
Patarapol Tantipidok, Ph.D.

I earned my Ph.D. at Tokyo Institute of Technology, Japan, where I studied shear resistance of reinforced concrete. Within the scope of the postdoctoral project I focused on two very special topics which govern the needs of today's building industry. These are the accelerated concrete construction and utilization of recycled concrete which is gained from demolished concrete structures. The acceleration of concrete construction is achieved by controlling the evolution of strength and stiffness of hydrating concrete for which I developed a numerical approach that is easily applicable in the practice. The developed methods were used for optimization of production of a railway sleeper which is currently under the certification process with the Czech Railway Authority. The possible utilization of recycled aggregate in concrete construction is mainly dictated by its cost-performance ratio. In order the quantify the potential benefit of using recycled aggregate, which makes then the recycled concrete, I developed an assessment method in cooperation with Ms. Dinara McLaughlin (Ph.D. student) which helps to decide the proportion between the natural and recycled aggregate to be used in concrete with respect to the minimum price while structure satisfies all relevant standards and regulations. The internship within this project, which I completed in Norway, helped me find my new employer when I will return back to my hometown, Bangkok.


doc. Ing. Petr Štemberk, Ph.D.

The selection of the proper candidate for the postdoc project casts heavy responsibility on the mentor. The criterion which I put for my potential candidates in order to complete the project with success was that the candidate studied in Japan as I have personal experience with studying in Japan. Dr. Patarapol Tantipidok, who graduated from Tokyo Institute of Technology, proved that this criterion served well its purpose. His working habits and research attitude made him a very useful member of my research team. I was most pleased by the quality of his work which was always superior. The other students participating in the research team were also motivated by his example and kindness, which may come from Thai's Buddhist background. Dr. Patarapol Tantipidok focused on numerical modelling of hardening concrete with the strict adherence to valid worldwide construction standards so that his contributions were applicable in the practice. The proposed numerical approach addressed the evolution of strength of hardening concrete, which is the primary criterion for early-age loading, and the evolution of stiffness along with long-term consequences in terms of creep and shrinkage which must satisfy the deformation of concrete structures throughout the service life. He also developed a methodology for assessment of application of recycled aggregate in ordinary concrete construction with regards to current material prices and construction standards.