



**International
Standard**

ISO 20537

**Footwear — Identification of
defects during visual inspection —
Vocabulary**

**First edition
2025-01**

STANDARDSISO.COM : Click to view the full PDF of ISO 20537:2025

STANDARDSISO.COM : Click to view the full PDF of ISO 20537:2025



COPYRIGHT PROTECTED DOCUMENT

© ISO 2025

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 General defects	1
3.2 Defects in materials aspects	4
3.3 Defects in components	5
3.3.1 Defects in upper	5
3.3.2 Defects in counter and toe puff	8
3.3.3 Defects in lining and insock	10
3.3.4 Defects in welt and foxing	11
3.3.5 Defects in heel	12
3.3.6 Defects in outsole	14
3.3.7 Defects in other components	15
3.4 Manufacturing defects	17
3.4.1 Defects in assembly	17
3.4.2 Gluing defects	19
3.4.3 Sewing defects	20
3.4.4 Defects in other process	23
3.5 Defects within pairs	24
3.6 Defects in markings	28
Bibliography	31

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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).

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

Visual inspection is important for manufacturers, suppliers, inspection organizations and costumers as one of the quality indicators of footwear products. This document is not only intended as a basis for assessing footwear appearance defects but also as a reference material and training material for the footwear industry.

The presence of one of these defects in footwear does not automatically imply that the footwear is substandard. Suppliers and purchasers can still reach an agreement on the scope and level of acceptance for defects in the goods, based on the intended use of the footwear.

Due to the development of material and technology in the footwear industry, as well as insufficient photographic resources, it is impossible to define all terms for identification of defects during visual inspection of footwear. The list of terms given in this document is not exhaustive.

STANDARDSISO.COM : Click to view the full PDF of ISO 20537:2025

STANDARDSISO.COM : Click to view the full PDF of ISO 20537:2025

Footwear — Identification of defects during visual inspection — Vocabulary

1 Scope

This document defines the most common terms related to defects that occur in the manufacture, storage and usage of footwear and that can be determined during visual inspection of the end product.

NOTE The photos are given as examples and do not represent all possible instances.

2 Normative references

There are no normative references in this document.

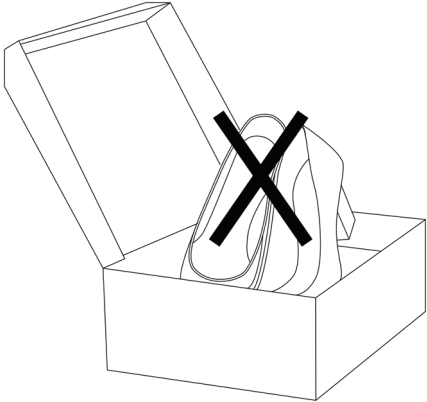
3 Terms and definitions

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/>

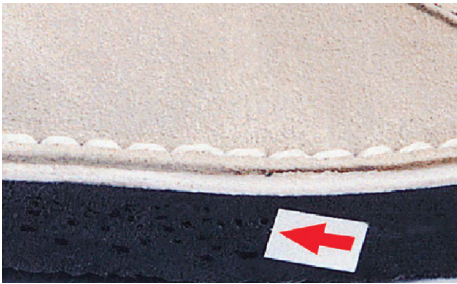
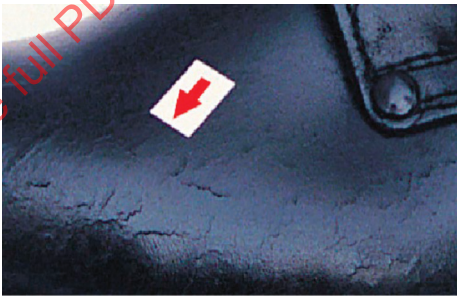
3.1 General defects

Term and definition	Examples
3.1.1 colour variation obvious difference in colour that can be seen in the same area within a pair, or in one component part or in the adjacent areas of one item of footwear Note 1 to entry: Intentional designs are not included.	
3.1.2 damaged shoe footwear that has changed in appearance due to careless operation that adversely affects its performance	

