

Technical Description

# Cabinetmaking

Construction and Building Technology



WorldSkills International, by a resolution of the Competitions Committee and in accordance with the Constitution, the Standing Orders and the Competition Rules, has adopted the following minimum requirements for this skill for the WorldSkills Competition.

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Effective 22.08.18



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# 1 INTRODUCTION

## 1.1 NAME AND DESCRIPTION OF THE SKILL COMPETITION

1.1.1 The name of the skill competition is

Cabinetmaking

1.1.2 Description of the associated work role(s) or occupation(s).

Cabinetmaking covers the manufacture of free-standing and built-in furniture and units, using wood at the sole or main material. It may include the design of furniture, but normally comprises the creation of furniture and units from designs prepared by others. Cabinetmaking differs from joinery through the quality of the wood and associated materials used, and the intricacy and aesthetic quality of the finished items. There is, however, some overlap between cabinetmaking and joinery.

A cabinetmaker generally works on commercial and residential assignments of a high quality and value. He or she will therefore exhibit very high standards of skill and professionalism in order to justify clients' expectations and willingness to pay. Most cabinetmakers work in small companies which have to be very sensitive to their reputation and market in order to sustain their businesses' viability.

The cabinetmaker will produce furniture and fittings in a workshop, at least until installing fitted items. However, in order to meet clients' needs, including for the items to add to the aesthetic qualities of their environment they will be placed in, he or she will know intimately where bespoke items are intended to be placed. For items produced speculatively rather than for known clients, the cabinetmaker will have a clear view of the types of location and setting that will show the items at their best.

The cabinetmaker will produce, interpret and/or adapt drawings, set out and measure, cut, form joints, assemble, install if need be, and finish to a high standard. The quality of his/her work will show in:

- The selection of the wood and other materials;
- The placing of the wood to bring out its particular characteristics;
- Construction techniques which allow for the natural movement of timber to achieve longevity and quality in the furniture piece;
- The selection of additional materials including veneers and fittings;
- The near-perfect fit of each part following accurate measurement, cutting and assembly, and
- The final appearance of the item.

Work organization and self-management, communication and interpersonal skills, problem solving, innovation and creativity, working precisely and accurately are the universal attributes of the cabinetmaker. He or she assumes a high level of personal responsibility and autonomy. From working safely through to exceptional planning and organizing, accuracy, concentration and attention to detail to achieve an excellent finish every step in the process matters and mistakes are largely irreversible and very costly.

Modern technology and mass production have enabled furniture and fittings, previously available only to the wealthy, to be more widely available. However, for those with disposable income and an eye for quality, the cabinetmaker is able to produce furniture and fittings that are a lasting pleasure both to use and to look at. In this discerning market the outstanding cabinetmaker will always be in demand.

1.1.3 Number of Competitors per team

Cabinetmaking is a single Competitor skill competition.

1.1.4 Age limit of Competitors

The Competitors must not be older than 22 years in the year of the Competition.

## 1.2 THE RELEVANCE AND SIGNIFICANCE OF THIS DOCUMENT

This document contains information about the standards required to compete in this skill competition, and the assessment principles, methods and procedures that govern the competition.

Every Expert and Competitor must know and understand this Technical Description.

In the event of any conflict within the different languages of the Technical Descriptions, the English version takes precedence.

## 1.3 ASSOCIATED DOCUMENTS

Since this Technical Description contains only skill-specific information it must be used in association with the following:

- WSI – Competition Rules
- WSI – WorldSkills Standards Specification framework
- WSI – WorldSkills Assessment Strategy
- WSI Online resources as indicated in this document
- WorldSkills Health, Safety, and Environment Policy and Regulations

## 2 THE WORLDSKILLS STANDARDS SPECIFICATION (WSSS)

### 2.1 GENERAL NOTES ON THE WSSS

The WSSS specifies the knowledge, understanding and specific skills that underpin international best practice in technical and vocational performance. It should reflect a shared global understanding of what the associated work role(s) or occupation(s) represent for industry and business ([www.worldskills.org/WSSS](http://www.worldskills.org/WSSS)).

The skill competition is intended to reflect international best practice as described by the WSSS, and to the extent that it is able to. The Standards Specification is therefore a guide to the required training and preparation for the skill competition.

In the skill competition the assessment of knowledge and understanding will take place through the assessment of performance. There will only be separate tests of knowledge and understanding where there is an overwhelming reason for these.

The Standards Specification is divided into distinct sections with headings and reference numbers added.

Each section is assigned a percentage of the total marks to indicate its relative importance within the Standards Specification. This is often referred to as the “weighting”. The sum of all the percentage marks is 100.

The Marking Scheme and Test Project will assess only those skills that are set out in the Standards Specification. They will reflect the Standards Specification as comprehensively as possible within the constraints of the skill competition.

The Marking Scheme and Test Project will follow the allocation of marks within the Standards Specification to the extent practically possible. A variation of five percent is allowed, provided that this does not distort the weightings assigned by the Standards Specification.

