

TECHNICAL DESCRIPTION

PAINING AND DECORATING



worldskills
international

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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:

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1. INTRODUCTION

1.1 Name and description of skill

1.1.1 The name of the skill is

Painting and Decorating

1.1.2 Description of skill

Painting and Decorating covers work done on buildings and objects:

- For protection and maintenance
- For sanitary and hygienic reasons
- For embellishment and decoration
- For lettering and safety purposes

1.2 Scope of application

1.2.1 Every Expert and Competitor must know this Technical Description.

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

1.3 Associated documents

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

- WSI - Competition Rules
- WSI - Online resources as indicated in this document
- Host Country - Health and Safety regulations

2. COMPETENCY AND SCOPE OF WORK

The Competition is a demonstration and assessment of the competencies associated with this skill. The Test Project consists of practical work only.

2.1 Competency specification

Working environment

Knowledge and understanding of working environment:

- Comprehend and comply with the standards and laws relating to safety, security and hygiene in the painting and construction industry
- Describe the various items of personal protective equipment required for any given situation
- Describe the precautions for the safe use of power tools
- Describe the possibilities for sustainability in the painting and construction industry

Competitors shall be able to:

- Become familiar with the host country's Health and Safety Regulations documentation
- Display the safe and proper use of all equipment used in the painting and construction industry
- Identify and use the appropriate personal protective equipment
- Separate trash and different materials for recycling
- Work carefully within their work/competition environment
- Prepare surfaces - using various grades of abrasives by sanding machine and hand

Paint panelled door

Competitors shall be able to:

- Apply water-based paints by brush, roller or paint pad methods to door using correct paint systems of primer, undercoat and gloss to achieve a full gloss finish with no defects.
- Produce accurate linear/straight lines to moulding, using a different colour.

Drawing/Design

Knowledge and understanding of drawing:

- Interpretation of drawings/setting-out
- Understand the need for accurate drawing to produce accurate work

Competitors shall be able to:

- Measure from technical drawings
- Produce a finished drawing/setting out that is clean and not marked with smudges from pencil lead or from the use of an eraser.

Design

Knowledge and understanding of design:

- Understand colour schemes/nuances, E.g. monochromatic, analogous, complementary.
- Knowledge of mixing paints by tinting and shading

Competitors shall be able to:

- Construct a design without the use of masking tapes, E.g. With paintbrush, roller and Mahl stick/painters ruler and lining tool.
- Mix/match/harmony colours

Apply wallpaper

Knowledge and understanding of applying wallpaper:

- Understand how to hang wallpaper vertically and plumb

Competitors shall be able to:

- Set and offset pattern matching
- Paste the wall adhesives
- Trim using scissors or trimming knives

Apply lettering using various techniques

Knowledge and understanding of lettering using various techniques:

- Have an understanding of transferring lettering/images
- Use of transfer and frisk film methods.

Apply decorative techniques

Competitors shall be able to:

- Produce a decorative technique using acrylic materials, E.g. tromp le oeil
- Free brushwork, marbling, wood graining, murals etc.

2.2 Theoretical knowledge

2.2.1 Theoretical knowledge is required but not tested explicitly.

2.2.2 Knowledge of rules and regulations is not examined.

2.3 Practical work

The work will be carried out in a work booth (see booth plan in Chapter 7).

The assignment comprises the following tasks which the competitor must carry out by himself:

Module 1 – Door

- Door will already have already been given a coat of primer and must be smooth, ready for undercoating.
- Door sanding/abrading, undercoating and glossing.
- All paint applications must be done vertically.
- The paint may be applied with a roller, but the finish of the surface must be done with a brush or paint pad. Painting with a spray gun is not allowed.
- The moulding needs to be painted with a different colour.
- The outside of the moulding/section can be masked with tape. The inside of the moulding/section must be applied with a brush by hand. Spatulas or other painters tools are allowed.

Module 2 – Wall papering

- Preparation of surfaces and hanging wallpaper:
 - Preparation of surfaces - The surface has to be prepared professionally in advance to allow for perfect papering of the wall.
 - Wall papering - The cutting as well as the sticking of the wallpaper to the wall will be a speed Competition (paragraph 5.3).
 - If the Competitor needs another round of wallpaper during the speed competition 2 marks are deducted.

Module 3 – Free technique

Application of a decorative painting technique chosen by the Competitor. Materials/tools for this exercise must be brought by Competitor. Prefabricated parts as well as wallpaper and glass fibre also elements in three dimensions are not allowed, prefabricated templates are allowed.