Term and definition	Examples
3.1.3 inconformity with the design situation when a product does not conform to the reference sample or drawing which both parties have agreed upon	 drawing  product
3.1.4 mildewing infesting process by microorganisms on material at any part of the footwear	 
3.1.5 non-compliant box shoe box that does not conform with the footwear inside	

Term and definition	Examples
3.1.6 poor printing printing on footwear that is incomplete or unclear	
3.1.7 soiled shoe shoe with dirt or adhesive mark on the upper, lining or sides of the sole due to careless handling or cleaning	
3.1.8 spue white frost-like layer that appears on the surface of footwear	
3.1.9 weave fault defect that reduces the expected performance of the fabric Note 1 to entry: Related defects are described in ISO 8498 and ISO 8499.	

3.2 Defects in materials aspects

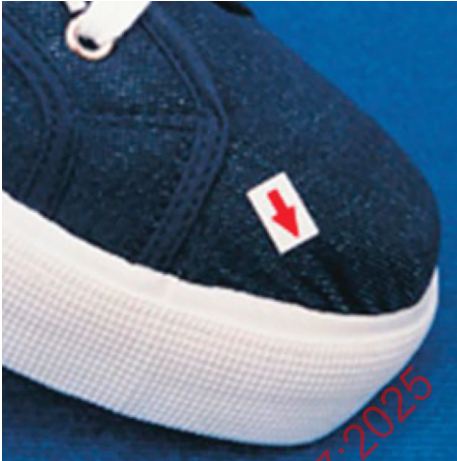
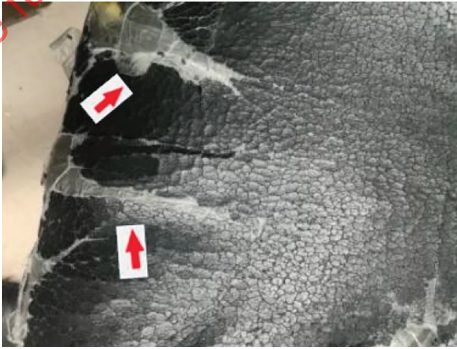
Term and definition	Examples
3.2.1 air hole small hole which develops in the colloid structure of materials	
3.2.2 colour migration discolouration caused by movement of colour from one material to another	
3.2.3 crazing cracks in the coating of upper materials	
3.2.4 discolouration staining or fading of the original material colour, either in discrete areas or across the whole product	
3.2.5 impurity small particles that do not belong to the original formulation and show on the material	

Term and definition	Examples
3.2.6 pit small hole in the surface of footwear	
3.2.7 shade variation differences within materials that cause a difference in the shade of the finished footwear	
3.2.8 sulfur blooming yellow or white layer that appears on the surface of rubber materials	

3.3 Defects in components

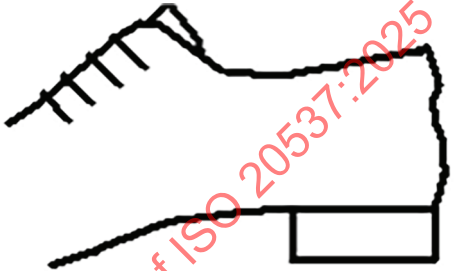
3.3.1 Defects in upper

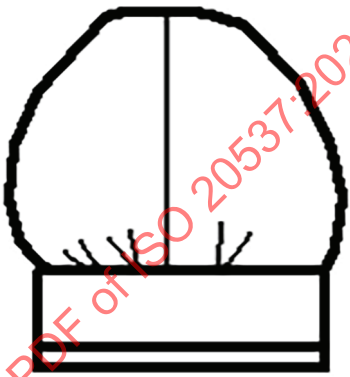
Term and definition	Examples
3.3.1.1 broken folding folding of upper over the edge that has broken during the making or wearing process	

Term and definition	Examples
3.3.1.2 crease on the upper wrinkles on the upper area of footwear due to poor sewing process	 
3.3.1.3 delamination of upper separation of upper into its constituent layers, either in whole or in part	 

Term and definition	Examples
3.3.1.4 exposed lasting margin scoured lasting margin of the upper that is exposed above the lasting edge	 
3.3.1.5 grain crack grain surface of leather in upper that is split or cracked, or on which a rupture pattern has developed	
3.3.1.6 wrinkled leather loose grain grain whose attachment to corium has been eroded, giving rise to pronounced wrinkles when leather is bent, grain inside [SOURCE: ISO 15115:2019, 3.55, modified — the preferred term “wrinkled leather” has been added.]	

