

Event Report

IPA-TC3 Steel Sheet-pile Symposium in KMUTT, Thailand, on October 31, 2019

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“Steel Sheet-pile Symposium” was organized by Technical Committee 3, International Press in Association and King Mongkut’s University of Technology Thonburi (KMUTT) on 31st October 2019 at meeting room of Civil Engineering Department, King Mongkut’s University of Technology Thonburi (KMUTT), Thailand.

In this symposium, the current development and practice on steel sheet-pile method in Japan and recent research accomplishments on PFS (Partially Floating Sheet pile) method were introduced. Around 50 participants of geotechnical and structural engineers, college lecturers and students from King Mongkut’s University of Technology Thonburi (KMUTT) joined this symposium.

The program of the symposium was as follows:

- Opening address, presented by Prof. Jun Otani (Kumamoto University / Chair of IPA-TC3)
- Introduction of IPA and TC, presented by Prof. Tatsunori Matsumoto (Kanazawa University / advisor of IPA-TC3)
- Introduction of IPA-TC3 and PFS (Partially floating sheet-pile) method, presented by Prof. Jun Otani (Kumamoto University / Chair of IPA-TC3)
- Site investigations on PFS method in Kumamoto Prefecture, presented by Assoc. Prof. Kiyonobu Kasama (Tokyo Institute of Technology, member of IPA-TC3)
- Results of centrifuge tests on PFS method, presented by Assoc. Prof. Tetsuo Tobita (Kansai University, member of IPA-TC3)
- Results of numerical analysis on PFS method, presented by Assoc. Prof. Kentaro Nakai (Nagoya University, member of IPA-TC3)
- Topics on sheet piling or foundation engineering in Thailand, presented by Mr. Visanu Vivatanaprasert (Altemtech Co., Ltd.)
- Steel sheet pile technology, presented by Dr. Shinji Taenaka (Nippon Steel, Secretary General of IPA-TC3)
- Researches on press-in technology, presented by Mr. Yukihiro Ishihara (Giken Ltd., member of IPA-TC3)
- Q&A session and closing speech, presented by Dr. Pastsakorn Kitiyodom (Geotechnical & Foundation Engineering Co., Ltd) and Dr. Pornkasem Jongpradist (King Mongkut’s University of Technology Thonburi)

The presentation shows the result of applying Partially floating sheet-pile method (PFS) on the Kumamoto Plain. This method will be compared with conservative, floating, ground improvement method and without any countermeasure. The key issues are to find appropriate values between floating depth and width ratio of sheet pile resting on stratum and soft soil layer. Their appropriate values will reduce the construction time and cost while provide sufficient strength. To improve PFS technique, centrifuge tests and numerical analysis will be applied to determine the appropriate values. Furthermore, development of steel sheet pile technology could help to improve efficiency of steel section, cost and construction time.

Recently, in Thailand, a steel sheet-pile method has been used as a permanent structure rather than temporary work in the construction site with constraint condition. The Silent Piler plays an important role to tackle the difficult construction conditions such as small working area, strict standards of noise and vibration controls and an area with low head room.

The PFS method shows an interesting result and the technique could be applied in Thailand. However, there are still some uncertainties about difference of soil condition, performance to be designed as retaining walls and effective type of steel section.

The discussion during the symposium will help improve technique of steel sheet pile and spread the knowledge of press-in technique. The activity of International Press-in Association (IPA) also raises awareness of innovation to improve Engineering society and human life.



Figure 1: A group photo of the participants after the symposium



Figure 2: Opening address by Prof. Jun Otani



Figure 3: Prof. Tatsunori Matsumoto introduces concept of IPA and TC



Figure 4: Assoc. Prof. Kiyonobu Kasama summarizes his site investigation results on PSF method

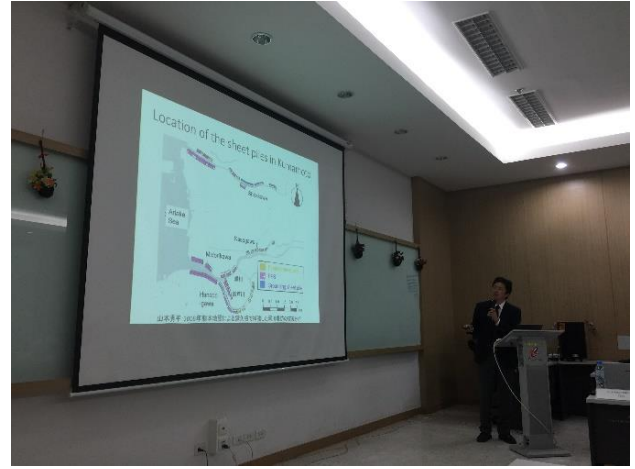


Figure 5: Assoc. Prof. Tetsuo Tobita explains results and concept of centrifuge technique



Figure 6: Assoc. Prof. Kentaro Nakai shows the results of numerical analysis on PSF method



Figure 7: Mr. Visanu Vivatanaprasert shares his experience on projects using Silent Piler in Thailand



Figure 8: Dr. Shinji Taenaka clarifies the development of steel sheet pile section



Figure 9: Mr. Yukihiro Ishihara explains about researches on press-in technology