

METHOD FOR OPTIMIZING STRENGTH DEVELOPMENT OF ULTRA-HIGH
STRENGTH CONCRETE

【ABSTRACT】

5 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
10 steps of: conducting the mixture design of the ultra-high
strength concrete with a slump flow of 850 ± 50 mm; 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
15 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
20 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
25 conducting air dry curing.

Fig. 1