Integrating Companies in a Sustainable Apprenticeship System

Project 2017-1-DE02-KA202-004174

Intellectual Output 3

Train-the-Trainer Manual

Quality Assurance

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Erasmus+

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Contents

1. Introduction

1.1. Aims of the ICSAS Project

The aims of the Erasmus+ project «Integrating Companies in a Sustainable Apprenticeship System» are to

- induce the existing Vocational Education and Training (VET) systems to train skilled workers for footwear manufacturing in Romania and Portugal to develop towards work-based learning (WBL) and improve the sector-specific tutor training in Spain and Germany
- develop a sector qualification framework and the referencing of national qualifications of Germany, Portugal, Romania, and Spain.

1.2. Eleven Manuals to Guide In-Company Tutors

Within this project, the project consortium has committed to editing eleven manuals which are intended to prepare in-company tutors and provide support for the work-based learning phases of the apprenticeship.
The work-place specific know-how (for example in the cutting department) will be imparted by skilled workers from this department. They will take on the role of in-house workplace instructors/trainers.

- demonstrating the operations which the apprentices are supposed to learn to perform
- guiding und supervising the apprentices during their first approaches as their skills are becoming more and more advanced
- leading them towards an independent performance of the task

Furthermore, each company enrolled in work-based learning will appoint a Head of Training who is responsible for

- planning of the order of the overall training of each apprentice (how long each apprentice will be trained at each learning station and in which order)
- assessing and documenting the learning progress of each student at each learning station

The chapters of this document are not meant to replace a textbook. They are meant to provide support to the trainers to plan the work-based learning activities with the trainees. The workplace trainers are invited to gather more information from other sources.

1.3. Take Your Apprentices on a Guided Tour

Before you start the hands-on training in a specific department, please make sure that the apprentice has been given a tour of the entire company including all departments.

For example, you could start with presenting the types of products your company manufactures and their intended use, the different customer segments, the distribution channels etc. Allow the apprentices insight into the product creation and manufacturing

processes, i.e. product design, pattern making, purchasing department, production planning, and all production departments to warehouse and logistics.

Present some shoe models your company produces (as in Fig 1). Your trainees will better understand the complexity of the product “shoe.

Fig. 1: Views of shoe parts like on this photo can be very helpful for the trainee to understand the complexity of a shoe

2. Quality Assurance

In order to check and ensure the quality of the footwear product, three parameters must be taken into account: the control of the aesthetic appearance, the control of the fit and the control of the technical aspects. These controls must be performed on the finished footwear as well as during all manufacturing stages to avoid problems in subsequent processes. Each control involves a series of steps and requirements that will be described below.

Particularly, the control of the aesthetic appearance will be carried out by means of a sampling plan, in order to be able to decide whether a footwear lot should be accepted or not after carrying out the inspection. On the one hand, a visual inspection of the quality (external appearance) of the footwear and the revision of the main quality attributes will be performed. The control of the fit, on the other hand, will be checked by selecting a tester panel and carrying out wear trials that will help determine the level of adaptation and comfort achieved during manufacturing. Finally, the control of technical aspects will consist in subjecting the footwear to a series of physical and mechanical tests following the company's own quality standards manual to ensure the quality and safety of the product.

2.1. Control of aesthetic appearance

First, the following concepts must be defined:

INSEPCTION: "Activity such as measuring, examining, testing or gauging one or more characteristics of a product or service, and comparing the results with specified requirements in order to establish whether conformity is achieved for each characteristic" (ISO 2859-1)

INSPECTION BY ATTRIBUTES: "Inspection whereby either the item is classified simply as conforming or nonconforming with respect to a specified requirement or set of specified requirements". (ISO 2859-1)

SAMPLING PLAN: Combination of sample size(s) to be used and associated lot acceptability criteria (acceptance and rejection numbers). (ISO 2859-1)

In order to prepare a sampling plan and begin with the inspection we need to know the lot size, that is, the number of items for inspection, from which a sample is taken to determine its conformity according to acceptability criteria. We also need to know the inspection level, which determines the relationship between the lot size and the sample size (I, II and III), el as well as the type of sampling (single, double or multiple) and the type of inspection (normal, tightened or reduced). The last parameter to be aware of is the Acceptance Quality Limit or maximum percentage of nonconforming shoes obtained by the process average to consider the sample successful upon inspection. The AQL may vary according to the seriousness of the defects found and quality requirements normally supplied by the client.

