

## **Test Project**

**ES2014\_TP25-24-48\_BE**

Submitted by:  
YVES WOEDSTAD , CSABA BABANECZ AND CARLOS GONZÁLEZ  
Member Country: BE, HU and ES

## **INTRODUCTION TO TEST PROJECT DOCUMENTATION**

Introduction to test project documentation .....	2
Contents .....	3
Introduction.....	3
Description of project and tasks .....	3
Instructions to the competitor .....	9
Equipment, machinery, installations and materials required .....	12
Marking scheme .....	14
other .....	14

## **CONTENTS**

This Test Project proposal consists of the following documentation/files:

1. ES2014\_TP25-24-48\_BE\_01.doc
2. ES2014\_TP25-24-48\_BE\_Alphacam.doc
3. ES2014\_TP25-24-48\_BE\_CIS\_Cabinetmaker.xls
4. ES2014\_TP25-24-48\_BE\_CIS\_Joiner.xls
5. ES2014\_TP25-24-48\_BE\_CIS\_Wood Machinist Technician.xls
6. ES2014\_TP25-24-48\_BE\_03.dwg
7. ES2014\_TP25-24-48\_BE\_01.pdf
8. ES2014\_TP25-24-48\_BE\_02.pdf
9. ES2014\_TP25-24-48\_BE\_03.pdf
10. ES2014\_TP25-24-48\_BE\_04.pdf
11. ES2014\_TP25-24-48\_BE\_05.pdf
12. ES2014\_TP25-24-48\_BE\_06.pdf

## **INTRODUCTION**

This is a TEAMWORK Test Project, including the trades Joinery, Cabinetmaker and Wood Machinist. Each trade Test Project is organized by daily modules that shall be finished and accessed at the end of their related days.

## **DESCRIPTION OF PROJECT AND TASKS**

<b>Daily Tasks / Modules</b>			
	<b>C 1 – 1<sup>st</sup> Day Competition</b>	<b>C 2 – 2<sup>nd</sup> Day Competition</b>	<b>C 3 – 3<sup>rd</sup> Day Competition</b>
<b>Teamwork</b>	Work planification Material list. carcase assembling.	Assembling of Frame and Drawer	Final assembling
<b>Joiner</b>	Module 1: Draw/Setting out execution Module 2: Frame	Module 2: Frame Module 3: Legs	Module 3: Legs
<b>Cabinetmaker</b>	Module 1: Carcase.	Module 1: Carcase Module 2: Drawer	Module 3: Flap

<b>Wood Machinist</b>	Module 1: Parts machining	Module 2: Organize Machine work Module 3: ISO exercise	Module 2: Organize Machine work Module 3: AlphaCAM exercise Module 4: Leg
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<b>Daily Marking</b> Each day will be marked the following criteria			
	<b>C 1 – 1st Day competition</b>	<b>C2 – 2nd Day competition</b>	<b>C3 – 3rd Day competition</b>
<b>Teamwork</b>	J – Teamwork	J– Teamwork	D – Finish and appearance E – Measurements F – Conformity J – Teamwork
<b>Joiner</b>	A – Draw/Setting out execution B – Internal Joints – Frame: A, B, E, F.	B – Internal Joints – Frame: C, D. C– External Joints – Frame E – Measurements – Frame B– Internal Joints – Legs: G, H, I.	B– Internal Joints – Legs: J, K, L, M. C– External Joints – Legs D – Finish and appearance E – Measurements – Legs F – Conformity G – Use of materials
<b>Cabinetmaker</b>	Module 1 A– Face marking of carcass. F- Surface finishing of internal surfaces	Module 1 A – Dimensions of carcass D- Joints after gluing, of carcass B-Face marking and setting out of drawer C- Joints before gluing of drawer.	Module 3 B – Face marking and setting out of flap C– Joints before gluing of flap D – Joints after gluing of flap E – Fitting and

		F- Sanding of internal parts of drawer D- Joints after gluing of drawer A-Diagonals of drawer	movable parts F– Surfaces finishing G – Conformity to drawing H – Use of materials
<b>Wood Machinist</b>	A – Dimensions B – Machined surfaces C – Machine setting D – Time and machine management	E – CNC– ISO Programming G – Conforming to drawing	A – Dimensions C – Machine setting D – Time and machine management F – CNC - AlphaCAM Operating G – Conforming to drawing H – Use of materials

### **NOTE:**

The joiner has to draw his mobile part alone and no other is allowed to help him in this task. On his draw, fine construction lines continuing out of frame can appear.

The cabinetmaker has to make his drawer alone and no other is allowed to help him in this task.

