Technical Description

Plastering and Drywall Systems

Construction and Building Technology

worldskills

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.

The Technical Description consists of the following:

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Stefan Praschl
Chair of the Competitions Committee

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Vice Chair of the Competitions Committee

1 INTRODUCTION

1.1 NAME AND DESCRIPTION OF THE SKILL COMPETITION

1.1.1 The name of the skill competition is

Plastering and Drywall Systems

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

The skilled plasterer may work on both internal and external plastering and rendering work. Much modern internal work is completed using drywall systems which involve the plasterer creating metal frames and installing plasterboard before the application on the final surface. These constructions can be complex and include curves and openings for doors and windows. Traditional plastering involves the preparation of the background prior to application of the plaster surface. The plasterer will prepare materials for use and be fully aware of legislation and official guidance relating to the preparation and use of materials. In addition to plastering flat surfaces, the skilled plasterer will create and install decorative mouldings. Plasterers will also be required to make repairs.

The plasterer may work on large construction sites for domestic, commercial or industrial use, in single domestic and commercial premises or on historic buildings and heritage sites. Much plastering work on larger sites is sub-contracted and as such many skilled plasterers will be self-employed, meaning that they have to take responsibility for tax and other earnings-related regulation.

A high degree of accuracy, care, and skill is required. Preparation for plastering work will include complex mathematical calculations. The practitioner needs to be able to read, interpret, and analyse complex specifications describing the work required and be able to convert these plans into reality.

A range of materials can be used depending on the site and the planned use of the finished building. Some materials can be harmful, so care must always be taken by the plasterer to prevent injury or damage in use or disposal of waste.

Plasterers often form part of a team, working efficiently, and effectively with other skilled craftsmen in a logical and well-planned manner.

1.1.3 Number of Competitors per team

Plastering and Drywall Systems 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).

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	**Work organization and management**	**15**

	The individual needs to know and understand:
	• Laws relating to hygiene, safety, and related to plastering and drywall systems
	• Different types of personal protective equipment (PPE)
	• Precautions for the safe use of power and cordless tools
	• Building methods and construction technology
	• Basic knowledge of:
	  • Electricity;
	  • Plumbing;
	  • Drainage;
	  • Security systems;
	  • Integrated entertainment systems
	• Safe use, storage, and appropriate uses for materials used in plastering and drywall systems
	• Balance between economics and quality dependent on the expected output and circumstances
	• The need for security for the storage of tools and materials
	• Good working knowledge of mathematics and geometry
	• Dispose of waste safely and be aware of the possibilities for recycling	

	The individual shall be able to: • Create and maintain a safe and hygienic working environment • Install the work area to avoid injury, especially to the back, elbows, shoulders, and knees • Apply standards and laws relating to security, safety, and hygiene in plastering and drywall systems • Effectively use the appropriate personal protective equipment (PPE) • Use correct power and cordless tools in a safe manner • Store plasterboards and related products safely and securely • Be proactive in own continuous professional development in order to keep abreast of and methods of working in the construction industry and changing technologies, for example acoustics and the sustainability and environmental impact. • Work effectively as part of a team • Work effectively with other trades on a construction site • Take appropriate care of customer's fixtures, fittings, carpets, and belongings • Apply mathematic geometry principles to the calculation of angles, areas, perimeters, curves, arcs, volumes, ratios, etc.	

