

16. Application of $F_c100\text{N/mm}^2$ High-strength Concrete to High-rise Reinforced Concrete Building

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High-strength concrete that had a design strength of 100 N/mm^2 was used for a high-rise reinforced concrete apartment building. As quality control, fresh concrete test, compressive strength test and measurement of the water content per unit volume were carried out. The concrete was placed by pumping, and the changes in the quality of fresh concrete before and after pumping were investigated. To understand the long-term performances of the structural concrete, such as changes in compressive strength and the length of actual columns, a core compressive test was conducted using model columns, and the shrinkages of the actual columns were measured. As a result of construction, it was confirmed that the concrete had stable fresh properties and can be placed by pumping. The resultant concrete columns were satisfactorily filled, had compressive strength far exceeding the required strength, and formed a high-quality structural frame.

Key words : $F_c100\text{N/mm}^2$ high-strength concrete, quality control, pumping, long-term strength, shrinkage