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Footwear — Vocabulary

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 216, *Footwear*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 309, *Footwear*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 19952:2005), which has been technically revised.

The main changes are as follows: [ISO/FDIS 19952](http://standards.iso/204159f3-0d16-40ed-ada7-7374a2908d25/iso-fdis-19952)

- additional terms were added, such as antimicrobial footwear, bottom wall, boxing footwear, bridge, components in contact with the skin, critical substances, drawn-up toe, extended sole spike heel, stiletto heel, etc.;
- synonyms were combined, such as box toe and toe puff, runner and through sole, built heel and stack heel etc.;
- some definitions were reviewed, such as bottom assembly, children's footwear, etc.;
- terms were updated based on industry developments, for example double sole was changed to multilayer sole;
- some unnecessary terms were deleted, such as school footwear/children's school footwear.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document defines terms and definitions used in the footwear industry, in order to facilitate communication and understanding across trade, designers, universities, manufacturers etc. in the footwear sector. This document defines each type of footwear under the current technological processes.

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Footwear — Vocabulary

1 Scope

This document defines terms used in the footwear industry.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 Footwear materials

3.1.1

abrasive

hard substance that can wear away a softer material by rubbing it

Note 1 to entry: An abrasive is usually used to prepare materials for bonding.

3.1.2

adhesive

cement

chemical compound used for bonding two surfaces together

3.1.3

backer

piece of material applied to another usually to add strength or reinforcement

3.1.4

binding

<material> narrow strip of material attached or wrapped around an edge (of a section)

3.1.5

bottom filling

bottom filler

material used to fill the void inside the lasted margin above the outsole *assembly* (3.2.2)

EXAMPLE Felt or cork.

Note 1 to entry: See [Figure 4](#), [Figure 10](#), [Figure 2](#), [Figure 3](#) and [Figure 5](#).

3.1.6

bridge

footwear support

piece of hardened paper, plastic, wood or other material to support footwear and maintain its shape during transportation and storage

Note 1 to entry: Filled-paper can also act as bridge.

3.1.7

coated fabric

textile covered with a polymer or plastic coating such as polyurethane, polyvinyl chloride (PVC) or rubber

3.1.8

coated leather

coated split leather

<material> *leather* (3.1.20) and split leather where the surface coating, applied to the outer side, does not exceed one third of the total thickness of the product but is in excess of 0,15 mm

[SOURCE: ISO 15115:2019, 3.22, modified — The preferred term “coated and coated split leather” has been changed to two preferred terms “coated leather” and “coated split leather”.]

3.1.9

coating

layer formed on the *surface* (3.6.22) of a substrate with a single or multiple application of material

3.1.10

combined material

composite material

material constituted of a combination of several different raw materials which cannot be separated mechanically

EXAMPLE Coated textile/leather (a textile/leather covered by a polymer film), complex upper (upper and lining are fully stuck by glue or other techniques and it is impossible to separate them), rubber boot upper (the sock can be fully dissolved in rubber), soling material (in injected sole footwear the insole can be fully dissolved in the sole), foam with adhesive or foam with residues of adhesive, etc.

3.1.11

double density

dual density

sole material comprising two layers of different density, from one or two polymers, solid and/or cellular in *construction* (3.2.16)

3.1.12

elastic

tape, cord or fabric containing rubber or a similar substance that allows it to stretch and return to its original shape

Note 1 to entry: Generally elastic materials are used in *upper* (3.3.65) construction in the *quarters* (3.3.48) or in the straps to hold the shoe on the foot.

3.1.13

facing stay

reinforcement (3.1.21) used to prevent *eyelets* (3.3.25) pulling through the *facer* (3.3.26)

3.1.14

foam

porous material in which the pores are all or partly intercommunicating

3.1.15

foxing

material that connects the *upper* (3.3.65) and sole to increase bendability strength

Note 1 to entry: Generally foxing is usually used in vulcanized footwear.

Note 2 to entry: See [Figure 1](#).

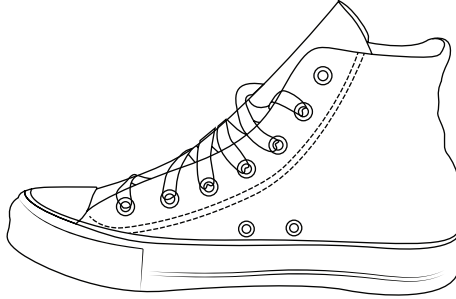


Figure 1 — Foxing

3.1.16

heel flap

Louis high heel

sole material stuck to the *heel breast* (3.3.34), where the sole continues back from the *waist* (3.6.29) down the front (breast) of the heel and extends to the *heel tip* (3.3.36)

Note 1 to entry: Such heels require a curvature at the top of the breast that blends into the waist.