The Woodmachinist technician has to do the template for curved piece of left leg and realize the piece alone and no other is allowed to help him in this task; he also realize the right side leg alone and no other is allowed to help him in this task.

### **DESCRIPTION OF PROJECT AND TASKS**

- The format of the Test Project is modular.
- It includes basic tasks from the 3 Trades (Joinery, Cabinetmaking and Wood Machine Technician) and should be developed as a team work.
- It must be accomplished in 18 hours (3 days)
  
- Joiner;
  - o Module 1: Draw/Setting out execution
  - o Module 2: Frame
  - o Module 3: Legs
  
- Cabinetmaker;
  - o Module 1: Carcase
  - o Module 2: Drawer
  - o Module 3: Flap
  
- Wood machinist.
  - o Module 1: Parts machining
  - o Module 2: Organize machine work.

o Module 3: CNC knowledge

- Teamwork;

o Module 1: Work planification Material List

o Module 2: Assembling of mobile part of joiner, legs , drawer, flap and the Final Assembling

o Module 3: Organize machine work

## C1 Day

Joinery:

The aim of the first day is to run the draw and the setting out of module2, and (Frame) Internal Joints: A, B, E, F.

Competitor must submit his plan for evaluation, if he don't do it, it couldn't be assessed anymore.

At the end of the first day, Competitor must submit the Frame's Internal Joints: A, B, E, F, if he don't do it, it couldn't be assessed done anymore.

Cabinetmaking:

The aim of the first day the competitor is running Module 1 (carcase).

Competitor must submit carcase's face marking; if he don't do it, it couldn't be assessed done anymore.

At the end of the first day Competitor must submit a properly glued box under clamps (assessment in beginning of C2); if he don't do it, it couldn't be assessed anymore. (the hinges reinforcement and the wooden hinge and his support in solid oak can be done the second day).

No external sanding the first day for facility of assessment.

Wood Machining Technician:

The aim of the first day is Parts machining of preparation materials and helping team.

## C2 Day

Joinery:

The aim of the second day is to run the Module 2: Frame Internal Joints: C, D. and Module 3: Legs Internal Joints: G, H, I.

Competitor must submit Module 2: joints C and D for assessment before gluing; if he don't do it, it couldn't be assessed anymore.

A the end of the second day, Competitor must submit Module 3: Joints G, H, I for assessment before gluing; if he don't do it, it couldn't assessed done anymore.

Cabinetmaking:

The aim of the second day is to run the Module 2: Drawer.

Competitor must submit drawer's face marking for assessment, if he don't do it, it couldn't be assessed anymore.

Competitor must submit drawer's setting out for assessment; if he don't do it, it couldn't be assessed anymore.

Competitor must submit drawer's joints before gluing; if he don't do it, it couldn't be assessed anymore.

At the end of the second day, the competitor has to deliver Drawer finished (glued and sanded), if he don't do it, it couldn't be assessed anymore.

Wood Machining Technician:

The aim of the second day of preparation materials, Organize Machine work and ISO exercise. (see Sponsor's test).

Note: At the end of the second day Competitor is required to deliver the machined pad, if he don't do it, it couldn't be assessed anymore.

## C3 Day

### Joinery:

The aim of the third day is run Module 3: Legs Internal Joints: J, K, L, M.

The Competitor must submit Module 3: Legs for assessment before gluing, if he don't do it, it couldn't be assessed anymore.

At the end of the third day the Competitor have to deliver the Legs, and the full TP Mounted and finished for final assessment.

### Cabinetmaking:

The aim of the third day is run Module 3: Flap

Competitor must submit flap's face marking, if he don't do it, it couldn't be assessed anymore.

Competitor must submit flap's setting out, if he don't do it, it couldn't be assessed anymore.

Competitor must submit flap's joints before gluing, if he don't do it, it couldn't be assessed anymore.

At the end of the third day the competitors have to deliver the flap, and the full TP mounted and finished.

### Wood Machining Technician:

The goal at the end of the third day - : AlphaCAM exercise and all the competitors have to deliver the complete, assembled and finished TP.

## **INSTRUCTIONS TO THE COMPETITOR**

1. - The trades consist of the following work processes and needs the following competences: A competitor should be able to:

### 1.1 Joinery:

Produce floorboards and staircases, doors and windows, kitchen units. They operate machines that saw, shape, bore holes in, cuts slots and grooves, assemble, and finish raw wood to make the doors, windows, cabinets, trusses, plywood, flooring, panelling, moulding, and trim that are components of most homes and buildings.

