

Application of Marbling Art onto the Vegetable and Chrome Tanned Leathers

Krom ve Bitkisel Tabaklanmış Derilerin Üzerine Ebru Sanatının Uygulanması

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SUMMARY

Marbling is a traditional decoration art that is made on the paper, fabric, glass and wood. In this study; special marbling dye, leather finishing pigments, and soil dye with ox gall were used as colorants and traditional marbling art was applied onto the vegetable and chrome tanned leathers. Then a top coat finishing was applied for a group of them. The leathers with marbling art were tested for water-stain and wet-dry rubbing fastness. It is concluded that, chrome tanned and dyed with finishing pigments or special marbling dyes and then finished ones were convenient for clothing manufacturing, the rests were more suitable as accessory and decoration materials.

Keywords: Leather, Marbling Art, Finishing Dye

ÖZET

Ebru; kağıt, seramik ve ağaç gibi malzemelerin üzerine yapılan geleneksel süsleme sanatıdır. Bu çalışmada; özel hazır ebru boyası, sığır ödlü finisaj pigment ve toprak boyaları kullanarak krom ve bitkisel tabaklanmış derilerin üzerine geleneksel ebru sanatı uygulanmıştır. Daha sonra bir grup deriye üst kat finisaj yapılmıştır. Ebru sanatı uygulanmış derilerin yaş-kuru sürtme haslıkları ve su lekesi haslığı test edilmiştir. Kromla tabaklanmış, finisaj pigmentleri veya özel ebru boyaları ile boyanmış ve finisajlanmış olan derilerin giysilik; diğerlerinin aksesuar ve dekorasyon amaçlı kullanımlar için uygun olduğu sonucuna varılmıştır.

Anahtar Kelimeler: Deri, Ebru Sanatı, Finisaj Boyası

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Introduction

Manufactures of ready wear have worked that they feature to design in order to be able to power to compete in the international market. One of fashion factor is to develop different finishing methods and apply them to leather.¹ In this sense marbling art may be one of the alternatives. The most important property of marbling art is that the created pattern can not be reproduced, so it is convenient for boutique claim either textile or leather manufacture. In this work made onto the vegetable and chrome tanned leathers² and they were tested for water-stain and wet-dry rubbing fastness.

Paper marbling is a method of aqueous surface design, which can produce patterns similar to marble or other stone, hence the name. The patterns are the result of colour floated on either plain water or a viscous solution known as size, and then carefully transferred to a sheet of paper or other convenient surfaces. This decorative material has been used to cover a variety of surfaces for several centuries. It is often employed as a writing surface for calligraphy, and especially book covers and endpapers in bookbinding and stationery. Part of its appeal is that each print is a unique monotype. The simplest form, and probably the oldest, is made in Japan and is known as Suminagashi; a shallow tray filled with water, and ground sumi ink, as well as ai indigo dye, and beni a colour derived from safflower, are carefully applied to the surface with an ink brush.

Another method of marbling is made on the surface of a viscous mucilage.³ The viscous mucilage is generally insist on natural gum tragacanth (*Astragalus* spp), is a viscous, odorless, tasteless, water soluble mixture of polysaccharides obtained from sap which is drained from the root of the plant and dried. It absorbs water to become a gel and also is used emulsifier, thickener and stabilizer.⁴

Ox gall which is used as the wetting agent in marbling and is mixed with pigments, is a greenish-brown liquid mixture containing cholesterol, lecithin, taurocholic acid, and glycolic acid.⁵ It is put inside the dyes that is used pigments and oxide dyes, and they have been waited for 3 weeks. These are spattered or dropped onto the size with brushes, making horse hair, one colour after another, until there is a dense pattern of several colours. The paper is laid down on the surface of aqueous media and the pattern is transferred from media to the paper and dried. In this study, it is aimed to find out which tanning type and colourant are more convenient to the leather marbling art and effect of finishing

on durability of pattern. The marbling art was applied on the grouped leathers and they were tested for water stain and wet-dry rubbing fastness.²

Material and Methods

Material

10 chromium and 10 vegetable tanned crust leathers are used for marbling. As colourant; soil dyes, special marbling dyes (*Pebeo brand marbling paints*) and leather finishing inorganic pigments (*Verbo*) were used. Ox gall was supplied from local market.

