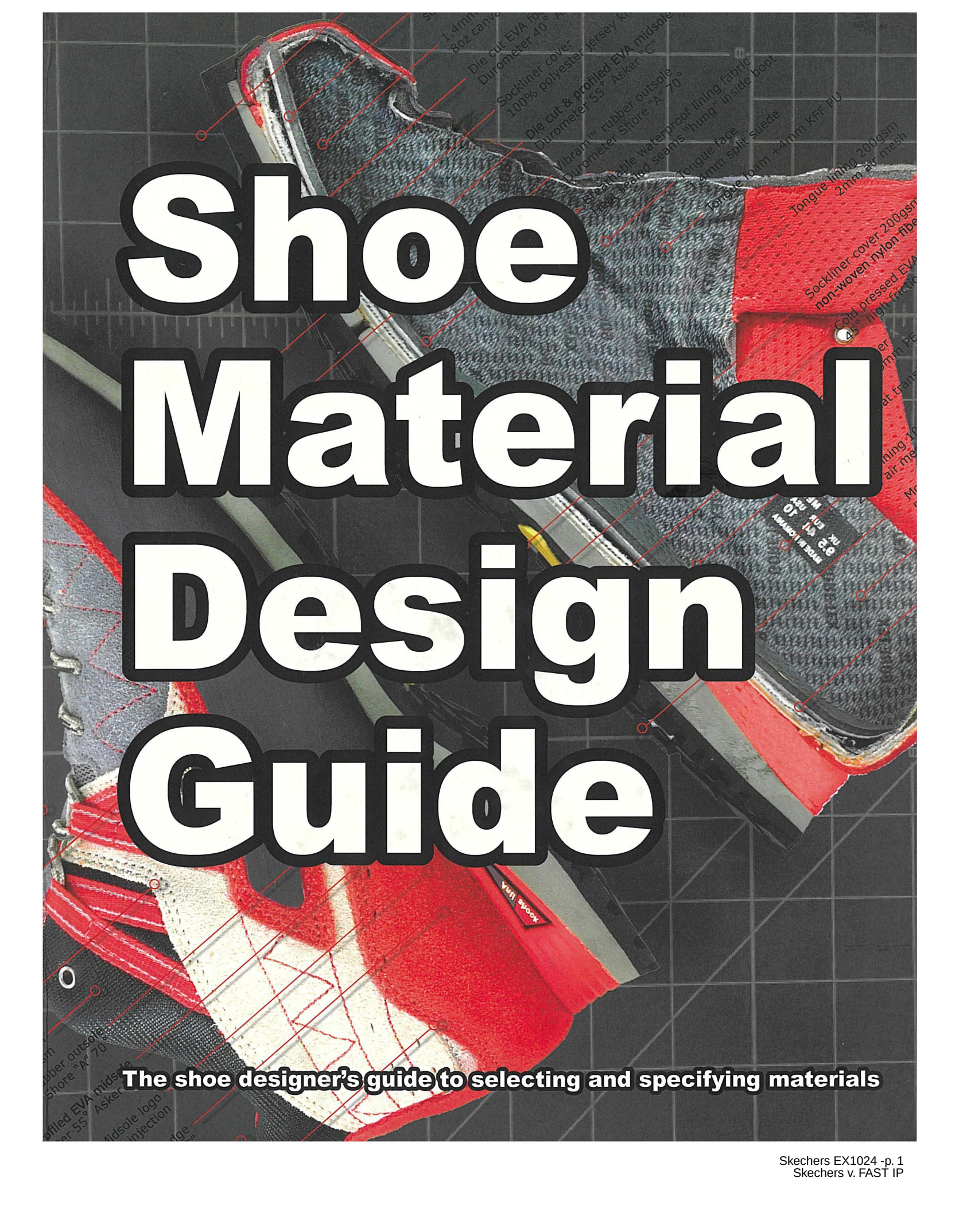




Shoe Material Design Guide

The shoe designer's guide to selecting and specifying materials

Today's shoe designer has an infinite number of available options when choosing materials for new footwear designs. Learning how to select and specify footwear materials accurately is a critical skill you will need to become a successful, professional shoe designer. The wrong choices can make a footwear mess, and the right choices can create a modern masterpiece!

You must take great care to pick materials appropriate for the demands of footwear marketing, performance, and manufacturing. The right material choices will make your shoe designs comfortable, compelling, and long-lasting.





Available now:

How Shoes are Made
How to Start Your Own Shoe Company
Shoe Material Design Guide
Cómo se hacen los zapatos
Cómo empezar tu propia empresa de calzado
Guía para el diseño de materiales de calzado
 鞋子是怎样制成的

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How to Design Women's Shoes

WWW.SNEAKERFACTORY.NET

Shoe Material Design Guide

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Dear Readers,

This book was written to educate, inform, and inspire the next generation of shoe designers, shoe developers, shoemakers, and footwear entrepreneurs! Our goal is to help prepare people for fulfilling careers in the world of shoes!

