



Integrating Companies in a Sustainable Apprenticeship System

Project 2017-1-DE02-KA202-004174

Intellectual Output 3A

Learning-Teaching Activities

– Lasting –

Authors: CFPIC and ICSAS-Team

Version: Final



Erasmus+

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1. Work-Based Lasting Training

1.1. What to prepare?

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

- Interpretation of the documents: Production plan, technical documentation / manufacturing order.
- Model and materials control for the lasting - properly prepared models, lasts, insoles, glues, staples, ...
- Equipment – Toe puff moulding machine, machine to attach the insole to the last, Forepart lasting machine, Side and seat lasting machine, Conditioning units / heat setting;
- Respective tools and utensils - inherent to the equipment and auxiliaries of the operations.
- Workstations, considering the application of the organisation, ergonomics, environment, hygiene and safety principles.

1.2. Interpretation of the documents

For an effective productive process, it is fundamental that the trainee be able to interpret a production plan, as well as, the technical documentation of models and materials.

Example of the production plan:

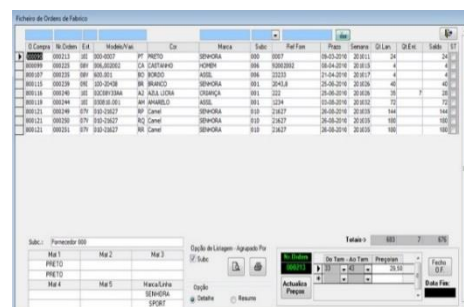
The production plan is a basic production tool, identifying what will be produced, in what quantity, manufacturing methods, where, who and when the product will be manufactured and how long it will take.

Elements to consider:

- Product line or model;
- Quantity of product;
- Manufacturing method.
- Survey of necessary materials;
- Stock management;
- Sequencing of production;
- Issuance and availability of production orders;
- Manufacture and lasting of the products.

Nowadays it makes sense in a company to consider an integrated management system and the use of software for production programming and control, which is where this production plan can be elaborated and made available.

Example:



