

# Primary Study on Design of the Strip Sandals

*Fuquan Deng<sup>1,\*</sup>, Taisheng Gong<sup>1</sup>, Haiting Li<sup>2</sup>, Hua Jin<sup>1</sup>,*

<sup>1</sup> College of Resources and Environments, Shanxi University of Science and Technology, Xi an 710021, P. R. China

<sup>2</sup> College of Foreign Languages and Communications, Shanxi University of Science and Technology, Xi an 710021, P. R. China

**Abstract:** The importance to the shoe making enterprises of the design and production of the complete hollow-out strip sandals was first introduced. Then the general design rules of such sandals were elaborated in detail on the basis of the upper material selection, color collocation and structure design. The first rule is precision: the position of the strips should be precisely linked to the foot type. The second is wholeness: the upper surface, the sole, the heel and the insole should be designed as a whole. The last is richness: the colors should be flexibly matched and the materials should be variably selected.

**Key words:** trip sandals; design; color; material

## 1 Introduction

A pair of harmonious shoes to go with the various summer dresses will add great beauty to females in summer. Strip sandals, with their comfortable and convenient wearing as well as novel and peculiar styles, particularly symbolize the elegance, personality, and tastes of the females.

## 2 The significance of sandal production

The target of the shoe-making enterprises is to make as much profit as possible and sandal production is significant to profit maximalization of shoe-making enterprises. First, the upper of the sandals are comprised of strips with smaller area, less material and lower cost for raw materials. Furthermore, materials for upper making are often some substitute such as leatheroid, further deducing the cost. Secondly, because of the simple upper structure, the sandal production is much simpler than shoes with complete upper, therefore further reducing the cost. All these factors contribute to the comparatively low cost of sandal making and increased profit. The risk of sandal making is greatly reduced and the order of sandal is usually more than 1000 pairs a time.

## 3 Features of female strip sandal

The upper and the vamp of the female strip sandal are composed of strips and there are various styles. The strips may be wide or narrow; the number can be more or fewer; they can be cross or traverse combined; they can be stitched together or remain separate. In designing strip sandals, the most important is not sample making but the positional relations of the strips, the binding potential, and the positioning of the strips on the last. Meanwhile in selecting the material, the particular attention should be paid to the fastness of the strip.

## 4 Rules of designing female strip sandals

The procedures of designing female strip sandals are as follows. First appropriate last should be

---

\* Corresponding author. Phone: +86-(0)-13468850866. E-mail: [dengfuquan@sust.edu.cn](mailto:dengfuquan@sust.edu.cn)

selected and the characteristic points should be marked on the last according to the bones in the feet. Then positions and the shapes of the strips should be fixed. Finally the samples should be made. To sum up, the rules for designing female strip sandals are listed below.

#### **4.1 The characteristic points should be closely linked with the bones in the feet**

The upper and vamp of female strip sandals are mainly composed of strips. These small strips should be appropriate for wearing. The strips usually bear too much force, so it is significant to fix the strips positions.

##### **4.1.1 Fixing strips at the toe part vamp**

The strips at the toe part vamp of the sandals have various styles. To fix the strip positions on the brink of the last bottom, the following four rules concerning the bones in the feet should be attended to: the exterior emboss of the hallux (90% of the foot length), the tip of the little toe (82.5% of the foot length), first metatarsophalangeal joint (72.5% of the foot length), and fifth metatarsophalangeal joint (63.5% of the foot length).

When the strips are wide, the inside part should be indented 10mm at the tip of the hallux to make the designed point positioned between the tip of the hallux and the exterior emboss of the hallux and the outside part should be extended 5mm beyond the tip of the little toe. When the strips are narrow, the inside part should be positioned between the exterior emboss of the hallux and first metatarsophalangeal joint, and the inside should be extended 5mm beyond the tip of the little toe so that the little toe is included in the strips; or the tip of the little toe should be indented 5mm so that the designed point should be positioned between the tip of the little toe and the fifth metatarsophalangeal joint. The two cases are illustrated as Fig. 1 (a) and Fig. 1 (b) respectively. The first strip in Fig. 1 (c) is apparently not appropriately positioned.



