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Research on application in fashion design clothing ergonomics

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ABSTRACT

Garment ergonomics is a new subject in recent decades, is a branch of ergonomics, the object of the research is 'human clothing environment system -- -- ', starting from the body for the various requirements of the angle, the request to clothing design and manufacture, to creator service in quantitative intelligence situation to make the design as much as possible, to maximize the fit for the needs of the human body.

KEYWORDS

Clothing design; Clothing structure; The structure of the human body; Psychological reaction.



INTRODUCTION

What is fashion ergonomics? Perhaps for the people this is a strange word, but he is always provide convenience to our life, and its main research direction has six points: (1) human shape and motion mechanism, psychological and physiological function. (2) the relationship between the body and the clothing hygiene, physiological reaction, involving the skin and clothing material of the clothing clothing clothing pressure, pollution, such as static electricity. (3) the relationship between the body and the packaging materials, varieties and high-tech materials to human body engineering value, human and material suitability, coordination of materials and styles, the application research in the clothing of the climate and human body heat exchange environment. (4) the relationship between human engineering and apparel modeling of quantitative change, how to achieve human dignity and style structure of trochaic clothing logo, graphics and engineering requirements of human psychological responses to colors. (5) the body shape measurement and statistical value orientation in the batch clothing and high fashion in clothing, CAD 3D space efficiency, evaluation models and specifications. (6) the relationship between the body and the special occupation clothing, work space and clothing requirements.

So what is the fashion design? Fashion design is a science and technology and art collocation focus, involves aesthetics, culturology, psychology, material science, engineering, marketing, color and other factors. "Design" refers to the plan, idea, conception, establishment scheme, also contain images, drawing, a type of meaning." Garment design process "is conceived according to the design requirements of the object, and draw out the effect graph, planar graph, then according to the drawings for production, to complete the whole design process".

So what are the application of clothing ergonomics research in the design of clothing? I think there are the following points: One. In the application of garment design. Two. The human body engineering in the application of the process of garment production. Three. Application of human engineering in structural design. Four. Application of human engineering in the functional clothing in. Five. Application of human engineering in the clothing pressure. Six. Application of human engineering in the special professional clothing in. Below we talk about specific.

GARMENT ERGONOMICS APPLICATION IN GARMENT DESIGN

The garment sculpt. Is the first step in costume design, it is to create the fashion image creation activities, it also refers to the created image of clothing, including clothing and other styles of dress of people after dress and hair and makeup after complete overall image. Obviously, the relationship between fashion design and the human body are inseparable^[1].

I think the so-called clothing style is to wear good-looking, can express the wearer's personality, can highlight the advantages of the body wear the author covered up the shortcomings of the body.

The defect of normal human body appearance a lot, but clothing is an important application of the research of repairing the defects of the body is not perfect. For example, a man wearing a straight, delicate suit, on the shoulder, chest and waist to depict the modification research and application of the person can appear trim, personable. Here is the clothing process indispensable status in the structure design. High quality suit in the chest to padded chest line, appear male breast crisp and full; The shoulder and shoulder pads, shoulders is thick and smooth; Armhole place make roll sleeve processing, appear shoulder peak tower round, flat vertical sleeve body smoothly. Suit barge head set door of fold is usually not death but an arc bending, it is on the visual modeling to produce a natural beauty of topology. In addition, the shoulder seam shrinkage and heat setting process, the formation of creases, pants, hip to pull out, are made by the modelling process implementation effect; Process of pressing objectively pull up to the application research on structural design of the province. Made in the suit deal with these supplement the neat, mostly due to strong and handsome male body is yearning, small part is based on rules, the ritual

THE APPLICATION OF ERGONOMICS IN THE CLOTHING PRODUCTION PROCESS

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On women's clothing modelling, also often in order to realize such as shoulder high flat, busty forceful effect. Reflected in the structure design, is required to grasp the actual human body into the credibility of the human body and the appropriate degree of ideal.

APPLICATION OF HUMAN ENGINEERING IN STRUCTURAL DESIGN

Clothing should behave, comfort and aesthetic, it should conform to the law of human engineering human engineering should also be fully reflected in every aspect of clothing structure design. Whether body size measure according to the static measurement and dynamic measurement, or other body includes design, process parameters design and dynamic changes of design pattern design, or finishing cut pieces in clothing structure design moulding line processing, and opposite to material selection and detection, thus realizing the harmony between man and the clothing, the environment.