Method

Above mentioned marbling technic for paper were used for leathers too. Applied colours were limited as red and blue to have more easily comparable results. The soil dyes and finishing pigments are prepared individually as a ratio of 60% dye and 40% aqua, in a 500 ml bottle, are added 70 drops ox gall and have been waited for a week.

The application was made with vegetable and wet-blue crust leathers. To search which type of dye fix better to the leather, three different applications were made. These are: Soil dyes with gall, leather finishing dyes with gall and special marbling dyes without gall. Then the leathers were laid down onto the viscous aqueous med in order to transfer pattern on leather surface like traditional marbling art. After drying, the leather samples with marbling art were separated into 2 groups to define the effect of finishing on durability of pattern. A top coat finishing process was applied one of these groups while other remained intact. Then following fastness tests were applied.

Wet-dry rubbing Fastness

TS, EN, ISO 11640 (IUF 450)⁶ Leather colour fastness to cycles of to-and-fro rubbing tests were processed. Wet-dry felts that were conditioned according to TS, EN, ISO 2419 (IUP 1-3)⁷ used in order to determine resistance surface of the leathers and change of colour in the felts was evaluated by the grey scale according to TS, EN, ISO 105-A02 (IUF 131)⁸ and TS, EN, ISO 105-A03 (IUF 132).⁹

Water-spotting Fastness

TS, EN, ISO 15700 (IUF 420)¹⁰ Leather colour fastness

to water spotting; stain effect that is occurred by water on all kinds of leathers was assessed whether cause any changing at the physical appearance and colour, or not and also colour changing of leathers was evaluated at the grey scala according to IUF 131 (TS,EN, ISO 105-A02) ⁸ and 132 (TS,EN, ISO 105-A03) ⁹

Results

Wet-dry rubbing Fastness

Table 1. indicates that, there are not any differences for characteristics of dye fixation between the chrome and vegetable tanned leathers. After finishing application, chrommed ones had better results. soil dye gave the worst results for all application parameters. Among the three types

of dyes, Special dyes and finishing pigments gave same results except chrommed and finished leathers which is slightly superior then special dyes.

Water-spotting Fastness

Table 2. indicates that, chrome tanned leathers had better values then other group for both finished or not. There are not any differences among the types of dyes for vegetable tanned leathers. For the chrome tanned leathers the special dye and the finishing pigment showed be applied marbling art with soil dye, the chrome tanned leathers was show the best results towards tter performance according to the soil dye and finishing application developed this property positively.

		Without Finishing			With Finishing		
V.T.L		Soil Dye	Special Dye	Finishing Pigment	Soil Dye	Special Dye	Finishing Pigment
Leather	Dry	1	4	4	1	4	4
	Wet	1	1	1	1	1	1
Felt	Dry	1	2	4	1	2	4
	Wet	1	1	1	1	1	1
C.T.L							
Leather	Dry	1	4	4	3	5	5
	Wet	1	1	1	2	2	3
Felt	Dry	1	4	4/5	2	4/5	5
	Wet	1	1	1	1/2	1/2	2

Table 1. Wet-Dry rubbing Fastness of made marbling of the vegetable(VTL)and chrome (CTL) tanned leathers

		Without Finishing			With Finishing		
V.T.L		Soil Dye	Special Dye	Finishing Pigment	Soil Dye	Special Dye	Finishing Pigment
After 30 min*		1	1	1	1	1	1
After 24 hours		2	3	3	2	3	3
C.T.L							
After 30 min*		1	3	4	3	5	5
After 24 hours		2	4	3	2	4	4

Table 2. Water-stain Fastness of made marbling of the vegetable and chrome tanned leathers

Conclusion

The results of made tests are that the vegetable tanned leathers gave less efficiency result than the chrome tanned leathers; finishing pigments and special dyes gave almost similiar results so we can say that they have same origin and to protect the pattern surface by finishing application is beneficial for chrome tanned leathers.

It is also found out that while the marbling leather which is dyed with finishing pigments or special dyes and top coated by finishing is convenient for using clothing leather, the ones without finishing are more convenient for using as accessory and decoration materials. Also the leathers with marbling art are had to look into different factors and their water-stain resistance is had to develop to the water.

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