UNIVERSITAS INTERNASIONAL BATAM

Faculty of Civil Engineering and Planning
Department of Civil Engineering
Odd Semester 2019/2020

THE INFLUENCE OF THE USE OF POLYPROPYLENE FIBER EFFECTIVENESS ON THE STRENGTH OF NORMAL CONCRETE

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ABSTRACT

Building constructions found in Indonesia generally utilize concrete as the main structural material. Despite its advantages, the concrete also has vulnerability which is practically unable to withstand ultimate tensile strength.

Many types of fibers can be used to improve the mechanical properties of concrete such as steel fibers, glass fibers, polypropylene fibers (a type of high-supply plastic), carbon, and natural fibers derived from natural materials such as fibers, bamboo fibers, coconut fiber, fibers burlap, and others. One unique fiber material used is polypropylene fiber. The purpose of this study was to determine the effect of adding polypropylene fibers to compressive strength in normal concrete and to find out the composition of polypropylene fiber content which causes optimum compressive strength of concrete.

From the results of tests carried out, the results obtained from a concrete mixture consisting of concrete mix polypropylene fiber 1%, 2%, and 3%. At the Concrete 1% age 7-28 days decreased concrete compressive strength ie 438.86 kg / cm2 with a percentage of 91%. While concrete 2% increased by 505.70 kg / cm2 with a percentage of 105% and concrete 3% decreased by 330.31 kg / cm2 with a percentage of 69%.

Keywords: Mixed Concrete, Compressive Strength Of Concrete, Polypropylene Fiber