To meet the changing body shape convex and three-dimensional modeling requirements, single in the fabric design, pleat dart is not enough, but also on the lining and lining structure design necessary, in addition, processing to pull process also need to make cloth, yarn shortened or elongated; deformation, the movement of the human body will produce different skin posture, muscle tension change is also different, only accurate to reflect this change factors and human activities to adapt to the rules of pattern design phase.

The first: Pattern design, namely the structure, important In the design should emphasize the functional design, to the appearance of morphology and dynamic change law of human body on the basis of mutual penetration.

Clothing material changes during the processing quantity and different process parameter selection should also be combined into structure design. On human engineering requirements in the rational design of the performance of the pattern, whether it is a three-dimensional shape design, design or dynamic change, should give full consideration to this point. So to show different characteristics of the human body, need a lot of practice experience and skills to supplement, combined with the properties of fabrics and the production process conditions, make the clothing to crowd into a meet the body, wrapped the body of three-dimensional space, and it has certain human activities to adapt to the amount of space and activity.

Second: Performance in finish machining pieces. Defect of common human appearance of many, but not perfect a research important application of clothes is the human body dressing on the defects.

For example, the suit is quite broad, to study on Application of modified in the shoulder, chest, waist, people are well proportioned, graceful bearing, here is the embodiment of clothing technology is indispensable in structure design position. For example, high quality suit to add chest lining in the chest, shoulder and shoulder pads, the armhole for rolling sleeve processing, lapel in folding forms a bending arc of a door place, and to pull the ironing process, all of these processing techniques, mostly out of the ideal type of longing, a small part is the rules of etiquette, concise effect, based on the consideration of the transformation, in the structural design of the structure of the human body, is the ordinary compliant motion. In the women's clothing modelling, often to achieve such as shoulder tall straight, chest plump and forceful effect.

Third:The application of fabric, fabric factors to adapt to the requirements of ergonomics in structure design.

Combined with the fabric Considering the influence of human factors engineering structural design of clothing, can be divided into thick fabric according to texture, thin, soft and strong and so on the different category. The shirt by bottom material can be divided into combed cotton shirt, silk shirt, shirt, cotton crepe de Chine blouse, the selection with a light, thin, soft, cool, very, good air permeability and ideal. The shirt collar lining used hot melt adhesive material, therefore in the washing to avoid using above 60 degrees warm water immersion. The shirt before, with white poplin, now more use of Dacron, silk, yarn and various kinds of chemical fiber made shirts. The style is collar, lapel, small lapel, ladies also have - or bald collar. Generally speaking, short sleeved T-shirts to bald collar and the majority, long sleeved with small Lapel for more.

APPLICATION OF HUMAN ENGINEERING IN THE FUNCTIONAL CLOTHING IN

Due to human activity, posture change, will make the air inside the inverted environment form change, therefore, the inner space environment garments are the space environment form a change. Because of frequent changes within the space environment, space environment form the inherent within the garment is broken, the resulting fabric counterweight to the human body. The man produce discomfort. Clothing is a human services, and not to confine people. How to eliminate the confinement factors. We must excavate and Study on action and object. People mourn the use of Engineering in clothing. Care too kind, the country such as France, American has some historical research on Ergonomics in the package t made T great achievements, all kinds of activities of the famous Japanese medical doctor Mr. Ji to wear elastic service people can have much free wins and stretching activity more than elongation will much hindered A body, well how much impact experiments were carried out. The experimental results show that the function of human body^[3]. People can drive a F host muscle skeletal, joint motion extension

The main two head upper arm muscle: Driver lower extremity skeletal muscle groups,Mainly involved in the knee joint activities, and the different point is upper muscles,Extensor muscles than exhibition to study much more powerful bow cut treatment should be - Dr. When our country clothing profession caused enough attention we should deeplyStudy and research results are applied in garment production. For example, in the play Basketball when you wear a vest, stretch arm, suitable for easy perspiration. When swimming wear tight swimsuit, make the person can reduce resistance in the waterTo move more freely.