2	**Planning and communication**	**15**
	The individual needs to know and understand: • Customer needs whether domestic or commercial • Impact of the use of the building on the plastering techniques and materials used • Required quality and standards such as the Q standard • The prioritization of work and the planning or order of work with other trades • Principles and methods for sourcing materials • Stock control and rotation including the importance of use by dates • Principles and methods of formal and informal communication	
	The individual shall be able to: • Read and interpret documentation from a variety of sources • Interpret and work from different accepted specifications • Prepare specifications, mainly for private work • Provide advice and guidance to other professionals such as architects and quantity surveyors • Read and interpret drawings and specifications • Calculate materials in accordance with plans and specifications • Describe in writing and verbally the process of installation • Explain complex specialist and technical information about installations to clients and other professionals	
3	**Construction**	**12**
	The individual needs to know and understand: • Standards and laws relating to construction of partitions and ceilings in plasterboard • Appropriate national standards • Specialist terminology • Construction methods including timber framed buildings • Framing systems used in construction of walls • framing systems used in construction ceilings • Screws and fastenings used in construction of walls and ceilings • Different types of plasterboard and fibre cement boards	
	The individual shall be able to: • Set out the different elements of walls and ceilings • Measure accurately • Accurately cut metal profiles • Erect framing with inserts for windows and doors – square, plumb, and levelled • Screw, fix, or crimp metal components • Channel and stud metal profiles • Install curved metal work such as archways, barrelled ceilings • Cut and fix with adhesives and screws plasterboard sheets • Cut and fix with adhesives and screws fibre cement boards • Construct frames using Expanded Metal Lath (EML)	

4	**Insulation**	**6**

	The individual needs to know and understand:
	• Standards, laws and codes of practice relating to;
	  • Thermal insulation in buildings;
	  • Acoustic insulation in buildings;
	  • Fire Rating & Regulations
	• Safety regulations relating to the storage, handling and installation of insulation materials
	• Materials used in:
	  • Thermal insulation in buildings;
	  • Acoustic insulation in buildings;
	  • Fire Rating & Regulations
	• Appropriate use of materials used in;
	  • Thermal insulation in buildings;
	  • Acoustic insulation in buildings:
	• Fire Rating and Regulations Impact of building regulations
	• The influence of sustainability and environmental impact on the insulation products and techniques
	• Current and changing technologies and practices relating to insulation	

	The individual shall be able to: • Install and fix acoustic products • Install and fix thermal products • Install and fix fire proof material and other materials to prevent the spread of fire • Use resilient material • Test installations and modify accordingly	
5	**Finishing of plasterboards**	**12**
	The individual needs to know and understand: • Different methods of finishing plasterboards • Materials and techniques used in finishing plasterboards	
	The individual shall be able to: • Prepare the plasterboard to receive the finish • Cut the beads and trims • Mix plastering compounds • Finish plasterboard joins manually by taping and jointing finishes • Manually sand the finished joints • Apply full surface coating • Finish plasterboard using a skim coat of Gypsum plaster	

6	**Plastering**	**15**
	The individual needs to know and understand: • Types of plaster and their uses • Types of background surfaces and their impact on plastering • Techniques and practices for plastering • Tools and equipment used in plastering • How to complete patching and repairs • Cutting of internal and external mitred corners • Use of plaster coatings	
	The individual shall be able to: • Prepare surfaces for plastering • Mix plaster to correct consistency • Apply render, float, skim, and set coats to straight and curved surfaces • Apply smooth coat finishes • Repair plasterwork	
7	**Creation and fitting of decorative mouldings**	**8**
	The individual needs to know and understand: • Methods and principles of making decorative mouldings • Range and use of decorative mouldings • Specialist finishes such as Scagliola or Venetian Plaster and other specialist techniques • Adhesives used in the fitting of decorative mouldings	

	The individual shall be able to:
	• Listen to, interpret and respect the opinion of customers
	• Interpret a proposed theme
	• Cut products accurately
	• Create internal and external mitres accurately
	• Apply and stick decorative coatings in a professional manner
	• Prepare and run in-situ moulds
	• Measure and cut components accurately
	• Cut and fix paper-faced cornices
	• Match, mitre and install cast ornamental cornices and panel mouldings including:
	  • Moulds;
	  • Arches;
	  • Coving;
	  • Dado rails;
	  • Cornices;
	  • Skirting;
	  • Panel moulds;
	  • Ceiling roses
	• Repair decorative mouldings	

8	**External plastering**	**10**
	The individual needs to know and understand: • Legislation and guidance relating to the application of external plastering and coatings • Safe working practices in relation to external plastering • Safe working practices on scaffolding platforms • Equipment and PPE needed for external plastering work • Characteristics, quality, uses, and limitations of available materials and techniques • Methods of application • Appropriate and safe disposal of waste	

