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8
9 UNITED STATES DISTRICT COURT
10 CENTRAL DISTRICT OF CALIFORNIA

11
12 NIKE, INC.,

13 Plaintiff,

14 v.

15 SKECHERS U.S.A., INC.,

16 Defendant.

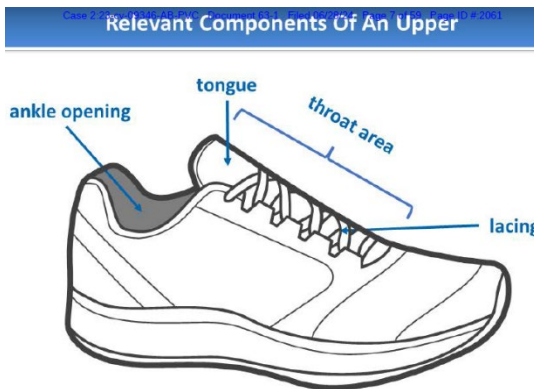
Case No. 2:23-cv-09346-AB-PVC

**SUPPLEMENTAL CLAIM
CONSTRUCTION BRIEFING**

Skechers U.S.A. v. Nike, Inc.
IPR2025-00151
Patent No. 9,510,636
Ex. 2014

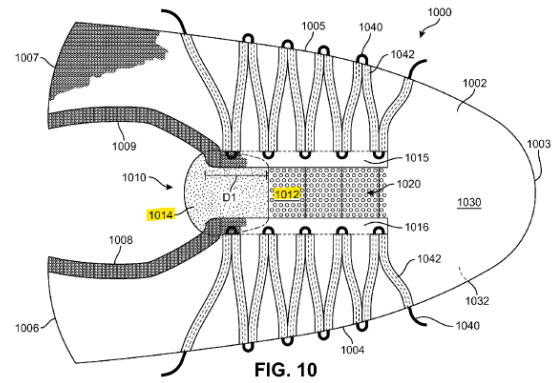
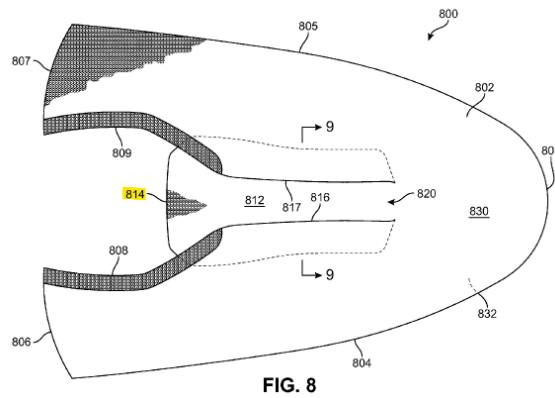
“tongue”

The ordinary meaning of “tongue,” in the context of footwear, is the portion of the footwear that extends over the top of the foot and is attached to the upper along at least a portion of the throat area. *E.g.*, ’562 Patent at 1:52–54; 6:32–35, 9:34–35; ’636 Patent at 1:57–59; 6:32–35, 9:41–43; Harris Decl., Ex. A (“part which covers the top of the foot” and is usually attached “at the bottom of the throat”). A tongue is such a rudimentary component of footwear that even laypersons can “point [it] out.” Harris Decl., Ex. B. Skechers agrees, and showcases this by calling out the “tongue” of a generic shoe in its *Markman* hearing demonstratives. See ECF No. 61 at 9 (“given the well-understood shape of a tongue both generally and in the context of shoes”); ECF No. 63-1 at 7.



In conventional articles of footwear, the tongue is a separate component stitched to the upper. In the ’562 and ’636 patents, the tongue is “integrally knitted” with the upper, but still has distinctive features of a conventional tongue. The patents provide various non-limiting examples of this. For example, the integral knit tongue may have “a top end 814 that extends into the portion of second knitted component 800 that is associated with the ankle opening,” as shown in Figure 8 (below left). ’562 Patent at 11:37–41, Fig. 8. Or, as shown in Figure 10 (below right), the integral knit tongue may have a “partially integral portion 1012” and a “free portion 1014,” where the free portion provides an enlarged ankle opening to assist a wearer with foot insertion. *Id.* at 13:13–

21, 13:57–66, Fig. 10. In these examples, the integral knit tongue is identifiable by its upper boundary which extends beyond the adjacent periphery of the ankle opening.



As another example, the integral knit tongue may be made of different yarn from the surrounding upper. *Id.* at 17:42–47. In this example, the integral knit tongue may be visually and structurally distinct from the surrounding upper. Or the integral knit tongue may have raised elements that may or may not incorporate lace apertures. *Id.* at 10:63–11:10.

Skechers seeks to improperly narrow the scope of “integral knit tongue” to cherry-picked non-limiting examples from the specification. ECF No. 56 at 5–11. Their briefing alleges purported concerns with the application of “integral knit tongue” to prior art. *Id.* And Skechers focused during the *Markman* hearing on the application of this term to the accused products. But courts don’t rewrite terms to read-in or -out prior art or accused products. *Hill-Rom Services, Inc. v. Stryker Corp.*, 755 F.3d 1367, 1374 (Fec. Cir. 2014) (“Where the meaning of a claim term is clear, ... we do not rewrite the claim to preserve its validity.”); *Cohesive Techs., Inc. v. Waters Corp.*, 543 F.3d 1351, 1367 (Fed. Cir. 2008) (“Although it is appropriate for a court to consider the accused device when determining what aspect of the claims should be construed, it is not appropriate [] to construe a claim [] to exclude the accused device.”). Thus, Skechers’ arguments about validity and infringement are irrelevant and shouldn’t be considered.

1 Dated: September 30, 2024 ARNOLD & PORTER KAYE SCHOLER LLP

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Attorneys for Plaintiff Nike, Inc.

CERTIFICATE OF SERVICE

I hereby certify that on September 30, 2024, I electronically transmitted the foregoing document using the CM/ECF system for filing, which will transmit the document electronically to all registered participants as identified on the Notice of Electronic filing, and paper copies have been served on those indicated as non-registered participants.

/s/ Timothy Haugh
For Plaintiff Nike, Inc.

CERTIFICATE OF COMPLIANCE

Pursuant to the Standing Order (ECF No. 18), Judge Birotte’s Individual Practices, and L. R. 11-6.1, the undersigned counsel of record for Nike, Inc. (“Nike”), certifies that Nike’s Supplemental Claim Construction Briefing complies with the word limit of L. R. 11-6.1, excluding the caption, table of contents, table of authorities, and the signature block.