| ID | Company | Model | Size | Material | Quantity | Start Date | End Date | Status |
|------|---------|-------|----------|----------|----------|------------|------------|--------|
| 0001 | 000123 | 001 | 390-0007 | PT PANTO | 2000 | 2023-01-01 | 2023-01-31 | 24 |
| 0002 | 000123 | 001 | 390-0007 | PT PANTO | 2000 | 2023-01-01 | 2023-01-31 | 24 |
| 0003 | 000123 | 001 | 390-0007 | PT PANTO | 2000 | 2023-01-01 | 2023-01-31 | 24 |
| 0004 | 000123 | 001 | 390-0007 | PT PANTO | 2000 | 2023-01-01 | 2023-01-31 | 24 |
| 0005 | 000123 | 001 | 390-0007 | PT PANTO | 2000 | 2023-01-01 | 2023-01-31 | 24 |
| 0006 | 000123 | 001 | 390-0007 | PT PANTO | 2000 | 2023-01-01 | 2023-01-31 | 24 |
| 0007 | 000123 | 001 | 390-0007 | PT PANTO | 2000 | 2023-01-01 | 2023-01-31 | 24 |
| 0008 | 000123 | 001 | 390-0007 | PT PANTO | 2000 | 2023-01-01 | 2023-01-31 | 24 |
| 0009 | 000123 | 001 | 390-0007 | PT PANTO | 2000 | 2023-01-01 | 2023-01-31 | 24 |
| 0010 | 000123 | 001 | 390-0007 | PT PANTO | 2000 | 2023-01-01 | 2023-01-31 | 24 |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|----|----|----|----|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|--|--|--|--|-----|
| Original | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PLANO DE PRODUÇÃO | | 2016-07652 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NR. ENCOMENDA | | 07569 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DATA PRODUÇÃO | | 25-11-2016 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CLIENTE | | C-CHOICE CHOICE THE DISCOUNT STORE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MODELO | | NOSSA REF. REF. CLIENTE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DESCRIPTIVO | | 018065.0008 49-513 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| COR | | BOTA DE CRIANÇA DIRECTORY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FABRICANTE | | ROSA SAVANA CALÇADOS SA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAIS: | | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | | | | | | | 440 |
| CORTANTES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Testeira | REF: ORIGINAL | Palmilha PAL01983 P.M49496 SA STRONG C/REF.CART.+FORTE ATRAS (NEXT) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Centraforte | REF: ORIGINAL | Sola SOL06883 SOLA ROMANA MEL 009 C/VIRA NATUR.P.BEGE ACA.C.018 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pel. Acabamento REF: 49496 (CORTANTES) | | ACABAMENTO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CORTE | | Acabamento VER AMOSTRA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PELARIA 1 | PEL00686 CCA 218 CROSTE VELOUR ROSA VELHO 165 | Palm. Acab. 1 SARJINHA COR BEGE C/ESP.NEXT REF:49496 (CORTANTES) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Obs. 1 | = RESTO | + TRANSFER NEXT NA PALMILHA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pelaria 2 | FOR03006 TFF MULTI ART. GLITTER MEDIO COR: MULTI-55 | ET.NEXT PENDURAR (FF2) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Obs pel 2 | = ESTRELAS | CODIGO DE BARRAS NOS 2 PÉS NO LADO DE DENTRO * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FORRO 1 | FOR02939 TFF BEGE/FUXIA SARJ.BEGE+ESTRELAS FUXIA RE+ESP2.5B | C/PINO PRETO (ATENÇÃO: ESTAS ETIQUETAS TÊM LADO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Obs Forro 1 | = RESTO | ESTÃO MARCADAS (L) PARA PÉ ESQUERDO * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Forro 2 | FOR03025 SGO ROSA COR: NAPPA 7 PINK | *E (R) PARA PÉ DIREITO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Obs Forro 2 | = VISTA DE FECHO DA FRENTE | Saco SAC00084 SACO PLASTICO PERFORADO C/6FUROS REDONDOS 25X30(BI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Forro 3 | FOR03025 SGO ROSA COR: NAPPA 7 PINK | = COLOCAR PÉ DIREITO DENTRO DO SACO E DE SEGUIDA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Obs Forro 3 | = VISTA DE FECHO DE TRAS | O PAR NO SACO NEXT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Forro 4 | FOR00405 AQUILINE BEGE L:1.48 (ROBEL/TEVAR) | Fita Cola FIT00001 F TA DE COLA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Obs Forro 4 | = TALOeira | Pino PINOS MANUAIS 75MM PRETOS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Forro 5 | FOR00150 PANO C/COLA CARDADO BRANCO | Saco SAC00046 SACO NEXT PP 25X35+5X0,06 C/PALA AD 3 4 5 6 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Obs Forro 5 | = GASPEA | Saco 2 SAC00047 SACO NEXT PP 30X35+5X0,06 C/PALA AD 8 9 10 11 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Forro 6 | FOR02848 TFF BEGE SARJINHA COR: BEGE 100%ALGODÃO C/ESP NEXT | El. Colar Saco ET.NEXT COLAR NO SACO (FF1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Obs Forro 6 | = PALMILHA | Outros Acab. 1 NAO LEVA CRUZETA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| El. III Palmilha | ESP00009 ESPUMA 3MM NEXTBDE+N3NUD (PALMILHA NEXT) | Obs. Aca. 3 SÓ COLOCAR CARTÃO INTERIOR/TALA NOS MODELOS* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Telas Gaspea | ELA00282 ELAST.295 BEIGE TERMO ESPEC. 1,48(GUPER 782-TAG E | Obs. Aca. 4 *DE OLDER (9-7) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Centraforte | TELA CONTRAFORTE-BITERM 330 AMAREL | Obs. Aca. 7 EMBALGEM - VER INSTRUÇÕES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Testeira | TELA TESTEIRA TALYN S63 | EMBALAGEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Timbre 1 | TIM00109 NEXT C/LAÇOS 20MM | TRANSITÁRIO GARLAND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Obs Timbre 1 | = A QUENTE NA TALOeira LADO EXTERIOR | EMBALAGEM 60x30x40 3-6 25 pares//7-9 21pares//10-12 16 pares | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transfer | TRANSFER NEXT CALC.BRANC/AZUL ESC. | FITA TARIFA =TARIFA COM PONTO VERDE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Obs Transfer | = NA PALMILHA | ROTULO TARIFA DO CLIENTE (VER DESENHO) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Obs. Corte 1 | ATENÇÃO A QUALIDADE DO TIMBRE | " ROTULO TARIFA (BOX END LABEL) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| COSTURA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Linha 1 | LIN00487 LINHA SERAFIL 40 COR:638 5000MT | 3 4 5 6 7 8 9 10 11 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Linha 2 | LIN00508 LINHA SERAFIL 20 COR:638 2500MT | CARTAO 58 X 28 3CC00 MODE.901 NEXT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Etiqueta 1 | ETI00003 ETIQUETA NEXT TECIDA PRETA DE CRAVAR NO FORRO | 3 4 5 6 7 8 9 10 11 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Obs | CRAVADA NO FORRO DO TALÃO EXTERIOR ***448513*** | Obs. Emb. 4 REVER QUANTIDADE DE EMBALAGEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fecho 1 | FEC01411 FECHO ROSA CURS NORM TERM PLASTICO 14CM COR:514 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fecho 2 | FEC04248 FECHO ROSA CURS NORM TERM PLASTICO 16CM COR:514 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Obs. Cost. 1 | ESTRELAS CRAVADAS DEPOIS DE VERGAR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MONTAGEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Forma | FRM00704 FORMA REF. 49496 N/B BOTA | Tarifa1 TAR02315 TARIFA 600X300X400 "NEXT" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |


