TECHNICAL DESCRIPTION

JEWELLERY

CREATIVE ARTS AND FASHION

TD27 v5.1 — WSC2015

WorldSkills International, by a resolution of the Technical 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.

The Technical Description consists of the following:

Effective 12.08.14

Stefan Praschl
Chair Technical Committee

Michael Fung
Vice Chair Technical Committee

1 INTRODUCTION

1.1 NAME AND DESCRIPTION OF THE SKILL COMPETITION

1.1.1 The name of the skill competition is

Jewellery

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

The skill of jewellery making consists of the manufacture of fashion accessories using precious metal.

A jewellery maker can make exclusive individual pieces for use, pieces ready to be set with precious gemstones or prototypes for reproduction in numbers through lost-wax casting.

A jewellery maker will usually work from detailed drawings created by a jewellery designer. They will therefore need to be able to correctly interpret these drawings to create a jewellery piece as envisioned by the designer. A jewellery maker must be able to respect the shapes and forms of the designer's original concept and should be able to interact with the designer, giving and receiving feedback regarding the manufacturing process. A jewellery maker's skill-set does not necessarily require direct contact with clients as there will usually be intermediaries involved.

A jewellery maker may also be required to replicate a piece directly, or use jewellery making skills to renovate or repair an existing piece.

Dealing with precious metals, a jewellery maker needs to be precise, work economically and avoid wastage of materials. The work is intricately detailed and requires a high level of skill, focus and concentration. Once the jewellery maker has finished a piece it may progress to further phases of the manufacturing process requiring goldsmith's industry skills other than jewellery making, such as gem-setting and casting.

For this reason a jewellery maker must have some knowledge and understanding of other goldsmith's industry skills. They must, for example, have an appreciation of gemstones, their characteristics, cuts, uses and impact on the finished piece. Similarly they must be aware of the different phases of reproduction through casting.

Jewellery makers will work in a goldsmith's workshop using specialist tools and equipment. Due to the intricate nature of the work, many of the tools are delicate and therefore need to be used and handled with extreme care. Some jewellery makers may be independent, but more often they will work in a workshop with other jewellery makers or technicians with other specialist goldsmith's industry skills. They must always observe skill-specific health and safety procedures and regulations.

Jewellery is made from precious metals and gemstones, which are highly valuable. A jewellery maker must therefore act with complete honesty and integrity and be fully aware of security and the regulations relating to the purchase, production and sale of precious metals, gemstones and finished pieces.

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 (when available)
- WSI – Online resources as indicated in this document
- Host Country – Health and Safety 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).

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 not be separate tests of knowledge and understanding.

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. 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	**Work organization and management**	**30**
	The individual needs to know and understand: • Procedures for checking and maintaining specialist individual tools and shared workshop tools and machines • Safe operation and maintenance of shared workshop machines and individual tools • Procedures for the secure storage of jewellery and materials • Risks attached to the use of natural and propane gas, oxygen, electricity, acid, and chemical products • Legislation and best practice relating to health and safety • Legislation and regulations relating to the purchase, production and sale of precious metals, gemstones and finished pieces • History and tradition of specialist jewellery making techniques used in past periods and in different countries • Specialist terminology relating to precious metals and jewellery making • Out-sourcing for electro-plating and the electro-plating process	

	The individual shall be able to:
	• Interact professionally with jewellery designers, and other jewellery professionals
	• Provide expert advice and guidance on jewellery manufacturing techniques for a specific design proposal
	• Assess and plan for the separate tasks and operations necessary for the manufacture or repair of jewellery components and assembly of completed jewellery pieces
	• Accurately interpret proposals for manufacture of jewellery components or complete jewellery pieces including:
	  • Technical drawings
	  • Sample pieces
	  • Sketches or rendered images from 3D digital models
	• Interpret technical terminology and symbols
	• Determine time, materials and equipment necessary to complete projects
	• Work with a high degree of accuracy and precision on fine and delicate pieces
	• Apply correct procedures for reduction of wastage and retention of precious metal filings for re-use
	• Comply with the health and safety regulations and procedures of the country or region where working
	• Use personal protective equipment (PPE) and clothing sturdy enough to protect the user from small pieces of flying or incandescent metal
	• Operate machinery and tools in a manner that avoids risk to him/herself or others within the workshop
	• Proactively maintain continuous professional development in order to aware of fashion trends in jewellery design, specialist manufacturing techniques and developments in technology	