/s/ Michael J. Harris
For Plaintiff Nike, Inc.

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2 UNITED STATES DISTRICT COURT
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Case No. 2:23-cv-09346-AB-PVC

**DECLARATION OF MICHAEL
HARRIS IN SUPPORT OF NIKE,
INC.'S SUPPLEMENTAL CLAIM
CONSTRUCTION BRIEFING**

1 I, Michael J. Harris, declare as follows:

2 1. I am an attorney at the law firm of Arnold & Porter Kaye Scholer
3 LLP, and outside counsel of record for Plaintiff Nike, Inc. (“Nike”) in this matter. I
4 make this declaration in support of Plaintiff Nike, Inc.’s Supplemental Claim
5 Construction Brief.
6

7 2. Attached as Exhibit A is a true and correct copy of an online blog
8 post titled “Footwear Terminology,” available at [https://boards.core77.com/t/footwear-](https://boards.core77.com/t/footwear-terminology/16722)
9 terminology/16722.
10

11 3. Attached as Exhibit B is a true and correct copy of an online article
12 titled “What Are the Parts of a Shoe?,” available at [https://www.nike.com/a/parts-of-](https://www.nike.com/a/parts-of-shoe-anatomy)
13 shoe-anatomy.
14

15 I declare under penalty of perjury that the foregoing is true and correct. Executed
16 on this 30th day of September, 2024
17

18 /s/ Michael J. Harris

19 Michael J. Harris
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28

Exhibit A

Footwear Terminology

Topics

More

Categories

Design Discussions

Showcase

Skills

Special Interest Areas

Other Discussions

All categories

Tags

car-design

design-consulting

design-management

ev

ai

All tags

rkuchinsky

Jan 2007

As this is a topic which seems to come up pretty often and old threads get buried, I thought it may help to make a stickie topic of Footwear Terminology.

Feel free to add links as appropriate. To keep this thread most useful, please only post links, not comments.

R

First Pullover Footwear Terminology

<http://pullover.blogspot.com/2005/07/footwear-terminology.html>

Running Shoe Design and parts/manufacturing

<http://www.madehow.com/Volume-1/Running-Shoe.html>

Shoe Terms

Shoes: Women's, Men's & Kids Shoes from Top Brands | DSW

Shop DSW for the best athletic shoes, sneakers, boots, sandals, accessories and more. Free shipping, low prices, and extra perks for VIPs. Find shoes online or at your nearest store.

For quick reference, here's the gloassary in full from my <http://www.firstpullover> blog,

Buff

To remove material by a sanding or roughing process. For example, EVA midsoles are buffed before assembly to help break the smooth surface for better adhesion to the upper.

Cement/Board Lasting

A lasting process where the insole board (carboard or texon) is inserted onto the last bottom and the lasting margin (excess) material of the upper is lasted onto the board and cemented to the insole board. Shoes of this type are usually more stiff and heavier.

Chemi-Sheet

A nonwoven reinforcement material that is impregnated with a chemical hardener that sets with application of heat or another chemical. Used commonly for counter or toebox reinforcement.

CM EVA

Compression Molded EVA. A foamed midsole material that offers good cushioning and compression set.

Collar

The opening area of a shoe at the top.

Colorway

A color/material combination.

Cosmo

An type of non-woven upper lining and reinforcement material used commonly on cross training and hiking boots that provides a stiffer (compared to Tricot) lining and support for the shoe.

Coutner

The back/heel of the shoe.

Eyelet

A hole through which you lace up a shoe.

Eyestay

The part around the lace opening (throat of the shoe). Can feature webbings, eyelets, etc.

FG

Firm Ground. Refers to football/soccer boots/outsoles designed for use on hard, natural surface.

Insole Board

The bottom part of the lasted upper.



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Last

Anatomical representation of the foot for constructing a shoe

Lasting

The process of stretching the preassembled upper around the last, by machine or by hand.

Lasting margin

The upper material part that when lasted folds over the edge of the last onto the bottom, overlapping the insole board.

Midsole

The component of a shoe between the upper and outsole used to provide cushioning, fit, comfort and support.

Outsole

The bottom component of a shoe that provides grip and traction.

Overlay

An upper part which is over another part.

Padding

Refers to foam or other material usually inside the collar or tongue to add thickness/cushioning and improve fit.

PU (upper material)

PU upper materials usually use a thin layer of PU foam with a non-woven or fabric backing for reinforcement and strength.

PU

PolyUrethane. Synthetic (plastic) material with minute bubbles or cells and a skin like surface. Used for upper materials, and in a different form for midsoles or padding foam.

Pullover

A prototype sample for checking pattern and fit.

Quarter

The side of the shoe. Can have many subcomponents and parts.

SG

Soft Ground. Refers to football/soccer boots/outsoles designed for use on soft (wet) natural surfaces.

SKU

Stock Keeping Unit. A unique model/style/colorway/size. Commonly used to refer to a unique colorway. I.e, if there are 2 models each with 5 colorways, there are 10 SKUs total.

Slip Lasting

A lasting process where the insole board (usually canvas) is stitched around the last bottom edge to complete the upper. Usually used for more lightweight, flexible shoes such as running shoes.

Stitch and Turn (seam)

A seam which is stitched to join two parts then flipped inside out so the stitch is hidden.

Toe Cap

Upper part on the toe, usually and overlay.

Tongue

Part which covers the top of the foot. Usually a separate component stitched inside the shoe at the bottom of the throat.

TPU

Thermoplastic PolyUrethane. Synthetic (plastic) material usually used for molded details and components on a shoe such as a molded eyestay, logo, counter reinforcement or waist stabilizer.

Tricot (a brand name, used to refer to a material, also Cambrelle)

Upper lining material, usually used on running shoes that is made from a sandwich of mesh type fabric, that allows a lightweight, breathable construction.

Turf

Refers to football/soccer boots/outsoles designed for very hard/round natural surfaces like dirt or turf and

[Skip to main content](#)

also synthetic grass surfaces.

Underlay

A part of a shoe upper that is under another part.

Upper

The part of a shoe created around the last.

Vamp

Area of the shoe/last on the front/top.

billymenut

Jan 2007

For me is very usefull, i need to know and study all the terminology in english.

cheers for the information Richard.

B111

Jun 2007

Information on bootmaking...

<http://www.thehcc.org/cgi-bin/discus/discus.cgi>

Information on leathers...

<http://www.all-about-leather.co.uk/allabout/leather/morethanyouthought.php>

Information on shoemaking/shoe components...

<http://podiatry.curtin.edu.au/shoo.html>

Footwear terminology, etc. books to buy...