Fig. 1: Production Plan

Technical documents of the model and materials - example:

Elements to consider:

- Definition and reference of model (s);
- Constituent parts of the models;
- Materials and materials consumption;
- Sequence of operations;
- Operative times;
- Model specific instructions.

ESPECIFICAÇÃO TÉCNICA



*FOTO ILUSTRATIVA

MODELO

SAPATO AMARRAR IMBIESEG BRANCO.

REFERÊNCIA

B41103 ACO | SB.

TIPO DE COURO DO CABEDAL

BOTINA EM COURO EM COH ESPESURA DE 1,8 MM A 2,2 MM.

TIPO DE COURO DA GÁSPEA

STROFLEX A20CC 20 PT.

TIPO DE LINHAS

COSTURAS SIMPLES, DUPLAS E QUÁDRUPLAS NA COR PRATA.

CERTIFICADO DE APROVAÇÃO

C.A 16569

EMBALAGEM INDIVIDUAL

SACO PLÁSTICO.

BIQUEIRA

TRUE LINE, POLIPROPILENO (PP) OU ACO.

CONTRAFORTE

FIBRA E EVA.

NUMERAÇÃO

34 AD 47.

PALMILHA DE MONTAGEM

EVA COSTURADO PELO SISTEMA STROBEL.

SOLADO

SOLADO MONODENSIDADE EM POLIURETANO (PU) INJETADO DIRETAMENTE NO CABEDAL, COM FUNÇÃO ANTIDERRAPANTE E COM ALTA RESISTÊNCIA AO DESGASTE.

EMBALAGEM COLETIVA

CAIXAS DE PAPELÃO DE 20 PARES.

