

Evaluation of Compressive Strength and Self-Healing Properties of No-Cement Composites Using Cementitious Material-Based Capsules

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No-cement composites exhibit approximately 70% lower CO₂ emissions than cement concrete. However, since durability can be reduced due to cracking and deterioration, research on self-healing no-cement composites is needed to prevent these problems. This study compared and analyzed the compressive strength and self-healing properties of no-cement composites containing cementitious material-based capsules. As a result of the analysis, the compressive strength at 56 days of the B-FS05 sample was the highest, and the compressive strength decreased as the capsule mixing ratio increased. In terms of compressive strength recovery rate, the B-FF05 sample showed the highest compressive strength recovery rate of approximately 114% among all samples. In addition, the sample containing 10% capsules showed a compressive strength recovery rate of approximately 110~112%, which was relatively higher than that of the Control sample (99%).