RECENT DEVELOPMENTS AND APPLICATIONS OF UHPC IN REPUBLIC OF KOREA

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ABSTRACT

Research on Ultra High Performance Concrete (UHPC) has been widely conducted globally due to its exceptional strength and durability. Systematic studies in France, Germany, the USA, Japan and China have yielded numerous outcomes. In Korea, the Korea Institute of Construction Technology (KICT) and the Korea Concrete Institute (KCI) have also achieved research outcomes at the international level through the development of their own UHPC.

This presentation initially outlines the general characteristics of UHPC, including strength, durability, and constructability. Secondly, it highlights the superiority of the UHPC developed by KICT and KCI in comparison to existing UHPC. Also, the development process of design code of UHPC for various strength levels is presented. Lastly, it provides various examples illustrating the application of the developed UHPC in bridges and buildings in South Korea.

Presenter

Jee-Sang Kim is a professor at the Department of Civil and Architectural Engineering, Seokyeong University, Seoul, South Korea. He obtained Ph.D. for a thesis entitled “Fatigue Behavior and Fatigue Analysis of Prestressed Concrete Composite Girder Bridges” from Seoul National University.

He worked as the Vice-President of Korea Concrete Institute (2017-2018) and the Vice-president of Korea Civil Engineers Society (2022). He is currently the President of Korea Concrete Institute (2023-2024). His research interest is the development of design code for Ultra High Performance Concrete (UHPC), prestressed concrete bridges and estimation of existing concrete structures. In addition, as a chair of Concrete Committee of Korea Construction Standard Center, he participated development and improvement of Concrete Design Code of Republic of Korea. Also, bond behavior of corroded reinforcement and prestressing tendons and applications of epoxy coated reinforcement are his recent research topics.