

7. Study of Construction Management Methods for Direct Floor Finish on Concrete Slabs

- Effects of floor finishing Works on concrete surface quality -

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This study seeks to establish a construction method that improves concrete quality. A series of experiments was performed to determine the effects of floor finishing work on the quality of the concrete surface layer. Two grades of floor finishing methods involving mechanical trowels are defined as a general specification and a mirror finish specification for special glossy surfaces. We evaluated the quality of concrete surface layers based on hardness tests and air permeability tests performed by the Torrent method.

The results confirmed that the use of a mechanical trowel tends to increase the hardness value of the concrete surface layer. The floor finishing method based on the mirror surface specification resulted in air permeability of less than 1.0×10^{-16} m²; this method provides higher floor quality than the floor finishing method based on the general specification. Furthermore, increasing the number of floor finishing cycles reduced the air permeability and improved the quality of the concrete surface layer.

Key words: concrete, direct floor finish, hardness test, air permeability test