

Study of Finishing Application on Aliphatic Polyurethane Dispersion and Polyurethane/Polyacrylate Composite Emulsion

*Shuling Chai**

School of Light Chemistry and Environmental Engineering, Shandong Institute of Light Industry, Jinan
250353, Shandong, P.R. China

*Corresponding author, Phone: +86-(0)-15066155145, E-mail: shulingchai@yahoo.com.cn

Abstract: The study about finishing application in pig garment leather was carried out with the synthesized anionic polyurethane (PU) dispersion, the core-shell and interpenetrating structure polyurethane/polyacrylate (PUA) hybrid emulsions as film forming agents. The wet rub fastness, solvent resistance, flex resistance and adhesive fastness of the coat on the finished leather were measured respectively. The results are as follows: (1) the synthesized anionic polyurethane dispersion, the core-shell structure PUA and interpenetrating structure PUA composite emulsions all showed good film forming properties, good covering grain damage and mending properties and strong adhesive force to the leather. The finished leathers had good feel of real leather. The grain surfaces were smooth, flat and natural. Also, the properties of wet fastness, solvent resistance and flex resistance were improved. The PU dispersion, core-shell and interpenetrating PUA composite emulsions were all fit for the finishing of the garment leather. (2) As for the wet rub fastness, solvent resistance and adhesive resistance, the interpenetrating PUA was the best, and the PU dispersion was the worse. But as for the flex resistance, both the PU dispersion and core-shell PUA were better than the interpenetrating PUA.

Key words: polyurethane; polyurethane / polyacrylate; leather finishing; core-shell; interpenetrating