2	**Manufacture of Precious Metal Alloys**	**10**
	The individual needs to know and understand: • Content of precious metal alloys and the impact that additives have on the precious metal in terms of colour, pliability and durability • How alloys react to various processes used by the jewellery maker • Properties of precious metal alloys and their solders • Laws and regulations relating to precious metal content for sale and export • Assaying processes and procedures for the country of operation, purchase and sale of jewellery products • Assaying marks delineating precious metal quality • Formats in which precious metals are sold	
	The individual shall be able to: • Recognize authenticity and quality signs for precious metals • Source precious metals of the correct price and quality for jewellery manufacture • Calculate the proportions and quantities of fine precious metals and base metals required for any predetermined quantity of any recognized precious metal alloy • Cast precious metal alloy ingots and bars of any predetermined weight, with a minimum of residual impurities, ready to be milled or rolled in preparation for the manufacture of jewellery components	
3	**Preparation of Precious Metal Alloys for the Manufacture of Jewellery Components**	**10**
	The individual needs to know and understand: • Properties and applications of various recognized precious metal alloys • Procedures for transformation of precious metal alloy ingots in preparation for the manufacture of jewellery components • Applications and uses for various recognized precious metals	
	The individual shall be able to: • Manufacture precious metal sheet or square wire, and reduce to any pre-determined thickness using manual or electrically powered polling mills • Manufacture and reduce thickness of square or round wire in precious metal alloys to any pre-determined dimensions using drawing banks • Manufacture round wire from square wire, and reduce to any pre-determined diameter using a drawing bank	
4	**Manufacture of a Simple Jewellery Component**	**20**
	The individual needs to know and understand: • Various jewellery components and their uses • Techniques and methods for forming and constructing components	

	The individual shall be able to: • Manufacture Chenier/tube and reduce to any predetermined diameter using a drawing bank • Transform precious metal alloy sheet, wire or Chenier/tube into basic jewellery components by means of bending, shaping and forming so as to conform to any shape pre-determined by technical drawing or sample component • Accurately drill precious metals so as to conform to any shape pre-determined by technical drawing or sample component • Transform basic jewellery components by means of abrasive techniques such as milling, grinding, filing ajour-sawing etc. so as to conform to any shape pre-determined by a technical drawing or sample component • Hammer, emboss, shape or dome precious metal sheet of an appropriate thickness into low relief, so as to conform to any shape pre-determined by a technical drawing or sample component using an appropriate doming tool	
5	**Manufacture of Complex Components and Complete Jewellery Pieces Using Solder Joins**	**20**
	The individual needs to know and understand: • Various jewellery components and their uses • Range and use of techniques and methods for forming, constructing and finishing components • Gemstone setting • Correct and safe use of solders and soldering torches	
	The individual shall be able to: • Assemble basic jewellery components into complex jewellery components by means of precious metal solder joins so as to conform to any design pre-determined by a technical drawing or sample component • Manufacture settings for precious gemstones so as to conform to any design pre-determined by a technical drawing or sample component, and in such a manner that stones of the pre-determined size and shape can be properly set by a professional gem setter • Manufacture functioning mechanisms for jewellery such as hinges, clasps, articulations, pressure snaps riveting and screw threads so as to conform to any design pre-determined by a technical drawing or sample component, and in such a manner that they will function as required and continue to function in the same manner for an indefinite period of time with normal use • Assemble basic jewellery components and complex jewellery components into completed jewellery pieces by means of precious metal solder joins so as to conform to any design pre-determined by a technical drawing or sample component • Repair damaged or worn pieces of jewellery in such a manner that the restored piece will be indistinguishable from its original aspect at the time of manufacture	