**Fig. 1 The relations between the positions of the strips and the toes**

##### **4.1.2 Fixing strips at the heel part**

There are two classical styles of heel part strips as illustrated in Fig. 2. These strips of these two styles are simplistically designed and conveniently put on and off. Because of the various demands and personalities of the female consumers, various styles of strips with different forms are endlessly produced as illustrated in Fig. 3. Despite the various forms of strips, the position at the brink of the last bottom should be located at the point 5mm in front of the center of the heel to ensure the wearing function.



**Fig. 2 Classic style of strips at the heel part**



**Fig. 3 Various forms of heel part strips**

#### **4.2 Wide application of materials and rich color design**

In recent years, the development and strengthening of new materials enable more materials employed in sandals making. Besides the traditional natural leather, there are various materials such as textile products, artificial leather, synthetic leather, knitting and fabrics and materials with metal tactile sensation. Because of small upper and fewer strips, the ventilation property of the natural leather is out of the supremacy, whereas the artificial and synthetic leather is superior to the natural leather because of its rich color, homogeneous quality and low cost, as illustrated in Fig. 4 (a). In Fig. 4 (b) and Fig. 4 (c), chiffon and satin are employed as the vamp material with effects of fringe and folds, which make the shoes appear soft and feminine, to add charms to elegance.



**Fig. 4 Sandals made of various materials**

In particular, the knitting is not only employed as the vamp but also the heel. The raw materials for the knitting are various, not restricted to strings, straws and hemp, but extending to fabrics, plastics and leather. With the same knitting methods, the combination of different colors and materials will produce highly different tastes. For example, the smart combination of leather and straw will add delicacy to rusticity. The combination of the knitting vamp with other popular elements such as satin strips, laces and flash cards will produce an eye-catching effect and novel vision. The rich effects are illustrated in Fig. 5.



**Fig. 5 Application of knitting in sandals**

In human visual perception and acceptance of shoes, the information of color transmits most quickly with the deepest emotion expression and strongest visual compact. In sandal designing, the color combination can be bolder as illustrated in Fig. 6. The bright scarlet and orange and serene blue can be directly employed in sandal strips. The live green is seldom employed in shoes with complete uppers, whereas it will give a cool and novel sense when employed in sandals.



**Fig. 6 Bold combination of bright colors**

#### **4.3 Wide space for exhibition and complete prominent molding**

The style of any make of shoes is composed of three elements: the last (providing the basic molding), the upper, and the sole. A make of shoes perfused with fashionable properties is determined by the last, which is the essence of the shoes; the fringe of the upper with fashion and the make of the sole which matches naturally with the upper. Therefore, in designing a part of the shoes, it is important to keep the style of the whole shoes in mind.

This is particularly true with sandal designing for the scarce upper and vamp parts, so the variation of the upper styles is quite limited. So the upper and vamp, the sole, the heel, and insole should be designed systematically as a whole in fringe. As illustrated in Fig. 7, the sandal is a make very popular this year with thick sole and thin heel. With the snakeskin decoration and blackwood carving, the sole show the mystery of the primitive clans and red strings with stone tassels shows the Chinese archaic style. On the sole, the oriental elements and the clan complex in the upper are knit into a whole. As for the sandal in Fig. 7 (b), the upper is composed of abundant and light tassels; the buckle is fastened onto the ankle as a female watchband; the bandage at the front is fastened with nails passing through the small holes at the sole. The completely white bandage, slim and elegant, making female nobility more prominent while the intertwining and exposing show the sexiness and purity of femininity. In Fig. 7 (c), the inspiration of the silvery sandal comes from the spray fountain in European courts. The shoe strip is slim and intertwining with the marble carving. The water waves from the cobblestone make the pattern of the sole. The main part of the spray fountain of the naked sexy sculpture makes the heel, which shows the

classical and romantic style.



**Fig.7 Design with prominent whole molding**

## **5 Conclusions**

Fashion changes and trends shifts. The objective of the sandal designer is to pursue personal development, to make design breakthrough, to actively seek new design symbol and expression for novelty, uniqueness and aestheticism. Moreover the rapid developing market demands require that the designers follow the fashion and seek novelty, uniqueness and personality. The designers should boldly exert their imagination and creativity and seek inspiration from traditional cultures so that they will design sandals according to the discipline from the perspectives of art styles, connotation, forms and expression with their particular targets.