<http://www.shoetrades.com/books.htm>

Lacing & Fit...

Propét USA, Inc.

Propét Walking Shoes not only provide you with the built-in comfort you need but also offer great value and more sizes for those of you who have a hard time finding your size.

cheers!



corporalInc_23

Dec 2009

Are there sites to explain Shoe Assembly; techniques/cost and materials/cost

i.e. Welding (HF Weld), PU Injection, Stitching techniques, etc...

I've been looking through various shoe sites and shoe catalogs; they explain diferrent terms...

e.g. Ecsaine Upper, Split sole, One piece sole, 3d lasting, Shine up to control odor, or Natural Split suede

AmplifiedCarpet

Feb 2010

Can anyone tell me what exactly a factory wants when they ask to provide the tooling? To what detail should I provide tooling? Is it just outsole design or other things as well?

[Skip to main content](#)

Outsole, lateral and medial side walls, heel, and toe views, a section through the center of the tool lengthwise (typically labeled A-A), 2-4 sections across the tool, usually at the ball of the toe, the arch of the foot, and the ball of the heel. Any detail sections needed through the tread or other surface details.

GURU

Feb 2010

Here's a full list:::

Aglet The plastic sheath at the end of a shoelace that makes the lace easier to thread through the eyelet holes of the shoe.

Antiquing A type of leather finish that creates a contrasting, rubbed-off appearance.

Approach Shoe A grip-soled athletic shoe meant to aid rock climbers on the path to and from the climbing area.

Arch The high, curved part of the sole of the foot, located between the ball of the foot and the heel. This term can also refer to the raised area of the insole of a shoe, which is meant to pad and provide support for the arch of the foot.

Athleisure Shoe Athletic-inspired, trendy footwear meant for casual, urban wear.

Back Seam The vertical seam at the center of the back of a shoe or boot.

Ball The padded area of the foot between the big toe and the arch of the foot.

Ballerina Flat / Ballet Flat A ballet-style flat meant for everyday wear.

Bellows Tongue A shoe tongue that is attached at both the top and the sides of the shoe.

Blucher A shoe construction featuring two side flaps of material that are joined across the foot with lacing.

Boot A style of footwear extending to the height of the anklebone and above. May extend as high as the thigh.

Brannock Device A device used to measure the length and width of the foot in order to ensure proper shoe fit.

Break The natural crease created across the vamp of the shoe from everyday wear.

Brogue A heavy, oxford-style shoe featuring pinked and perforated detailing.

Burnish The process of buffing a shoe surface to achieve an antiquing effect of the leather.

Cambrelle A durable, breathable, synthetic material that helps wick away moisture and gives added warmth.

Cap Toe An additional piece of leather covering the toe of a shoe. May be in several different shapes or patterns. Also known as a Tip.

Cemented Construction A shoe construction in which the upper of a shoe is cemented, rather than stitched, to the sole of the shoe. Cement construction results in a lighter, more flexible shoe.

Chukka Boot A boot style with laces, usually with a plain toe, and is the height of the ankle.

Circumference The measurement around the shaft of a boot taken at the widest part near the top of the boot shaft.

Climatrac A durable lining that is quick-drying and extremely breathable.

Clog A footwear style featuring a closed toe, open back and a platform sole traditionally fashioned from wood.

Combination Last A footwear last in which the heel is two sizes smaller in width than the widest part of the shoe, producing a shoe with a narrow heel and a wide toebox.

Contoured Footbed An insole that molds to the shape of the foot.

[Skip to main content](#)

Cordovan Leather from a horse's posterior. When tanned it becomes a rich black cherry color; so it has evolved into common usage as a color name.

d'Orsay (pump) a pump with a circular vamp and sides that curve downward sharply, exposing the sides of the foot.

E.V.A. (Ethylene Vinyl Acetate) A synthetic compound used for outsoles. E.V.A. provides cushioning to the foot and is easily shaped by heat and pressure.

Embossed Leather A design that is imprinted onto leather and often simulates exotic skin - i.e., croco or snake. May also be a random pattern.

Espadrille A shoe or sandal style that has a woven rope or similar material covering the wedge or sole.

Eyelet A hole through which a lace is threaded; may be reinforced with a metal ring or grommet.

Fiberboard A material made primarily of wood pulp which is used for counters, insoles and heel lifts.

Finish The process by which the final appearance of a shoe is created. The finish can include the application of polish to create a high-gloss finish, or a contrasting polish to create a rub-off finish like "antiquing".

Finishing Room The area of a shoe factory where the shoe is finished, including the removal of the last, insertion of the insole, completion of the outsole and final application of polish.

Flat Foot A condition in which the arch of the foot is collapsed and the entire foot rests on the ground.

Footbed Another term for insole.

Forefoot The area of foot between the ball and the toes.

Foxing A strip of rubber joining the upper and sole of a shoe. Typically found on canvas sneakers.

French Heels Women's shoes with a curved, medium-high heel. Also known as Curved Heels, Pompadour Heels or Louis Heels.

Gait An individual's style of walking.

Galoshes Waterproof (typically rubber) overshoes or boots meant to protect the foot and footwear from inclement weather.

Ghillie (pronounced "gil-ee") A style of footwear in which the laces pass through fabric or leather rings or loops attached to the front opening of the shoe, rather than eyelets.

Girth The circumference of a shoe last measured around the ball of the foot.

Goodyear Welt A shoe construction in which the upper and sole of the shoe are stitched together, resulting in greater durability. The resulting seam is visible and runs around the outside of the shoe, where the upper and outsole meet.

Gore An elastic panel stitched into either side of a shoe's vamp in order to make it more comfortable and easier to put on and take off.

Grain The inherent surface pattern of leather, differentiated by the animal from which it came.

Heel "Heel" can refer to both the rear, padded area of the underside of the foot, as well as the solid part of a shoe that supports the heel cup. The standard measure for heel heights is as follows: an 8/8 (low heel) is 1" high; a 16/8 (medium heel) is 2" high; and a 24/8 (high heel) is 3" high. Types of shoe heels include: Baby Louis - The same shape as a Louis heel but a 12/8 or shorter. Built Heel - Created from layers of leather or fiber with contrasting tones. Continental - A higher heel with a slightly curved back and flat front. Cuban - A thick, stacked heel with little or no curvature and tapered at the bottom; usually medium in height. Louis or French - Features a curved back and ranges in height from 16/8 to 24/8. Stacked - Similar to the built heel but typically can be created from synthetic and leather materials. Often found on spectator shoes. Wedge - A heel of any height that is as wide as the shoe itself and follows the shoe's contour from toe to heel.