	The individual shall be able to:
	• Meet contract specification
	• Apply legislation and official guidance in working methods
	• Use and maintain PPE, equipment, and resources appropriately and effectively
	• Dispose of waste safely
	• Measure, mark out, apply, and finish
	• Prepare materials and apply to external backgrounds:
	  • Brick and/or block and/or concrete surfaces;
	  • Plinths
	  • Internal and external angles;
	  • Reveals;
	  • Walls;
	  • Installation of Expanded Metal Lath (EML)
	• Form industry recognized external rendering finishes:
	  • Two-coat work;
	  • Three-coat work;
	  • Internal and external angles;
	  • Reveals
	• Apply textured coated finishes	

9	**Heritage**	**7**
	The individual needs to know and understand: • Various specialist materials used on heritage sites and historical buildings • The history of the building, its fabrication and building techniques • The laws and regulations relating to planning and conservation	
	The individual shall be able to: • Respect a building's history • Understand and follow plans and specifications • Communicate effectively with clients • Communicate effectively with officials • Prepare materials • Prepare the building ready for renovation or repair for both internal and external surfaces • Apply appropriate plastering techniques according to the building's history and fabrication whilst maintaining the building's integrity for both internal and external surfaces	
	Total	**100**

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 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	20.00	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 maximum 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

Section A: Measurement

This will be assessed using the following criteria for modules one and two.

- The accuracy of the measurement before the application of any tapes, beads, or coatings.

On modules three and four the measurements will be taken on the completion of the modules and will be of the plaster components fixed to the modules and will be taken from the beads and tapes because the module will have been previously plastered or taped and jointed.

Section B: Squareness/Plumbness/Level

This will be assessed using the following sub criteria for modules one, two, and three:

- The Plumbness of the construction of modules one and two before the application of any tapes, beads or coatings:
- The Squareness of the construction of modules one and two before the application of any tapes, beads or coatings;
- The levels of the construction of module one and two before the application of any tapes, beads or coatings;
- The Plumbness of the mouldings in module three;
- The Squareness of the mouldings in module three (internal and external angles);
- The levels of the components mouldings in module three

Section C: Plaster finishing/Taping and jointing

This will be assessed using the following criteria for modules one, two, and three:

- The straightness of the tapes and beads;
- The smoothness of the tapes;
- The straightness of the coatings;
- The smoothness of the coatings;
- The cleanness of the coatings

Section D: Mouldings

- The cleanness of the mouldings;
- The precision of the cutting and filling of the internal and external mitres on the components mouldings in module three;
- The straightness of the internal and external mitres of the mouldings in module three;
- The smoothness of the internal and external mitres of the mouldings in module three;
- The cleanness of the internal and external mitres of the mouldings in module three.

Section E: Module three – Moulding and speed module

This will be assessed using the following criteria:

- The completion of the task;
- Time used to complete the work from fastest and slowest time;
- The accuracy of the measurements;
- The cleanliness and accuracy of the external and internal mitres corners.

Section F: Technical conformity

This will be assessed using the following criteria for modules one, two, and three.

- Is the Test Project completed as drawn on the plan;
- Is the Test Project built as described in the project brief;
- Has the Test Project been built with the components and materials specified by the Competitors in their Components and materials list (see 5.4.3)
- Is the Test Project built to industry standards;
- Are the screw centres correct;
- Are the screw depths correct;
- Are the studs spaced correctly;
- The cleanliness of the finish of modules one, two, and three;
- The volume of the Competitors toolbox (see section 8.2)

Section G: Freestyle module

This will be assessed using the same criteria as for modules one, two, and three. in addition, there will be the following further assessment criteria.

- Does the module conform to recognized industrial practice;
- Is the module in the correct place;
- Do the dimensions on the module conform to the drawing;
- Was the model completed within the time allowed

Health, safety, and general cleanliness guidelines

Health and safety and cleanliness will be assessed throughout the competition. Any Competitor who breaches the skill-specific safety rules will be stopped until such a time as the breach is rectified.