APPLICATION OF ERGONOMICS IN THE CLOTHING PRESSURE

Clothing pressure is clothing research one of the important factors in the engineering, But the evaluation of it is often by the method of subjective test, in order to set up Perfect fit and comfortable clothing, need to study in the design phase State of clothing pressure distribution, it is involved in the clothing engineering The development of two aspects: both need to be able to accurately describe the dynamic interaction between clothing and human body mechanics model of application research, also need to be able to complete the model and the calculation method of clothing pressure visualization. Specific application: shark shark swimsuit bikini is the neck to the ankle, to the wrist wrapped entirely, appearance similar to diving suit, swimsuit imitation shark skin surface, when athletes jump into the water, can produce small vortex inside the groove, the vortex can be offset in the maelstrom of swimsuit surface increased resistance applied research. The particularity of sharks swimming suit not only from the cloth on the high-tech, more important is combined closely with the swimsuit in the fit. It changes the international pursuit of "high dew leg type" and bold use of "the whole leg type", above all packages from the ankle in a bathing suit. It increases the swimsuit cover the area of the obvious characteristics of the body, is to make our swimmers are under pressure to have maximum comfort and fit. So it is according to the different muscle movements of the various parts of the human condition, different pressure comfort design, cutting cuttings of different combinations. Sharks swimming suit to the arms and legs with appropriate pressure to tighten, can stimulate the effect of muscles, help self-discipline of the leg and arm movements during the game. And swimming, the body exercise makes the muscle vibration, especially easy to loss of energy, so you need appropriate pressure on the muscles, a large amount of vibration to reduce muscle, so as to reduce fatigue sharks swimming suit is neck to toe Ankle, wrist wrapped entirely, appearance similar to diving suit, swimsuit imitation shark skin surface, when athletes jump into the water, can produce small vortex inside the groove, the vortex can be offset in the swimsuit surface increased resistance maelstrom of applied research. The particularity of sharks swimming suit not only from the cloth on the high-tech, more important is combined closely with the swimsuit in the fit. It changed the pursuit of "high dew leg type" and bold use of "the whole leg type", above all packages from the ankle in a bathing suit. It increases a swimsuit cover the area of the body clear point, is to make our swimmers are under pressure to have maximum comfort and fit. So it is according to the different muscle movements of the various parts of the human condition, different pressure comfort design, cutting cuttings of different combinations. Sharks swimming suit to the arms and legs with appropriate pressure to tighten, can stimulate the effect of muscles, help self-discipline of the leg and arm movements during the game. And swimming, the body exercise makes the muscle vibration, especially easy to loss of energy, so you need to the appropriate pressure on the muscles, a large amount of vibration to reduce muscle, to relieve fatigue. 2000 Olympic swimming competitions, thorpe is dressed in a super close-fitting one-piece - sharks swimming suit from head to foot, set a new world record. The Olympic swimming competition in 2000, thorpe is wearing a super close-fitting one-piece - sharks swimming suit from head to foot, set a new world record^[4].

APPLICATION OF HUMAN ENGINEERING IN THE SPECIAL OCCUPATION IN CLOTHES

In the clothing one environment system, sometimes environments have special requirements on the garment, for example we dive suit, space spacesuit etc according to the protective function of health type protective clothing, such as radiation-proof clothes, anorak, insulation clothing and antibacterial clothing; safety protective clothing, such as Flame retardant clothing, flame retardant protective clothing, anti-static clothing, bulletproof clothing, anti The thorn clothes, suits, diving suits, acid suits and pest control service etc.;In order to keep the wearer health work clothes, such as clothing, dustproof, anti oil Clothing and water repellent clothes etc.. The structure of protective clothing, with anti penetration power Can, good air permeability, high strength, high Naijing hydraulic characteristics of the Characteristics, mainly due to the industry, electronics, medical, chemical,The use of bacterial infection environment in addition to meet the high strength and high wear resistance etc^[5]. Wearing requirements, often because of the purpose of protection, the principle of protection of different There are differences, from cotton, wool and silk, lead and other natural materials, rubber,Plastic, resin, synthetic fiber and other synthetic materials, to the contemporary new functional material Materials and composite materials, such as: the impact of para aromatic polyamide and high strength and high modulus polyethylene fiber products, containing fluorine compound oil repellent, anti radiation polyimide fibers, acrylic complexed copper fiber antistatic agglomeration, antibacterial fiber and the related deodorant finishing of fabric. In general, protective clothing on the sociality and the common mental set, uniform clothing and unified logo is the best means of people to narrow the psychological distance. Characteristics, nature of the enterprise, enterprise value, in the same industry status, avoid the performance requirements for operator personality psychology. Protective clothing to focus only on the common psychological content, such as professional characteristics, the nature of the enterprise, the enterprise value, in the same industry status, avoid the performance requirements for operator personality psychology.

Through the above argument, application of ergonomics on garment design is enormous, but also to promote the power of fashion design ahead, with the development of the times, more and more people pursue the comfort of clothing, so the human body engineering will be more and more vigorous development, thereby affecting the clothing aspects.

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