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Water Repellent Coatings on Mud Walls

Silicones are being increasingly used in the protection of masonry due to their water-repellent property. Encouraged by our work on fired briquettes, we undertook studies on the application of water soluble silicones to *kutcha* bricks and mud walls.

Treated and untreated *kutcha* bricks were immersed in water (0.8 in. layer) to test their water-repellent properties. While the untreated briquettes crumbled after 40 min., the coated ones lasted over 110 days (Fig. 1). When subjected to a continuous water spray, the treated briquettes showed minor pitting after 72 hr., while the uncoated briquettes disintegrated immediately. In weathering tests, uncoated full size bricks were washed away in the first rain, whereas the coated ones remained intact even after 69 days with over 30 in. of rain.

Silicone-coated panels (6 ft. x 4 ft. x 13 1/2 in.) when subjected to a constant water spray for 6 hr., remained dry and did not suffer

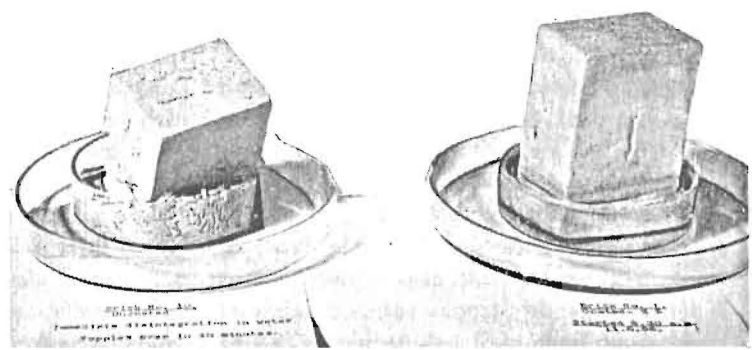


FIG. 1 — IMMERSION TEST FOR BRIQUETTES — UNCOATED (LEFT); SILICONE-COATED (RIGHT)

any damage. An uncoated panel was completely wetted and badly damaged within 2 hr

Silicones, due to their hydrophobic nature, render the surface highly water-repellent. The coated panels presented a completely dry appearance during and after the test or rainfall, in contrast to

other panels which became wet. Unlike other water-proofing treatments, silicones do not block capillaries and allow 'breathing'.

The work has been extended to panels and wall surfaces in a village house for natural weathering. — M.M. SINGH & N.K. PATWARDHAN 'CBRI, Roorkee.