

Interview

On-Site Interview

Ms. Hongjuan He
IPA Secretariat

I interviewed Mr. Matsuzawa (Sato Jyuki Kensetsu Co., Ltd.) and Mr. Asano (Kajikawa Construction Co., LTD) who are engaged in the Press-in project named “Aseismic reinforcement work to embankment on Turumi – Shinkoyasu line”, On March 3rd 2017, at Yokohama city, Kanagawa prefecture. I thank them for giving us valuable insights during this interview. Satojuki construction Co., Ltd is responsible to manage the entire project and conduct the Press-in operation on inbound line (for Tokyo). Kajikawa Construction Co., Ltd conduct the Press-in operation on outbound line.

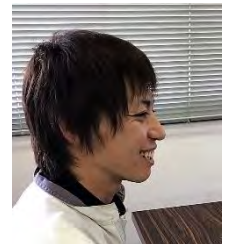
Profile of Mr. Kazuyuki Matsuzawa, Sato Jyuki Kensetsu Co., Ltd.

Mr. Matsuzawa has experienced in construction industry for 28 years. He has joined Sato Jyuki Kensetsu Co., Ltd. in 2013 with his career of construction management in piling. He is responsible for construction planning, management and quality control in welding work as the construction manager in this project. He has qualifications of the First-class Civil Engineering Works Execution Managing Engineer, the Second-class Welding Engineer, the licenses for various cranes and construction vehicles and etc.



Profile of Mr. Yoshikazu Asano, Kajikawa Construction Co., Ltd

Mr. Asano has joined Kajikawa Construction Co., Ltd. in 2009 with 8 years of the field experiences on the “Hard Ground Press-in method” and other application of the Press-in method. He was engaged as a main operator for this project. He has qualifications of the Second-class Press-in Operation, Supervisor for safety program in charge and so on.



Q1. Can you explain the background, overview and features of this project?

Mr. Matsuzawa: As everyone knows that the Great East Japan Earthquake happened in 2011 and brought a severe damage to Japan. Therefore, Japanese government has committed the aseismic reinforcement projects of the railway embankment to minimize damages due to an inland earthquake in Tokyo area. The project is ordered to press-in 120 pieces of U shaped steel sheet piles (L=16.5m) to the both side of inbound and outbound lines then the top of parallel steel sheet piles are connected with tie rods.

Mr. Asano: The significant characteristic of the project is to conduct press-in operation on the very steep and narrow slope adjacent to the railroad during day time. As shown in the Picture1, the workable construction space is limited in 4.5m to 10m width for inbound line and 2.5m to 3.5m width for outbound line for 60m length on each line. Vibration was strictly limited during the operation since the distance from the safety guard fence along the railway was only 1.6m away as shown in Picture2. It was required to pay very careful attention particularly for material hoisting process since trains are passing by every 5 minutes in morning and evening commute.



Picture1: Construction overview

Red frame: Construction for inbound line

Yellow frame: Construction for outbound line



Picture2: Non-staging system (outbound line)



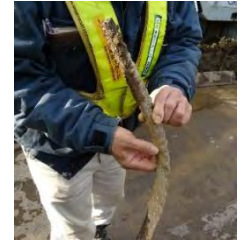
Picture3: Side-view

Q2. What are the significant points for the Press-in Method to overcome constraint conditions on the project?

Mr. Matuszawa: It is impossible to utilize the conventional methods which require to place the necessary machines and equipment side by side on the narrow and steep slope. We introduced the Non-staging system, as shown in Picture 2, that the system only enables all the piling machineries for the Press-in operation to walk on the previously installed sheet piles by itself (self-walking).

Q3. *Has the construction been carried out on time? Can you tell us about difficulties or concerns that you have faced on the project?*

Mr. Asano: Yes, the construction has been carried out smoothly so far and we predict that the project will be completed earlier than planned schedule. The Press-in operation has completed on the outbound line yesterday and the self-walking backward operation has just commenced today, and it is projected to complete in two days. We have judged that the ground condition will be relatively easy to deal with based on the given soil boring log, but we found obstacles in 14m depth as shown in Picture 4, unfortunately. We have continued the operation since the Crush Piler enables to penetrate those obstacles. I reaffirmed that the Press-in method is versatile and applicable to deal with varieties of ground conditions, applicable to hard ground again through this project.



Picture4 obstacle

Mr. Matuszawa: The progresses was made generally on time but have experienced difficulty to carry-in the machines and sheet piles to the construction space. We introduced 200 tons all terrain crane to carry the equipment and materials over the railways because the large vehicle is unable to access to the construction yard, then we divided the Crush Piler into two segments to hoist them in with the crane. Electric supply is cut-off only for 2.5 hours between 1:00am to 3:30am and we are required to safely carry in the equipment and materials during the limited time period. We carefully made the plan that all necessary equipment and materials are kept in the temporary stock yard just outside of the railways then hoist them over to the construction yard during 2.5 hours. However, we could not execute it in the winter season occasionally because trains need to be run in the mid night to prevent the rails to freeze. We have learned that the construction plan need to be carefully examined to absorb those unpredictable incidents.