## 2.2 WORLDSKILLS STANDARDS SPECIFICATION

SECTION		RELATIVE IMPORTANCE (%)
1	<b>Work organization and management</b>	10
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> <li>• Health and safety legislation, obligations, and regulations which control the work process</li> <li>• The principles of working safely with electrical equipment and tools</li> <li>• Emergency procedures and reporting processes for accidents, first-aid, and fire</li> <li>• The situations when personal protective equipment (PPE) must be used</li> <li>• The uses, care, maintenance, and storage of tools, machines, equipment, and materials</li> <li>• The significance of keeping a clean and tidy work area</li> <li>• Ways in which working practices can minimize wastage and manage/control costs</li> <li>• Sustainability measures applying to the use of 'green' materials and recycling</li> <li>• Principles of work planning, operations and time management</li> <li>• The significance of planning, accuracy, checking and attention to detail in all working practices</li> <li>• The role of the individual in maintaining a successful business</li> <li>• The value of managing own continuing professional development</li> </ul>	
	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> <li>• Follow health and safety standards, rules, and regulations</li> <li>• Maintain a safe working environment</li> <li>• Identify and use the appropriate personal protective equipment including safety footwear, ear, eye, and dust protection</li> <li>• Select, use, clean, maintain, and store all hand and powered tools and equipment safely</li> <li>• Select, use, and store all materials safely</li> <li>• Plan the work area to maximize efficiency and maintain the discipline of regular tidying and cleaning</li> <li>• Plan and work efficiently, checking progress, and outcomes regularly to avoid unnecessary costs or other penalties</li> <li>• Critically evaluate own work</li> </ul>	

<b>2</b>	<b>Communication and interpersonal skills</b>	<b>5</b>
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> <li>• The importance of establishing and maintaining client confidence and trust</li> <li>• Non-verbal communication</li> <li>• The negotiation process</li> <li>• The roles and requirements of associated trades and professions</li> <li>• Effective methods of communication with different groups and individuals</li> <li>• The value of building and maintaining productive working relationships with colleagues and managers</li> <li>• The importance of swiftly resolving misunderstandings and conflicting demands</li> <li>• Progress reporting methods</li> </ul>	
	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> <li>• Gain the trust of clients and manage expectations positively</li> <li>• Visualize and interpret clients' wishes, giving advice and making recommendations or providing options which meet/improve their design and budgetary requirements</li> <li>• Liaise with suppliers to negotiate prices and place orders</li> <li>• Produce estimates for clients</li> <li>• Recognize, respect, and adapt to changing circumstances and requirements</li> <li>• Communicate with others with reference to drawings, variations to documents and restrictions</li> <li>• Follow instructions, meet deadlines, and report on progress in the appropriate format</li> </ul>	
<b>3</b>	<b>Problem solving, innovation, and creativity</b>	<b>5</b>
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> <li>• Principles of style, form, and aesthetics</li> <li>• The available options for enhancing quality through style and technique</li> <li>• The common types of problem which occur during the work process</li> <li>• Diagnostic approaches to problem solving</li> <li>• The challenges of complex projects</li> <li>• Trends and developments in the industry</li> </ul>	

	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> <li>• Consider, explore and discuss style, form, and aesthetics with clients and specialists</li> <li>• Check work regularly to minimize problems at a later stage</li> <li>• Recognize, clarify and resolve problems swiftly, and through appropriate processes</li> <li>• Develop creative solutions to challenges when working on complex projects</li> <li>• Contribute ideas to improve the product and overall level of client satisfaction</li> <li>• Keep up to date with changes and trends in the industry</li> <li>• Demonstrate a willingness to try new methods</li> </ul>	
<b>4</b>	<b>Working with drawings</b>	<b>15</b>
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> <li>• The essential information that should be included in a working drawing</li> <li>• The ISO standards which govern drawings</li> <li>• Geometry and trigonometry</li> <li>• The significance of an accurate working drawing as a basis for high quality work</li> <li>• The importance of identifying and correcting errors and omissions</li> <li>• The options for adding value through construction style and technique</li> </ul>	
	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> <li>• Establish the required uses and environment of the finished product</li> <li>• Establish the required or appropriate materials for the product</li> <li>• Establish the dimensions, characteristics, and style of the required product</li> <li>• Produce drawings both to scale and full size</li> <li>• Produce drawings which clearly indicate the type of construction</li> <li>• Interpret given drawings, optimizing the potential for high quality construction</li> <li>• Clarify and correct missing or incorrect information</li> <li>• Determine the types and quantities of the required materials for the product</li> </ul>	