3.3.2 Defects in counter and toe puff

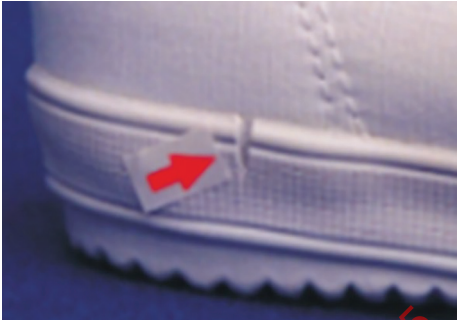
Term and definition	Examples
3.3.2.1 collapsed counter counter area of footwear that has collapsed due to the stiffener either becoming detached or weakened	 
3.3.2.2 collapsed toe puff toe that is distorted and buckled because the reinforcement has collapsed within, leaving creases and/or dents	 

Term and definition	Examples
3.3.2.3 uneven counter counter edge that has become creased Note 1 to entry: Uneven counter can be due to excessive force used during the lasting process or a poor sewing process.	 
3.3.2.4 uneven toe puff toe puff of the shoe that has become creased Note 1 to entry: Uneven toe puff can be due to excessive force used during the lasting process or a poor sewing process.	

3.3.3 Defects in lining and insock

Term and definition	Examples
3.3.3.1 crease wrinkle permanent hard folding mark that appears in the middle of lining or insock EXAMPLE A pleat or furrow in the surface stuck together.	
3.3.3.2 broken insock textile on insock component that has torn during the placement or wearing process	
3.3.3.3 separated lining lining that has separated from the upper, leaving gaps or open areas	
3.3.3.4 uneven lining lining that has wrinkled or creased	
3.3.3.5 uneven lining edge edge of lining that is crooked	

3.3.4 Defects in welt and foxing

Term and definition	Examples
3.3.4.1 broken foxing foxing that has cracked Note 1 to entry: Broken foxing can be due to poor material quality or poor tension during the wearing process.	
3.3.4.2 foxing curling departure of foxing from physical flatness with the tendency to curve into a cylindrical shape	
3.3.4.3 poor foxing positioning foxing that is too high, revealing the outsole	
3.3.4.4 uneven welt welt surface that is uneven or welt edge that is crooked or notched	

Term and definition	Examples
3.3.4.5 insufficient welt welts that fail to cover the circle of the lower outer edge of footwear	

3.3.5 Defects in heel

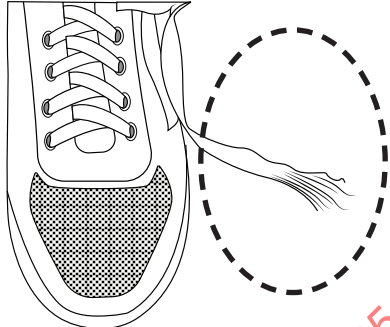
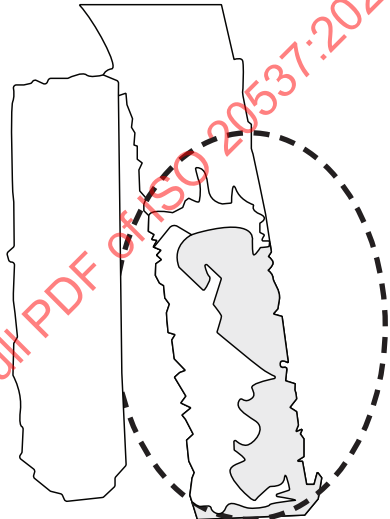
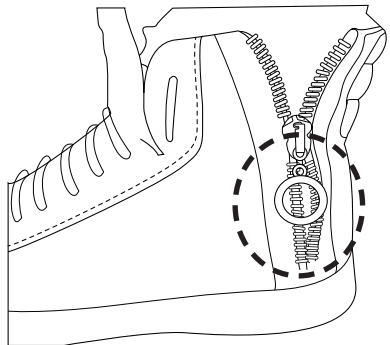
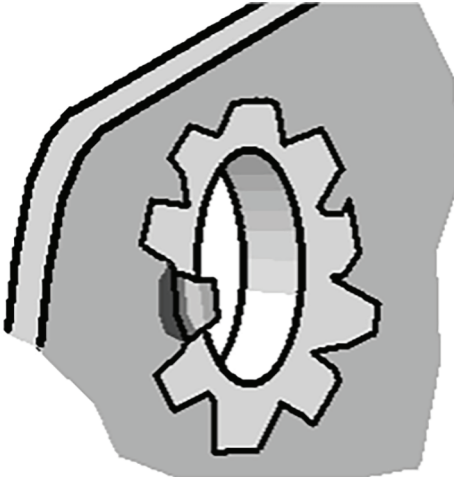
Term and definition	Examples
3.3.5.1 creased heel cover heel coating that is wrinkled, not fixed tightly or not fully stretched	 
3.3.5.2 loose heel heel that has not been securely fastened causing it to work loose easily or come off altogether	

