Committee Report: JCI-TC144A
Technical Committee on Establishment of PDCA Cycle for the Construction of High Quality Concrete Structures

委員会報告：JCI-TC144A
コンクリートの確実な施工のための PDCA サイクル研究委員会

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Abstract
The committee examined the ideal framework of the PDCA cycle in construction to increase the reliability of the current construction, which is based on the concrete quality management using the slump and air content as criteria, with the use of test methods newly proposed. To be more specific, the committee sorted and examined the technologies that can be used at each PDCA stage through a discussion of ideal framework of the PDCA cycle at two levels: site-level PDCA cycle where the concrete used in the site is verified to see whether it meets the construction performance specified at design time, and correction is made in case the concrete is out of the specifications; and planning-level PDCA cycle where constructed structure according to the construction plan that is prepared based on the construction performance specified at design time is verified at the time of completion, and an improved construction plan is suggested at the next construction.

1. Introduction
Concrete work is carefully executed in each stage of transportation, placing, compaction, finishing, curing, and removal of formwork and support, to ensure that the structural concrete has the quality specified during design time. Also, to ensure the required quality, a large number of test methods for quality management are suggested to check whether the specifications specified at each stage of execution of work are ensured, for example, whether the strength of 5 N/mm^2 is ensured at the removal of the formwork. Numerical simulation technologies for verifying the concrete filling condition in the formwork prior to the execution of work have also made progress. This committee was set up with the aim to examine the ideal framework of the PDCA cycle in concrete work required for the construction of higher-quality structures by using these test methods and numerical simulation technologies.

The members of the committee are as shown in Table-1.1. The committee consisted of the following three working groups for carrying out activities:

WG1 (PDCA Cycle Examination WG): Examine specific methods for implementing the PDCA cycle in construction using test methods for verifying the reliable construction.

WG2 (Simulation WG): Examine the applicability of the construction with numerical simulations based on a rheological theory to the PDCA cycle.

WG3 (Test Method Standardization WG): Draft standards on fresh concrete test methods to be utilized for implementing the PDCA cycle.....

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