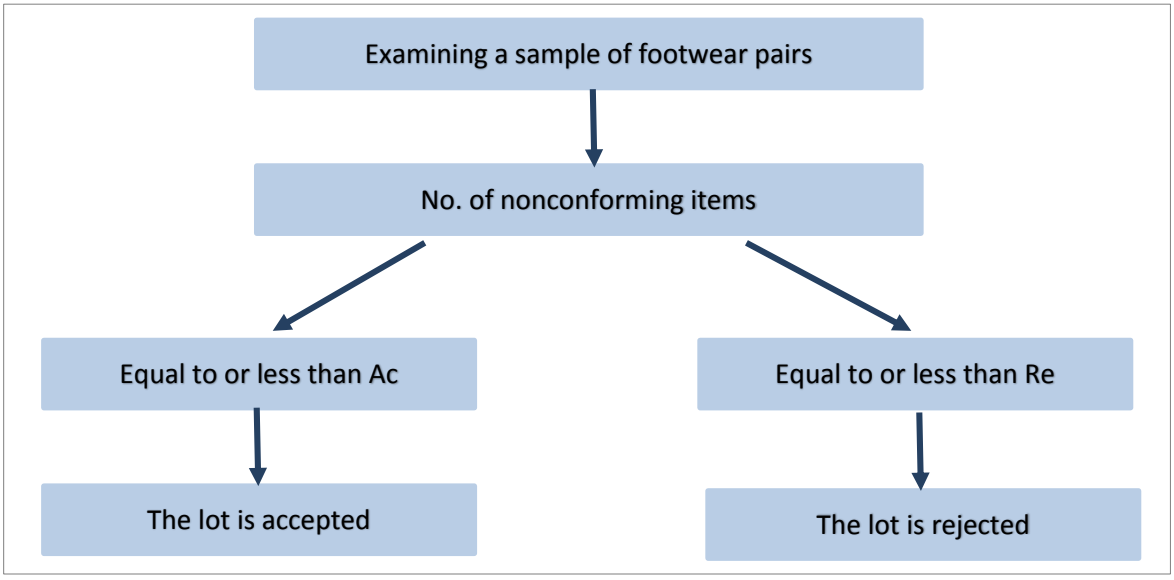
Unless otherwise specified, general inspection level II shall be used, the type of sampling will be single and the type of inspection will be normal.

2.2. Establishing a single sampling plan

Firstly, the sample size code letter is to be known, which is provided in table 1 of page 19 in ISO 2859-1. (Fig. 6).

- The first column of table 1 "Lot size" shows the value range in which the lot to be inspected may be, and the correlative letter in the column of inspection level II, which will be the "Sample size code letter".
- The sample size will be established according to table 2-A "Single sampling plans for normal inspection (Master table)", provided in page 20 of ISO 2859-1 (Fig. 7).
- In the first left column of table 2-A named "Sample size code letter", the letter selected will be found.
- In the subsequent column, named "Sample size", the number (n) will indicate the number of pairs to be inspected, which are drawn at random from the lot.
- In the column headings of table 2-A, different applicable AQL values are provided as percentages.

This process is summarised as follows:



2.3. Classification of defects

Once explained how to obtain a single sampling plan, the next step is to classify the different types of defects that may be found during the inspection according to their degree of seriousness: critical defects, major defects, minor defects. For the identification of defects it is necessary to have a confirmation pair accepted by the client to compare the chosen shoes with it.

Critical defects:

Critical defects are those that may undermine the user's safety and mean the automatic rejection of the product.

An example of critical defect is the presence of nails with a sharp tip and staples protruding from the insole, a wrong fit, a wrong bonding, ornaments or pieces with sharp edges, etc.

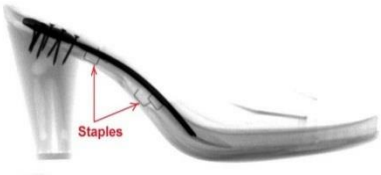


Fig. 2: Critical defect

Major defects:

Major defects are those affecting the appearance, resistance, fastness or comfort properties of the product.

Any item showing a major defect will never be purchased by a costumer. Some major defects may be: deep wrinkles in the lining, non-matching colours in the upper, etc.

