

THE EFFECTS OF POLYPHROPHYLENE FIBER ADDITION AGAINST SPLIT TENSILE STRENGTH OF SELF COMPACTING MORTAR

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ABSTRACT

Mortar according to rough estimates, tensile strength values ranged between 9% -15% from its compressive strength, this causes the walls will crack after the earthquake. Because of that it needs an innovation to repairing the weakness of characteristic in order to make the wall is more stronger in hold the axial tensile force caused by the earthquake. The purpose of this study is to assess the effect of polypropylene fiber addition against split tensile strength with self compacting mortar method. The use of the SCM method because the narrowness of the space for manufacture of precast wall due to blocked by the formwork, SCM can solidified itself without requiring additional compaction that will fill the entire space on the formwork.

This research includes experimental studies. By using the cylindrical mortar test object (diameter 15 cm and 30 cm height). In this research, the comparison of mixture composition of materials is 1 cement : 5 sand : 0.9 water. While sikament used by 1.2% from cement's weight. Polypropylene fiber was used by 0.5 kg/m³, 1kg/m³, 1.5 kg /m³. Using three specimens in each variant. Retrieval of data or split tensile strength testing of concrete using testing press machine with ELE brand. Test results were analyzed using quantitative descriptive method.

The test results showed polypropylene fiber do not affecting the split tensile strength, it is evident without the fiber addition of a test specimen has average split tensile strength is 1.53 Mpa, larger than average split tensile strength test specimens using 0.5 kg/m³ fiber addition is 1.28 Mpa. The test object using the fiber addition of 1.5 kg/m³ is equal to 1.08 MPa, and the test object using the fiber addition by 1 kg/m³ is equal to 1.40 MPa.

Keywords : Mortar, Split Tensile, Fiber