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Pullout Strength of Textile Reinforcement in Concrete by Embedded Length and Concrete Strength

Authors : Jongho Park, Taekyun Kim, Jungbhin You, Sungnam Hong, Sun-Kyu Park

Abstract : The deterioration of the reinforced concrete is continuously accelerated due to aging of the reinforced concrete, enlargement of the structure, increase if the self-weight due to the manhattanization and cracking due to external force. Also, due to the abnormal climate phenomenon, cracking of reinforced concrete structures is accelerated. Therefore, research on the Textile Reinforced Concrete (TRC) which replaced reinforcement with textile is under study. However, in previous studies, adhesion performance to single yarn was examined without parameters, which does not reflect the effect of fiber twisting and concrete strength. In the present paper, the effect of concrete strength and embedded length on 2400tex (gram per 1000 meters) and 640tex textile were investigated. The result confirm that the increasing compressive strength of the concrete did not affect the pullout strength. However, as the embedded length increased, the pullout strength tended to increase gradually, especially at 2400tex with more twists.

Keywords : textile, TRC, pullout, strength, embedded length, concrete
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