



DEPARTMENT OF CIVIL ENGINEERING

SEMINAR

Research on water resistance property of high belite sulphoaluminate inorganic coating and its application

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Time: 10:30 a.m. – 11:30 a.m.

Venue: Room 612B, 6/F Haking Wong Building, The University of Hong Kong

Abstract

The effects of fiber types (basalt fibers, polyvinyl alcohol fibers, polypropylene fibers), fibers content and curing conditions on the mechanical strength and macroscopic failure mode of high belite sulphoaluminate inorganic coating were studied. The strength retention rate was used as the evaluation index of its early water resistance. The optimal fiber types and the corresponding content were selected. The microstructure of polypropylene fiber-reinforced high belite sulphoaluminate coating at different hydration ages were studied by scanning electron microscopy (SEM), and the early relative humidity (RH) 100% curing failure mechanism was analysed. It is found that the volume expansion of ettringite and the softening of some components are the main reasons for the cracking failure. By exploring various properties of the inorganic coating, different surfaces of metal, wood, concrete and ceramics can be protected. Thus, the decorative appearance, anti-corrosion, anti-fire, chemical stability, abrasion and wearing resistance are greatly enhanced.

About the Speaker

Prof. Jia-huan Yu is a professor in Foshan University in China since 2022, and was a faculty member in Shenyang Jianzhu University in China since 2005. He founded Guangdong i7 Science and Technology Co. Ltd. recently in 2023. He was a visiting scholar in Washington State University in United States in 2017, visiting scholar in University of Michigan in United States in 2008, postdoctoral fellow in Dalian Institute of Technology in China from 2005 to 2007, and postdoctoral fellow in Kobe University in Japan in 2001. From 1992 to 2001, he pursued studies in engineering mechanics field in Shanghai Jiaotong University in China, where he obtained his bachelor and doctor of philosophy degrees.

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