

The Role of Water Transport between Brick and Mortar

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Abstract:

Masonry bond is affected by the initial interaction between the masonry unit and fresh mortar. The effects of mortar and brick properties on water transport were studied by placing brick in contact with fresh mortar and examining the absorption of water, consolidation, and change in air content. Modulus of rupture evaluated the effects of the interaction on in-situ mortar strength. Several mortars and different types of brick were used to identify factors affecting water transport. Water transport was shown to measurably affect microstructure, consolidation, and strength of in-situ mortar. The addition of admixtures to the mortar influenced water transport, while variations in sand gradation of the mortar had only a slight effect on the brick-mortar interaction. The initial rate of absorption of the brick affected water transport, but alone did not sufficiently describe the suction capacity of a brick in contact with fresh mortar.

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