Fig. 3: Major defect

Minor defect:

Minor defects are those not affecting the appearance, resistance, fastness, and comfort properties of the product. These only affect product aesthetics. Some examples of minor defects could be: glue stains in barely visible areas of the shoe, slight wrinkles in the lining, small burnt areas in the lining, etc.

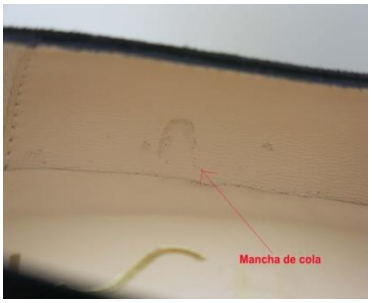


Fig. 4: Minor defect

2.4. Example of sampling plan and inspection

Once the single sampling plan is established and the types of defects that may be found are defined, an illustrative example of how to perform an inspection will be shown:

A lot of 1,212 pairs of shoes needs to be inspected.

Fig. 5: Individual boxes and Cartons

Two key conditions must be fulfilled:

Homogeneity:

All the pairs to be inspected must have been manufactured following the same process and with the same components.

Randomness:

The pairs of shoes comprising the sample are drawn in a way that all pairs have the same probability to be selected

Then, the parameters are defined:

- Lot size: 1,212
- Inspection level: II
- Sampling type: Single
- Type of inspection: Normal
- Acceptable quality limit:
    - 0 % critical defects
    - 2.5% major defects
    - 4% minor defects

According to tables 1 and 2-A shown hereafter.

Table 1 - Sample size code letters (see 10.1 and 10.2)

Lot size	Special inspection levels				General inspection levels		
	S-1	S-2	S-3	S-4	I	II	III
2 to 8	A	A	A	A	A	A	B
9 to 15	A	A	A	A	A	B	C
16 to 25	A	A	B	B	B	C	D
26 to 50	A	B	B	C	C	D	E
51 to 90	B	B	C	C	C	E	F
91 to 150	B	B	C	D	D	F	G
151 to 280	B	C	D	E	E	G	H
281 to 500	B	C	D	E	F	H	J
501 to 1 200	C	C	E	F	G	J	K
1 201 to 3 200	C	D	E	G	H	K	L
3 201 to 10 000	C	D	F	G	J	L	M
10 001 to 35 000	C	D	F	H	K	M	N
35 001 to 150 000	D	E	G	J	L	N	P
150 001 to 500 000	D	E	G	J	M	P	Q
500 001 and over	D	E	H	K	N	Q	R

Fig. 6: Table 1 of page 27 of the standard UNE-ISO 2859-1

The range of the lot size and the general inspection level assigned are both indicated with a blue arrow. The corresponding sample size code letter is at the intersection of both, marked with a blue circle.

Table 2-A — Single sampling plans for normal inspection (Master table)

Sample size code letter	Sample size	Acceptance quality limit, AQL, in percent nonconforming items and nonconformities per 100 items (normal inspection)																												
		0,010	0,015	0,025	0,040	0,065	0,10	0,15	0,25	0,40	0,65	1,0	1,5	2,5	4,0	6,5	10	15	25	40	65	100	150	250	400	650	1 000
		Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re
A	2	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	0 1	⇩	⇩	1 2	2 3	3 4	5 6	7 8	10 11	14 15	21 22	30 31
B	3	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	0 1	⇧	⇩	1 2	2 3	3 4	5 6	7 8	10 11	14 15	21 22	30 31	44 45
C	5	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	0 1	⇧	⇧	1 2	2 3	3 4	5 6	7 8	10 11	14 15	21 22	30 31	44 45	⇧
D	8	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	0 1	⇧	⇧	⇧	1 2	2 3	3 4	5 6	7 8	10 11	14 15	21 22	30 31	44 45	⇧	⇧
E	13	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	0 1	⇧	⇧	1 2	2 3	3 4	5 6	7 8	10 11	14 15	21 22	30 31	44 45	⇧	⇧	⇧
F	20	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	0 1	⇧	⇧	1 2	2 3	3 4	5 6	7 8	10 11	14 15	21 22	⇧	⇧	⇧	⇧	⇧	⇧
G	32	⇩	⇩	⇩	⇩	⇩	⇩	⇩	⇩	0 1	⇧	⇧	1 2	2 3	3 4	5 6	7 8	10 11	14 15	21 22	⇧	⇧	⇧	⇧	⇧	⇧	⇧
H	50	⇩	⇩	⇩	⇩	⇩	⇩	⇩	0 1	⇧	⇧	1 2	2 3	3 4	5 6	7 8	10 11	14 15	21 22	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧
J	80	⇩	⇩	⇩	⇩	⇩	⇩	0 1	⇧	⇧	1 2	2 3	3 4	5 6	7 8	10 11	14 15	21 22	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧
K	125	⇩	⇩	⇩	⇩	⇩	0 1	⇧	⇧	1 2	2 3	3 4	5 6	7 8	10 11	14 15	21 22	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧
L	200	⇩	⇩	⇩	⇩	0 1	⇧	⇧	1 2	2 3	3 4	5 6	7 8	10 11	14 15	21 22	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧
M	315	⇩	⇩	⇩	0 1	⇧	⇧	1 2	2 3	3 4	5 6	7 8	10 11	14 15	21 22	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧
N	500	⇩	0 1	⇧	⇧	⇧	1 2	2 3	3 4	5 6	7 8	10 11	14 15	21 22	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧
P	800	0 1	⇧	⇧	1 2	2 3	3 4	5 6	7 8	10 11	14 15	21 22	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧
Q	1 250	⇧	⇧	1 2	2 3	3 4	5 6	7 8	10 11	14 15	21 22	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧
R	2 000	⇧	1 2	2 3	3 4	5 6	7 8	10 11	14 15	21 22	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧	⇧

