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Vertical precast printing method for automation in construction

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ABSTRACT

The goal of this study is to develop a new method of fabricating precast members using printing technology as part of construction automation technology. Based on slip-form and 3D printing technologies, vertical precast printing device was manufactured in lab-scale, and precast fabrication with rebar fabrication experiments utilizing manufactured printing device were conducted in lab-scale. In this study also mentioned the material property criteria required for printing by using various water-to-cement ratios to fabricate precast members. For vertically printed members, shape stability must be satisfied immediately after printing begins. The material properties that satisfy shape stability were identified through the concept of waiting time and changes in water-cement ratio.

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