

## TESTING OF COMBINATIONS OF MATERIALS AND PATTERNS

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**Annotation:** This article analyzes the importance of the process of testing the combination of materials and patterns in design and light industry. In the modern fashion and textile industry, the harmonization of various materials and the effective use of patterns serve to improve the aesthetic and functional quality of products. Throughout the study, it was substantiated that combination testing is an important tool for improving product quality, creating new design solutions, and meeting consumer needs.

**Keywords:** material, pattern, combination, design, texture, color harmony, fashion, composition, knitwear, aesthetics.

Today, the fashion and textile industry is one of the fastest growing industries. The modern consumer is demanding not only high-quality, but also aesthetically perfect. For this reason, designers pay special attention to the creation of new combinations of forms, materials and patterns. The combination of materials and patterns not only determines the overall look of a product but also influences its functional properties. It is possible to give a new aesthetic appearance to the product by combining different materials. For example, by combining knitted fabric with satin or jeans, a stylish and original design is created. Patterns, on the other hand, increase the artistic value of the product and give it a spirit of nationalism or modernity. Especially the combination of color and texture plays an important place in the design. The purpose of this article is to study the theoretical foundations of testing combinations of materials and patterns, to highlight their significance in design and to analyze the features of their application in the modern fashion industry.

Testing the combination of materials and patterns is one of the most important steps in the design process. When creating a product, the designer conducts a deep analysis of the physical and aesthetic properties of the material. Each material has specific properties of Texture, Density, Elasticity and Color Reception which these factors influence the overall appearance of a product. Therefore, the right choice of materials and their harmony with patterns are one of the key factors for design success. (1).

Textile materials are diverse, and they are made from natural, artificial and mixed fibers. Natural materials such as cotton, silk, wool and linen are distinguished by environmental friendliness and convenience. And artificial materials are widely used by the sturdiness and cheapness of them. The designer takes into account the function, seasonality and needs of the consumer of the product when choosing the material. For example, in winter clothes heat retaining materials are used, then in summer collections they prefer light and breathable fabrics. Patterns form the artistic basis of the design. Patterns can be geometric, vegetative, abstract or national style. Each pattern represents a specific meaning and mood. Geometric patterns denote rigidity and order, while vegetative patterns are a symbol of nature and elegance. And national patterns reflect the cultural heritage and traditions of the people. (2).



In the combination of material and pattern, color harmony is especially valuable. Color has a strong influence on human psychology and plays an important role in the perception of the product. When choosing colors, the designer takes into account their contrast, harmony and emotional impact. For example, bright colors express energy and activity, while pastel colors evoke a sense of calm and sophistication. The theory of composition is one of the fundamental principles in the creation of combinations. The composition provides a balanced arrangement of all elements in the product. (3).

In order for the material and patterns to harmonize with each other, their size, shape and color proportions are taken into account. Improper composition can spoil the aesthetic appearance of the product. Texture is also an important component of combinations. Texture refers to the surface structure of the fabric and influences the perception of the product through intuition. The soft and smooth textures convey a sense of elegance, while the rough textures convey strength and determination. Designers create original design solutions by combining different textures. In the industry of modern fashion, combinations of materials are widely used. (4).

For example, the combination of knitted and leather, silk and denim, satin and cotton fabrics creates a new aesthetic look. Such combinations enhance not only the appearance of the product, but also its functional properties. In the combination of patterns, the concepts of rhythm and proportion play an important role. Rhythm is formed through the repetition of pattern elements and gives the product a sense of movement. And proportion determines the ratio of patterns. Too large or too small patterns can negatively affect the overall appearance of the product. (5).

The use of national patterns is one of the current trends in modern design. Uzbek national ornaments, satin and adras motifs are widely used in the design of contemporary clothing. And this will allow to preserve the national culture and blend it with global fashion. Digital technology has further advanced the process of testing material and pattern combinations. With the help of special computer programs, designers can test colors and patterns virtually. This reduces time and cost and helps to create new creative solutions. (6).

3D modeling technologies also play an important role in the design process. Designers have the opportunity to create a virtual model of the product and pre-evaluate various combinations of materials and patterns. And this reduces errors in production. The concept of ecological design is also an important focus in material combinations. Today, much attention is paid to eco-friendly and the use of recyclable materials. Organic cotton, bamboo fiber, and recycled fabrics play an important role in the development of eco-fashion. (7).

Changing consumer tastes also affect design combinations. Modern customers prefer comfortable, aesthetic and ecological products. For this reason, designers strive to use innovative materials. Testing combinations when creating fashion collections is an integral part of the creative process. Each collection is designed on the basis of a specific idea, and the combination of material and pattern serves as the main aesthetic tool.

In combination of material and pattern, contrast method is also widely used. The combination of contrasting texture or colors makes the product more attractive. For example, the combination of a smooth satin and a rough knitwear creates an interesting visual effect. The minimalist method is also widely used in combinations. The minimalist design is dominated by simple forms, a small number of patterns and natural colors. This style occupies an important place in the trends of modern fashion. The issue of ergonomics is also important when creating combinations. The product should not only be beautiful, but also easy to use. Due to this, weight, softness and air permeability of the material are taken into account.

Psychologically, too, patterns and materials affect a person's mood. Bright and active patterns evoke a sense of energy, while quieter colors and simpler patterns convey a sense of peace. In general, the testing of combinations of materials and patterns is an important scientific



and practical area of design, which serves to increase the aesthetic, functional and economic value of the product. Modern technologies and creative approaches create new design solutions that contribute to the development of fashion industry. (6).

**Conclusion:** In conclusion, testing the combination of materials and patterns is one of the most important areas of the contemporary design and fashion industry. The combination of physical and aesthetic properties of various materials and the effective use of patterns add to the artistic value of the product. Especially the proper choice of color, texture and composition makes the product attractive. Modern technologies are helping designers to virtually test and refine combinations, creating new opportunities. The use of national patterns, on the other hand, gives the products originality and cultural significance. At the same time, the use of eco-friendly materials and the adherence to sustainable fashion principles remain one of the most pressing issues of today. Testing material and pattern combinations is not only aesthetically pleasing, but also cost-effective. A well-designed design enhances the success of the product in the market and satisfies the satisfaction of the consumers. Therefore, in-depth study of this direction is of great importance in the development of light industry and design.

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