⇩ = Use the first sampling plan below the arrow. If sample size equals, or exceeds, lot size, carry out 100 % inspection.
⇧ = Use the first sampling plan above the arrow.
Ac = Acceptance number
Re = Rejection number

Fig. 7: Table 2-A. Page 28 of the standard UNE-ISO 2859-1

The sample size code letter is followed by a corresponding number indicated with a blue square.

Intersection between the sample size and the acceptance quality limits for minor and major defects previously set will provide the acceptance (green) and rejection (red) numbers of the lot.

The resulting control plan will consist in:

Selecting a sample of 125 pairs of shoes.

For major defects:

- (Ac) If 7 or fewer nonconforming pairs of shoes are found, the lot will be accepted.
- (Re) If 8 or more nonconforming pairs of shoes are found, the lot will be rejected.

For minor defects:

- (Ac) If 10 or fewer nonconforming pairs are found, the lot will be accepted.
- (Re) If 11 or more nonconforming pairs are found, the lot will be rejected.

Failure to comply with any of them would result in a direct rejection of the lot.

If the lot is found to be unacceptable, the footwear manufacturer shall be responsible for reworking or replacing nonconforming items before they are resubmitted for inspection.

2.5. The main quality attributes in footwear

Once the parameters are established the inspection may proceed. Inspection by attributes is carried out by checking the most representative quality attributes of shoes.

General appearance

The main general aspects to be taken into account are shapes, symmetries, dimensions, etc. The most common ones are:

When looking straight at a shoe there must be total symmetry, and for that purpose, an imaginary line has to be drawn from the heel to the toe-end. This line will act as a symmetry axis allowing us to see symmetrical features on both sides.

Fig. 8: Shoe centring

In order to check that the height is similar, the shoes are placed one against the other over an horizontal surface to see if there is some difference between them. In the left photograph, the height of the sole backpart is similar, but the height of the upper backpart is unequal, and thus, the shoes are unequal as a whole. This is deemed a very serious defect.

Fig. 9: Backpart height

The shoes must be placed over a flat surface facing backwards to see their rear part. Then an imaginary line is drawn from the middle of the top-piece up to top of the backpart. The back seam or back element must be parallel and very close to that imaginary line.

Fig. 10: Straight back seams or centred backpart

A right shoe stand means that the base of the heel and the sole in the MTP joint area (ball) are in flat contact with the ground.

Fig. 11: Flat stand of the shoe

The shoes are placed on a flat surface. Length and width of the throat in the vamp area must be similar in both shoes. As regards throat fit, straightness and height of the side edges in the throat area must be equal.

Fig. 12: Throat position and fit

When looking at a boot profile and drawing a vertical, imaginary line along the centre of the boot shaft, both sides must be parallel. Likewise, bootleg height of both boots must be pretty equal, with no significant differences.

Fig. 13: Height and straightness of the boot leg

Upper

If it is made of leather, special attention must be paid to wrinkles and scratches that may have been produced during the manufacturing process and affect the final appearance. Other possible leather imperfections may be found such as veins, perforations, etc. only visible after manufacturing the shoes and that may adversely affect the quality.

