

## Development of organosilicon decorative coating with craquelure effect

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### Abstract

The article analyzes coatings based on organosilicon compounds and presents the results of research on the selection components of compositions that provide protection of painted products from corrosive environments, mechanical and thermal effects. Defects of paint and varnish coatings are investigated. The expediency of modifying organosilicon film-forming compositions with solutions bead polymers of polymethyl methacrylate and polybutyl methacrylate has been substantiated. To obtain a heat-resistant coating, two compositions were developed for the lower and upper layers. The bottom layer was KO-85 organosilicon varnish modified with solutions of bead polymers and PF-060 alkyd varnish. To regulate the wetting and spreading, surfactants were introduced into the bottom layer, which could improve the structural, mechanical and decorative properties of the coatings. The top layer of the coating with the craquelure effect was KO-868 silicone enamel modified with functional additives that increase the surface tension and reduce the spreadability of the resulting composition. Research has been carried out on the physica-mechanical (adhesion, impact strength, elasticity of the film during bending), decorative (change in gloss, color, dirt retention, chalking) and protective (cracking, peeling, weathering, bubble formation, corrosion of metaln, wrinkling, dissolution) properties of a two-layer coating, as well as its resistance to water, gasoline, mineral oil and temperature.

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