

「Joint Seminar on Fly Ash and Blast Furnace Slag Blended Cement Concrete - Research, Specifications and Applications in Thailand, Indonesia and Japan -」

Joint Seminar on Fly Ash and Blast Furnace Slag Blended Cement Concrete - Research, Specifications and Applications in Thailand, Indonesia and Japan - was held on September 28th, 2023. This joint seminar was organized by JSCE Concrete Committee with co-organization from Indonesian Society of Civil and Structural Engineers (HAKI), Engineering Institute of Thailand (EIT), and Sirindhorn International Institute of Technology (SIIT), Thammasat University, Thailand. JSCE have organized two joint seminars on the related topics with our Indonesian counterparts in 2019 and 2021, respectively. JSCE is also keeping close collaboration with researchers in Thailand on the application and research of fly ash and slag. Sharing common issues on promoting low-carbon and high durable concrete materials by using fly ash and slag, this joint seminar was aimed to strengthen academic and industrial communication among civil engineers and researchers from the three countries. The seminar was in hybrid form with most of the speakers and participants attending online, and a venue was prepared in SIIT, Thammasat University for some speakers and participants attending on site. The presenters and their presentation titles of this seminar are shown in Table-1.

Thailand and Indonesia are undergoing fast economic growth, leading to high demands for infrastructure development. Meanwhile, the global carbon neutrality consensus in recent years brings new challenges to concrete and construction industries towards low-carbon concrete materials. It is highly valuable that JSCE could share the experience and recent advances in Japan with our counterparts of Thailand and Indonesia in the application of fly ash and slag in concrete. It is also important for Japanese researchers and engineers to learn about the recent research advances and practices in Thailand and Indonesia for the sake of further improvement of technologies and international communication in Japan.

In the seminar, two presenters from Japan, three speakers from Indonesia, and two speakers from Thailand, made their presentations on the topic from academic or industrial viewpoints. Dr. Warangkana Saengsoy, SIIT, Thammasat University, Thailand, introduced their recent research progress on the utilization of fly ash off specifications in concrete, indicating that many off-spec fly ashes have high potential for use in concrete so more studies on them should be carried out. Dr. Januarti Jaya Ekaputri, Sepuluh Nopember Institute of Technology (ITS), Indonesia, introduced their study progress of high-volume fly ash concrete in marine environment including both tidal and immersion, particularly strength development and chloride penetration. In addition, she introduced the current research on geopolymer made from fly ash and sea water, showing the potential of geopolymers to be utilized in marine environment. Dr. Takeshi Torichigai, Kajima Corporation, Japan, is working on development of ecological and green concrete and their application in practical projects. In his presentation, the application of fly ash cement concrete in dam construction in Japan was introduced, raising the quality control issues faced in the practical construction and the solutions. Mr. Yohans Sunarno is the operation director of PT Bosowa Beton Indonesia, Indonesia. He introduced the current condition of fly ash sources in Indonesia and their effects for improving performance and cost efficiency in fly ash concrete production. Mr. Sakkarin Luangkamchorn works in The Concrete Products and Aggregate Co., Ltd., Thailand. He introduced practical application of fly ash concrete, highlighting the projects of high-volume fly ash concrete used for high-rise building foundations for thermal cracking control. Dr. Takeshi Yamamoto, Central Research Institute of Electric Power Industry, Japan, introduced the development of a rapid assessment method for pozzolanic activity of fly ash (API method), which will be included in JIS A 6201. Dr. Ivan Sandi Darma, Institut Teknologi Bandung, Indonesia, induced their studies on

microstructures of slag and fly ash blended cement concrete using X-ray computed tomography (X-ray CT) technologies as well as examples with the combination of superabsorbent polymer.

The joint seminar gained a lot of attentions from Japan, Thailand, and Indonesia. More than 200 participants from universities, institutes, and construction companies attended the seminar via Zoom or on site. The participants expressed great interest in the presented topics. In the Q&A session, a lot of questions were asked ranging from material compositions, property test, quality control, and cost and manufacturing, with warm discussions with the speakers. It can be said that the joint seminar is successful. More and deeper technical communications are expected in the future.



Photo 1



Photo 2



Photo 3

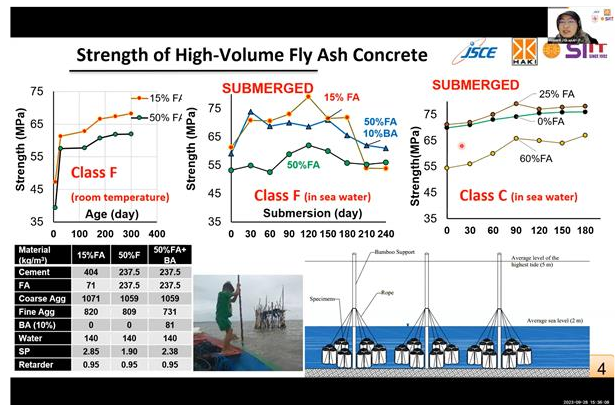


Photo 4

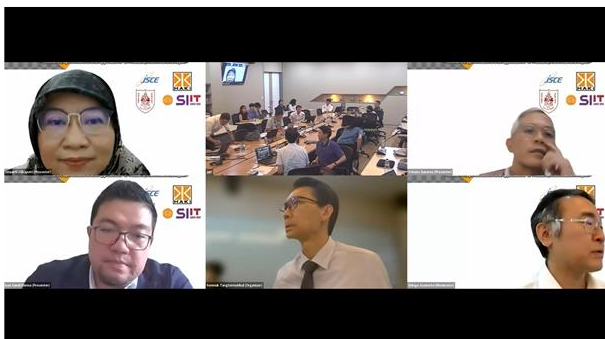


Photo 5



Photo 6

Table-1 Speakers and their presentation titles

Presentation	Speaker
Study on the potential utilization of off-spec fly ash in concrete	Dr. Warangkana Saengsoy, Sirindhorn International Institute of Technology, Thammasat University, Thailand
High-volume fly ash concrete in marine condition and recent research for geopolymer	Dr. Januarti Jaya Ekaputri, Sepuluh Nopember Institute of Technology, Indonesia
Rapid assessment method for pozzolanic activity of fly ash (API method) as JIS A 6201	Dr. Takeshi Yamamoto, Central Research Institute of Electric Power Industry, Japan
Fly ash in concrete production: improving performance and cost efficiency	Mr. Yohans Sunarno, Operation Director, PT Bosowa Beton Indonesia, Indonesia
Applications for high-volume fly ash concrete in Thailand	Mr. Sakkarin Luangkamchorn, The Concrete Products and Aggregate Co., Ltd., Thailand
Application of fly ash cement to Dam concrete in Japan	Dr. Takeshi Torichigai, Kajima Corp., Japan
Microstructures of slag and fly ash blended cement concrete	Dr. Ivan Sandi Darma, Institut Teknologi Bandung, Indonesia

Moderator: Dr. Shingo Asamoto (Saitama University, Japan)