<b>5</b>	<b>Selecting and preparing materials</b>	<b>25</b>
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> <li>• The importance of thinking through each project to ensure that everything is in place to enable completion</li> <li>• The implications for the business/organization of not setting out correctly</li> <li>• Calculations to assist accuracy and the efficient use of time and materials</li> <li>• The characteristics and uses of hardwood and softwood</li> <li>• The characteristics and uses of board materials</li> <li>• The characteristics and uses of veneers</li> <li>• Methods for identifying defects and limitations in the materials selected</li> <li>• The characteristics of the selected material when in use by the client</li> <li>• The basis for selecting fittings for hinges, locks, catches, stays, handles, and shelves</li> </ul>	
	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> <li>• Visualize the whole project to identify and resolve challenges</li> <li>• Select the material in order to avoid defects and enhance appearance</li> <li>• Select fittings for use and appearance</li> <li>• Set out the material in order to determine all the measurements, sections, angles, mitres, and joints</li> <li>• Use geometric methods to determine complex angles, joints, and intersections</li> <li>• Label material and items as appropriate</li> <li>• Transfer points, measurements and angles accurately from plan to materials</li> <li>• Set out directly on materials where appropriate</li> </ul>	
<b>6</b>	<b>Joining and assembly</b>	<b>25</b>
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> <li>• How solid wood and manufactured panel material components are joined to create and assemble items</li> <li>• The balance to be struck between the quality of joinery and the available time</li> <li>• The properties, uses and limitations of glues, and other fixing materials</li> </ul>	

	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> <li>• Use prepared solid wood to set out the required type and size of joints for an assembly</li> <li>• Use traditional hand tools, portable power tools and assorted stationary woodworking machines including CNC (optional by competitor choice) to cut and prepare a wide range of joints including mortise and tenon, finger joints, mitres, dowel joints, halving joints, and dovetail joints, etc.</li> <li>• Use woodworking machines or a combination of machines and hand tools to produce woodworking joints of various types</li> <li>• Use woodworking machines to form grooves, rebates, and mouldings</li> <li>• Cut manufactured panel materials and prepare joints using a dimension saw</li> <li>• Apply edging strips and face veneers to a panel</li> </ul>	
<b>7</b>	<b>Preparation of surfaces and finishing</b>	<b>15</b>
	<p>The individual needs to know and understand:</p> <ul style="list-style-type: none"> <li>• How various components are prepared for polishing (finishing) with clear coating such as lacquer and the like</li> <li>• The uses and limitations of preparatory techniques and materials such as abrasives</li> <li>• Methods of fitting doors and drawers into a cabinet carcass</li> <li>• The uses and limitations of polishing materials and agents</li> <li>• The importance of checking finish against client requirements and expectations and personal standards</li> </ul>	
	<p>The individual shall be able to:</p> <ul style="list-style-type: none"> <li>• Position and fit hinges</li> <li>• Control the fit around door edges</li> <li>• Fit drawers and other moving items into carcasses to achieve a glide fit</li> <li>• Produce surfaces that are free from defects</li> <li>• Produce surfaces on a complete assembly that are free from defects</li> <li>• Produce soft edges to the components or assemblies</li> <li>• Polish the components or assemblies</li> <li>• Review the items for harmony, proportion, fit, and finish</li> </ul>	
	<b>Total</b>	<b>100</b>

## 3 THE ASSESSMENT STRATEGY AND SPECIFICATION

### 3.1 GENERAL GUIDANCE

Assessment is governed by the WorldSkills Assessment Strategy. The Strategy establishes the principles and techniques to which WorldSkills assessment and marking must conform.

Expert assessment practice lies at the heart of the WorldSkills Competition. For this reason, it is the subject of continuing professional development and scrutiny. The growth of expertise in assessment will inform the future use and direction of the main assessment instruments used by the WorldSkills Competition: the Marking Scheme, Test Project, and Competition Information System (CIS).

Assessment at the WorldSkills Competition falls into two broad types: measurement and judgement. For both types of assessment, the use of explicit benchmarks against which to assess each Aspect is essential to guarantee quality.

The Marking Scheme must follow the weightings within the Standards Specification. The Test Project is the assessment vehicle for the skill competition, and also follows the Standards Specification. The CIS enables the timely and accurate recording of marks, and has expanding supportive capacity.

The Marking Scheme, in outline, will lead the process of Test Project design. After this, the Marking Scheme and Test Project will be designed and developed through an iterative process, to ensure that both together optimize their relationship with the Standards Specification and the Assessment Strategy. They will be agreed by the Experts and submitted to WSI for approval together, in order to demonstrate their quality and conformity with the Standards Specification.

Prior to submission for approval to WSI, the Marking Scheme and Test Project will liaise with the WSI Skill Advisors in order to benefit from the capabilities of the CIS.

## 4 THE MARKING SCHEME

### 4.1 GENERAL GUIDANCE

This section describes the role and place of the Marking Scheme, how the Experts will assess Competitors' work as demonstrated through the Test Project, and the procedures and requirements for marking.

The Marking Scheme is the pivotal instrument of the WorldSkills Competition, in that it ties assessment to the standards that represent the skill. It is designed to allocate marks for each assessed aspect of performance in accordance with the weightings in the Standards Specification.