Fig. 14: Presence of wrinkles, scratches or imperfections on leather

In the article of the photograph, there is a mismatch between the colour of the leather uppers.

Fig. 15: Colour matching in shoe pieces

Stains may be caused by application of repairers, adhesives or stitch marking, and they can be considered as minor or major defects depending on their size, contrast, and location.

Fig. 16: Glue stains and visible stitch marking

Reinforcing elements are usually located between the upper and lining (tapes, toe-puffs and stiffeners) and should not be perceived on the upper leather.

Fig. 17: Leather marks caused by backing materials

This photograph shows the presence of wrinkles caused by deficiencies in assembling operations of components.

Fig. 18: Wrinkles caused by deficiencies in assembling operations

Stitching of upper pieces is one of the most important quality attributes. Therefore, special attention must be paid on straightness and parallelism of seams, as well as on evenness in the number of stitches per cm. Corrected or loose stitches and loose threads must be checked as well.

Fig. 19: Parallel seams, corrected stitches

Fig. 20: Eyelet symmetry. Location of zippers, loops, reinforcing stitches and position of elastics

Two same size ankle boots are shown on the slide, but the length of the zipper is different, since the end of the zipper on the right image is closer to the outsole. These differences affect both the appearance and fit. Likewise, all fastening elements must be checked, and all seam finishes (loops and reinforcing stitches). Position and attachment of ornaments also need to be checked by a simple manual tensile test. For a more precise testing of their real attachment strength, a destructive laboratory test would be required.

Sole

Fig. 21: Welt adequately joined to the outsole. Heel seat tightly attached and heel alignment

We need to focus on the welt-outsole joining first (left image). The closure must be in the backpart of the inner side of the shoe, as close as possible to the sole-heel bond area. In women's footwear, the right position of the heel needs to be checked; it must not be crooked. When looking at the rear part, the joining area between the upper and heel seat must be tightly attached with no gaps and properly aligned.

Now we must check the colour matching of outsoles. The left image shows a colour mismatch, since the left sole is lighter.

Also, some stains may be produced by application of adhesives, finishing products, creams or accidental spotting during manufacturing process and must be detected.

Fig. 22: Outsole finishing, colour matching, absence of stains

We must ensure that the material covering the platform and heel does not have any wrinkles or stains caused by the wrapping process.

Fig. 23: Wrinkle-free and clean heel covering

Toe-puff and stiffeners

Fig. 24: Position of reinforcements, toe-puff deformation resistance, stiffener hardness

Height and length shall be checking by hand. Once verified the position of the two reinforcements, their strength will be tested; on the one hand, by pressing the toe-puff with the finger and deforming it to see if it restores its original shape afterwards, and on the other hand, by pressing the stiffener manually as well to check its level of resistance to collapsing.

Lining, insock and insole

Fig. 25: Presence of stains, lining creases, right insock stamping

Along with creases, stains on linings or insocks are other common defects found upon inspection. Other aspect to be taken into account is the insock stamping. It must be correct in terms of text and shape, as well as colour, clarity and homogeneity.

When nails or staples have been used for insole attachment, 100% of items must be inspected to ensure that no pair has any missed staples or nails that could protrude from the insole. In order to check this feature, a non-destructive and highly truthful system is commonly used, which is X-ray scanning. A right positioning and length of the shank is essential for a good stability and resistance of the waist and heel areas of the shoe.

Fig. 26: Presence of attaching nails or staples, shank position and length

3. Control of footwear fit

After checking the outer features, it is recommended to ensure that the article of footwear adapts to the greatest number of people's feet and that it offers the expected comfort according to the type of shoe, materials and construction methods used. First of all, dimensions must be checked as for lengths widths, heights and weight relative to the indicated size and footwear style.

Fig. 27: Dimensional evaluation of the shoe

The next step is performing wear and fit trials for a real assessment of footwear.

