14. Study on the Carbonation Suppressive Effects of Concrete considering the Aging of Coating Materials for Textured Finishes

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Durability of buildings against carbonation is usually estimated by thickness and water/cement ratio of concrete upon reinforcement. Giving film coating on concrete surface for finishing can be expected to suppress carbonation by blocking contact with carbon dioxide, therefore, it can be possible to give higher evaluation to building durability depending what kind of materials are used as textured finishing. We have examined carbonation suppressive effect of finish coating, considering aging of the finishing material itself. Forced carbonation tests are given to samples applied 1) Multi-layer coating E, 2) Waterproof exterior film coating material E, 3) Waterproof multi-layer coating E which are previously given chemical, physical deterioration or both. As a result, it proved to be possible to evaluate, by fixed quantity, both carbonation suppressive effects of each finishing and decay of their performance under aging. From these experiments, following formulae are lead in order to estimate procession of concrete carbonation considering aging of finishing materials.

Key words: coating materials for textured finishes, carbonation, suppressive effect, considering aging