

Bond Strength between Concrete and AR-Glass Roving with Variables of Development Length

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Abstract : Recently, the climate change is the one of the main problems. This abnormal phenomenon is consisted of the scorching heat, heavy rain and snowfall, and cold wave that will be enlarged abnormal climate change repeatedly. Accordingly, the width of temperature change is increased more and more by abnormal climate, and it is the main factor of cracking in the reinforced concrete. The crack of the reinforced concrete will affect corrosion of steel re-bar which can decrease durability of the structure easily. Hence, the elimination of the durability weakening factor (steel re-bar) is needed. Textile which weaves the carbon, AR-glass and aramid fiber has been studied actively for exchanging the steel re-bar in the Europe for about 15 years because of its good durability. To apply textile as the concrete reinforcement, the bond strength between concrete and textile will be investigated closely. Therefore, in this paper, pull-out test was performed with change of development length of textile. Significant load and stress was increasing at D80. But, bond stress decreased by increasing development length.

Keywords : bond strength, climate change, pull-out test, substitution of reinforcement material, textile

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