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Abstract	:	<p>This study explored the effects of formulation modifications of natural hydraulic lime (NHL) mortars exposed to hot temperature and high humidity conditions. The modified mortars were seeded by oyster shell powder, partially replacing the sand. The mortar samples underwent a curing period of 56 days with five observation days. The pH, carbonation depth, flexural strength, compressive strength, sorptivity, and morphology were studied. The results indicated that seeded mortars were more successful at setting and hardening high humidity settings. In addition, curing the mortars at higher temperatures hastened the hydration reaction significantly. The data indicate that seeded mortars can improve performance in several areas, notably carbonation rate (25%-45%), flexural strength (16%-60%), compressive strength (20%-55%), and sorptivity (18%-25%). The experimental protocol shows that the hardened mortar pore system is affected by the water-binder ratio, hydration level, relative humidity, and carbon dioxide concentration. The hydration of mortar greatly influences its strength. Using oyster shell powder as an aggregate substitute increased the performance of the mortars by microstructure and capillarity development. This circumstance is significant in our comprehension of modified lime mortars and seeding compounds, especially in hot-humid environments.</p>