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# TOEFL

## Transcript Audio 1





Good evening, class! Today we are going to continue our studies about textiles. So we are going to take a look at blue jeans story. The blue jeans were invented by Levi Strauss and Jacob Davis in 1873. It became a trend amongst teenagers in the 1950s. Since then, blue jeans have become present in almost every closet around the world. Blue jeans are famous probably because of their faded and worn look. But have you ever wondered how blue jeans get this unique “look”?

In the 1950s, a textile manufacturing technique was invented to give jeans this faded look. Known as stone-washing, this technique involved washing the jeans with rough pumice stones in a rotating drum. Blue jeans were originally made of denim, a sturdy cotton textile. The rough pumice stones could scrape a layer off the denim, thus producing a faded-worn appearance. Because this look was so effective, the stone-washing technique was really popular. However, the expanding cost of importing pumice stone from abroad led to extensive mining of pumice deposits in the United States. This triggered a negative response from American ecologist groups. In addition, stone washing is detrimental to the fabric, consequently reducing the lifespan of the blue jeans themselves.

**Student: Excuse me, Professor Hollaender, Have the manufacturers taken any action towards it?**

Yes, they had to! In the 1980s, a different technique called acidwashing was introduced. Like stone-washing, acid-washing used pumice stones, but chlorine was added in the process. With chlorine, the denim is bleached white. The end result of acidwashing is still faded jeans, however, the acid-washed jeans have white streaks or spots where the dye faded.

Both stone-washed and acid-washed jeans were popular in the 1980s. Today, as a result of advancing biotechnology, industries no longer need to use stones to fade jeans. These stone washing techniques have been replaced by a process called “biostoning.” Biostoning produces the similar desired effects of the stone-washed and acid-washed techniques, but utilizes enzyme. The enzyme used in this process is called cellulase. You see, cellulose is a main component of cotton. Because the enzyme cellulase breaks down cellulose, the cotton in the jeans is affected. This process occurs when the cellulase binds to the cellulose on the cotton fibers and breaks the molecular bonds



between them. Thus the dye particles are released from the surface of the jeans, producing this “faded” effect.

**Student : Professor Hollaender, It means that nowadays, the companies are manufacturing only biostoning technique.....**

No, even though this biostoning technique is much more effective and less time-consuming than the other two techniques mentioned, some manufacturers still produce blue jeans using the stonewashing technique. This is because there are a number of customers who prefer their jeans to have a worn 'stonewash' appearance. I guess it has a bit of old-fashion style. Stonewash jeans have now become a world-wide leisure and fashion item.