**Abstract**

The biggest global problem today is environmental pollution. The environment is polluted by the release of various gases and small particles into the atmosphere, which are the result of the production of various materials. During the production of 1 ton of cement, approximately 1 ton of CO2 is emitted into the atmosphere. If we consider that the world production of cement is about 4.18 billion tons, then it can be seen that during the production of cement, the same amount of CO2 is released into the atmosphere. Due to the increase in the consumption of concrete, there is also an increase in the production of cement, which results in an increase in environmental pollution and global warming. In addition to all greenhouse gases, carbon dioxide causes 65% of global warming.

Because of the above, solutions are being sought in the production of new materials that would at least partially replace cement. One of such materials is geopolymer.

In this paper, geopolymer samples based on fly ash from the Stanari thermal power plant were tested. Fly ash from the Stanari thermal power plant, 12M NaOH solution and commercial water glass were used as materials. The samples were made with an alkali to fly ash ratio of 1,2. The Na2SiO3/NaOH ratio ranged from 2; 2.5 and 3. The samples were thermally treated at geopolymerization temperatures of 60, 70 and 80 °C. After that, the compressive strengths of the samples were tested after 2, 7 and 28 days.

**Key words: geopolymers, fly ash, environmental pollution, compressive strength**