By reflecting the weightings in the Standards Specification, the Marking Scheme establishes the parameters for the design of the Test Project. Depending on the nature of the skill and its assessment needs, it may initially be appropriate to develop the Marking Scheme in more detail as a guide for Test Project design. Alternatively, initial Test Project design can be based on the outline Marking Scheme. From this point onwards the Marking Scheme and Test Project should be developed together.

Section 2.1 above indicates the extent to which the Marking Scheme and Test Project may diverge from the weightings given in the Standards Specification, if there is no practicable alternative.

The Marking Scheme and Test Project may be developed by one person, or several, or by all Experts. The detailed and final Marking Scheme and Test Project must be approved by the whole Expert Jury prior to submission for independent quality assurance. The exception to this process is for those skill competitions which use an independent designer for the development of the Marking Scheme and Test Project. Please see the Rules for further details.

Experts and independent designers are required to submit their Marking Schemes and Test Projects for comment and provisional approval well in advance of completion, in order to avoid disappointment or setbacks at a late stage. They are also advised to work with the CIS Team at this intermediate stage, in order to take full advantage of the possibilities of the CIS.

In all cases a draft Marking Scheme must be entered into the CIS at least eight weeks prior to the Competition using the CIS standard spreadsheet or other agreed methods.

### 4.2 ASSESSMENT CRITERIA

The main headings of the Marking Scheme are the Assessment Criteria. These headings are derived in conjunction with the Test Project. In some skill competitions the Assessment Criteria may be similar to the section headings in the Standards Specification; in others they may be totally different. There will normally be between five and nine Assessment Criteria. Whether or not the headings match, the Marking Scheme as a whole must reflect the weightings in the Standards Specification.

Assessment Criteria are created by the person(s) developing the Marking Scheme, who are free to define criteria that they consider most suited to the assessment and marking of the Test Project. Each Assessment Criterion is defined by a letter (A-I). It is advisable not to specify either the Assessment Criteria, or the allocation of marks, or the assessment methods, within this Technical Description.

The Mark Summary Form generated by the CIS will comprise a list of the Assessment Criteria.

The marks allocated to each Criterion will be calculated by the CIS. These will be the cumulative sum of marks given to each Aspect within that Assessment Criterion.

## 4.3 SUB CRITERIA

Each Assessment Criterion is divided into one or more Sub Criteria. Each Sub Criterion becomes the heading for a WorldSkills marking form. Each marking form (Sub Criterion) contains Aspects to be assessed and marked by measurement or judgement, or both measurement and judgement.

Each marking form (Sub Criterion) specified both the day on which it will be marked, and the identity of the marking team.

## 4.4 ASPECTS

Each Aspect defines, in detail, a single item to be assessed and marked together with the marks, or instructions for how the marks are to be awarded. Aspects are assessed either by measurement or judgement.

The marking form lists, in detail, every Aspect to be marked together with the mark allocated to it.

The sum of the marks allocated to each Aspect must fall within the range of marks specified for that section of the skill in the Standards Specification. This will be displayed in the Mark Allocation Table of the CIS, in the following format, when the Marking Scheme is reviewed from C-8 weeks. (Section 4.1)

		CRITERIA								TOTAL MARKS PER SECTION	WSSS MARKS PER SECTION	VARIANCE
		A	B	C	D	E	F	G	H			
STANDARDS SPECIFICATION SECTION	1	5.00								5.00	5.00	0.00
	2		2.00					7.50		9.50	10.00	0.50
	3								11.00	11.00	10.00	1.00
	4			5.00						5.00	5.00	0.00
	5				10.00	10.00	10.00			30.00	30.00	0.00
	6		8.00	5.00				2.50	9.00	24.50	25.00	0.50
	7			10.00				5.00		15.00	15.00	0.00
TOTAL MARKS		5.00	10.00	10.00	10.00	10.00	15.00	20.00	100.00	100.00	2.00	

## 4.5 ASSESSMENT AND MARKING

There is to be one marking team for each Sub Criterion, whether it is assessed and marked by judgement, measurement, or both. The same marking team must assess and mark all competitors, in all circumstances. The marking teams must be organized to ensure that there is no compatriot marking in any circumstances. (See 4.6.)

## 4.6 ASSESSMENT AND MARKING USING JUDGEMENT

Judgement uses a scale of 0-3. To apply the scale with rigour and consistency, judgement must be conducted using:

- benchmarks (criteria) for detailed guidance for each Aspect (in words, images, artefacts or separate guidance notes)
- the 0-3 scale to indicate:
  - 0: performance below industry standard
  - 1: performance meets industry standard
  - 2: performance meets and, in specific respects, exceeds industry standard
  - 3: performance wholly exceeds industry standard and is judged as excellent

Three Experts will judge each Aspect, with a fourth to coordinate the marking and acting as a judge to prevent compatriot marking.

## 4.7 ASSESSMENT AND MARKING USING MEASUREMENT

Three Experts will be used to assess each aspect. Unless otherwise stated only the mark or zero will be awarded. Where they are used, the benchmarks for awarding partial marks will be clearly defined within the Aspect.