3.1.17

heel grip

strip of material applied to the inside of the back part of the footwear *upper* (3.3.65) to prevent *heel* (3.3.33) slip during walking

3.1.18

heel lift

single layer of material forming part of a *built heel* (3.3.10), excluding the *top piece* (3.3.61)

3.1.19

interlining

material that is between *lining* (3.3.42) and *upper* (3.3.65)

3.1.20

leather

hide or skin with its original fibrous structure more or less intact, tanned to be imputrescible, where the hair or wool have been removed or not, whether or not the hide or skin has been split into layers or segmented either before or after tanning and where any surface coating or surface layer, however applied, is not thicker than 0,15 mm

Note 1 to entry: If the tanned hide or skin is disintegrated mechanically and/or chemically into fibrous particles, small pieces or powders, and is then, with or without the combination of a binding agent, made into sheets or other forms, such sheets or forms are not leather.

Note 2 to entry: If the grain layer has been completely removed, the term leather shall not be used without further qualification, e.g. split leather, suede leather.

Note 3 to entry: The material shall be of animal origin.

[SOURCE: ISO 15115:2019, 3.52]

3.1.21

reinforcement

material used to improve the strength and modify the stretch properties of *upper* (3.3.65) and/or lining materials or *outsole* (3.3.47) during manufacture or during wear

3.1.22

thick leather

leather (3.1.20) with a thickness greater than 2 mm

3.1.23

top facing

strip of material stitched inside a footwear *upper* (3.3.65) at the top to finish off the *lining* (3.3.42) and to reinforce the footwear

3.2 Footwear manufacturing

3.2.1

adhesion

state in which two surfaces are joined together by chemical bond or interfacial forces

Note 1 to entry: This can be via adhesive, or through a chemical reaction, i.e. thermoplastic adhesion where the soling is stuck to the rubber shoe via heating.

3.2.2

assembly

matching or bringing together the various *components* (3.3.16) of the footwear with or without the lasts

3.2.3

attached rib

ply rib

rib

wall which is perpendicular to the flat *surface* (3.6.22) of a sole or *insole* (3.3.39) and slightly inward from the edge, usually made of fabric, fixed to the insole to present a wall similar to a Goodyear insole rib

Note 1 to entry: This can be formed by cutting a channel or lip or by folding a piece of material.

Note 2 to entry: See [Figure 4](https://standards.iteh.ai/catalog/standards/iso/204159f3-0d16-40ed-ada7-7374a2908d25/iso-fdis-19952).

3.2.4

back seam

seam (3.2.34) at the back of the *heel* (3.3.33) joining or closing the *upper* (3.3.65) together

3.2.5

beading

folding

process of folding over an edge, usually the *top line* (3.3.60)

3.2.6

binding

<process> attaching a narrow strip around an edge

3.2.7

Blake sewn

<process> *chainstitch* (3.2.13) method in which the *upper* (3.3.65) and sole are sewn together with a single stitch from the inside, resulting in a clean and seamless appearance on the exterior of the footwear

Note 1 to entry: This sewing method was invented by Blake.

Note 2 to entry: See [Figure 10](#).

3.2.8

bottom assembly

<process> bringing together all the parts of the footwear bottom

3.2.9

buffing

bringing up a shine or polishing or roughing or scouring in preparation for *adhesion* (3.2.1)

3.2.10

burnishing

treatment to add highlights, including edge treatment involving application of heat to a skive so that it assumes a quarter-round section

3.2.11

butt seam

seam (3.2.34) made by butting two edges together with no overlap, usually sewn using a zigzag stitch

