METHOD FOR OPTIMIZING STRENGTH DEVELOPMENT OF ULTRA-HIGH STRENGTH CONCRETE

【ABSTRACT】

The present invention relates to methods for optimizing strength development of ultra-high strength concrete that are capable of optimizing the strength development of the ultra-high strength concrete in the same mixture design with the same mixing materials as each other. The methods include the steps of: conducting the mixture design of the ultra-high strength concrete with a slump flow of 850±50mm; conducting the mixture design of the ultra-high strength concrete with an air content between 1.0% and 2.0%; conducting first dry-mixing of the gravels and the silica fume for 20 to 40 seconds and conducting the putting and mixing of the other mixing materials in the mixing process of the ultra-high strength concrete; conducting final mixing of the water for 150 to 200 seconds and after conducting a stationing operation where the mixing operation stops for 200 to 400 seconds, conducting the mixing for 150 to 200 seconds in the mixing process of the ultra-high strength concrete; conducting self-compacting casting of the ultra-high strength concrete; and conducting wet curing for 14 to 28 days after the casting of the ultra-high strength concrete and conducting air dry curing.

Fig. 1