

Subcommittee on Concrete Education

Subcommittee 201 on concrete education was established in 1988. Six sessions on concrete education, each two years in length, were held between 1988 and 2004. In sessions 1 through 5, the need for concrete education, the background of concrete education, and requests from those in the concrete field were investigated, and effective teaching methods were proposed. Those sessions, however, mainly dealt with the teaching methods in schools. In the sixth session, the committee focused on promoting continuing education and disseminating information about concrete. The seventh session, which began in November 2006, focused on continuing education for young engineers. A series of lectures were held on the fundamental points of concrete design and construction according to the JSCE Standard Specifications for Concrete Structures—Structural Performance Verification, Materials and Construction, the Recommendations for the Mix Design of Fresh Concrete, and Construction Placement Related Performance Evaluation (Concrete Library 126). The lectures covered six themes: two relating to design and four relating to construction. Each lecture lasted forty-five minutes, including a question and answer period to promote two-way communications between the lecturer and the participants.

Theme 1: (Design 1) Serviceability and Durability

Theme 2: (Design 2) Basic Knowledge of Structural Details

Theme 3: (Construction 1) Background of Concrete Library 126

Theme 4: (Construction 2) Adequate Mixture Proportions and Selection of Ready-mixed Concrete

Theme 5: (Construction 3) Basic Knowledge of Construction

Theme 6: (Construction 4) Recommendation for Mix Design of Fresh Concrete and Evaluation of Construction Placement Performance, Chapter 7 of Concrete Library 126 (Column)

The same series of lectures was held twice a month in October, November, and December 2007. The lectures took place in the evening so that the participants could attend after work.

The committee also distributed a questionnaire in order to obtain information about the JSCE Standard Specifications for Concrete Structures and the problems faced by the participants in their daily work. The information will be applied to future activities of the concrete committee.

The questionnaire covered the following nine points.

- 1: The participant's field of work
- 2: Date of lecture
- 3: Can you prepare a mixture proportion?
- 4: Evaluation of the lecture (comprehensibility and impressions)
- 5: Opinions of the JSCE Standard Specifications for Concrete Structures

- 6: Problems encountered in daily work
- 7: Empirical problems in construction
- 8: Suggestions for themes for the next lecture
- 9: Others

The subcommittee's report on concrete education was published in March 2008. The questionnaire provided much useful information. Most participants evaluated the lectures as "Adequate." For the JSCE Standard Specifications for Concrete Structures, "Specification-based" was mentioned more often than "Performance-based" because of the former's easier application to actual construction work. Furthermore, participants felt the standards were not adequately explained and lacked background data, and the bases of the coefficients of equations were unclear. The problems most often encountered during construction were pumps clogging, honeycombing or voids, segregation, cold joints, thermal cracking, and shrinkage cracking. These defects must be prevented in order to guarantee the durability of concrete structures.