Heel Breast The forward-facing side of the heel.

Heel Height Heel height is measured on a vertical line at the breast of the heel, from the bottom surface of the sole where it meets the heel, to the floor. Heel height is measured in increments of 1/8th inches, so an

[Skip to main content](#)

8/8 heel is one inch high.

Heel Seat The part of the shoe directly below where the heel of the foot rests and where the sole and the heel are joined together.

Heel Spurs Soft deposits of calcium that grow on the "plantar fascia", a band of tissue that runs along the bottom of the foot and are typically painful.

Hidden Gore An elastic panel at the front of a shoe that is covered by the shoe's tongue and provides added comfort. See Gore.

Hook & Loop A method of keeping something closed, using 2 pieces of fabric. One piece has small hooks, to attach to the other piece which has 2 loops.

Huarache A flat sandal or shoe with a woven leather upper.

Imitation Leather Any synthetic material made to look like leather.

Injection Molded Construction A type of sole unit construction created by injecting melted PVC or a similar material into the sole mold. Injection molded construction is an efficient way to mass-produce footwear.

Inseam The hidden seam of a welted shoe holding together the welt, upper, lining and insole.

Insole A lining that runs the full length of the inside of the shoe.

Instep The upper, center section of the foot, between the toes and ankle.

Jelly Shoes Shoes made entirely of PVC.

Jodhpur Boots A low-cut boot used primarily for equestrian activities. May be laced or a twin gore pull-on style.

Kidskin A soft, porous leather created from the hide of young goats.

Kipskin Middle-grade leather created from the skins of young cattle that are larger than calves, yet not fully grown.

Kiltie A decorative, fringed tongue over the vamp of a shoe.

Laces A strip of material strung through the eyelets of a shoe in order to pull the shoe closed and adjust its girth.

Last A metal, wood or plastic form used to create the shape of a shoe.

Lasting The process of pulling and shaping a shoe on a last.

Lift One of the several layers of leather or leather-board used make a heel.

Lining The inside material of a shoe. May be composed of leather, fabric or synthetic material.

Loafer A slip-on shoe, completely without fasteners.

Lug Sole A heavy-tread, rubber sole.

Mary Jane / maryjane The style of low heeled shoe with a strap across the instep. The strap can be attached with elastic or a buckle, making it easy to slip on and off.

Metatarsal Bones Five long bones in the foot that help to move the body forward when walking or running. They form the top slope of the foot, from the instep to the toes.

Mid-sole The layer of material between outsole and innersole used for reinforcement or cushioning.

Moccasin A shoe in which the bottom is a single piece of leather, stitched around a last. The vamp is usually attached by whip stitching to the bottom of the shoe so it encloses the foot. Also known as Tru-Moc construction.

Monk Strap A closed shoe, usually a blucher pattern, with a wide strap across the instep that buckles at the side. Also known as a monk strap.

Motion-Control Designs or devices found in athletic shoes that control the inward rolling (pronation) of the foot.

[Skip to main content](#)

Mule Backless, closed-toe slippers or shoes.

Napa Leather A supple version of sheepskin.

Nubuck Lightweight, supple leather used on the upper of the shoe. Buffed to a suede-like appearance.

Ombre A type of shadow, but the word alludes to a sunspot, or a shadow cast on the sun by a planet. When used to describe a shoe, it is a detail (or entire shoe) that starts with one color and fades or blends into another.

Orthotic An orthopedic insole designed to cushion and stabilize the foot.

Outsole The bottom outer sole of a shoe.

Oxford A traditional term describing a low shoe laced or tied over the instep.

Patent Leather A glossy leather that has a shiny appearance. Patent leather is typically created from cattle hide.

Pebbled Grain An embossed-leather grain finish that resembles a pebble surface.

Penny-Loafer A slip-on style shoe with a slit over the instep where a penny traditionally was placed for good luck.

Perforation A pattern of small holes punched or bored into the trim of a shoe, for the purpose of decoration or ventilation.

Pinking Saw-tooth shaped edging applied to the trim of shoes for decoration.

Piping A decorative, narrow strip of leather that typically follows the seam of a shoe.

Pitch The angle of the back part of the heel where it meets the sole, compared to the front part of the heel where it meets the sole. On a high-heeled shoe the pitch should be at a larger angle, in order to stabilize the heel.

Platform Shoe A style of shoe featuring a thicker sole at the front; the heel is typically high to accommodate the higher height of the sole.

Polyurethane (PU) A synthetic material frequently used as an alternative to leather in the manufacturing of footwear. PU is light, flexible and durable.

Pump A low-cut women's shoe, typically moderate in heel height.

Polyvinyl Chloride (PVC) A semi-rigid plastic material, often used in heel counters and outsoles for added support

Quarter The rear portion of a shoe, covering the heel and sides and often joined at the back seam.

Quarter Lining The lining of the rear part of a shoe, typically made from leather or fabric.

RadianTex An insole that provides thermal reflection to keep your feet warm and cozy.

Riding Boot A boot designed specifically for equestrian activities. Usually knee-high, with goring and a low heel. This term can also describe boots that are designed to look like riding boots.

Rim The part of the shoe where the foot enters. Another term for collar or topline.

Saddle Oxford / Saddle Shoe An oxford-style shoe featuring a saddle across the vamp, often in a contrasting color.

Sandal A simple form of footwear where the shoe is held to the foot by strips of leather or fabric.

Scotch Grain The embossing of leather to create a heavy, pebbled look.

Shaft Height Shaft height of boots are measured from middle of the arch up the inside of the boot, to the top of the boot shaft.

Shearling Sheepskin or lambskin with the wool still attached. Used often as a lining for shoes and boots.

Shoe Horn A curved metal or synthetic device used to aid in slipping the foot into a shoe.

[Skip to main content](#)

Shoe Sizes The variation between full sizes is one-third of an inch, while the difference between half sizes and full sizes is one-sixth of an inch. This system of sizes is based on a decree made by Edward in 1324.

Side Leather Leather from the sides of cattle, divided by the backbone.

Silicone A slippery polymeric material used to waterproof shoes.

Sipes A specific, razor-cut pattern in the outsoles of deck shoes that help to disperse water and prevent slipping.

Slide A shoe featuring an open toe and open back, with a band across the toe. Can be flat or heeled.

Sling-back A shoe held to the foot with a strap at the back. The strap is typically elasticized or buckled for greater comfort and adjustment.

Slip-On A style of footwear which is simply slipped on to the foot with no further adjustment.

Slipper A flat shoe that is easily slipped on, usually meant for indoor wear and lined for comfort and warmth.