Fig. 2: Technical specific

| O.Fabrico - Mont/Acab: 034075 N° Folder: 160584 | | * 0 0 3 4 0 7 5 0 0 0 * | | | | | | | | | | | | | | |
|---|-------------------------------------|-------------------------|------------------|-----|---------|--------|-----------------|------------|----|-----|----|----|----|----------|---------|-------|
| Modelo/var.: | H DOLPHIN2 / 04 | Pele 1: | Sugar bordo/S. | | | | | | | | | | | | | |
| Nr. Enco. Ln.: | / | Pele 2: | bordo/Pat. black | | | | | | | | | | | | | |
| Cliente: | 14023 BLITZERS | Pele 3: | S.bordo/S.bordo | | | | | | | | | | | | | |
| Ref. Cliente: | | Forro: | Gum | | | | | | | | | | | | | |
| Cliente. Desp.: | | Sola: | Sonic Whit+grey | | | | | | | | | | | | | |
| Enco. Cliente: | 667- | Forma: | VER OBSERVAÇÕES | | | | | | | | | | | | | |
| | | Prazo Entrega | Semana | | | | | | | | | | | | | |
| | | 18/09/2017 | 201738 | | | | | | | | | | | | | |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | Qt.Enco. | | |
| | | | | | | | | | | 1 | 1 | 1 | 1 | 1 | | |
| 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | --- | | | | | Qt.Lan. | |
| 1 | 1 | 1 | | | | | | | | | | | 7 | | | |
| Lote | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | --- | Total |
| 1 | | | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 7 |
| Materias - Primas | | | | | | | | | | | | | | | | |
| Operação: Mont/Acab | | | | | | | | | | | | | | | | |
| Cod.Artigo | Designação | Cartaz/Côr | DoTam-AoTam | Tam | Consumo | U/M | Qt.Ent. | Qt.Retorno | | | | | | | | |
| BAT.FITA.800 | ATAC. FITA POLIESTER 800 | 401 118 VERMELHO CL | 24 | 29 | 1,20 | 4,000 | par | | | | | | | | | |
| BAT.FITA.800 | ATAC. FITA POLIESTER 800 | 401 118 VERMELHO CL | 30 | 35 | 1,30 | 3,000 | par | | | | | | | | | |
| BAT.FITA.800 | ATAC. FITA POLIESTER 800 | 700 PRETO | 24 | 29 | 1,20 | 4,000 | par | | | | | | | | | |
| BAT.FITA.800 | ATAC. FITA POLIESTER 800 | 700 PRETO | 30 | 35 | 1,30 | 3,000 | par | | | | | | | | | |
| 3PV.SONIC.A1 | PALM.VILLAS 640 REF.14696 (OBS) | 319 ROSA GUM 1069 | 26 | 26 | 26 | 1,000 | par | | | | | | | | | |
| 3PV.SONIC.A1 | PALM.VILLAS 640 REF.14696 (OBS) | 319 ROSA GUM 1069 | 27 | 27 | 27 | 1,000 | par | | | | | | | | | |
| 3PV.SONIC.A1 | PALM.VILLAS 640 REF.14696 (OBS) | 319 ROSA GUM 1069 | 28 | 28 | 28 | 1,000 | par | | | | | | | | | |
| 3PV.SONIC.A1 | PALM.VILLAS 640 REF.14696 (OBS) | 319 ROSA GUM 1069 | 29 | 29 | 29 | 1,000 | par | | | | | | | | | |
| 3PV.SONIC.A1 | PALM.VILLAS 640 REF.14696 (OBS) | 319 ROSA GUM 1069 | 30 | 30 | 30 | 1,000 | par | | | | | | | | | |
| 3PV.SONIC.A1 | PALM.VILLAS 640 REF.14696 (OBS) | 319 ROSA GUM 1069 | 31 | 31 | 31 | 1,000 | par | | | | | | | | | |
| 3PV.SONIC.A1 | PALM.VILLAS 640 REF.14696 (OBS) | 319 ROSA GUM 1069 | 32 | 32 | 32 | 1,000 | par | | | | | | | | | |
| 3PM.SONIC.H2 | PAL.MON 14696 RED. C.REF.SIENF(OBS) | | 26 | 26 | 26 | 1,000 | par | | | | | | | | | |
| 3PM.SONIC.H2 | PAL.MON 14696 RED. C.REF.SIENF(OBS) | | 27 | 27 | 27 | 1,000 | par | | | | | | | | | |
| 3PM.SONIC.H2 | PAL.MON 14696 RED. C.REF.SIENF(OBS) | | 28 | 28 | 28 | 1,000 | par | | | | | | | | | |
| 3PM.SONIC.H2 | PAL.MON 14696 RED. C.REF.SIENF(OBS) | | 29 | 29 | 29 | 1,000 | par | | | | | | | | | |
| 3PM.SONIC.H2 | PAL.MON 14696 RED. C.REF.SIENF(OBS) | | 30 | 30 | 30 | 1,000 | par | | | | | | | | | |
| 3PM.SONIC.H2 | PAL.MON 14696 RED. C.REF.SIENF(OBS) | | 31 | 31 | 31 | 1,000 | par | | | | | | | | | |
| 3PM.SONIC.H2 | PAL.MON 14696 RED. C.REF.SIENF(OBS) | | 32 | 32 | 32 | 1,000 | par | | | | | | | | | |
| 1FR.PORCO | FORRO ANILINA PORCO | 319 ROSA GUM 1069 | | | | 2,393 | pe ² | | | | | | | | | |
| 3SL.SONIC.08 | SONIC MONOC. BRANCO + ENV.CINZA | | 26 | 26 | 26 | 1,000 | par | | | | | | | | | |
| 3SL.SONIC.08 | SONIC MONOC. BRANCO + ENV.CINZA | | 27 | 27 | 27 | 1,000 | par | | | | | | | | | |
| 3SL.SONIC.08 | SONIC MONOC. BRANCO + ENV.CINZA | | 28 | 28 | 28 | 1,000 | par | | | | | | | | | |
| 3SL.SONIC.08 | SONIC MONOC. BRANCO + ENV.CINZA | | 29 | 29 | 29 | 1,000 | par | | | | | | | | | |
| 3SL.SONIC.08 | SONIC MONOC. BRANCO + ENV.CINZA | | 30 | 30 | 30 | 1,000 | par | | | | | | | | | |
| 3SL.SONIC.08 | SONIC MONOC. BRANCO + ENV.CINZA | | 31 | 31 | 31 | 1,000 | par | | | | | | | | | |
| 3SL.SONIC.08 | SONIC MONOC. BRANCO + ENV.CINZA | | 32 | 32 | 32 | 1,000 | par | | | | | | | | | |
| 7CAIXAS | CAIXAS | 01 BO-BELL | 24 | 29 | 23 | 4,000 | un | | | | | | | | | |
| 7CAIXAS | CAIXAS | 01 BO-BELL | 30 | 35 | 27 | 3,000 | un | | | | | | | | | |
| MINI.BOT | MATERIAS NÃO INCORPORADAS - BCT/SAP | | | | | 7,000 | par | | | | | | | | | |
| COS.SOLA.COM | COSIDO SOLA COMPLETA | | | | | 7,000 | par | | | | | | | | | |
| 5LI.SERAFI0 | LINHA SERAFIL Nº10 | 711 412 CINZA CLA. | | | | 0,000 | con | | | | | | | | | |
| 8PICT.P1 | PICTOG. P1: Pele - Pele - Sintético | | | | | 14,000 | un | | | | | | | | | |