3.1. Wear trials

Wear trials are carried out by a tester panel for fit assessment. Footwear fit is understood as a set of dimensional characteristics that comfortably accommodate the foot and provide support in gait movements under real-use conditions. This allows us to detect design and manufacturing problems that have been overlooked at first sight or under the inspection by attributes and that may adversely affect the functionality and comfort of the shoe when wearing it. This assessment is undertaken by analysing specific questionnaires filled out by testers. This tester panel is selected by creating groups in terms of:

- Physical constitution
- Type of tread (supinator, pronator)
- Gait cycle
- Toe shape (Greek, Egyptian, square)
- Absence of foot deformities requiring special features

First, a visual inspection of the tester's feet takes place in order to defect abnormalities affecting the development of the trial (claw toes, bunions, etc.). Then, the tester's feet are digitised or regularly measured to register the main measurements, which will be useful for the assessment and appraisal of problems arise during the test. Shoes are tested simulating common actions in which they would be worn: The tester has to walk for 5 min at a speed of 5 Km/h on a flat treadmill, climbing steps for 1 min and bending over and kneeling upon each leg.

Both initial and in-use fit are evaluated. Questionnaires provide quantitative data (1-10) and qualitative data (YES/NO).

Some of the properties taken into account are: permeability, breathability, chafing, discomforts, good fastening to the foot, good plantar pressure distribution, flexibility, softness, slipping properties, etc.

Fig. 28: Wear and fit trials

Comfort perception is key for sales and company success. The initial comfort appraisal must reach its highest level at the moment the customer tries the shoe on before its purchase. Nevertheless, within the limited business cluster, the long-term comfort feature is considered as an added value, which in turn contributes to empower the image and future of the brand.

4. Control of technical aspects. Quality standards manual

It is a guide designed by the footwear company. It shall be complied with by all its suppliers and their subcontractors. Therefore, it is a public document that companies provide to customers, users, suppliers and institutions so that they can be aware of, comply with and supervise, respectively, the quality standards that the company is committed to.

This guide must gather, at least, this information:

- Design recommendations
- General requirements (labelling, etc.)
- Physical/mechanical requirements
- Chemical requirements

Particularly, as regards physical/mechanical specifications, footwear models have their own specific properties (design, type of manufacture, materials used, end use, etc.). For mandatory standards, the corresponding tests shall be performed if indicated in the manual.

In relation to the specifications on chemicals, if the company establishes its own requirements about chemicals, these must never be less restrictive than the requirements set forth in the legislation in force, otherwise the company shall ensure the compliance with the applicable European regulations, as well as with the national regulations of the countries where the footwear is to be sold. These tests aim to control the presence of hazardous substances in the product.

The necessary tests for physical-mechanical and chemical aspects can be carried out in cooperation with external accredited laboratories if stated in the specifications of the article and if the company is not properly equipped to do so.