## 4.8 THE USE OF MEASUREMENT AND JUDGEMENT

Decisions regarding the selection of criteria and assessment methods will be made during the design of the competition through the Marking Scheme and Test Project.

## 4.9 COMPLETION OF SKILL ASSESSMENT SPECIFICATION

### Sections A to G

#### A Dimensions

Specific dimensions will be measured. All dimensional marking will be done by templates supplied by the Workshop Manager.

#### B Conforming to drawing

The project must conform to the drawing in all instances. Figure veneering made according to Competitor's plan.

#### C Face marking and joints before gluing

Indication of face marking system. The inside of the joints is assessed before gluing, including fit and accuracy. Dowels and biscuits must be inserted in a uniform manner for presentation/marketing.

A selected dovetail joint(s) will be made with hand tools only [No electric tools will be permitted].

#### D Joints after gluing

Inspection of joints at assessment time. The joints should have no gaps and show no evidence of fillings (glue, sawdust, wax, etc.).

#### E Fitting and movable parts

Hardware fitting to doors, drawers etc. according to drawing and information sheets. Fit and function of moving parts. Wax or lubricant only allowed on moving parts.

#### F Surfaces

The quality of finish of all surfaces e.g. solid wood, veneered panels and edges should be ready for polishing. The surfaces should show no evidence of fillings (glue, sawdust, wax, etc.). Surfaces will be prepared to a maximum of 240 sand paper. Surfaces should be level with no visible cross scratches.

#### G Use of material

A penalty for the use of extra materials due to mistake up to a maximum of three points. One point per mistake.

#### H Safety

- Follow health, safety, and environment standards, rules and regulations
- Maintain a safe working environment
- Identify and use the appropriate personal protective equipment including safety footwear, ear, eye, and dust protection
- Select, use, clean, maintain, and store all hand and powered tools and equipment safely

## 4.10 SKILL ASSESSMENT PROCEDURES

When marking is carried out by a team of Experts, only the allocated team, the Chief Expert and/or the Deputy Chief Expert may be present. Experts not involved in marking are not to be in the marking area.

Competitors will lose marks if three Experts witness a hidden non-conformity during competition.

## 5 THE TEST PROJECT

### 5.1 GENERAL NOTES

Sections 3 and 4 govern the development of the Test Project. These notes are supplementary.

Whether it is a single entity, or a series of stand-alone or connected modules, the Test Project will enable the assessment of the skills in each section of the WSSS.

The purpose of the Test Project is to provide full, balanced and authentic opportunities for assessment and marking across the Standards Specification, in conjunction with the Marking Scheme. The relationship between the Test Project, Marking Scheme and Standards Specification will be a key indicator of quality, as will be its relationship with actual work performance.

The Test Project will not cover areas outside the Standards Specification, or affect the balance of marks within the Standards Specification other than in the circumstances indicated by Section 2.

The Test Project will enable knowledge and understanding to be assessed solely through their applications within practical work.

The Test Project will not assess knowledge of WorldSkills rules and regulations.

This Technical Description will note any issues that affect the Test Project's capacity to support the full range of assessment relative to the Standards Specification. Section 2.1 refers.

### 5.2 FORMAT/STRUCTURE OF THE TEST PROJECT

The format/structure of the Test Project is a single project assessed in stages.

### 5.3 TEST PROJECT DESIGN REQUIREMENTS

- The drawings for a Test Project proposal must be created in AutoCAD format DWG and also saved as a PDF file on the WorldSkills template and include the correct specifications. The drawings must be to the scale of 1:1, 1:2 or other suitable scale, and the format should include a maximum of two drawings of size A1. Smaller sizes are allowed if suitable to expedite work at the Competition. The orthographic drawing can be produced at an identified reduced scale. Test project proposals should be produced considering the need for 30% change;
- Test Project proposals must be in English;
- Test Project proposals must have a carcass, drawer and a hinged component;
- Maximum clamping dimension shall be 900 (in 2021) The maximum combined size of a project (height, width, depth) is to be 2500.
- Test Project can be completed in 22 hours;
- Figure veneering: Competitor's own design with minimum of four parts (fields). Made with materials supplied on the Infrastructure List. Competitors will submit the plan prior to the start of competition.

## 5.4 TEST PROJECT DEVELOPMENT

The Test Project MUST be submitted using the templates provided by WorldSkills International ([www.worldskills.org/expertcentre](http://www.worldskills.org/expertcentre)). Use the Word template for text documents and DWG template for drawings.

### 5.4.1 Who develops the Test Project or modules

Experts may submit a Test Project.

### 5.4.2 How and where is the Test Project or modules developed

The Test Project is developed independently.

Experts can discuss their Test Project proposals on the Discussion Forum. Each participating Expert submits their Test Project proposal.

