

12. A Study on Effective Curing of Lining Concrete

Tetsuya Hironaka, Toshiyuki Ishii, Kunikazu Azuma, Hiroaki Shiraishi

Dense placement and proper curing are essential to the quality enhancement of concrete structures. For curing tunnel lining concrete in particular, new techniques have been developed and put to practical use in addition to conventional wet curing. Curing performance has, however, been evaluated parametrically while varying concrete mix proportions and curing conditions in few cases. In this study, model tests are conducted using small specimens while varying the curing method (curing in water, spraying water, curing with wet cloth, applying drying shrinkage reducer, or using improvement material), curing temperature, curing humidity and curing period as parameters. Standard mix proportions are used for lining concrete. Based on the test results, the curing methods are evaluated using the rate of reduction of drying shrinkage as an index for evaluating crack resistance, and appropriate curing methods are proposed.

Key words : curing, water content, drying shrinkage, drying shrinkage strain, coefficient of air permeability