4.1. Footwear properties and laboratory tests

Upper and lining materials

Fig. 29: Tear strength

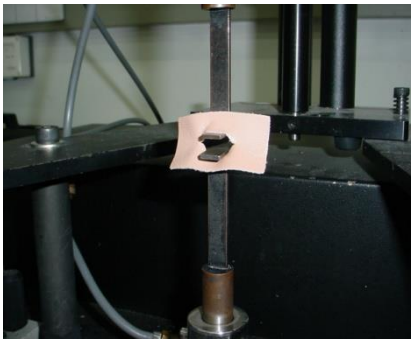


Fig. 30: Flex resistance

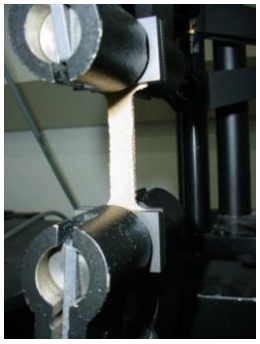


Fig. 31: Tensile strength and elongation at break

Fig. 32: Resistance to damage on lasting

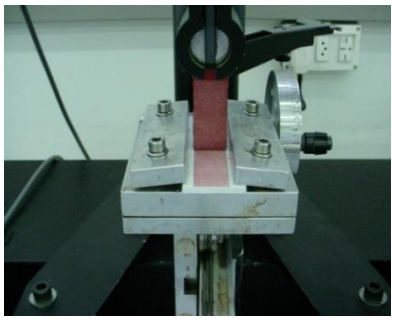


Fig. 33: Bond strength

Fig. 34: Rub fastness

Fig. 35: Light fastness

Fig. 36: Colour fastness to perspiration

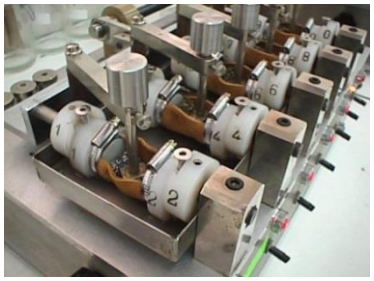


Fig. 37: Water penetration and absorption

Fig. 38: Water vapour permeability

Fig. 39: Abrasion resistance

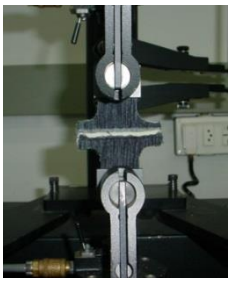


Fig. 40: Seam strength

Fastening elements

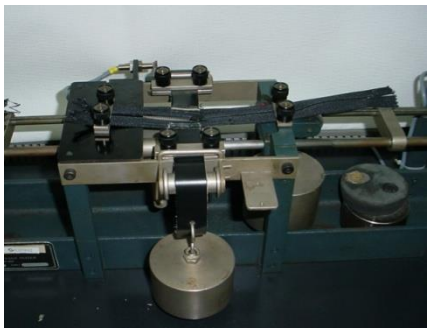


Fig. 41: Wear resistance. Puller attachment strength. Bottom stop holding strength Top stop holding strength. Lateral tensile strength

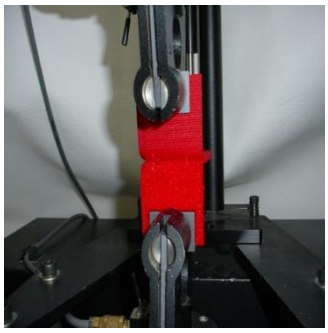


Fig. 42: Peel strength (90º)

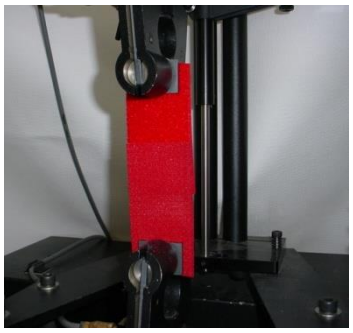


Fig. 43: Shear strength

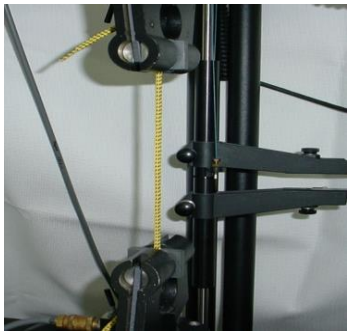


Fig. 44: Tensile strength of shoelaces

Fig. 45: Abrasion resistance of shoelaces

Soles, heels

Fig. 46: Abrasion resistance

Fig. 47: Flex resistance

Fig. 48: Slip resistance

Fig. 49: Water resistance

Fig. 50: Heel attachment strength

Fig. 51: Flex resistance

Fig. 52: Impact resistance

4.2. Quality standards for chemicals

The quality standards manual must include as well compliance data related to safety in the use of chemicals. In general, forbidden chemicals can be found in footwear and its components either because they have been used in the production processes, or because they are found as impurities in other compounds, or due to contamination during preservation, storage or transport. The company's own chemical requirements must never be less restrictive than the requirements set forth in the legislation in force, whether at European level or at national/regional level.

Chemical tests are increasingly important in the footwear industry. These are especially relevant to prevent the appearance of allergens or toxic substances that are detrimental for the living beings and the environment.

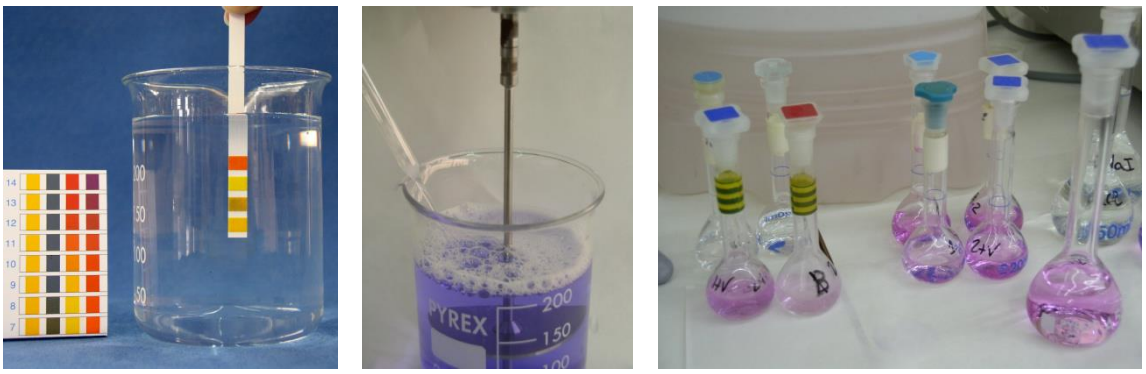


Fig. 53: Chemical tests in laboratory for detection of forbidden or restricted substances (chromium VI, volatile matter, sulphates, carbonates, etc.)

