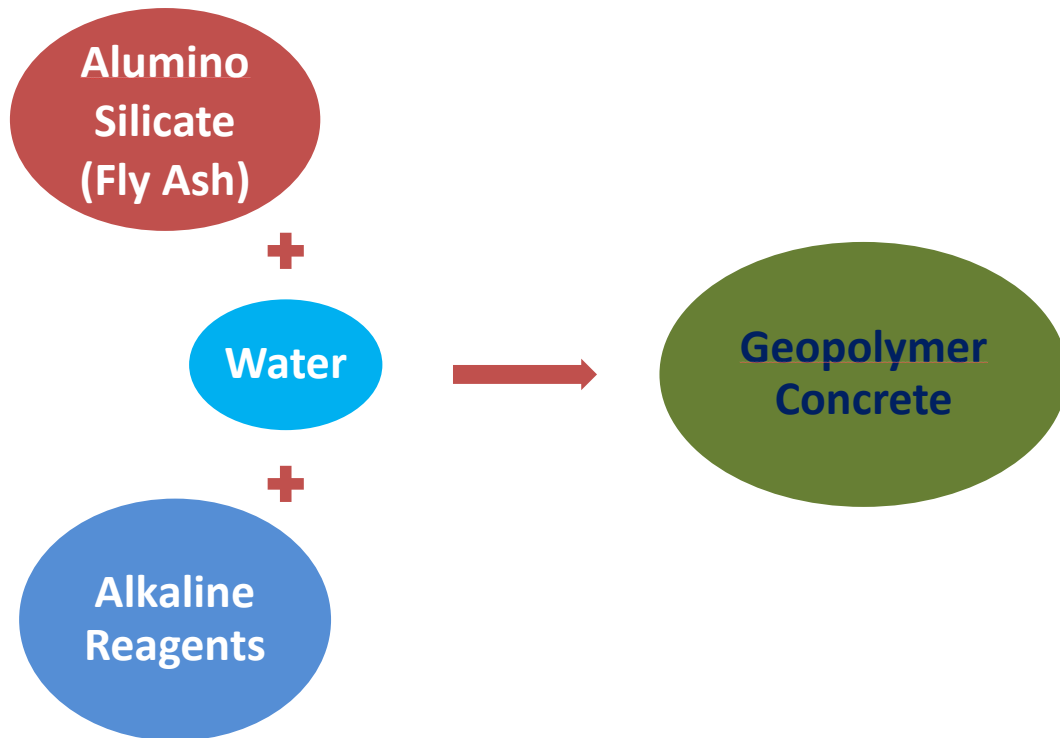


# **USE OF GEOPOLYMER IN ROAD CONSTRUCTION**

## Use of Geopolymer in Road Construction:

What is geopolymer:



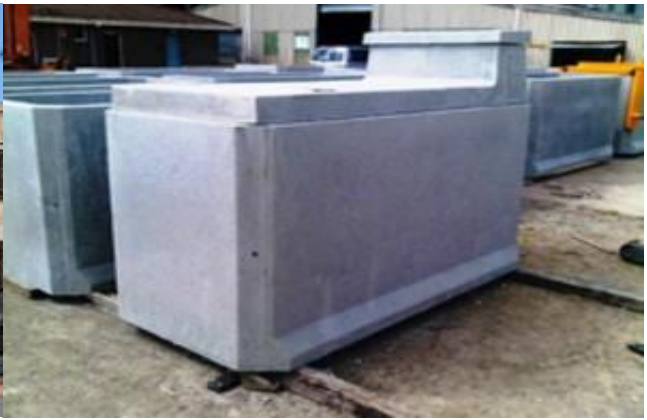
### Fly ash

- ✓ Free or Low cost but liability
- ✓ Easily available
- ✓ Good properties
- ✓ Best Material for Geopolymerisation
- ✓ Require huge area for disposal

### Geopolymer

- ✓ Simple processing
- ✓ Low energy consumption
- ✓ Low CO<sub>2</sub> generation
- ✓ Low water requirement

## Success Stories of Geopolymer Concrete utilization



## Test Works at SSL, Lanjigarh



## Pilot Road at Lanjigarh Plant



Proposed Site for Pilot road



Construction Under prograss



Green Concrete Pouring & Leveling



Green Concrete Pilot Scale Road

## Utilisation of Fly Ash in Geopolymer Concrete



PCC POURING DURING GREEN CONCRETE MAKING



REINFORCEMENT WITH GREEN CONCRETE WORK UNDER PROGRESS



ON GOING GREEN CONCRETE JOB....

25 06 2014



ACCOMPLISHMENT OF 40m LENGTH GREEN CONCRETE ROAD

30 06 2014



## 40 m Geopolymer Concrete Road Testing



### Benefits of Geopolymer Concrete

- ✓ Cold setting technology which is first of its kind in the world.
- ✓ Cement free “Green Concrete”
- ✓ Suitable for Concrete roads of strength from 10 MPa to 50 MPa

### Benefits

- ✓ Superior mechanical properties.
- ✓ Chemical resistance (acids, toxic waste, salty water).
- ✓ Fire resistance & thermal insulation.
- ✓ Short time to gain maximum strength
- ✓ Good abrasion resistance
- ✓ Reduction in cost of concrete from 10% to 20%
- ✓ 80% reduction in CO<sub>2</sub> emissions
- ✓ Environment Friendly
- ✓ Wide span of applications
- ✓ Increased utilisation of industrial waste

**Acknowledgement: Sesa Sterlite (VAL), Lanjigarh**