6	Surface Finish	10
	The individual needs to know and understand: • Skill specific finishing and polishing methods and techniques • Effect of different types and grades of polishing media on the surface finish • Procedures, tools and techniques to gain the optimum surface finish • Common surface imperfections and defects and appropriate techniques for their repair • International grades of sandpaper used in surface finishing	
	The individual shall be able to: • Avoid creating marks, scratches and surface imperfections throughout all stages of manufacture of simple and complex jewellery components and completed jewellery pieces prior to the application of final surface finish • Finish surfaces at stages throughout the manufacturing process • Apply non-reflective 800ASA sandpaper (or equivalent) appropriate for critical evaluation and/or passing on to any subsequent phase of production requiring other goldsmith's industry skills, such as casting, gem-setting, engraving and polishing	

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 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 judgment. These are referred to as **objective** and **subjective**, respectively. 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 external designer for the development of the Marking Scheme and Test Project.

In addition, Experts are encouraged 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 the complete and approved 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 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).

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 of assessment 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) has a specified day on which it will be marked.

Each marking form (Sub Criterion) contains either objective or subjective Aspects to be marked. Some Sub Criteria have both objective and subjective aspects, in which case there is a marking form for each.

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 objectively or subjectively and appear on the appropriate marking form.

The marking form lists, in detail, every Aspect to be marked together with the mark allocated to it and a reference to the section of the skill as set out in the Standards Specification.

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)

STANDARD SPECIFICATION SECTIONS	CRITERIA									TOTAL MARKS PER SECTION
TOTAL MARKS PER CRITERION										100

4.5 SUBJECTIVE MARKING

Subjective marking uses the 10 point scale below. To apply the scale with rigour and consistency, subjective marking should be conducted using:

- benchmarks (criteria) to guide judgment against each Aspect
- the scale to indicate:
  - 0: non attempt;
  - 1-4: below industry standard;
  - 5-8: at or above industry standard;
  - 9-10: excellence.

4.6 OBJECTIVE MARKING

A minimum of three experts will be used to judge each aspect. Unless otherwise stated only the maximum mark or zero will be awarded. Where they are used, partial marks will be clearly defined within the Aspect.

4.7 THE USE OF OBJECTIVE AND SUBJECTIVE ASSESSMENT

The final deployment of objective or subjective assessment will be agreed when the Marking Scheme and Test Project are finalized. The table below is advisory only for the development of the Test Project and Marking Scheme.

SECTION	CRITERION	MARKS		
		Subjective	Objective	Total
A	Similarity to drawing/Function	20	0	20
B	Sawing – ajour work	20	0	20
C	Soldering	20	0	20
D	Surface finish	10	0	10
E	Dimensions	0	20	20
F	Piece complete on time	0	10	10
Total		**70**	**30**	**100**

4.8 COMPLETION OF SKILL ASSESSMENT SPECIFICATION

Criterion A: For similarity to drawing, the Experts will subjectively assess the degree to which the Competitor's work reflects the general shapes and proportions described in the Test Project drawing(s). For function, the Experts will subjectively assess the degree to which any mechanisms or clasps in the Competitor's work function correctly.

Criterion B: The Experts will subjectively assess, shape's dimensions and internal surface finish of technical elements involving removal of metal in the Competitor's work.

Criterion C: The Experts will subjectively assess the degree to which Competitors unite, by means of solder joints, components implicitly or specifically defined as touching in the Test Project drawing(s), without discoloration or incorrect application of solder.

Criterion D: The Experts will subjectively assess the degree to which the Competitor's work demonstrates a uniform, unpolished finish (equivalent to ASA 800 abrasive r finish. A 20 mm square flat sample piece of 18 kt gold will be selected by the experts and displayed in the workshop area to clearly show the desired surface finish) without marks, scratches or discoloration on all surfaces not assessed for criterion B.