5. Assessment/feedback template

5.1. Introduction to feedback sheet

Unlike learning in formal environments as in classrooms or workshops, learning outcomes (LO) from work-based learning (WBL) in a learning station (LS) depend strongly on the actual equipment of the production line and the models and makes, which a shoe factory manufactures. If the shoe models produced do not require certain work tasks of a whole sphere (in stitching or assembly, for example), then it is simply not possible to acquire skills in this production line related to this method.

A systematic and transparent communication on concrete LOs acquired via WBL by a learner/apprentice between tutors, supporting the learner in the various departments, and the head of training, being responsible for the entire training programme, is of great importance in WBL.

With the intend to provide a concise and handy communication tool, we recommend using the matrices as shown below: They allow tracking the achievements of each trainee in each department in a quick and easy way. The matrices do not refer to any formal assessment; they simply state the degree of autonomy each trainee was able to reach within the given timeframe in each Sphere of Activity.

The matrices list the main work tasks (in bold) and the performance that can be acquired in each department. The work tasks refer to the acquired skills; to indicate that they include key competencies and knowledge the underlying elements for some of the work task are listed.

How to use the matrices: In order to give feedback on the learning progress of each trainee, please tick off the level of autonomy the learner has reached for each work task (choosing between needs assistance / needs instruction / needs supervision / completely independent).

If the work task in the matrix was not part of the training, you can leave it out or erase the work task; if additional work tasks were trained, please feel free to continue the list of work tasks according to your training goals.

In the end, the matrices will document what each learner has been able to acquire and which level of autonomy she/he has reached. And again, although this has already been said: Please bear in mind that you may have to adapt the matrices according to the processes and to the operations in your department.

Sphere of Activity: Quality Assurance

Work task:	Conducting physical tests, e.g.

Flex resistance;
Tear strength;
Bond strength;
Rub fastness;
Light fastness;
Abrasion resistance;
Impact resistance;
Slip resistance;
Reading & understanding the required task;
Providing & preparing the material;
Knowledge about materials;
Co-operating with colleagues;
Asking for support if needed.

Evaluation

Needs assistance	Needs instruction	Needs supervision	Completely independent
☐	☐	☐	☐

Place, Date Signature

Work task:	Establishing a sampling plan

[Please set up the criteria in this section in line with your evaluation needs according to the example given above]

Evaluation

Needs assistance	Needs instruction	Needs supervision	Completely independent
☐	☐	☐	☐

Place, Date Signature

Work task:	Inspection of the aesthetic appearance
[Please set up the criteria in this section in line with your evaluation needs according to the example given above]	
Evaluation	

Needs assistance	Needs instruction	Needs supervision	Completely independent
☐	☐	☐	☐

Place, Date Signature

Work task:	Control of footwear fit
[Please adapt to your evaluation needs]	
Evaluation	

Needs assistance	Needs instruction	Needs supervision	Completely independent
☐	☐	☐	☐

Place, Date Signature

Work task:	Conducting chemical tests, e.g.

Determination of pH in leather;

Determination of volatile-matter content in leather;

Determination of sulphated total ash and sulphated water-insoluble ash;

Determination of matter soluble in dichloromethane and free fatty acid content in leather;

[Please set up the criteria in this section in line with your evaluation needs according to the example given above].

Evaluation

Needs assistance	Needs instruction	Needs supervision	Completely independent
☐	☐	☐	☐

Place, Date Signature

Work task:	Acceptance or rejection of the product

[Please set up the criteria in this section in line with your evaluation needs according to the example given above]

Evaluation

Needs assistance	Needs instruction	Needs supervision	Completely independent
☐	☐	☐	☐

Place, Date Signature

Final evaluation (in this department)

Quality Assurance; including all work tasks above

Evaluation

Needs further training	Can perform all work tasks (almost) independently
☐	☐

Place, Date Signature

6. List of tables