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Foam Dyeing and Functional Finishing of Polyester Spunlaced Nonwovens

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This study was to investigate the application of foam finishing technology(FFT) for the dyeing and soil release(SR) finishing of polyester spunlaced nonwoven fabric for apparel use and the fluorochemical finishing of polyester spunlaced nonwoven fabric for interior use. The reflectance of dyed cloth with C.I. Disperse Red 4, SR properties, such as water absorption and reflectance, with polyester-polyether SR agent and water-oil-soil repellency properties and selected physical properties with fluorochmical repellent agent were demonstrated, and then compared the foam dyeing and finishing with the conventional carrier-high temperature dyeing and padding application. The equilibrium dye concentration of polyester spunlaced nonwoven fabric was 6%(o.w.f.) of dye concentration in carrier dyeing system and 4%(o.w.f.) of dye concentration in high temperature dyeing system, but it could not reached equilibrium at 20g/ℓ of dye concentration in foam dyeing system. Then it was required more than 20g/ℓ of dye concentration to yield a deep shade of nonwoven fabric in foam dyeing system. The water absorption and SR properties of polyester spunlaced nonwoven fabric were improved equivalently with both techniques. The foam finished nonwoven fabric treated with fluorochemical repellent agent added to reactive nitrogenous extender showed more soft handle and higher soil and abrasion resistance than the same nonwoven fabric finished conventionally.