### 5.4.3 When is the Test Project developed

The Test Project is developed according to the following timeline:

TIME	ACTIVITY
Before previous Competition	Experts develop a Test Project proposal. It is optional for new Experts to develop a Test Project.
At the previous Competition	All proposals that meet the design requirements are submitted to the Director of Skills Competitions and are circulated to all Experts on the Discussion Forum.
Six (6) months before current Competition	Experts' shortlist three proposals by vote on the Discussion Forum. WorldSkills Director of Skills Competitions randomly selects one proposal. The selected Test Project is provided confidentially to a former Expert to prepare the 30% change.
Three (3) months before current Competition	The Skill Competition Manager arranges for a 30% change and keeps the change secret. The Skill Competition Manager provides only the cutting list for the material to the Workshop Manager to prepare them. No current Expert may be involved in this process.
At the Competition (C-3)	The 30% change is released to the Experts. The Experts advise Competitors of the 30% change.

## 5.5 TEST PROJECT VALIDATION

The Test Project is validated by a photograph of the completed project.

## 5.6 TEST PROJECT SELECTION

Experts' shortlist three proposals by vote on the Discussion Forum. WorldSkills Director of Skills Competitions randomly selects one proposal.

## 5.7 TEST PROJECT CIRCULATION

The Test Project is circulated via the website as follows:

The three shortlisted Test Projects are circulated six months before the current Competition (see section 5.4.3 above).

## 5.8 TEST PROJECT COORDINATION (PREPARATION FOR COMPETITION)

Coordination of the Test Project will be undertaken by the Skill Competition Manager.

## 5.9 TEST PROJECT CHANGE AT THE COMPETITION

The selected Test Project is provided confidentially to a former Expert to prepare the 30% change.

## 5.10 MATERIAL OR MANUFACTURER SPECIFICATIONS

Specific material and/or manufacturer specifications required to allow the Competitor to complete the Test Project will be supplied by the Competition Organizer and are available from [www.worldskills.org/infrastructure](http://www.worldskills.org/infrastructure) located in the Expert Centre.

Not applicable.

## 6 SKILL MANAGEMENT AND COMMUNICATION

### 6.1 DISCUSSION FORUM

Prior to the Competition, all discussion, communication, collaboration, and decision making regarding the skill competition must take place on the skill specific Discussion Forum (<http://forums.worldskills.org>). Skill related decisions and communication are only valid if they take place on the forum. The Chief Expert (or an Expert nominated by the Chief Expert) will be the moderator for this Forum. Refer to Competition Rules for the timeline of communication and competition development requirements.

### 6.2 COMPETITOR INFORMATION

All information for registered Competitors is available from the Competitor Centre ([www.worldskills.org/competitorcentre](http://www.worldskills.org/competitorcentre)).

This information includes:

- Competition Rules
- Technical Descriptions
- Marking Schemes
- Test Projects
- Infrastructure List
- WorldSkills Health, Safety, and Environment Policy and Regulations
- Other Competition-related information

### 6.3 TEST PROJECTS [AND MARKING SCHEMES]

Circulated Test Projects will be available from [www.worldskills.org/testprojects](http://www.worldskills.org/testprojects) and the Competitor Centre ([www.worldskills.org/competitorcentre](http://www.worldskills.org/competitorcentre)).

### 6.4 DAY-TO-DAY MANAGEMENT

The day-to-day management of the skill during the Competition is defined in the Skill Management Plan that is created by the Skill Management Team led by the Skill Competition Manager. The Skill Management Team comprises the Skill Competition Manager, Chief Expert, and Deputy Chief Expert. The Skill Management Plan is progressively developed in the six months prior to the Competition and finalized at the Competition by agreement of the Experts. The Skill Management Plan can be viewed in the Expert Centre ([www.worldskills.org/expertcentre](http://www.worldskills.org/expertcentre)).

## 7 SKILL-SPECIFIC SAFETY REQUIREMENTS

Refer to Host country or region WorldSkills Health, Safety, and Environment Policy and Regulations for Host country or region regulations.

- The Workshop Manager is responsible for the safety measures on the machines, including the use of safety glasses and hearing protection;
- All machines should be properly guarded;
- All circular saws must have a riving knife and top guard;
- For all machines wooden safety aids may be requested by Experts;
- Compressed air is not to be used for dust removal;
- Experts are to check safety of all machines and to make a decision 'safe' or 'not safe';
- The light conditions must be uniform for all Competitors and must be a minimum 300 lux at each bench top;
- Each Competitor will have a working area of 15 square metres. Each bench must have a minimum of one vice with wooden chops mounted on the long side;
- The work surface of the bench must be height adjustable;
- No item in the Competitor's workspace can be above 1500 mm including the drawing board not including vacuum hose and lamp.
- Chop (Drop) Saw may not face the public;
- Electricity 220/240 V with minimum of 20 A fuse in each Competitor's area.

## 8 MATERIALS AND EQUIPMENT

### 8.1 INFRASTRUCTURE LIST

The Infrastructure List details all equipment, materials and facilities provided by the Competition Organizer.

The Infrastructure List is available at [www.worldskills.org/infrastructure](http://www.worldskills.org/infrastructure).