Criterion E: The Experts will objectively assess whether the Competitor's work respects clearly marked dimensions on the Test Project drawing, within defined tolerances.

Criterion F: The Experts will objectively assess whether the components and technical elements specified in the Test Project drawing(s) are present and connected to the others by means of at least one solder or mechanical joint.as specified in the technical project.

4.9 SKILL ASSESSMENT PROCEDURES

- The Experts that attend the Competition will be divided into marking groups to deal with each section of the marking criteria;
- If modular, every completed module/task/section will be marked on the same day in which it was completed;
- To ensure transparency, each Competitor is provided the same evaluation sheet as used by the Experts;
- Experts will maintain supervision of the Competitors during the Competition, but must not look at Competitors' work, or have any knowledge of progress until the module has been marked;
- At the end of each day of the Competition, the incomplete test pieces shall be collected, by the Workshop Manager, in opaque boxes, sealed and signed, marked with the Competitor's workstation number and country code, and locked in a safe or strong cabinet. The key or combination to the safe or strong cabinet should be kept only by a neutral person, nominated by the Experts;
- At the end of each day of the Competition, photographs may be taken of all Competitors' metal, by a neutral person nominated by the Experts, to assure that no parts may be replaced or added. These photographs shall be kept in a safe or strong cabinet;
- At the end of each Competition module the test pieces for marking shall be sealed in opaque envelopes, inscribed with the Competitor's name, workstation number and country code;
- For marking, the test pieces will be anonymously labelled by two neutral persons (including the Workshop Manager) and will be marked without the Experts having any knowledge of the Competitors' identity.

5 THE TEST PROJECT

5.1 GENERAL NOTES

Sections three and four 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 and balanced 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.

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 0 refers.

5.2 FORMAT/STRUCTURE OF THE TEST PROJECT

Test Project with separately assessed sub-projects or components.

5.3 TEST PROJECT DESIGN REQUIREMENTS

The Test Project must have a wide variety of jewellery technical elements including:

- Ajour/backholes;
- Gallery and/or back/edge wire;
- Settings made by soldering simple jewellery components;
- Mechanisms and/or assembly of complex jewellery components;
- Doming/forming or relief work.

Test Project proposals must be accompanied by three to five photographic images of each module completed within the proposed time limit using the material list below in any precious metal.

The drawing must be available in at least JPG or PDF. For drawing projections refer to ISO 128, either first or third angle projection. Projections shall be on one sheet of A4 paper, scale 1:1, or one per module. Cross-sections and three dimensional representations may also be included

Documentation for the test project proposal must include a full marking scheme.

It must be possible for Test Project proposals to be manufactured from the following pre-determined list of materials without having to melt and re-cast cuttings or filings:

- 40mmx80mmx1.2mm sheet;
- 40mmx4.0 mm square wire;
- 100x2.0mm round wire;
- 80x3.0mm round-tube;
- 1gm each of Hard/medium/easy solder.

In each module a minimum of two, and a maximum of three dimensions, must be clearly identified on the drawing for marking purposes.

Project must be designed to accommodate the timetable listed below:

Module one: Three to five working hours
Module Two: Five to seven working hours
Module Three: Five to seven working hours
Module Four: Four to six working hours.

5.4 TEST PROJECT DEVELOPMENT

The Test Project MUST be submitted using the templates provided by WorldSkills International (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

The Test Project/modules are developed by all Experts.

5.4.2 How and where is the Test Project or modules developed

The Test Project or modules are developed independently.

5.4.3 When is the Test Project developed

The Test Project is developed according to the following timeline:

TIME	ACTIVITY
Up to 90 days before Competition day C-4.	Experts will upload Test Project proposals (using WorldSkills Test Project proposal templates and format, including photographs of a completed sample of each module and DWG files if applicable) onto the Jewellery forum.
30 days before Competition day C-4	Experts will select three projects by Discussion Forum poll for immediate circulation on the WSI website. See Competition Rule Appendix seven for eligibility to vote
At the Competition	One Test Project is selected by random draw from the three circulated proposals. 30% change is made to the selected Test Project

5.5 TEST PROJECT VALIDATION

By presenting projects using WorldSkills Test Project proposal templates and format, including photographs from different angles of a completed sample of each module and DWG files if applicable.