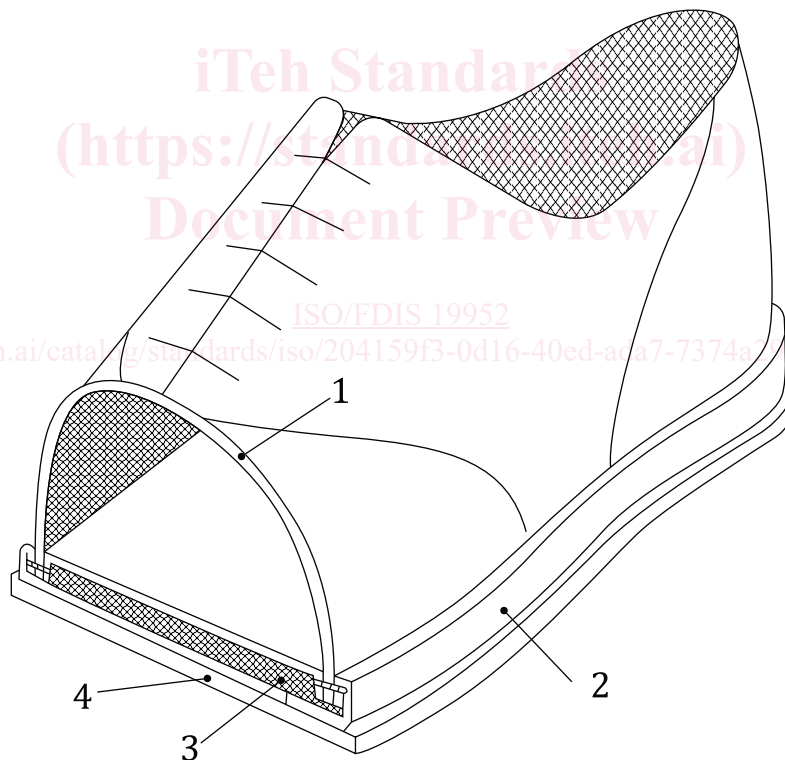
3.2.12

California

construction (3.2.16) in which the *upper* (3.3.65) is stitched to a flexible *insole* (3.3.39) or a light *sock* (3.3.31) to make a bag into which the *last* (3.6.13) is forced

Note 1 to entry: The band is then used to cover the edge of a *midsole* (3.3.43) before the *outsole* (3.3.47) is stuck on.

Note 2 to entry: See [Figure 2](#).



Key

- 1 upper
- 2 covering
- 3 bottom filling/filler
- 4 outsole

Figure 2 — California construction

3.2.13

chainstitch

stitch made by a single thread passing to and fro through a hole in the material and caught on one side by a loop formed by the previous stitch

3.2.14

cohesion

state in which the particles of a single substance are held together by the primary or secondary valence forces

3.2.15

construction

<process> particular method or process used for constructing or assembling a sole (*outsole* (3.3.47))

3.2.16

construction

<process result> manner in which the *outsole* (3.3.47) is attached to the *upper* (3.3.65)

3.2.16.1

cemented construction

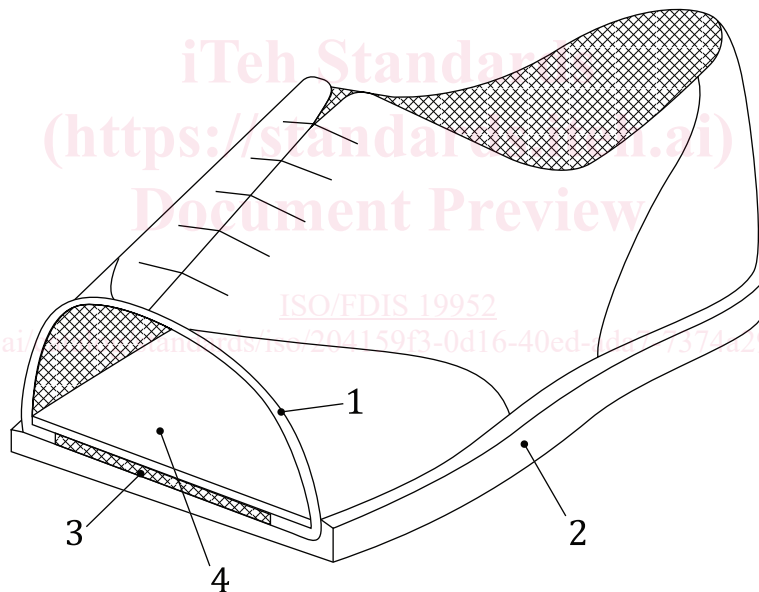
flat lasted

stuck-on sole construction

stuck-on

method of construction where the *upper* (3.3.65) is fixed or lasted to the sole using *adhesive* (3.1.2)

Note 1 to entry: See [Figure 3](#).