No Competitor will be allowed to compete without the minimum PPE which consists of safety shoes (with toughened toes), safety glasses, and dry lining gloves. These items must be brought by each Competitor.

All Experts must bring safety shoes or boots to the competition.

Judges will wear the appropriate personal safety equipment when inspecting, checking, or otherwise working with a Competitor's Test Project.

Tolerances for structure and plasterboard: +-1mm for the dimensions lower than 300 mm +-2mm for the dimensions between 300mm and 1200mm, +- 3mm for the dimensions higher than 1200mm.

Tolerances in straightness for coatings and finishing: +-1mm for the dimensions lower than 500mm +-2mm for the dimensions between 500mm and 1500mm +-3mm for the dimensions higher than 1500mm.

Tolerances for mouldings and ornamentation: +-1mm for the dimensions lower than 300mm +-2mm for the dimensions higher than 300mm.

All coatings will be assed using the European Q standards

http://www.eurogypsum.org/wp-content/uploads/2015/04/EUROGYPSUMFINSHINGUK.pdf

- Q2 for Taping and jointing
- Q3 for full surface coatings

4.10 SKILL ASSESSMENT PROCEDURES

The Chief Expert and Deputy Chief Expert discuss and divide the Experts into marking teams. This is assessed by the WorldSkills Competition experience, culture, and language of the Experts.

The Expert marking teams mark the same aspects on every project.

5 THE TEST PROJECT

5.1 GENERAL NOTES

Sections 3 and 0 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 2.2 refers.

5.2 FORMAT/STRUCTURE OF THE TEST PROJECT

The format of the Test Project is modular with five processes. The complete Test Project has a build and finishing time of between 18 and 22 hours.

One process will be freestyle with a maximum of two hours. This process will be completed and assessed on the last day of the Competition. The Competitors can prepare some of their work before the competition (templates, drawings, running moulds, rubber moulds, etc.). No completed or pre-made sections can be used in this module. If this occurs the Competitor will be given 0 marks for the freestyle module.

The compulsory Test Project consists of five separate processes which will be assessed after the agreed time for the completion of the module:

- Process one: Internal arrangement (Module 1 build)
- Process two: Thermal or acoustic solution (Module 2 build)
- Modules one and two may be built together as part of the overall project and assessed upon completion within the agreed build time.
- Process three: taping and jointing, plastering, external plastering
- Process four: Decoration and ornamentation this could include a speed test.
- Process five: Freestyle

5.3 TEST PROJECT DESIGN REQUIREMENTS

The Competitors must carry out, independently, the following tasks without any outside help:

- Set out the walls, ceilings, and decorative elements;
- Build the walls and ceilings using a metal frame and clad them with plasterboard;
- Tape, joint and finish the plasterboards;
- Measure, cut, and fix the prefabricated decorative moulding sections formed from plaster
- For the freestyle module the Competitor can use a decorative plastering technique to create a plaster effect which can be applied to the required module. This can be moulding sections run by the Competitor, decorative coatings, Venetian plaster, and sgraffito, or lighting effects. The Competitor has a free choice of technique.
- No completed or pre-made sections can be used in this module. This could be prefabricated sections or a pre-cut template that is placed on the wall and worked to. If this occurs the Competitor will be given 0 marks for the freestyle module.
- The materials for this exercise can be brought to the Competition by the Competitor if they are not on the Infrastructure List but they must contain plaster. Specialist tools can be brought and used by the Competitor as well as special accessories such as spot lights. The Competitors must consider the space implications regarding the workshop floor space as the Competitor will not be allowed to encroach past their allotted space.

Process one: Module one (build) – Standard construction

- This module cannot exceed 2.2 m in height;
- This module must contain a 2 m² straight and plumb surface which will be used for application of module four;
- This module must contain at least one angle and two edges;
- The walls can be straight or curved and can contain door and window openings.
- Specialist plasterboard can be used to construct all or part of this module.