The Infrastructure List specifies the items and quantities requested by the Experts for the next Competition. The Competition Organizer will progressively update the Infrastructure List specifying the actual quantity, type, brand, and model of the items. Items supplied by the Competition Organizer are shown in a separate column.

At each Competition, the Experts must review and update the Infrastructure List in preparation for the next Competition. Experts must advise the Director of Skills Competitions of any increases in space and/or equipment.

At each Competition, the Technical Observer must audit the Infrastructure List that was used at that Competition.

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.

### 8.2 COMPETITOR'S TOOLBOX

Competitors may bring a toolbox (crate) with a maximum external volume of 1.5m<sup>3</sup>.

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

- Every power tool that is equipped with an attachment for dust exhaustion should have a dust collector. There will be only one collector allowed. Competitors must bring extra hose, fittings and adaptors to accommodate different brands of vacuums.
- The only two permitted stationary mounted machines the Competitor may bring are one Chop (Drop) saw and one Inverted router table machine including a selection of cutters;
- Competitors may not bring cutter blocks or saw blades for the Competition Organizer supplied machinery except for drills;
- Solid timber and practice pieces will be supplied by the Competition Organizer;
- Competitors may bring any hand tools they wish;
- Competitors may not bring any solid wood, plywood, or MDF. Competitors may bring sanding blocks, cauls, clamping block, straight edges, fence liners as long as they are not the same wood as the test project
- In addition, each Competitor may bring a maximum of five portable power tools of their choice as long as they are not listed in the Infrastructure List to be supplied by the Competition Organizer. (Random orbital, small hand router, larger hand router, etc.);
- The Competition Organizer and/or sponsor will provide each Competitor with:
  - Access to shared biscuit joiners (one for every four Competitors);
  - Access to shared lipping planers (one for every four Competitors);
  - Access to shared Domino machines (one for every four Competitors);
  - Dowelling machines (one for every four Competitors);
  - Cordless drill (one for every Competitors);

- All other conventional hand tools are allowed. No rigid clamps over 400 long;
- The Competition Organizer and/or sponsor will provide an array of clamps for each Competitor which the Chief Expert will specify;
- The Competition Organizer and/or sponsor will provide consumables (glue, biscuits, dowels, abrasives, etc.). As well, dust extraction is provided at each bench. The Competitors may bring a limited amount of abrasives, glue, and tape.

## 8.4 MATERIALS, EQUIPMENT, AND TOOLS SUPPLIED BY EXPERTS

Personal Protective Equipment (PPE) such as safety glasses and ear protection.