Key

- 1 upper
- 2 outsole
- 3 bottom filling/filler
- 4 insole

Figure 3 — Cemented construction

3.2.17

cutting area

usable area of material, for example, a hide or skin, from which *components* (3.3.16) are cut

3.2.18

direct moulding

method of having a sole/heel mould that is held against the lasted *upper* (3.3.65), making contact at the bite-line where the welt-plate touches the upper, thus enclosing a cavity within which the sole/heel is formed

3.2.18.1

injection moulding

type of *direct moulding* (3.2.18) where the sole is formed from polymer that is forced into the mould while in a molten state

3.2.18.2

direct vulcanizing dv moulded

type of *construction* (3.2.16) where uncured rubber is placed in a sole mould in contact with the lasted margin of the *upper* (3.3.65) and cured or vulcanized in situ via the application of heat and pressure

3.2.18.3

reaction moulding

type of *construction* (3.2.16) where a sole, such as a polyurethane (PUR) sole, is formed in the mould attached to the lasted upper by mixing the components of the PUR (e.g. polyol and isocyanate) immediately before they are introduced into the mould and where the components react in the mould to produce a cellular PUR outsole

3.2.19

direction of stretch

directions with the most and least stretch (modulus) respectively, usually with *leather* (3.1.20), but also with other upper materials

3.2.20

edge

3.2.20.1

edge finishing

application of inks and colorants to raw edges

3.2.20.2

edge guide standards.iteh.ai/catalog/standards/iso/204159f3-0d16-40ed-ada7-7374a2908d25/iso-fdis-19952
mechanical device fitted to equipment to aid following of edges, often seen on stitching machines

3.2.20.3

edge iron setter

heat treatment applied by using a tool shaped to match the edge profile and to make edges smooth

3.2.20.4

edge trimming

operation with tool to define the profile on the edge of a *component* (3.3.16) so its edge is neat and/or matches an adjacent component

Note 1 to entry: Top stitching is often known as under edge trimming.

3.2.21

finishing

<process> applying the final treatments, colourants and glosses to footwear

3.2.22

fitting

<process> matching the dimensions of the foot most accurately to a given size of foot

3.2.23

force lasting

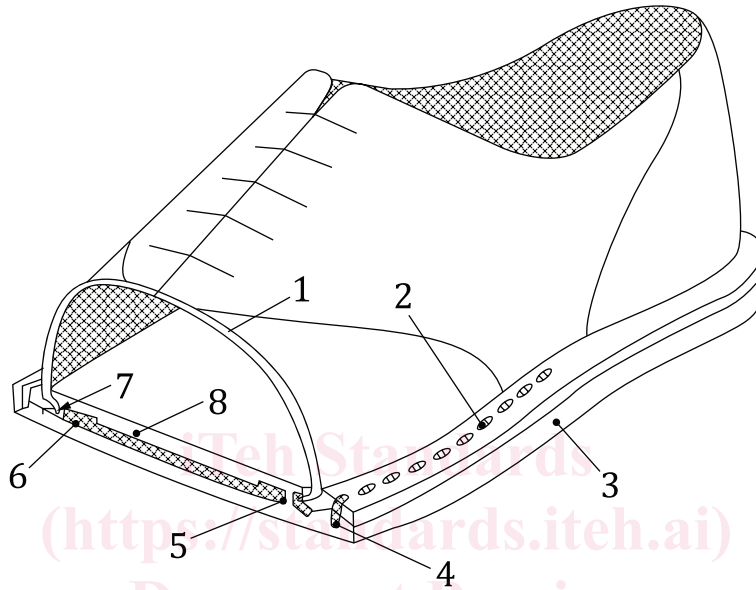
method of *lasting* (3.2.28) where the *upper* (3.3.65) is joined to the *insole* (3.3.39) or *insock* (3.3.38) and forced on to a *last* (3.6.13)

3.2.24

Goodyear welted

type of *construction* (3.2.16) in which the *welt* (3.3.70) and the *upper* (3.3.65) are sewn to the *insole rib* (3.2.3) by the *welt sewing* (3.2.48) machine or by hand, then welt is sewn to the *midsole* (3.3.43) or *outsole* (3.3.47)

Note 1 to entry: See [Figure 4](#).



Key

- 1 upper
- 2 welt
- 3 outsole
- 4 seam
- 5 welt sewing
- 6 bottom filling/filler
- 7 rib
- 8 insole

Figure 4 — Goodyear construction

3.2.25

halogenation

treatment, usually with chlorine, to improve the *bondability* (3.5.4) of materials

Note 1 to entry: Other halogens such as iodine or bromine may also be used.

3.2.26

lace hooks

<factory> small hooks inserted like *eyelets* (3.3.25) into footwear or boot *facings* (3.3.26) used for temporary closing during *lasting* (3.2.28), to prevent damage