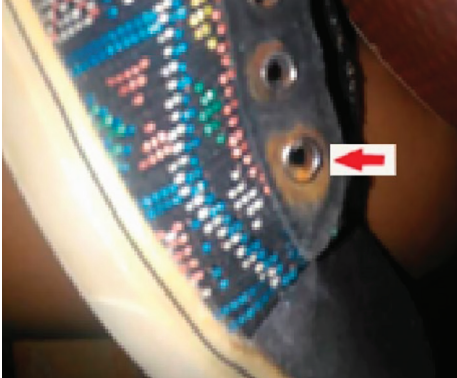
Term and definition	Examples
3.3.5.3 loose top piece top piece that has not been securely fastened to the heel, causing it to work loose easily or come off altogether	 A schematic diagram showing a cross-section of a shoe heel. A top piece is shown attached to the heel base with a dashed line, indicating it is not securely fastened and can move independently.
3.3.5.4 slanted heel heel that does not sit on the ground flat but leans with the top piece resting on its edge	 The example for a slanted heel includes a photograph of two dark red high-heeled shoes. The heel of the shoe on the right is shown from a side angle, with a red arrow pointing to the slanted heel. Below the photograph are two line drawings of a high-heeled shoe, one showing the side profile and the other showing the heel from a side angle, both illustrating the slanted design.
3.3.5.5 uneven top piece top piece surface that is distorted	 A photograph showing the underside of a shoe's top piece. The surface is dark and textured, with a red arrow pointing to a specific area where the surface appears distorted or uneven.

3.3.6 Defects in outsole

Term and definition	Examples
3.3.6.1 blister soft area that presents an irregular surface or protuberance without a break on the surface	
3.3.6.2 deformed outsole outsole profile that is distorted	
3.3.6.3 mould spew material which has flowed into the mould gap and remains on the surface Note 1 to entry: Mould spew occurs during the injection process of moulded footwear.	
3.3.6.4 moulding defect structure that is incomplete or deformed	

3.3.7 Defects in other components

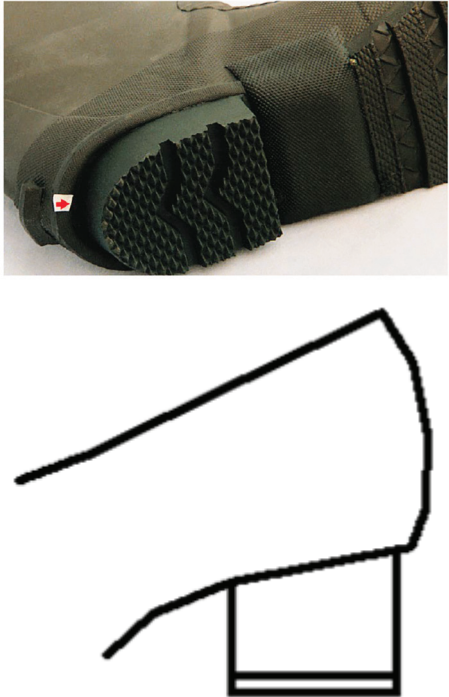
Term and definition	Examples
3.3.7.1 defective lace lace containing one or more defects which could affect its functionality Note 1 to entry: Defects can include excessive or insufficient length and damage.	
3.3.7.2 defective touch and close fastener touch and close fastener containing one or more defects which could affect its functionality Note 1 to entry: Defects can include frays and lack of stickiness.	
3.3.7.3 defective zipper zipper containing one or more defects which could affect its functionality	
3.3.7.4 eyelet clenching fault eyelet edge which is sticking out Note 1 to entry: An eyelet clenching fault can cause injury to the wearer.	