The main competences required include:

- Following detailed technical drawings to plan jobs.
- Selecting the type of wood to suit a particular product.
- Working out the amount of timber needed.
- Selecting, installing and adjusting saw blades, cutter heads, boring bids, and sanding belts in respective machines, using hand tools and rule.
- Starting machine and making trial cut.
- Periodically verifying dimensions of parts for adherence to specifications, using gauges and templates.
- Assembling fabricated parts to make millwork products, such as doors, sashes, door and window frames, cabinets, etc.
- Cleaning workshop tools and servicing equipment.

### 1.2 Cabinetmaking:

A competitor should be able to:

Construct a piece of furniture from a working drawing and written instructions, using the material supplied.

The main competences required include:

- Reading and interpreting drawings and written instructions.
- Planning processes, sequences and time management.
- Construct joints or components using hand or machine tool techniques.
- Cutting dovetails by hand.
- Frame or panel construction using solid timber or composite materials.
- Working with veneers.
- Fitting hardware.

- Fit and adjust movable parts to allow smooth movement.
- Obtaining dimensional accuracy within given tolerances.
- Sand and prepare ready for polishing / accepting a finish.
- Produce curve surfaces by hand or machine techniques.
- Cleaning workshop tools and servicing equipment.

### 1.3 Wood Machining Technician:

A competitor should be able to:

Preparing and operate machines that saw, shape, tenoning, bore holes in and mould profiles such as chamfers, slots and grooves. In traditional or numeric controlled machines. The integrations of computers with equipment has improved production speed and capability, simplified setup and maintenance requirements, and increased the demand for workers with computers skills.

The main competences required include:

- Reading, interpreting and following detailed technical drawings and written instructions.
- Planning processes, lists of materials, sequences and time management.
- Selecting the type of wood to suit a particular product.
- Working out the amount of timber needed.
- Selecting, installing and adjusting saw blades, cutter heads, boring bits, and sanding belts in respective machines, using hand tools and rule.
- Starting machine and making trial cut.
- Periodically verifying dimensions of parts for adherence to specifications, using gauges and templates.
- Basic knowledge of AlphaCAM functionalities.
- Programming ISO CNC programs.
- Cleaning workshop tools and servicing equipment.

### 2. The competences include general social/soft skills:

- Creativity
- Critical thinking
- Flexibility/adaptability
- Honesty/integrity
- Interpersonal communication
- Proactive work attitude
- Self motivation
- Teamwork
- Time management
- Work ethics skills
- Ability to take, create, acknowledge and live up to personal responsibilities
- Problem-solving skills
- Working under pressure

### 3. Scope of Skills promotion at EuroSkills

The Skills promotion consists of

- \_ a Skills competition,
- \_ an try a trade event.

### 4. Description of the Skills competition:

The competition is a

- \_ multi trade team competition

The work processes explained in the section 1.2.2 will be part of the competition. The work processes will be representative of the daily activities in the trade. Some will be quick some will take more time but never exceed a normal day work.

The activities will be assembled in modules and a detailed work schedule will be established in such a way that the competition area will constantly demonstrate activities during the whole day.

## **EQUIPMENT, MACHINERY, INSTALLATIONS AND MATERIALS REQUIRED**

It is expected that all Test Projects can be done by competitors based on the equipment and materials specified in the Infrastructure Lists\*.

• Attachment: Infrastructure List

\* (Definition: the Infrastructure Lists is the equipment, machinery, installations and materials supplied by the organizer – it does not include tools and material to be supplied by competitors and/or experts).

Infrastructure List is downloadable on forum.

The Infrastructure List lists all equipment, materials and facilities provided by the Organizer or Competition Partner.

The Infrastructure List specifies the items & quantities requested by the Experts for the next Competition. At each Competition, the Experts must review and update the Infrastructure List in preparation for the next Competition. Experts must advise the Secretary General of any increases in space and/or equipment.

The Infrastructure List does not include items that Competitors and/or Experts are required to bring and items that Competitors are not allowed to bring – they are specified below.

## **MATERIALS, EQUIPMENT AND TOOLS SUPPLIED BY COMPETITORS IN THEIR TOOLBOX**

The Competitor may bring the following tools to the Competition. The list is a suggestion only and is not limited. However only 2 bench-mounted saws and 2 bench-mounted routers are allowed (one of each for the joiner and the cabinetmaker)..

- Set of drawing instruments
  - Awls
  - Planes
  - Chisels
  - Shaping tools
  - Rabbet plane
  - Plough plane
  - Gauges
  - Squares
  - Mallet
  - Drill and bits
  - Hammer
  - Screwdrivers
  - Hand tool sharpening equipment
  - Electric powered routers, which may be bench mounted, with the necessary safety guards
  - The only stationary machines allowed in a Competitor's area are a bench mounted router and a drop saw on a stand (mitre saw) per cabinetmaker, and same for joiner (see TO).
- All other power tools must be handheld.
- Hand-held routers
  - Sander
  - Trammel points
  - Portable lamp
  - Portable vice

Note: The maximum open height of the toolbox MUST not exceed 1.5 m. No other object in the Competitor's area is to exceed 1.5m in height.