Enjoy!

Special thanks to:

Andrea, Alex & Erik, Karim, Halla, Mom & Dad, Dave, Alfredo, Jason, David, Lizzie, Johnson, Steve, Lenny, Bernie, Simon, Ben, Chad, The Mint Project.

Thanks to all my working friends in the USA, China, Hong Kong, Korea, Taiwan and Europe.

Shoe Material Design Guide

WADE MOTAWI

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HOW TO USE THIS BOOK

How to select the right materials for your shoes

This book was written to help shoe designers, product managers, footwear developers, and students select the right materials for their footwear projects. After reading this book, you will have a better understanding of the material types available and the many options for each material type.

You will learn how to qualify your material choices; making sure they meet the performance requirements for your shoe. Once you have selected your materials, you will need to communicate your material choices to the factory.

Section 1: Material options for the shoe designer

The first section of the book details the many materials available to the shoe designer. Each chapter will focus on a specific material type or component. You will study the manufacturing processes and available options for each material. Once you have an understanding of your material choices, we will review how to use each material type to maximize its effect in your shoe designs.

Section 2: How to qualify and specify shoe materials

The second section of the book details exactly how to qualify and specify materials. We explain how to test materials, how to manage vendor relations, and how to build your material library. You will also learn about the challenges of sourcing, ordering, and managing the shoe material supply chain.

Section 3: How materials are used in shoe production

For this section, we have cut a sampling of shoes in half to identify what materials are used and where they are used to make many popular styles of modern and classic shoes. Use this section as a reference for common materials used to create many footwear styles.

Section 4: Who makes the best shoe materials?

To help you find the best material suppliers, we list the top vendors for major material categories.

Leather for footwear, page 3

Shoe stitching thread, page 35

Synthetics for shoes, page 27

Webbing for shoes, page 89

Textiles for shoes, page 17

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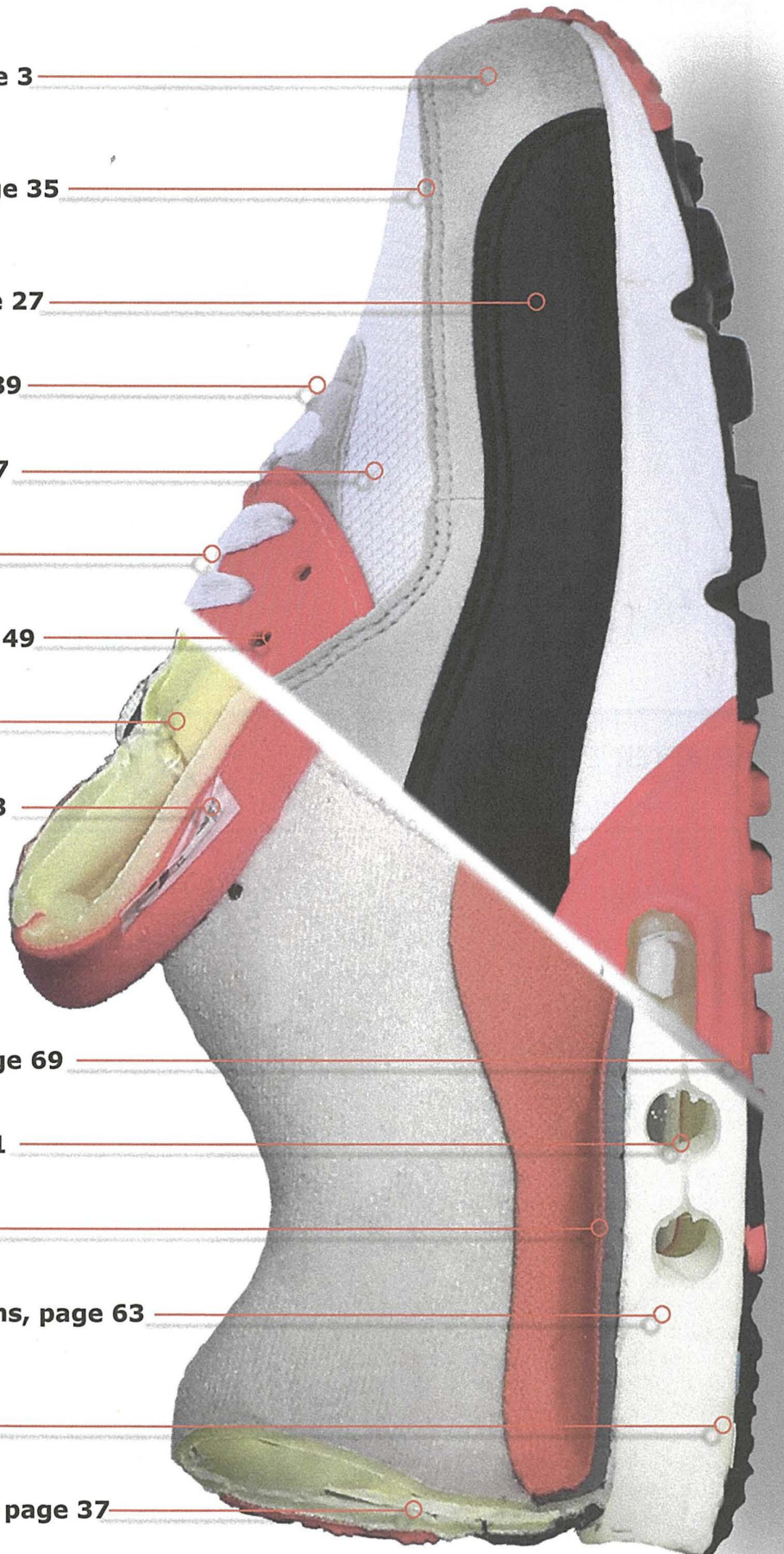
Plastics for shoes, page 91

