

## Waterproofing Agent in Concrete for Tensile Improvement

**Authors :** Muhamad Azani Yahya, Umi Nadiyah Nor Ali, Mohammed Alias Yusof, Norazman Mohamad Nor, Vikneswaran Munikanan

**Abstract :** In construction, concrete is one of the materials that can commonly be used as for structural elements. Concrete consists of cement, sand, aggregate and water. Concrete can be added with admixture in the wet condition to suit the design purpose such as to prolong the setting time to improve workability. For strength improvement, concrete is being added with other hybrid materials to increase strength; this is because the tensile strength of concrete is very low in comparison to the compressive strength. This paper shows the usage of a waterproofing agent in concrete to enhance the tensile strength. High tensile concrete is expensive because the concrete mix needs fiber and also high cement content to be incorporated in the mix. High tensile concrete being used for structures that are being imposed by high impact dynamic load such as blast loading that hit the structure. High tensile concrete can be defined as a concrete mix design that achieved 30%-40% tensile strength compared to its compression strength. This research evaluates the usage of a waterproofing agent in a concrete mix as an element of reinforcement to enhance the tensile strength. According to the compression and tensile test, it shows that the concrete mix with a waterproofing agent enhanced the mechanical properties of the concrete. It is also show that the composite concrete with waterproofing is a high tensile concrete; this is because of the tensile is between 30% and 40% of the compression strength. This mix is economical because it can produce high tensile concrete with low cost.

**Keywords :** high tensile concrete, waterproofing agent, concrete, rheology

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