Fig. 3: Manufacturing orders

1.3. Model and material control for lasting

For an effective assembly of footwear models it is essential to control the existence and quality of the necessary materials. Thus, the Trainee must carry out this control, taking into account the elements of the production plan, the production order and possible technical documentation of the models.

Model control – result of the preparation for lasting

Technical errors:

pattern making, results of improper operations, incorrect distension direction, misplaced parts, lack of stitches or irregular stitches, irregular perforations, ...

Lack of quality in materials:

visible defects, different shades and characteristics, materials not suitable for the purpose, incorrect quantities, ...



Fig. 4: Shoe upper

Control of the materials used in the lasting – quantity and quality:

- Insoles
- Glues
-

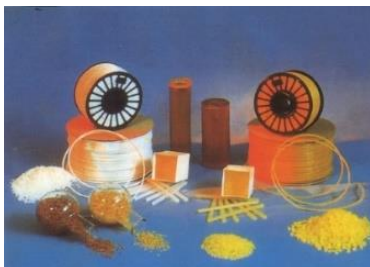
Materials used in the lasting



Insoles



Last



Hot-melt adhesive



Nails

Fig. 5: Materials used in the lasting

1.4. Equipment preparation and setting

The trainee must make different preparations and adjustments of the equipment according to different models and materials.