Process two: Module two (build) – Thermal or acoustic construction.

- This module can be independent or fixed to module one;
- It must contain some insulating material to improve thermal or acoustic performance;
- Specialist plasterboards can be used to construct all or part of this module

Process three: Taping and jointing, Plastering, External plastering

- This process will be completed using materials provided by the Competition Organizer**.**

Process four: - Decoration and ornamentation

- This will be produced by the external designer and the drawing will be given to the Competitors at the start of C3
- This module can be used as a speed test.

Process five: - Freestyle

- Each country will provide a freestyle model for their Competitor that best shows the skills of their Competitor and plastering skill to the wider audience.
- The drawing of the proposed freestyle module must be professionally produced and must be recognisable as the actual model that is produced on the wall with some allowances made for colour differences between the drawing and the actual model. The drawing must contain at least 2 dimensions for assessment.
- The proposals will be given to the SMT on C3.

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 will be developed by an Independent Designer.

The Test Project modules can be drawn by a CAD professional.

5.4.2 How and where is the Test Project or modules developed

The Test Project modules will be developed by an Independent Designer using the WSSS.

5.4.3 When is the Test Project developed

The Test Project is developed according to the following timeline:

TIME	ACTIVITY
Before the Competition	The marking scheme and Test Project is developed by an outside designer and reviewed by the Skill Advisor.
At the Competition	• The Test Project is given to Competitor on Familiarization Day for three hours then taken away. • The Expert can work with the Competitor for the first hour only. • No digital or optical recording devices will be allowed to be used on the stand during C-2 through C+1. • Any notes to be produced on paper provided by WSI (all numbered). • All notes to remain "on stand". • The Competitor will produce a list of all components and materials they require to complete the build and finish the Test Project. (Track, stud, Plasterboards, Screws, Trims and beads, finishing materials, etc.). This will be produced by the Competitor by the end of Familiarization Day and will form part of the Test Project assessment. • The list will be given to the Workshop Manager who will provide all the materials to the Competitors work area. This will be done in consultation with the Competitor.

Note: The material catalogue available in the Host Member's country/region is required to develop the Test Project modules.

5.5 TEST PROJECT VALIDATION

When the Test Project modules have been designed the Skill Competition Manager must review and agree that the Test Project modules can be completed within the material, equipment, knowledge, and time constraints of the Competitors.

5.6 TEST PROJECT SELECTION

Test Project with full marking scheme is set by the Independent Designer with guidance of the Skill Advisor.

Test Project is to be set using the WSSS.

The CE and DCE will have no input or knowledge of the Test Project in line with the other Experts.

5.7 TEST PROJECT CIRCULATION

The Test Project is circulated via the website as follows:

The Test Project is not circulated prior to the competition

All Experts will need to become familiar with the WSSS as the Marking Scheme and Test Project will be developed from this.

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

Not applicable.

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.

If the Host Country's norms and manufacturer specifications are required to allow the Competitor to complete the Test Project, the manufacturer/supplier must provide by three months before the Competition the necessary documents at least in English:

- Host Country's norms;
- Technical specifications;
- Installation guide.

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 Skill Competition Manager (or an Expert nominated by the Skill Competition Manager) 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
- 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 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 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).

7 SKILL-SPECIFIC SAFETY REQUIREMENTS

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

- All Competitors must bring and use safety glasses when using any hand, power, or machine tools or equipment likely to cause or create chips or fragments that may injure the eyes;
- All Competitors must bring and use where appropriate:
  - Protective clothes;
  - Safety shoes;
  - Safety gloves;
  - Ear protection.
- Competitors must keep their workspace clear of obstacles and the floor space clean permanently;
- Failure by the Competitor to comply with safety directions or instructions will mean that the Competitor will be stopped from working until the correct standard has been achieved;
- Judges will wear the appropriate personal safety equipment when inspecting, checking or otherwise working with a Competitor's Test Project.

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 Skill Competition Manager on behalf of 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 Skill Competition Manager must review, audit, and update the Infrastructure List in partnership with the Technical Observer in preparation for the next Competition. The Skill Competition Manager must advise the Director of Skills Competitions of any requests for 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.

