

**Title** The Effect of Safety System in Construction which result on Productivity Rate

**Researcher** Sunun Monkaew  
Thawatchai Nawalerspunya  
Faculty of Engineering  
Rajamangala University of Technology Phra Nakhon  
Wannawit Teamthong  
Faculty of Engineering  
King Mongkut's University of Technology North Bangkok

**Year** 2013

### **Abstract**

The purpose of this research is to study the effect of a safety system provided for external wall plastering activity on productivity by studying a construction of commercial buildings. The safety system composed of (1) stable scaffolding system, (2) providing clean and not slip walkways on the scaffold, (3) installation of handrails not less than 0.90 meters in height along sides of the scaffold, (4) installing safety nets around outside perimeters of the scaffolding, (5) indicating working area, (6) installing stairs, (7) providing protection for people who works below, (8) providing tools and equipments for transporting material which are safe and ready for using, and (9) providing personal protective equipment for workers. Cost of the safety system is 79,665 baht for a wall area of 1,510 m<sup>2</sup>, or approximately 53 baht/m<sup>2</sup>. The prevention cost is quite high because it is an initial investment cost. However, contractors could repeat theirs used on future projects. Productivity rates for prior and after the used of safety system are 1.16 and 1.13 m<sup>2</sup>/person/hr, respectively. The productivity declines for approximately 3%. In addition, our study found an impact of predecessor activity, which is a brick laying activity. If brick walls are not well aligned and plumbed, the working time for wall plastering could take longer for 8%. Meanwhile, the wall plastering productivity could decrease for 11% and labor cost could increase for 12%.