Smooth Leather Any leather that is smooth on the surface, without pebbling, or noticeable grain.

Sneaker An athletic shoe, typically made of canvas with a rubber sole. The term “sneaker” comes from the wearer’s ability to walk in the shoe without making noise.

Sock-liner A sock liner is the insole in the interior of the shoe that the foot rests on.

Sole The bottom part of a shoe, not including the heel.

Sole Leather Any heavy leather (usually cattle-hide), used for the soles of shoes.

Spectator A shoe design that is characterized by 2 materials, often of different colors or materials, with an edge of the dominant color having a pinking edge exposed, and a perforated design on the toe.

Split Leather A type of leather used in shoes that is made from the lower layers of a hide that have been split away from the upper or grain.

Stacked Heel A wide high heel made of different colored layers of wood or material simulating wood.

Straight Lasted A type of last used to create a very straight shoe that helps to prevent severe pronation.

Suede Leather with a soft napped surface.

Synthetic Materials Materials other than genuine leather, but which are designed to look or function like leather. Also known as man-made materials.

Tannage The process of converting raw hides or skins into finished leather.

Tap The attachment of a leather or metal partial sole over the existing sole of a shoe.

Tassel A rope and knot ornament typically found on the vamp of a loafer or moccasin.

Thong A sandal featuring a V-strap that connects to the sole of the shoe between the big and second toe, and at the sides of the foot.

Throat The main opening of a shoe extending from the vamp to the ankle.

Tip An additional piece of leather covering the toe of a shoe. May be in several different shapes or patterns. Also known as a Cap.

Tongue A strip of leather or other material, sewn into the vamp of a laced shoe and extending to the throat of the shoe.

Thermoplastic Rubber (T.P.R.) A plastic material used by many manufacturers in the injection molding process.

Thermoplastic Urethane (T.P.U.) A plastic material that gives support through the midfoot or medial side of a running shoe.

Tread May refer to the design of a shoe’s sole, or the way in which a shoe’s sole is worn.

[Skip to main content](#)

Tru-Moc A shoe in which the bottom is a single piece of leather, stitched around a last. The vamp is usually attached by whip stitching to the bottom of the shoe so it encloses the foot. Also known as moccasin.

Unit Bottom A single shoe bottom made from a mold of rubber or plastic. It includes the sole, platform heel or wedge.

Upper The upper part of a shoe, not including the sole. May be made from leather, fabric or synthetics.

Upper Leather Any leather used for making shoe uppers. The principal leathers used for shoe uppers are calf, kid, horsehide, goat, sheep, and leathers made from the skin of reptiles. All of these may be made in a wide variety of finishes, such as smooth, suede, patent, embossed, and glossy.

Vamp The front part of a shoe upper that covers the toes and part of the foot.

Vegetarian Shoes Shoes made of non-leather or synthetic materials.

Velcro Registered trademark of Velcro Industries BV Brand hook-and-loop fasteners are often used as straps to provide adjustable fits for shoes.

Vibram A type of durable, non-slip, outsole typically found on hiking boots. Vibram is a registered trademark of Vibram S.P.A.

Vinyl Short for polyvinyl chloride (P.V.C.), vinyl is a shiny plastic often used for coating shoes.

Vulcanized Rubber Rubber that has been converted from its crude state to one of durability and strength.

Wedge Heel A heel which extends from the back of the shoe to the ball of the shoe, following its contour.

Wellington AKA Rainboot A Style of pull-on boots with no trim, often made of rubber, for inclement weather.

Welt A strip of leather sewn between the insole and the outsole to create greater durability.

Width The width of a shoe is typically measured in letters (AAA, AA, A, B, C, D, E, EEE, EEEE) and refers to the width of the shoe last as measured at the ball of the foot. Widths are defined in one-sixths of an inch.

Wing Tip A wing-shaped toe cap.

jelena

Jun 2010

Has anyone heard of a logo application called "hoe skin"?
First time i heard this term i thought i misheard it but now its the second time i'm hearing it.

ralphzoontjens

Aug 2016

I am looking for books/guides regarding the manufacturing of athletic running shoes, but many of the links posted here are not active anymore, or the books are quite outdated (late 80s). Are there any good books about this that you can recommend? We are also looking into 3D printing for midsoles.

_YO

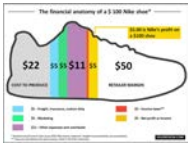
Aug 2016

I haven't seen any lately. If you find some, let us know!

dnikitiuk

Aug 2016

Business Terminology explaining what it costs to make a running shoe.
Concise examples of landed costs, wholesale revenue and gross margins etc.



What does it cost to make a running shoe?

Solereview goes where no one has gone before. Sneaker economics 101.

[Skip to main content](#)

holtag

Aug 2016

Great article, thanks for sharing dnikiuik!

Leo_Rivera

Oct 2016

Great post, this should be very helpful. Now I dont need to point at my shoe anymore to describe it, haha.

claimconsultantsllc

Jun 2017

Wow! such a fantastic thing you have shared.

_YO

Oct 2019

Came across this little shoe glossary. It is for kids shoes but a hand reference:

<https://www.kidshoeology.com/visualshoeglossary.html>

louis_leblanc

Oct 2019

Maybe you forgot you even did this diagram, but at the bottom of this core77 post Michael had made a cheat sheet. It helped me a lot when I was getting started in footwear.



Post Nike Sneaker Fiasco, a Footwear Design Expert Shares How and Why...

Detailed diagrams included—you're going to want to print this one out!

_YO

Apr 2020

Thought I would just drop that right in here:

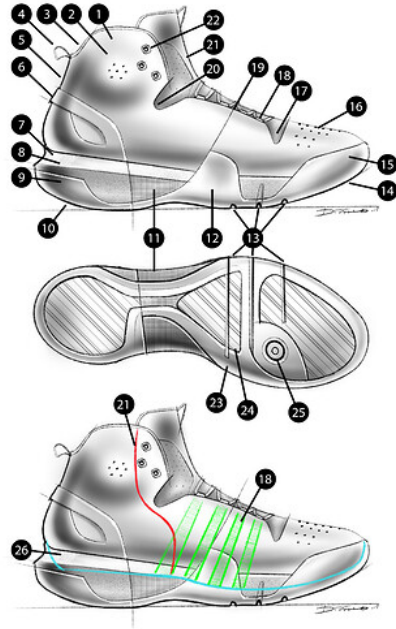
1. Upper: generally the soft parts of the shoe. It can be sewn, welded, knit, or any combination of the three. It can have a traditional tongue, a taco tongue, a bootie construction or a partial bootie. It can be single, double, or hybrid lasted to the tooling. I could talk for a week just about the upper.
2. Malleolus Padding: a little extra padding for this sensitive ankle joint is customary. On the Jordan XX1 and XX1PE it was actually a heat activated molded toe box material.
3. Achilles Notch: this little notch elevates pressure on the Achilles tendon.
4. Pull Tab: seems simple, but having one is nice.
5. Heel Rake: a little heel rake helps keep the heel locked down on the footbed. Too much and it hurts!
6. Heel Counter: these can either be an internal heat activated material or in this case and external injection molded part. It gives 3D shape and structure to the heel of the upper making a nice cup to keep the heel located.
7. Tooling: generally all the molded parts of the shoe. Generally a combination of injection and compressions parts put into an assembly often called the sole unit. Don't forget tooling has to be opened for each part in each size and it doesn't scale uniformly.
😎 Midsole: generally injection molded EVA (typically a proprietary compound) in a performance product. It can also be compression molded or in the case of vintage runners it is made of laminated cut and buffed sheets of EVA.
😎 Heel Wrap: a little extra bonding surface here helps prevent delaminations. A lot of little things like this add up to a great product.
8. Heel Kick: the surface of the outsole rolls up so that a player coming down in a foot strike rolls pressure onto the mid foot through the gate onto the ballet of the foot (metatarsal heads).
9. Outsole: generally compression molded, sometimes in different densities or carbon compositions. In vintage product this would be a capsule that is stitched to the upper and in even older product it would be uncured rubber that would be vulcanized directly to the upper. Both of those older

[Skip to main content](#)

techniques are great for durability and rigidity but they are also stiff and heavy compared to modern product.

10. Shank: this can either be an internal top loaded plastic, carbon fiber, or kevlar (sometimes called a credit card shank) or in this case it is an external part laminated between the EVA midsole and rubber outsole. The benefit of being external is you can have it wrap up the sidewall which makes it extra rigid. This part helps carry energy from the heel strike through the gate to the balls of the feet. It also helps keep the shoe from torquing making a stable platform to land on.
11. Outrigger: this is a part of the outsole that wraps up sometimes past the midsole. The rubber is much stiffer than the EVA so having this part can help keep the foot onto of the midsole in dynamic cutting and pivots on court. These can be really important.
12. Tooling Flex Notches: They don't look like much, but elevating a little material here under the metatarsal heads of the foot increases flexibility a lot.
13. Toe Spring: this is the amount that the toe bends upward. A greater amount of toe spring helps with rolling through the gate when running.
14. Toe Bumper or Toe Wrap: If an outsole is going to delaminate it usually does it in the toe or heel. Having this bumper adds a lot of bonding margin that is going to improve durability. In sports like basketball and tennis where there is a lot of toe drag with some players it is going to make a big difference.
15. Vamp Perfs: These perforations in a leather vamp are going to improve ventilation and also flexibility. The little things add up. Of course on a knit shoe to textile vamp you don't need this.
16. Eyerow Flex Notch: There the eyerow meets the base of the tongue you will often see a bit of a jog. This simple detail give the soft 2 dimensional materials of the upper a place to flex.
17. Gillies: These strips of webbing, sometimes called gillies, capture the laces and should go all the way down to the strobels at the base of the foot so as you lace up you are literally pulling the shoe to the foot from the footbed upward.
18. Seams: A seam can stretch 2-5mm per game. If you have 10 seams on a shoe, that is a lot stretch! A good practice is to minimize them, but the fewer seams you have the less efficient the patterns are in terms of nesting parts to be cut out of the roll of material. The simpler uppers are generally reserved for the more expensive signature shoes. Typically the seams will be done in such a way that allow the shoe to be "color-blocked" uniquely, meaning that by changing colors and materials it can look almost like a different model.
19. Flex notch: another one. This one allows the ankle to flex a bit and helps with fitting the shoe. Feet can be very different one to the next.
20. Tongue: obviously, but the same of it matters a lot. For a basketball shoe you generally want it to be wider to wrap the foot a bit. This is because players often have their ankles taped up which means they need a wider overall throat opening. In this case the tongue is a semi bootie construction meaning it wraps all the way to the strobels in the mid foot making half of a sock.
21. Eyelets: typically reinforced either internally or externally. Players will crank down on their laces so hard and the stretch the shoe so much in play that if this is not reinforced the lade could tear out.
22. Variable Radius: on a basketball shoe, the medial side (inside) radius of the outsole will often be much larger than the lateral side (outside). This very subtle detail allows for easier transitions with medial side push offs and more stability when cutting.
23. Traction: different types of activities require different kinds of traction patterns. With the multidirectional nature of basketball and the smooth surface of the court, the 50% up vs down and angles of herringbone are most common.
24. Pivot Point: most basketball outsoles have a smoother area with less traction under the first metatarsal head (base of the big toe) that helps the foot pivot more smoothly on the court.
25. Footbed: the actual height off the ground the foot interface is. In a basketball shoe it will typically be sunk into the tooling quite a bit so there is ample bonding margin to prevent blow outs and delamination. Each company has it's standard heights and offsets that carry by activity based on

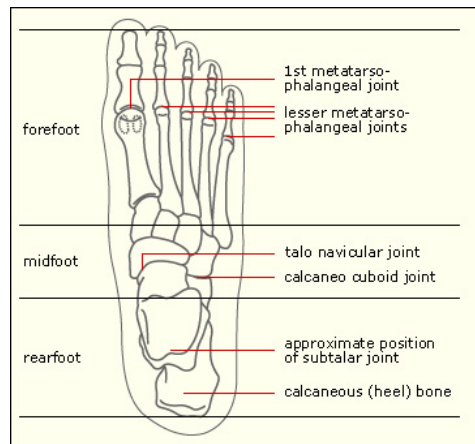
testing their cushioning compounds and platforms.