Footbeds, page 81

Midsole cushioning systems, page 63

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CHAPTER 6

SHOELACES

Shoelaces have two very simple functions. First, to hold the shoe onto your foot and second, to provide some style! The earliest leather shoes dated from 3500 B.C.E. have leather laces. 5000 years later, the function is the same, but the style has come a long way.

For the shoelace to do its job correctly, it should resist stretching and stay tied. Once these basic functions have been satisfied, more specific attributes can be studied for different shoe types. The "correct" shoelace depends on the function of your shoe. The same lace that works for a fine leather office shoe will not be suitable for hunting boots or ballerina slippers.

The aglet

The end cap on the shoelace is called the "aglet". The aglet is made of plastic tape wrapped tightly around the lace, or a metal cap crimped over the end. The plastic aglet tape may have a printed logo, while the metal aglet may have a logo stamped onto its surface. Yes, aglet is a funny sounding word! The origin is French, *aiguillette*, meaning 'small needle.'

The lace

The lace is simply a string. There are many material options depending upon the functional requirements of the shoe. The waxed cotton lace of an office dress shoe does not need to be high strength, 2mm diameter is okay. The lace on a hockey skate is cut resistant, wide to displace lacing pressure, and has high tensile strength so the players can pull the laces tight. The hockey skate lace may be 12mm wide. Laces with a textured surface and compressible core will stay tied better than smooth firm laces.

Style

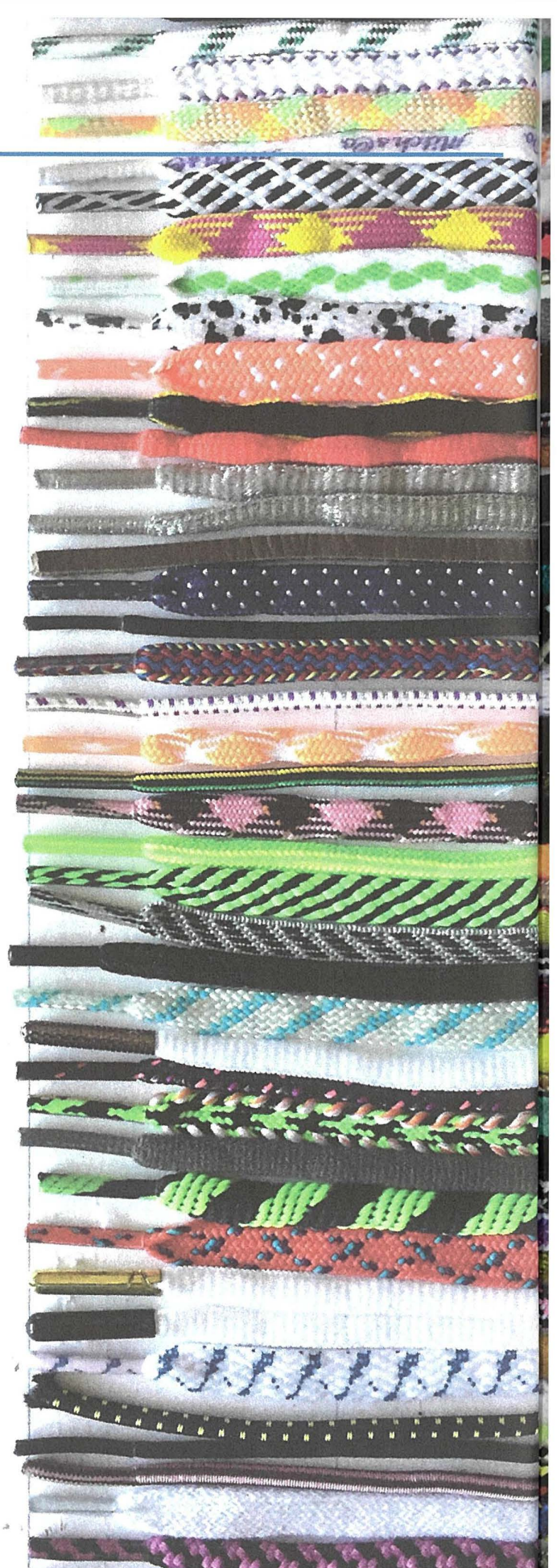
The shoelace is also an element of style! Skateboarders often replace the standard black lace with a brightly colored lace. The boat shoe has leather laces due to tradition rather than functionality.