5.6 TEST PROJECT SELECTION

The Test Project is selected at the current Competition.

On arrival at the Competition, the Test Project for the Competition is selected by random draw from the three selected Test Project proposals before undergoing 30% changes.

5.7 TEST PROJECT CIRCULATION

The Test Project is circulated via the website as follows:

Submitted to the Technical Director 90 days prior to Competition for immediate circulation.

Submitted to the Technical Director immediately after validation as per 5.2 and 4.7 by the poll on the Skill Discussion Forum. The three selected proposals are circulated 30 days before the Competition.

5.8 TEST PROJECT COORDINATION (PREPARATION FOR COMPETITION)

The Chief Expert, Deputy Chief Expert and the nominated Expert from the Member country/region who's Test Project is selected.

5.9 TEST PROJECT CHANGE AT THE COMPETITION

The selected Test Project must be changed by a minimum of 30% at the Competition.

Any of the following alterations may be made to the selected Test Project at the Competition site in order to eliminate the possibility of any Competitor bringing ready-made components for evaluation.

- Enlargement/reduction of ≤30%, in a given XYZ axis, to the size of components or to the size of stone for which a setting is conceived, in the selected Test Project drawing;
- Enlargement/reduction of ≤30% to the number of times a specific technical element is repeated (ex. Number of holes) in the selected Test Project drawing;
- Alteration of the shape of the stone for which a setting is conceived, maintaining its volume within ≤30% of that defined in the selected Test Project drawing;
- Any alterations, including combinations of the above, which maintain the technical elements to be completed in the selected Test Project, and respect the general aesthetics, and can be made using the materials defined by the Test Project Design Requirements (Refer to 5.3).

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 located in the Expert Centre.

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).

This information includes:

- Competition Rules
- Technical Descriptions
- Marking Schemes
- Test Projects
- Infrastructure List
- Health and Safety documentation
- Other Competition-related information

6.3 TEST PROJECTS [AND MARKING SCHEMES]

Circulated Test Projects will be available from www.worldskills.org/testprojects and the Competitor Centre (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 Chief Expert. The Skill Management Team comprises the Jury President, 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).

7 SKILL-SPECIFIC SAFETY REQUIREMENTS

Refer to Host Country/Region Health and Safety documentation for Host Country/Region regulations.

- Competitors must wear transparent eye protection when required;
- Practical clothing that covers the body to knee e.g. Apron or coveralls;
- Enclosed footwear must be worn within the workshop 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.

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 Technical Director of any increases in space and/or equipment.

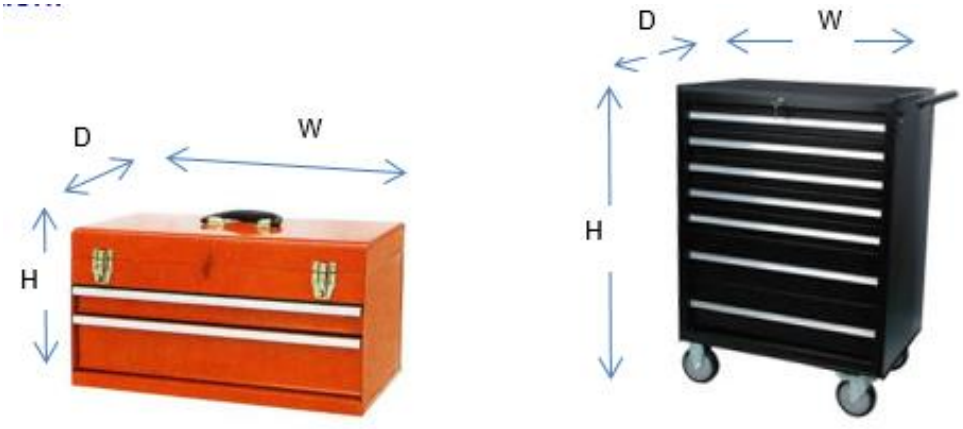
At each Competition, the Technical Observer must audit the Infrastructure List that was used at that Competition.