If sponsors are providing tools and equipment for the competition they will be used rather than tools provided by individual Competitors.

All competing countries/regions will be informed of the sponsorship arrangements on the forum after Competition Preparation Meek.

8.2 COMPETITOR'S TOOLBOX

The total volume of Competitor toolboxes cannot exceed 1.5 cubic metres. Toolbox numbers are not limited but the total volume cannot exceed the specified value. This volume should not include the outside packing used to transport the toolbox and will be checked once the packaging is removed. The dimensions will be taken on the outside of the toolbox or boxes

If the volume of the toolbox or toolboxes exceeds 1.5 cubic metres it will be removed from the competition area and all tools and equipment will have to be put into the competitors allotted area in a safe manner.

The toolbox packing material will be removed from the competition area.

If these guidelines are breached marks may be deducted from the Competitor's score using the Marking Scheme.

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

ITEM	PICTURE
Measuring tape (2 m, 5 m);	
Ruler (1 m);	
Square;	
Mitre box;	

Feather edge ruler;	
Trowels, different types;	
Plastering knives and plastering spatulas;	
Plasterer's float, different types;	
Joint rules/mitre tools;	
Hammer;	
Wood and metal saws;	
Special saws for plasterboard;	
Abrasive paper;	
Rubber breakers;	
Brushes;	
Metal stud guillotine;	
Pencils;	
Felt board/felt sponge;	
Japanese spatulas;	
Chalk lines;	
Jig saw;	
Screw gun (single screw or collated);	
Grignoteuse;	
Gouges;	
Sponges;	
Surform plane;	
Tin snips (manual or battery powered)	

This list is not restrictive. Any tool that does not appear on the list will be presented to the Experts and a vote will take place as to whether it can be used during the competition. A common-sense approach will be taken.

8.4 MATERIALS, EQUIPMENT, AND TOOLS SUPPLIED BY EXPERTS

Not applicable.

8.5 MATERIALS AND EQUIPMENT PROHIBITED IN THE SKILL AREA

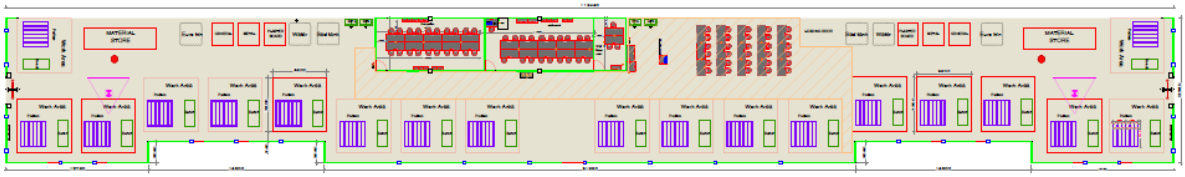
All metal sections are to be cut by a drywall guillotine or tin snips (manual or electric) and as a result electrical chop saws (or any saw that has a revolving blade) are prohibited in the Competition.

All mitres to cornice and panel moulds must be cut by hand and as a result electrical mitre saws (or any saw that has a revolving blade) are prohibited in the Competition.

8.6 PROPOSED WORKSHOP AND WORKSTATION LAYOUTS

Workshop layouts from previous competitions are available at 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 – USB, memory sticks	Competitors, Experts, and Interpreters are allowed to have memory devices in the workshop.
Use of technology – personal laptops, tablets and mobile phones	Competitors, Experts, and Interpreters are allowed to use personal laptops, tablets and mobile phones in the Expert room. It is not allowed to use any recording devices Audio or Visual during C-2, C-1 or C+1 in the competition area.
Use of technology – personal photo and video taking devices	Competitors, Experts, and Interpreters are allowed to use personal photo and video taking devices in the workshop after C+1. There will be no taking of photographs or videos by Experts or Interpreters during days C+1.
Tools/infrastructure	Competitors are not allowed to bring and use circular tools, chop saws etc. or vacuums for cleaning.
Templates, aids, etc.	Competitors are not allowed to have templates or cutting lists they have prepared prior to the competition.
Drawings, recording information	Competitors can only use the official Test Project drawings that are distributed at the competition.
Health, Safety, and Environment	Refer to the WorldSkills Health, Safety, and Environment policy and guidelines document.

