

## Chapter 7

# Conclusions

The current extent of geopolymer commercialisation in dollar terms is extremely difficult to estimate. This can be attributed to the confidential technical and commercial aspects governing the competitive world of business. Many companies claim to have commercially available products based on geopolymers, but no output volumes are available. Certainly the green environmental aspects of geopolymers compared to OPC based products are widely used to promote geopolymer based products (Concrete Institute of Queensland 2010; Achille 2010; Banh UK Ltd. 2010).

The short term future for geopolymer based products is factory manufactured precast components, where heat curing and an acceptable level of technical control are readily available. This will enable speciality products such as sewage and chemical contacting components and thermally resistant parts such as tunnel linings to gain a market presence based on technical superiority. The move to ambient curing of geopolymer systems generally involves the introduction of calcium based products which can adversely impact on the excellent durability profile of geopolymers.

The large variations in fly ash composition and its influence on the geopolymerisation process and end product properties is still a major hurdle for larger scale acceptance of geopolymer based products. The current national standards for fly ash do not consider its application as a geopolymer feedstock. Specific test methods to classify fly ashes for the geopolymerisation process should be a priority for the relevant fly ash producers and marketing bodies. This will ensure that the majority of fly ash can be safely utilised in commercial products instead of creating environmental hazards.