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 MATERIALS, EQUIPMENT AND TOOLS SUPPLIED BY COMPETITORS IN THEIR TOOLBOX

Toolbox Size

Toolboxes greater than 0.25m³ will not be allowed within the workshop area during the competition.



The volume will be measured as height (Floor to top of toolbox) x width x depth.

Wheels can be removed.

Non-consumable materials, equipment and tools to be supplied by the Competitor

QTY	DESCRIPTION
1	Set of Hand files
1	Set of Needle-point files
1	Rounding hammer
1	Steel block
1	Saw frame
1	Set of Pliers
1	Marking tool
1	Square
1	Measuring rule
1	Compass, dividers
1	Bench pin
1	Propane or Oxy/propane Soldering Torch*
1	Soldering tweezers
1	Soldering torch
1	Soldering block
1	Clear protection glasses
1	Chisel/scorpers/graver
1	Scraper
1	Magnifying glass
1	Magnet

Quantities specified are recommended as the minimum – Competitors may bring more than one. Additional tools not listed are permitted subject to a complete toolbox inspection.

* Gas and Oxygen supply pressures and internal hose and connector diameters to be supplied by the organization six months before the Competition.

Consumable materials to be supplied by the Competitor

QTY	DESCRIPTION
1	Saw blades
1	Modelling clay
1	Soldering fluid/flux
1	Heat resistant paste
1	Set of sanding paper – assorted grit
1	Frazers/milling cutters/burrs
1	Drills assorted sizes
1	Plaster
1	Pumice-stone powder
1	Cleaning products (no acid)
1	0.25 mm binding wire (60 cm)
1	1 mm copper sheet (15 cm x15 cm)
1	800 Emery Paper (American Standard) or equivalent/20 sheets

Quantities specified are recommended as the minimum – Competitors may bring more than one. Additional Materials not listed are permitted subject to a complete toolbox inspection.

NOTE: Whitening pickle and pickle vat will be supplied by the Competition Organizer and listed in the Infrastructure List. Competitors are not to use any other acid/pickle than that supplied. The brand and materials safety data sheet for the pickle will be made available six months before the Competition.

8.3 MATERIALS, EQUIPMENT AND TOOLS SUPPLIED BY EXPERTS

Not applicable.

8.4 MATERIALS AND EQUIPMENT PROHIBITED IN THE SKILL AREA

- Material used in the Test Project: other than that supplied by the host country for the competition. Tools/Templates pre-formed for the selected Test Project;
- Any yellow or white gold coloured metals.

8.5 PROPOSED WORKSHOP AND WORKSTATION LAYOUTS

Workshop layouts from previous competitions are available at www.worldskills.org/sitelayout.

Example workshop layout:

9 VISITOR AND MEDIA ENGAGEMENT

To maximize visitor and media engagement for Jewellery the following ideas will be considered:

- Try a trade (benches with tools for visitors to try basic Jewellery techniques);
- "Competitor Cam" – a fixed camera on each Competitor's workstation with a central viewing monitor;
- Test Project descriptions;
- Enhanced understanding of Competitor activity;
- Competitor profiles – interests, training and education, e.g. duration of training;
- Career opportunities – may differ for each Member country;
- Daily reporting of Competition status – progressive marking would allow for increased spectator interest;
- Precious metal art history – an educational brochure detailing the history of jewellery manufacture and how this aligns with current industry practice, in particular, techniques that the Competitors are currently using;
- Audio visual display explaining the project and category information for the general public.

10 SUSTAINABILITY

- Recycling;
- Use of 'green' materials;
- Use of completed Test Projects after Competition;
- Energy efficient lighting;
- Pre-determined material list;
- Pre-determined toolbox sizes.

11 APPENDIX

Sample technical drawings