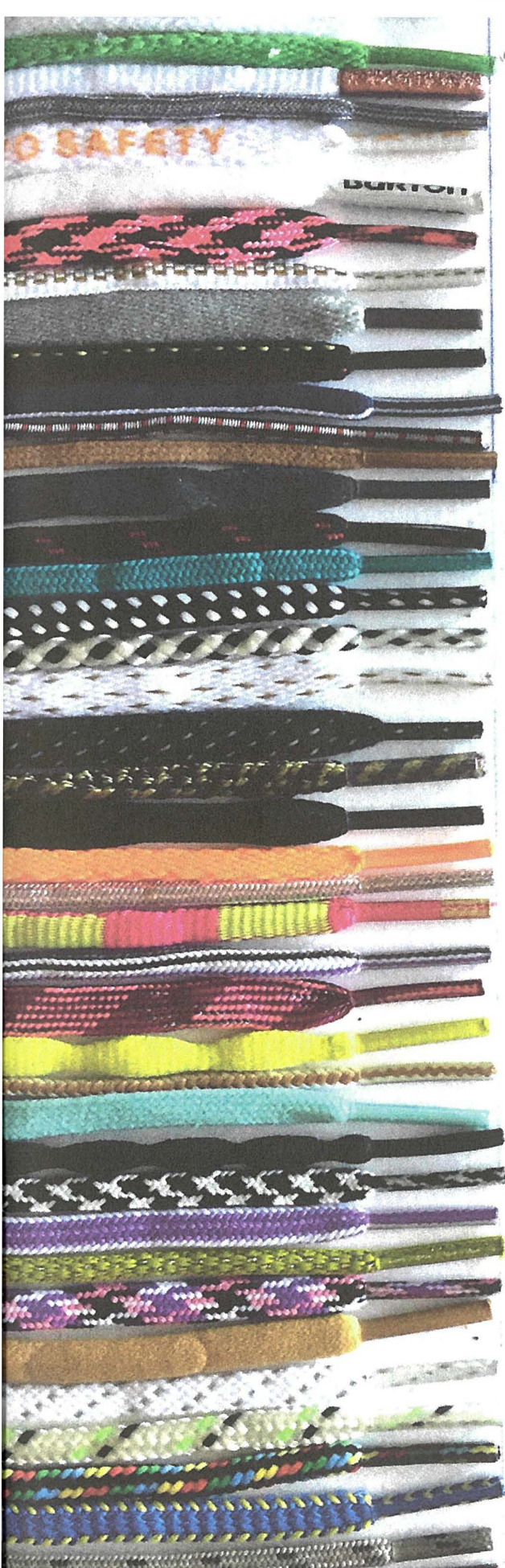
Shoelace constructions:

Braided, waxed, jacquard weave, reflective, oval, round, flat.

Shoelace materials:

Polyester, nylon, cotton, leather, Kevlar, elastic rubber with knit cover, stainless steel wire.





Other lacing systems

Aside from conventional woven or knit laces, there are many other ways to secure a shoe to your foot.

Steel cable lacing systems can be found on cycling shoes, snow boots, golf and running shoes. The cable reel and fittings will add US\$2.00 to \$10.00 to the factory price of your shoe and provide a unique function.



Of course, some shoes may not have any laces at all. The adjusting function may be velcro straps or elastic goring. The shoe brand Royal Elastics™ is based entirely on shoes without laces.



How long should a shoelace be?

There are charts available on-line that suggest the lace length based on how many lace holes are in the shoe. A basic measurement also works: starting with the shoe upper still on the last, the lace should run through every position then add 6 inches (15cm).