



Integrating Companies in a Sustainable Apprenticeship System

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Intellectual Output 3A

Learning-Teaching Activities - Quality Assurance -

Authors: INESCOP and ICSAS-Team

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1. Work-Based Quality Assurance Training

1.1. What to prepare

In order to start the work-based training, there is a list of things to prepare:

- Working table
- Ruler and measuring tape.
- Grey scale for evaluating colour variation.
- Photo camera.
- Model pair of shoes for inspection.
- Copy of standard ISO 2859-1 for preparing the sampling plans.
- Arrow-shaped stickers to mark the defect found.
- Printed copy of the inspection report template to fill it out.



Fig. 1: Work-based learning / working table



Fig. 2: Graduated ruler to measure distances



Fig. 3: Measuring tape to measure curves and girths



Fig. 4: Grey scale to check colour variations between the confirmation sample and the manufactured samples



Fig. 5: Photo camera to document the samples and the defects found



Fig. 6: Confirmation pair and packaged shoe pairs to perform the inspection

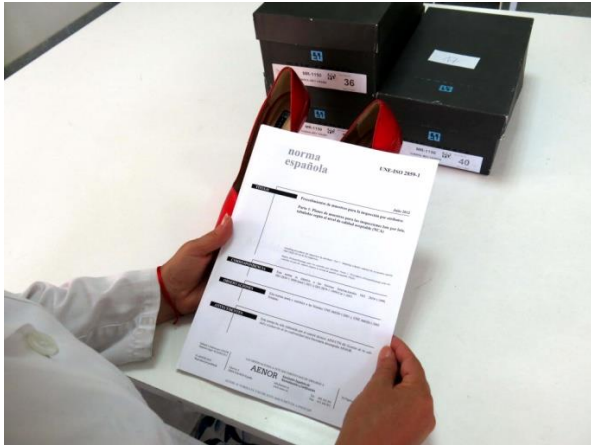


Fig. 7: Copy of standard ISO 2859-1 to establish a sampling plan

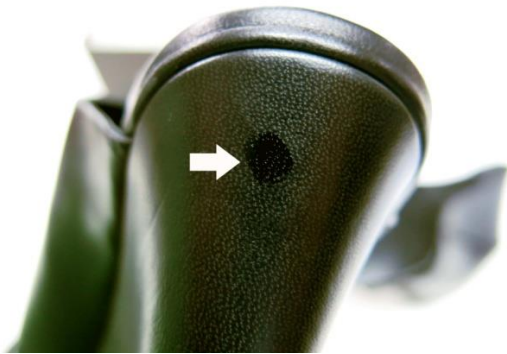


Fig. 8: Arrow-shaped white sticker to mark the defects

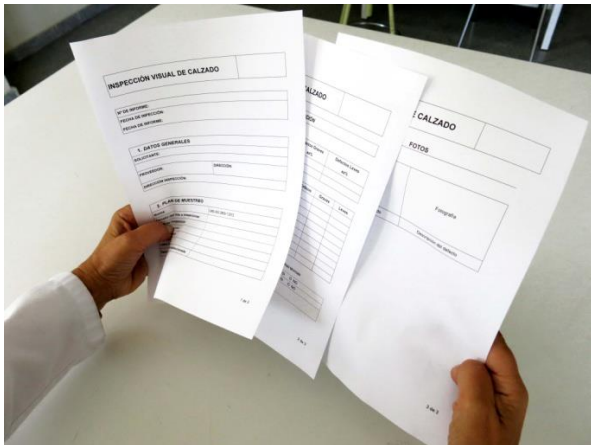


Fig. 9: Inspection report template

2. Footwear inspection exercises

Exercise 1:

The apprentice is expected to become familiar with the use of the tables to prepare the sampling plans.

Taking the following parameters:

- Level of inspection: II
- Type of sampling: Single
- Type of inspection: Normal

The apprentice must prepare the sampling plan according to the tables of Figure 10 and 11 for different lot sizes and Acceptance Quality Limits (AQL).

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	H	J	L	N	P
150 001 to	500 000	D	E	H	J	M	P	Q
500 001	and over	D	E	G	K	N	Q	R

Fig.10. Table 1 of standard ISO 2859-1

Exercise 2.

The apprentice is expected to identify the defects present in the pairs of shoes delivered compared to the confirmation pair of shoes.

10 shoe pairs are delivered to the apprentices, numbered from 1 to 10 for them to correlate the defects found with each pair.

Afterwards, the results will be shared and gathered.



Fig. 12: Ten pairs of shoes numbered from 1 to 10

Exercise 3.

The apprentice is expected to know how to classify the type of defect as critical, major or minor.

With the results obtained in the previous exercise the apprentice will be asked to classify the defects found in every pair.

Then the results will be shared to agree on the type of defect.

Exercise 4.

With the knowledge acquired, the apprentice shall create a sampling plan on a production lot and shall prepare an inspection report based on the following acceptance quality level:

- 0 % critical defects
- 2,5% major defects
- 4% minor defects



Fig. 13: Example of a production lot arrangement

A report template similar to that of Figure 9 will be handed out as a guide.



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