Term and definition	Examples
3.3.7.5 loose ornaments ornament not securely attached to the shoe due to poor bonding force	
3.3.7.6 rusty accessory metal accessory with a corrosive substance which is formed by the action of water and air	

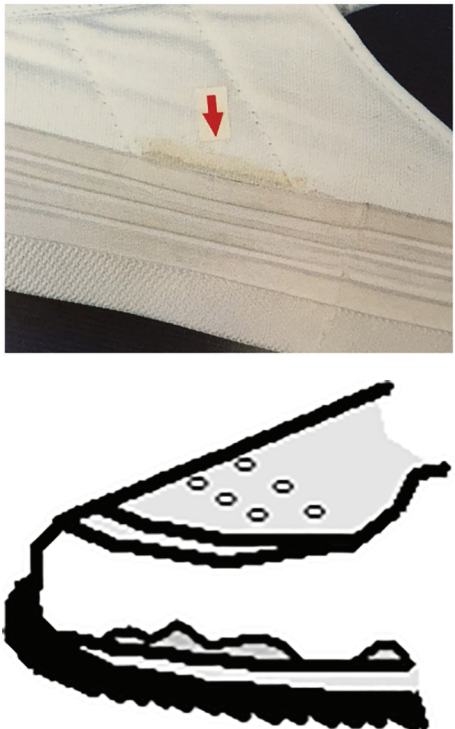
3.4 Manufacturing defects

3.4.1 Defects in assembly

Term and definition	Examples
3.4.1.1 insufficient insock insock that is too short to cover the heel area and sides of the insole	
3.4.1.2 mismatching upper and sole footwear with an upper whose size does not match with the sole size	

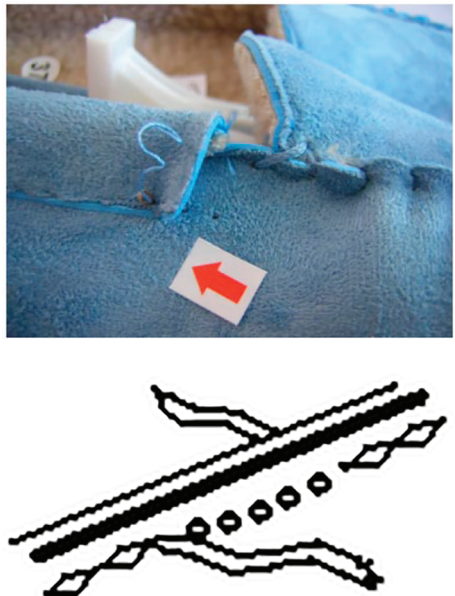
Term and definition	Examples
3.4.1.3 misplaced heel heel that does not sit correctly on the seat of the footwear	
3.4.1.4 under-seated heel heel whose top is smaller than the area of the seat Note 1 to entry: This makes the heel seem immersed in the sole of the footwear.	

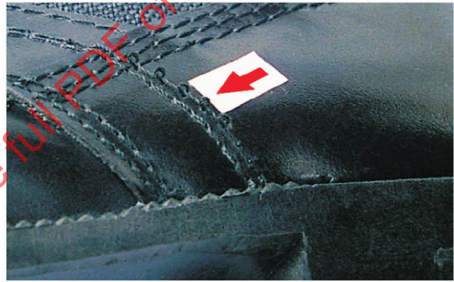
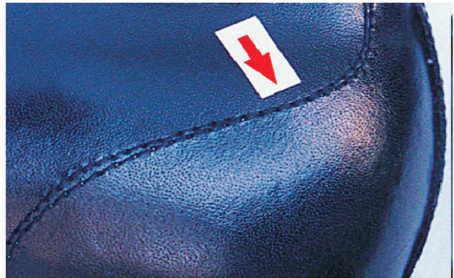
3.4.2 Gluing defects