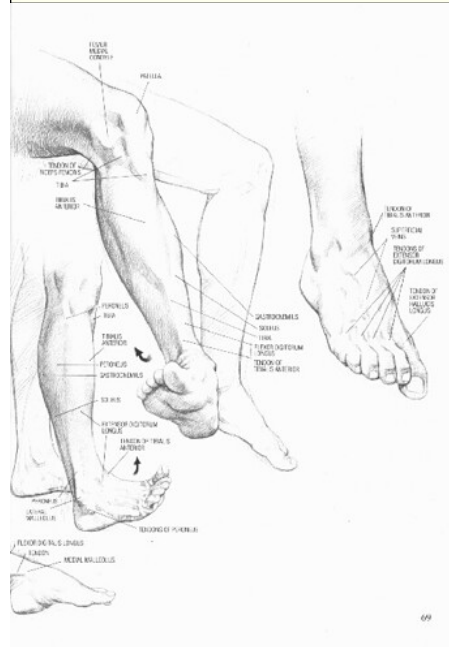
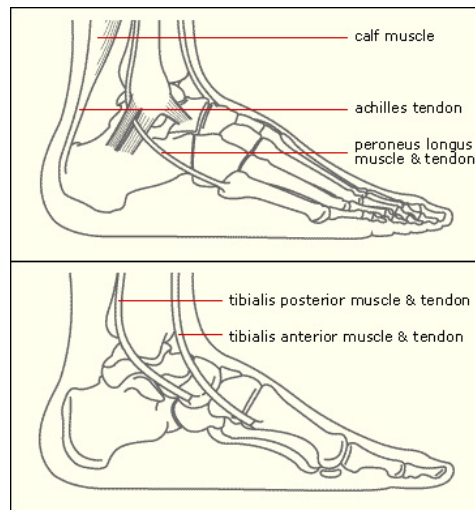
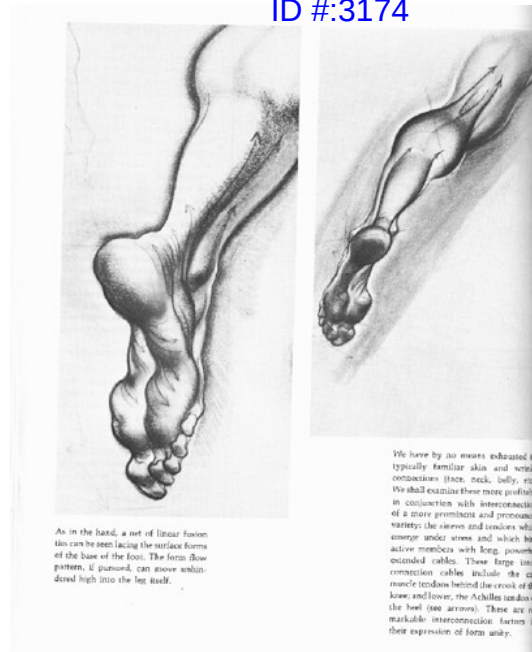
_YO

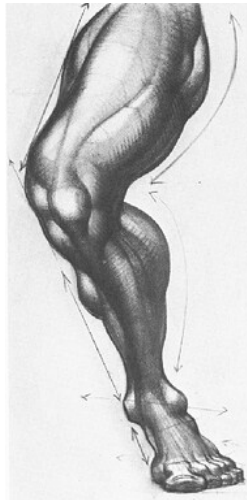
Jan 2022

was going through some archives and I found these foot anatomy images from when I first started at nike in 2003.



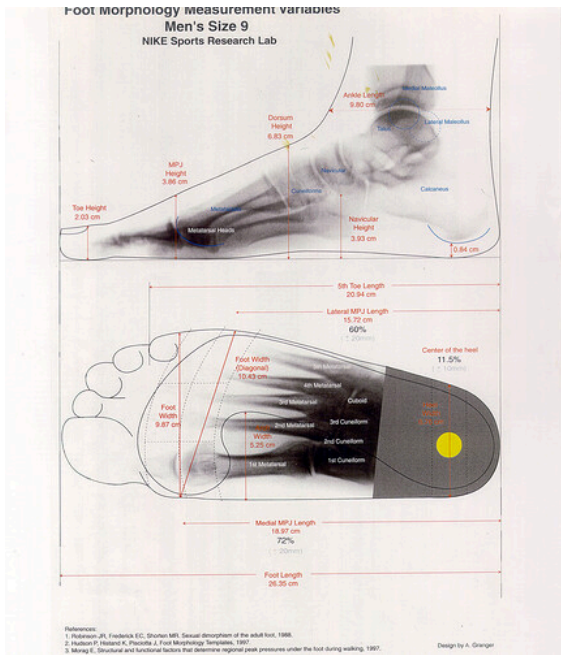
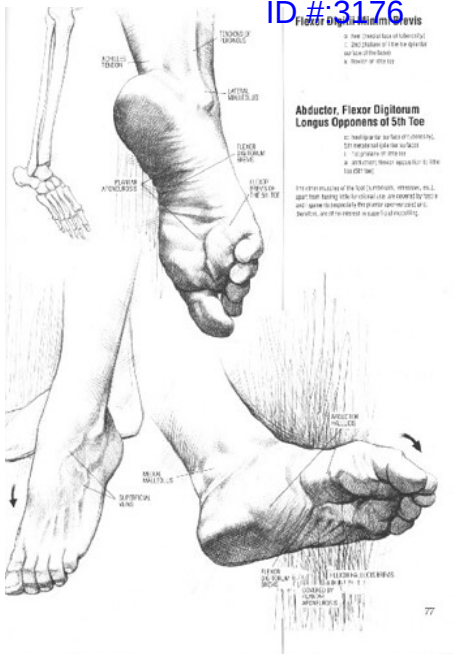
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The S-shape rhythm of the front view leg accounts for all manner of leg kinds and actions. In this figure, we see a front view leg with a bent knee; the straight S-shape line is given a corresponding break. Note the exposed anklebones. Once again, these protruding anklebones immediately signal a (frontal leg approach and call for a S-shape control of forms (see arrows).





rkuchinsky

Jan 2022

jacob_fleisher

Jan 2022

Thank you everyone, especially Richard and Michael, for sharing your deep knowledge: it's amazing to peruse. I know very little about the industry, but have a few sneaker head students: this stuff is gold.

junglebrodda

Jan 2022

was going through some archives and I found these foot anatomy images from when I first started at nike in 2003.

thanks for posting, these are sweet!

[Skip to main content](#)

_YO

Jan 2022

you are very welcome, it it originally from an article I did with Emily Engle for the core77 blog. she had asked me to respond to that whole Zion court shoe failure thing and instead I thought it might a good moment to explain a bit of what goes into footwear as a lot of other industrial designers who haven't designed performance footwear can sometimes think of it as just throwing lines down.

This is the original article:



Post Nike Sneaker Fiasco, a Footwear Design Expert Shares How and Why...

Detailed diagrams included—you're going to want to print this one out!

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This is the original article:
[Post Nike Sneaker Fiasco, a Footwear Design Expert Shares How and Why Basketball Shoes Can Fail - Core77](#)

😂 quoted the wrong post, but i missed that article so thanks for that as well!