Toe puff moulding equipment:

- Setting the temperature
- Setting the pressure
- Setting the action time

Equipment for attaching insole to the last:

- Select and equip the machine with the fastening material

Equipment for Forepart lasting:

- Adequate choice of the teflon (forepart) according to the last
- Setting teflon pressure (average pressure from 2 to 4 bar)
- Setting the pincers pressure (average pressure from 6 to 8 bar)
- Setting hammer pressure (average pressure from 2 to 6 bar)
- Adjust the temperature of the fusible glue/hot-melt adhesive (240 ° C to 280 ° C)
- Elevator course;
- Adjust the last distance in relation to the pincers.

Equipment for Side and seat lasting:

- Proper choice of teflon (side and seat) according to the last;
- Setting teflon pressure (average pressure from 2 to 4 bar);
- Toe cap support positioning;
- Lateral supports and fingers positioning;
- Elevator course;
- Setting pincers pressure;
- Adjust the temperature of the fusible glue/ hot-melt adhesive (240°C to 280°C);
- Adjust the last distance in relation to the teflon (side and seat).



1.5. Organisation of the workstations

Efficiency at work, productivity, as well as safety and health are fundamental in a company context and the trainee must realize their importance and apply some principles in the organization of the workstations and their activities:

- Recognize and characterize the main characteristics of a workstation.
- Recognize the advantages of organization, hygiene and safety at work.
- Recognize the advantages of the collective and individual protection.
- Identify and evaluate risks associated with the work environment: excessive noise, excessive temperatures, vibrations, abnormal pressures, radiation, humidity, chemicals, improper transport of the loads, inadequate postures, inadequate information and communication ...
- Identify and apply prevention and health measures inherent in each workplace:
 - Rationalization of activities;
 - Adequate allocation of equipment, tools and materials;
 - Transactions in specific areas and with adequate means;
 - Proper and healthy posture, considering ergonomic and health principles;
 - Use equipment and tools properly;
 - Wear protective equipment whenever justified.

1.6. Lasting operations

The trainee must know how to perform the lasting operations of the different models, taking into account their specificities, the materials and the equipment, in a gradual complexity, in order to obtain an effective professional performance.

Toe puff moulding – requirements:

- Correct positioning of the toe puff;
- Appropriate temperature according to the materials;
- Proper pressure;
- Application of the hygiene, safety and health measures.

Attaching the insole to the last – requirements:

- Correct positioning of the insole on the last - considering the type of lasting;
- Effective method of attaching the insole to the last;
- Application of hygiene, safety and health measures.

Forepart lasting – requirements:

- Correct positioning of the upper on the last;
- Correct positioning of the shoe in the machine;
- Appropriate temperature according to the materials;
- Proper pressure;
- Application of hygiene, safety and health measures;
- Shoe centred on the last;
- Featheredge for proper lasting;
- Effective bonding.

Side and seat lasting – requirements:

- Correct positioning of the shoe in the machine
- Appropriate temperature according to the materials;
- Proper pressure;
- Application of hygiene, safety and health measures.
- Shoe centred on the last;
- Adequate height of the heel counter and the quarters;
- Featheredge for proper lasting.
- Effective bonding.

2. Exercises

Throughout the training, learning situations, questions and challenges should be presented to the trainee, developing the theory to the practice of lasting operations and considering a gradual increase in complexity.

In accordance with the activities proposed above we present some suggestions:



1. Check the materials needed to the lasting of the different models – A, B e C.
2. Prepare the equipment to perform each lasting operation of different models of shoes.
3. Perform each operation considering the characteristics of the model and materials, the correct use of the equipment, the application of safety and health measures, the quality of the product and the gradual complexity of the operations.
4. Analyse, evaluate and solve any problems or failures in the performed work - promoting autonomy, proactivity and a gradual effectiveness in professional performance.

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