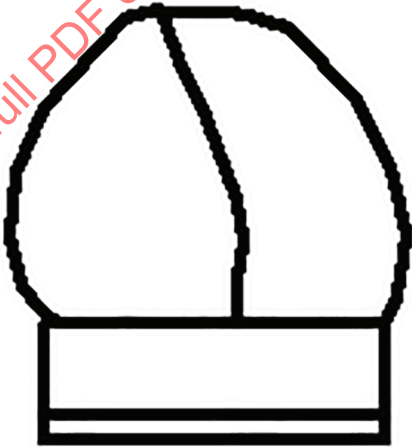
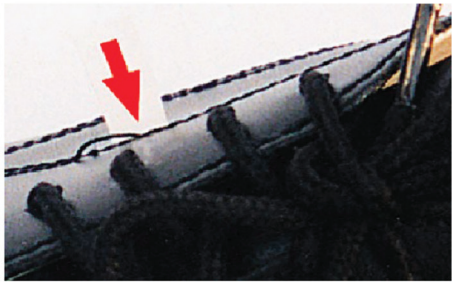
Term and definition	Examples
3.4.2.1 adhesion failure detachment of two parts connected with adhesive material Note 1 to entry: Typical adhesion failures are common between the outsole and the midsole, between the outsole and the upper and between the midsole and the upper. Note 2 to entry: An example of an adhesive material is glue.	
3.4.2.2 glue overflow excessive amount of adhesive that has bled from the adhesion part to the surface	

Term and definition	Examples
3.4.2.3 insufficient gluing insufficient application of glue to components, causing their detachment	
3.4.2.4 trace of glue glue stains on the insock or upper of the finished footwear	

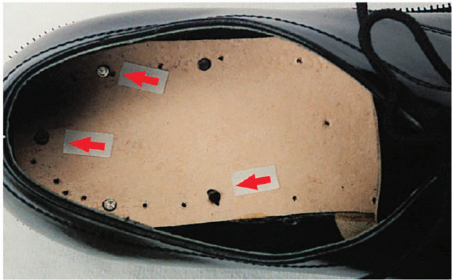
3.4.3 Sewing defects

Term and definition	Examples
3.4.3.1 broken stitching thread breakage thread that has broken altogether, perhaps as a result of poor thread quality or poor tension in the stitching process	

Term and definition	Examples
3.4.3.2 crooked stitching non-parallel stitches disordered or crooked alignment between the stitch line and the intended edge on an upper Note 1 to entry: Special stitching styles are excluded from crooked stitching.	
3.4.3.3 flipped thread under thread and top thread that have switched places, causing the under thread to float on the upper surface	
3.4.3.4 merged stitching stitch threads that overlap in some areas of a shoe	

Term and definition	Examples
3.4.3.5 skewed back seam back seam that is not located in the line of heel symmetry	 
3.4.3.6 skipped stitching thread that is skipped, leading to the thread coming away from the upper in a loop alternating with stitches on both sides	
3.4.3.7 uneven lapping upper material with a rough or/and uneven overlap	

3.4.4 Defects in other process

Term and definition	Examples
3.4.4.1 extruded nail nail which is used to fasten some components of footwear through the insole Note 1 to entry: Extruded nails have the potential to hurt the wearer.	 
3.4.4.2 poor lasting insufficient lasting that results in wrinkles due to poor process technique or the incompatibility of the upper and the last	
3.4.4.3 remaining staple staple, used for positioning during lasting, that has been left in the insole Note 1 to entry: Remaining staples have the potential to hurt the wearer.	
3.4.4.4 uneven nail nail applied to fix a heel or top piece that is unevenly distributed	
3.4.4.5 uneven top facing top line that varies in size	

3.5 Defects within pairs

Term and definition	Examples
3.5.1 different apron size size of central portion on the top of the vamp that is variable within pairs	
3.5.2 ornament difference difference between ornaments in the same area of two items in a pair Note 1 to entry: Intentional designs are not included.	
3.5.3 pair colour variation obvious difference in colour that can be seen in the same area of two items in a pair Note 1 to entry: Intentional designs are not included.	