Related Topics

Topic	Replies	Views	Activity
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Crash course: Footwear Terminology	14	4.7k	Jan 2007
shoe terminology	5	4.1k	Jul 2005
sole materials	7	3.4k	Dec 2006
parts	3	2.6k	Aug 2005

Exhibit B



What Are the Parts of a Shoe Called?

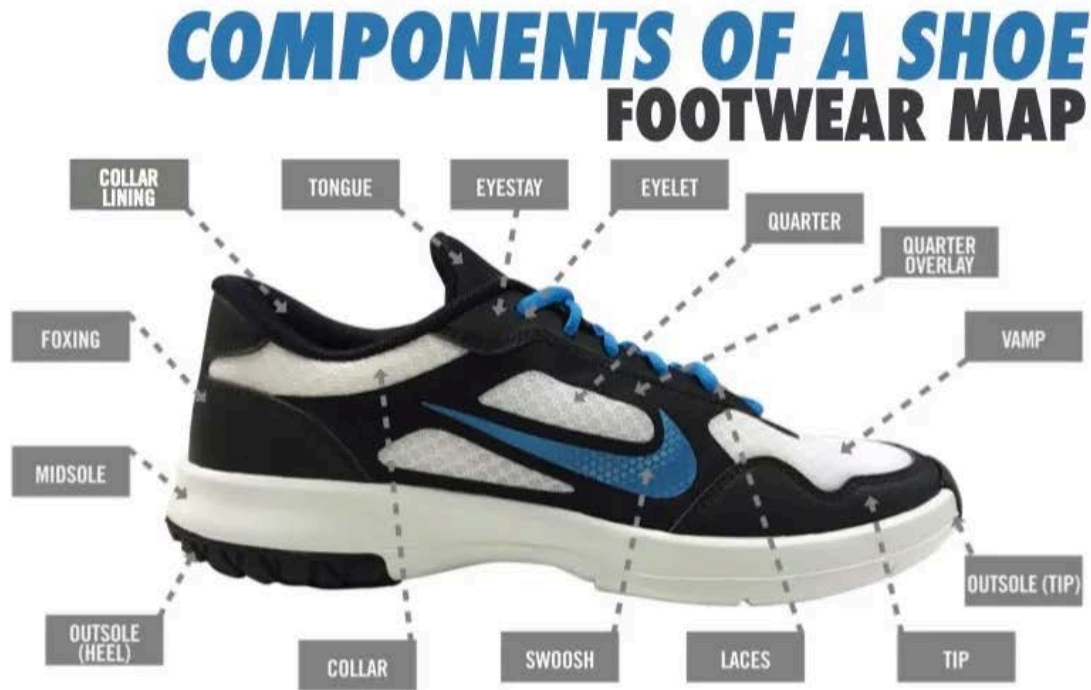
There are typically about 23 different parts of a shoe. It's not just the heel, the tongue and the laces, which most of us can point out, but rather a more complex breakdown of parts.

Toward the back of the shoe, you'll find the:

- Tongue top
- Tongue front
- Tongue foam
- Tongue lining
- Collar lining
- Collar foam
- Heel lining
- Heel counter
- Foxing

Within the front half of the shoe, there's the:

- Eyestay
- Eyestay reinforcement
- Eyelets
- Laces
- Quarter
- Quarter overlay
- Vamp
- Tip
- Tip reinforcement



Along the bottom, there are three different soles — the two outsoles at the toe and heel, and the midsole. These all lay below the strobel.

When specifically looking at a Nike shoe, you can't forget to mention the most recognizable component either — the Swoosh. It may not have a function when it comes to the fit of your shoe, but it certainly makes a style statement all on its own.

This list may feel long, but the many shoe parts work together to give you the most comfortable, high-performance fit possible for the type of activity you're doing on your feet.



On the Top

While all the parts on the top of your shoe serve a particular function, many of them are also about style. **Laces**, for example, are a necessary component when it comes to fit, but they also contribute to the style of the shoe. Think about the pop of color that neon laces can bring to your look.

Other elements include the **eyelets** and **eyestay**, which work together to hold the laces. The eyelets are the hole the laces go through, and the eyestay is the material that holds the eyelets in place.

The top of your shoe is also made up of the **quarter**, which is the area covering the sides and back of the foot, and the **tongue**, which plays a very important role. You may sometimes feel like it's that pesky piece you've got to pull up each time you get your shoe on, but it actually protects the top of your foot and prevents the laces from rubbing.

When it comes to the upper part of your shoe, look for sneakers made from soft, breathable materials for added comfort. Exploring shoes made sustainably can give you a comfortable upper, with fabrics made from **sustainable materials** that have proven their worth when it comes to sneakers. **Nike Flyknit**, for example, is a lightweight fabric precision-engineered with an average of 60 percent less waste than in traditional footwear upper manufacturing.

And **Nike Flyleather**, while it looks, feels and smells like natural leather, is made by binding at least 50 percent recycled leather fibers with synthetic fibers using a water-powered process, ultimately creating less waste and a lower impact on climate change compared to full grain leather.

At the Heel

The heel is probably one of the most important parts of the shoe from the perspective of the wearer. Without the right cushioning and comfort, the shoes won't last. They may rub and cause blisters, making your feet sore instead of supporting them while you're on the move.

This area of your shoe starts with the **collar**, which is where you insert your foot. It should have its own padding to keep your foot comfortable from the moment you put your shoes on. There's also **collar foam**, which provides cushioning to both your heel and ankle, and the **collar lining**, which encloses the seams in the back of your shoe while enhancing comfort.

Foaming is the material at the heel. It covers the entire back of the shoe, and is what will start to wear away quickly if your sneakers don't fit right. Right behind it is the **heel counter**, the stiffest piece of material in the back of your shoe. It helps maintain the shoe's shape.

Under the Foot

Also considered on the most important parts of the shoe is the bottom. Having the right materials in place here plays a big role in comfort. Not enough support, or even the wrong shape, can leave foot and leg muscles sore after a workout.

The sole and strobels make up what sits under your foot, with the sole of the shoe composed of three separate parts:

- 01 The **strobels** is the piece of fabric that lays in the bottom of your shoe directly below your foot.
- 02 The **midsole** is the foam layer, responsible for cushioning.
- 03 The **outsole** is the bottom layer, the one that comes into contact with outside surfaces. It's often rubber, and provides traction. Sometimes it's broken down into the heel and tip.

The midsole and outsoles sit underneath the strobels, making a neat stack of cushioning that varies in thickness based on what type of shoe you're wearing. This part of your sneaker will also vary in flexibility to accommodate the type of exercise you're doing when in them.

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