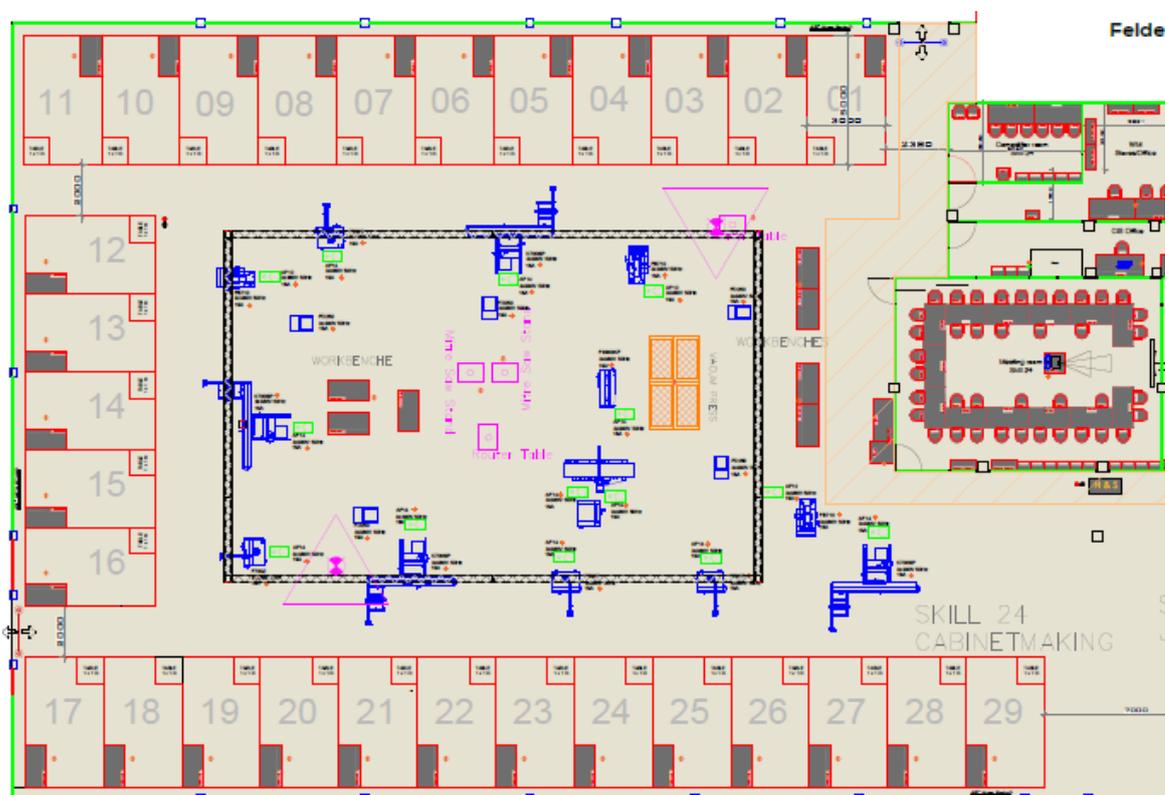
## 8.5 MATERIALS AND EQUIPMENT PROHIBITED IN THE SKILL AREA

Those not listed in section 8.3 above are prohibited in the skill area.

## 8.6 PROPOSED WORKSHOP AND WORKSTATION LAYOUTS

Workshop layouts from previous competitions are available at [www.worldskills.org/sitelayout](http://www.worldskills.org/sitelayout).

Example workshop layout:



## 9 SKILL-SPECIFIC RULES

Skill-specific rules cannot contradict or take priority over the Competition Rules. They do provide specific details and clarity in areas that may vary from skill competition to skill competition. This includes but is not limited to personal IT equipment, data storage devices, internet access, procedures and work flow, and documentation management and distribution.

TOPIC/TASK	SKILL-SPECIFIC RULE
Use of technology – personal laptops, tablets and mobile phones	<ul style="list-style-type: none"> <li>• Competitors are not allowed to bring personal laptops, tablets or mobile phones into the workshop.</li> <li>• Experts and Interpreters are allowed to use personal laptops or tablets.</li> <li>• No communication devices are to be used in the workshop area while the competition is underway.</li> </ul>
Use of technology – personal photo and video taking devices	<ul style="list-style-type: none"> <li>• Experts and Interpreters are allowed to use personal photo and video taking devices in the workshop during the competition days only (C1 to C4)</li> <li>• Competitors are allowed to use personal photo and video taking devices in the workshop at the conclusion of the competition only.</li> </ul>
Templates, aids, etc.	<ul style="list-style-type: none"> <li>• Competitors are not permitted to bring prefixed or ensemble jigs, fixtures or templates.</li> <li>• No drawing boards attached to trolleys in shop area. Documents attached to a clip board are allowed. Maximum clipboard size A3</li> </ul>
Drawings, recording information	<ul style="list-style-type: none"> <li>• Competitors, Experts, and Interpreters are not permitted to take the Test Project drawings out of the workshop.</li> </ul>
Health, Safety, and Environment	<ul style="list-style-type: none"> <li>• Refer to the WorldSkills Health, Safety, and Environment policy and guidelines document.</li> </ul>

## 10 VISITOR AND MEDIA ENGAGEMENT

It is intended that the following will be used to maximize visitor and media engagement for this skill.

- Try a trade;
- Display screens;
- Test Project display;
- Career opportunities;
- Daily reporting of competition status.

## 11 SUSTAINABILITY

This skill competition will focus on the sustainable practices below:

- Recycling;
- Use of completed Test Projects after Competition;
- If possible certified wood will be used for Test Project;
- If possible project materials should be local to the Competition Organizer.

## 12 REFERENCES FOR INDUSTRY CONSULTATION

WorldSkills is committed to ensuring that the WorldSkills Standards Specifications fully reflect the dynamism of internationally recognized best practice in industry and business. To do this WorldSkills approaches a number of organizations across the world that can offer feedback on the draft Description of the Associated Role and WorldSkills Standards Specification on a two-yearly cycle.

In parallel to this, WSI consults three international occupational classifications and databases:

- ISCO-08: (<http://www.ilo.org/public/english/bureau/stat/isco/isco08/>)
- ESCO: (<https://ec.europa.eu/esco/portal/home> )
- O\*NET OnLine ([www.onetonline.org/](http://www.onetonline.org/))

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Your competition's WSSS appears most closely to relate to *Cabinetmakers and Bench Carpenters*:

<https://www.onetonline.org/link/summary/51-7011.00>

and *Cabinet Maker*: <http://data.europa.eu/esco/occupation/e1416610-ad08-4f37-8b46-9f99632a5c0f>

Adjacent occupations can also be explored through these links.

## 13 APPENDIX

### 13.1 RESPONSIBILITIES OF THE FORMER EXPERT MAKING THE 30% CHANGE

The former Expert making the 30% change has the following responsibilities:

- Provide 30% change to the Test Project;
- Provide the Material List for the Test Project;
- Provide the Marking Scheme for Test Project in consultation with the Skill Advisor;
- Ensure the Infrastructure List is adhered to for Test Project:
  - Machines;
  - Power Tools;
  - Shop Supplies;
    - Tooling;
    - Adhesives;
    - Fasteners;
    - Abrasives;
    - Etc.
  - Hardware;
  - Competitor Practice Material;
  - Competitor Template Material.