Picture5 carry-in the equipment

Q4. Were there any specific requirements from project clients?

Mr. Matsuzawa: Safety is the most important issue than anything else. The first priority is to assure the safe train operation. If accidents do happen due to rush of construction, it will cause enormous effects on the train operation and passengers, though it is important for us to complete our construction soonest possible. Since we are dealing with sheet piles, we extremely care to prevent scattering of metallic noise with anti-noise sheets around the construction area.

Q5. Please share with us your toughest operational experience.

Mr. Asano: I experienced difficulties to deal with underground obstacles where I conducted the Press-in work with the Zero-clearance Crush Piler in Gifu prefecture two years ago. I was aware that the gravel layer was existing 6m below the ground surface according to the soil boring log, which the Crush Piler should not have any problems for penetration. I observed the Press-in operation became difficult though and I felt very rushed due to lack of my experience, then I asked for my seniors' advice for problem solving. With having their advice, I have learned that even though the soil boring log is important but the prediction of problems by hearing the sound during augering process and making an appropriate judgement is very important on the job site. The advice is still useful in this construction.

Mr. Matsuzawa: I also experienced difficulties at project of aseismic reinforcement to embankment at Takadanobaba, Tokyo three years ago. The project was ordered as the steel sheet piles Press-in with Crush Piler in accordance with the specifications but some H shaped steel piles were left in the ground. We tried to extract H shaped steel piles (12 m in length!) with Crush Piler and its successfully done, otherwise we might have to divert the press-in line from the initial plan. The extra efforts ended up with adjustments to construction schedule with re-arrangement of manpower and machines. Through this experience, I become keenly aware of the importance of the on-site inspection to identify the existing condition before the commencement of the work.

Q6. Please share your prediction with us about the future of the Press-in Technology.

Mr. Matsuzawa: GRB system (Non-staging System) is the system that enables all the piling machineries necessary for the Press-in operation to move by itself (self-walking) on the previously installed sheet piles. It has enormous advantage compared to other methods which require other construction machineries to occupy large area besides piling machine. Especially, Japan has a large amount of earthquake. We believe GRB system (Non-staging System) is effective method for expeditious restoration works at disaster area cause by earthquake and/or tsunami.

Mr. Asano: I fully agree with what Mr. Matsuzawa said. I often use GRB system on construction site. I hope we could use GRB system without using heavy machineries such as rough terrain crane. Also, I will make more effort to become much better by utilizing the Press-in System so I could contribute myself more through a lot of construction sites.

★Comments:

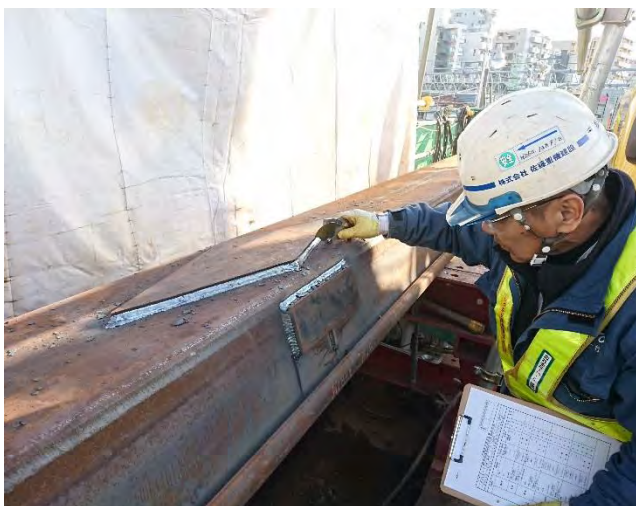
For this interview, I went to the site where Press-in machine was in operation and was so surprised that I knew that the Press-in Method could use under the restricted circumstances such as narrow space and limited construction time in night. It was very impressed that the trains I watched at construction site were felt much larger than what I see them in daily life. When those train are passing by, the site staff ceased their work, giving the train driver hand signal to assure safety with facing to huge train. I was so impressive by their attitude towards safety issue. Moreover, I found it amazingly that no claim has been received from the neighbors because of trust relationship between them and the site staff being well developed, though the construction site is surrounded by family houses. Through this interview, I strongly felt that they are proud of not only the Press-in Method but themselves, which they have experienced a lot through having hard time to deal with difficult situations.

I believe that the Press-in application adjacent to railway will be a very useful case-example internationally so that I would like to continue to introduce similar topics in our Newsletter.

I would like to express my sincere appreciation toward Mr. Matsuzawa, Mr. Asano and all who are concerned in this interview. Thank you so much.



Picture 6: Interviewing with Mr. Matsuzawa and Mr. Asano



Picture7 Mr. Matsuzawa is checking lateral joints on the site



Picture8 Mr. Asano is operating the system of self-waling backward

We welcome the on-site operators who are able to accept the interview. If you have any questions, please contact to IPA Secretariat address to Ms. Hongjuan He (ipa.ka@press-in.org). We are waiting for you!