Upon arrival and unpacking of toolboxes, Competitors will show all tools and demonstrate all jigs and templates to the tool inspection team for validation prior to the beginning of the Competition.



## **MATERIALS & EQUIPMENT AND TOOLS PROHIBITED IN THE SKILL AREA**

During the Competition, Competitors are prohibited from using mobile phones, cameras, personal music devices, radios and any other device deemed to be a distraction by the Chief Expert.

## **MARKING SCHEME**

Each Test Project must be accompanied by a marking scheme proposal based on the assessment criteria defined in Section 5.

The marking scheme proposal is developed by the person(s) developing the Test Project, eventually helped by CE.

The detailed and final marking scheme is developed and agreed by all Experts on the Discussion Forum.

Marking schemes are to be entered into the CIS prior to the Competition.

## **OTHERS**

*\* After parts marking face, competitors must warn the jury that the task is ready for evaluation.*

*\* The competitors must presents all setting out and joints before gluing (except carcasse of cabinetmaker).*

*\* The competitors are allowed to present pieces for assessment of face marking before the scheduled time.*

*\* For setting out: marking jauge, tracing point (or other) lines are considered as "lines" in acception of marking schemes.*

*\* For flap's profile, competitor can use another profile than doucine (Roman Ogee), but respecting Marking Scheme.*

*\* For the realization of marquetry, only a handled scrollsall is allowed (no machine; see TO).*

## **MATERIAL LIST**

### **Boards:**

#### MDF 19mm A/B Oak:

- 1x 1132mm x 762mm x 19mm (bottom, no veneer edge)
- 3x 1200mm x 285mm x 19mm (2 long veneer edges included)
- 1x 250mm x 285mm x 19mm (2 long veneer edges included)
- 1x 1200mm x 185mm x 19mm (1 long veneer edge included)

- 1x MDF min 5mm - max 7mm A/B Oak 400mm x 200mm (drawer bottom)
- 1x MDF 11mm (max) A/B Walnut US 250mm x 160mm (central panel of flap)
- 1x MDF 18mm 1200mm x 850mm (joiner's plan)
- 1x MDF 18mm 1000mm x 800mm (left leg plan)
- 1x MDF 18mm 900mm x 300mm (template curved piece of left leg)
- 1x MDF 10mm 500mm x 160mm (lateral panels of flap)

**Preglued veneer edge** 22mm Oak : 2500mm per candidate cabinetmaker

**Veneer** Masterflex Walnut US: **1x** 250mm x 150mm  
Masterflex Oak : **2x** 250mm x 150mm

### **Solid woods:**

#### **Solid wood Walnut US :**

**1x** 450mm x 130mm x 12mm (drawer's sides)

#### **Solid wood Oak :**

##### A. CABINETMAKER :

##### Drawer :

**1x** 470mm x 200mm x 22mm (face)

**1x** 470mm x 110mm x 12mm (back)

##### Flap :

**1x** 900mm x 70mm x 22mm (lower cross)

**1x** 900mm x 50mm x 22mm (upper cross)

**1x** 650mm x 50mm x 22mm (outside amounts)

**1x** 650mm x 135mm x 22mm (inside amounts)

##### Carcase :

**1x** 1050mm x 40mm x 22mm (hinges reinforcement on left side)

**1x** 850mm x 40mm x 36mm (support wooden hinge)

**1x** 650mm x 40mm x 25mm (wooden hinge)

**1x** 850mm x 19,5mm x 10mm (solid edge bottom)

**1x** 850mm x 24mm x 19,5mm (solid edge face)

##### B. JOINER :

##### Right side leg :

**1x** 850mm x 50mm x 50mm

##### Left side leg :

**2x** 1250mm x 50mm x 45mm

**2x** 700mm x 50mm x 45mm

**1x** 750mm x 120mm x 45mm

##### Mobile part :

**1x** 1000mm x 100mm x 60mm

**1x** 1400mm x 60mm x 60mm

**2x** 850mm x 100mm x 60mm

### **Others :**

Lamellos, dominos

Wooden dowel diam. 8mm : 200mm per candidate cabinetmaker

Hinges for the flap (3) and for mobile part (3) ; + adapted screws

Screws for the legs (12 per candidate joiner) 4,0 x 50mm torx

Thin marquetry sawblades (length 130mm)