10 VISITOR AND MEDIA ENGAGEMENT

The following list provides examples of how this skill competition may be more attractive for the media and visitors:

- Try a trade;
- Speed test in module three (decoration and ornamentation);
- Display screens (architectural works in plaster and plasterboard);
- Test Project descriptions;
- Career opportunities;
- Daily reporting of competition status.

11 SUSTAINABILITY

This skill competition will focus on the sustainable practices below:

- Who of us does not live surrounded by gypsum? What home does not have plaster on the walls or plasterboards for its ceilings and interior lining? Who has not been impressed by offices, hotels and public institutions whose interiors are shaped into intricate arches and curves, which are made possible by the use of plaster and plasterboards to create an aesthetically pleasing environment?
- Gypsum has been used by man in construction or decoration in the form of plaster and alabaster since 9000 B.C. During the time of the pharaohs, gypsum was used as mortar in the construction of Cheops Pyramid (3000 B.C.). In the Middles ages and Renaissance, decorations and artistic creations were made of plaster. Since then, the range of construction-related uses has continued to expand.
- The process to obtain plaster is simple: the mineral is extracted from the earth's crust (open or underground quarries), it is then exposed to certain thermal processes whereby it is partially dehydrated and after grinding becomes a fine white powder – commonly known as Plaster of Paris – which hardens when moistened and allowed to dry. There isn't any VOC (Volatile Organic Compound) inside.
- Gypsum is furthermore a raw material which can be eternally recycled to manufacture gypsum-based products (closed-loop recycling). We could say that gypsum is in that case close to being a "totally renewable natural resource".
- Incomparable Features:
  - Gypsum is fire protective. Gypsum is non-combustible and able to delay a fire's spread up to four hours. Gypsum acts, in this case, as a fire barrier and thus reduces home or business fire damage
  - Gypsum regulates sound and solutions. Gypsum walls, ceilings and floors together with insulation materials create quiet zone in the house or business environment. They are designed to provide a physical barrier to sound, incorporate a sound break and minimize reverberation. These solutions are virtually indispensable for the interiors of homes and offices and indeed all types of buildings where people congregate such as school, shops, cinemas, airports, etc.
  - Gypsum acts as a thermal insulator when combined with insulation materials. Thanks to its low thermal conductivity, gypsum plasterboards contribute together with the insulating material to the insulation of external walls and linings.
  - Gypsum equilibrates humidity and heat peaks. Gypsum is capable of storing humidity when a room is humid and automatically releasing this humidity if the indoor air becomes too dry. Plaster and Plasterboards have also a "heat-storing" ability. Small temperature increases are absorbed and radiated back later when the temperature in the room decreases.
  - Gypsum is impact resistant. The gypsum industry provides plasterboards, plaster blocks and plaster with a degree of hardness equivalent to a thick wall heavy masonry construction.

Gypsum is multifaceted, multipurpose, supple, and aesthetic. A richness of forms can be created in plasterboard, plaster, or stucco. For architects, building with gypsum products allows them to answer, even more dramatically to the demands of their customer while remaining within an affordable budget. In Short, gypsum allows the creation of stunning interiors in any and all styles, from the classical to the modern.

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.**oneto**nline.org/)

This WSSS (Section 2) appears most closely to relate to *Plasterers*:
http://data.europa.eu/esco/isco/C7123
These links also enable adjacent occupations to be explored.

The following table indicates which organizations were approached and provided valuable feedback for the Description of the Associated Role and WorldSkills Standards Specification in place for WorldSkills Kazan 2019.

ORGANIZATION	CONTACT NAME
Taiwan Society of Fireproof and Green Building Materials and Interior Decoration	Chih-Yen Wu, Director