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agric@tubitak.gov.tr

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The Effects of Wood Bleaching Chemicals on The Surface Gloss and the Adhesion Strength of Varnishes

Ayhan ÖZÇİFÇİ, Musa ATAR
Gazi Üniversitesi Teknik Eğitim Fakültesi Mobilya ve Dek. Böl., Ankara - TÜRKİYE
Burhanettin UYSAL
Yüzüncü Yıl Üniv. Van MYO Mobilya ve Dek. Böl., 65080 Van-TÜRKİYE

Abstract: In this research, sodium hydroxide + hydrogen peroxide, sodium hydroxide + calcium hydroxide + hydrogen peroxide, hypochlorite and hydrochloric acid were applied to pine (Pinus sylvestris L), oriental beech (Fagus orientalis Lipsky), ash wood (Fraxinus lanceolata) and oak (Quercus petraea spp.) for bleaching. Next, acrylic, synthetic, polyurethane and acid-catalyzed varnishes aplied on the bleached wood samples. Afterwards, the effects of these bleaches on the surface brightness and the adhession strength of varnishes were studied. The results indicate that the bleaching agents used did not affect surface gloss, whereas the type of wood and varnish did. Acrylic varnish yielded the glossiest surface while acid-catalyzed varnishes gave the least glossy surface. It was determined that the HCI solution had decreased the adhesion strength of varnishes.

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