عنوان مقاله:

Experimental Study on Bond Stress between Ultra High Performance Concrete and Steel Reinforcement

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خلاصه مقاله:

Due to axial deformations generally caused by flexure, shear stress will be generated across the interface between reinforcement and surrounding concrete. This longitudinal shear stress is called bond stress and coordinates deformation between concrete and reinforcement. With increasing a member s axial deformation, bond stress finally reaches its ultimate value, bond strength, after which deformation of reinforcement and surrounding concrete will be not coordinated any more. Studies have shown that addition of nanosilica into cement-based materials improves their mechanical properties. Considering the unique characteristics of nanosilica, it seems that this material can be used in ultra-high performance concrete. Therefore, further research is needed on how to use it in concrete mixes. Due to the importance of examining bond stress and the lack of exact equations for bond stress of ultra-high performance concrete and steel reinforcement, the present study aimed to assess the bond stress between concrete and steel reinforcement.

کلمات کلیدی:

Bond Stress; Ultra-High Performance Concrete; Steel Reinforcement; Nanosilica