The whole dimensional area must be covered by a manual technique. The use of pre prepared materials for projection are permitted, however all techniques must be applied manually. The projection of a pattern via beamer or similar appliance must be done within the provided work space. All the work must be done within the work booth, which the competitor must not leave.

The free technique module must include an infosheet, this is to be brought along to the Competition and include the following points:

- Competitor name and country/region;
- Applied materials for the free technique (only water-based material);
- Layout for the free technique, without dimensions.

This Infosheet must be given to the Chief Expert before start the Competition. It will be appraised in module 3. Layout for the free technique with coloured draft (plan) or coloured, printed photo, without dimensions. The Competitor needs to use the whole surface of the free technique panel.

Module 4 – Design lettering

- Design
Constructing of a given design and freehand colouring without the use of masking tapes, masking films and masking shields. E.g. With paintbrush, roller and Mahl stick/painters ruler and lining tool.
- Lettering
Drawing and/or attaching lettering and signs (name of the venue and year). No pre prepared materials are allowed.
- Transfer technique: plot templates and/or perforated blueprints and/or own construction according to guidelines. The type of application will be decided by the experts prior to the competition.

Module 5 – Colour matching, mural

- Colour matching
Mixing of a predetermined colour and its harmonic nuances.
- Mural
The mural, excluding the mixing of the colour, will be a speed contest (paragraph 5.3). The use of masking tape and templates is allowed.

Mixing of 2 predetermined colours (a light and a dark one) and the Competitors need to mix two harmonic nuances between the light and the dark example.

It is possible for the Experts to explain the chosen module to the Competitors during the Competitor Communication session.

3. THE TEST PROJECT

3.1 Format / structure of the Test Project

The format of the Test Project comprises a series of separately assessed modules.

3.2 Test Project design requirements

Criteria for module 4 that has to be submitted

- The Test Project that has to be prepared by the Experts for the following Competition consists of module 4 (design and lettering). Changes within the 30% to the "design" are excluded.
- The choice of the respective Test Project is based on paragraph 3.6.
- The Test Project must
 - comply with the current valid Technical Description;
 - comply with the requirements and numbering defined by WorldSkills
 - Module 4 consists of a colour drawing showing the design and lettering (name of the venue and year) as well as details of the construction.
- The following documents must be given to the Chief Expert for the selection of the Test Project; they may not contain any information regarding the designer or the country (no names):
 - Outline in colour, M1:10;
 - Design drawing, M1:10, measurements in cm;
 - Specification of the colour tone with an international code;
 - Be submitted with proof it can be constructed and is feasible within the given time (paragraph 3.5)
- The necessary materials to be used will be made available, already mixed, at the competition venue. Therefore, the colours of the design and the lettering must be precisely indicated when the test project is submitted, e.g. RAL, NCS or other international colour codes.
- The entire Test Project (excluding module 5) must be prepared in detail and in the three official languages by the Expert whose Test Project has been chosen and made available to the WorldSkills secretariat in digital form (PDF) after it has been approved by the Chief Expert.

Criteria for the submitted module 5

- Experts must draw the mural for module 5 during the preparation days at the Competition (C-4 to C-1). The Experts need to choose from a minimum of 2, maximum of 4 murals, which will be prepared at the Competition. The mural measurements must be no larger than 110 cm x 220cm and be designed so that there is no wet paint on wet paint.
- The mural must be done in a minimum of 3, maximum of 4 colours, including the background and comprise the construction in detail.
- The mural will take the form of a speed competition; the maximum time for the speed competition is 1.5 hours. The colour tone mixed by the Expert at the current Competition must be reproduced exactly by the Competitor and included in the mural according to the Test Project. The other 3 shades must be mixed as colour shade. The colour mixing will be completed prior to the speed competition.

- The mural must be done in 4 colours including the background (project in four levels of grey) and comprise the construction in detail.
- Proof must be submitted that the project is able to be constructed in the time and is feasible (paragraph 3.5).

3.3 Test Project development

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

3.3.1 Who develops the Test Project / modules
The Test Project / modules are developed by:

Proposals for the Test Project/modules (module 4) are developed by all Experts.

3.3.2 How and where is the Test Project / modules developed

The proposals for the Test Project/modules are developed independently.

3.3.3 When is the Test Project developed
The Test Project is developed:

The Test Project/modules are developed according to the timeline chart below:

Time	Activity
At the previous Competition	<ul style="list-style-type: none"> ● The Experts define the requirements of the individual modules (paragraph 2.3). ● The Experts vote on module 4 (design, lettering). The winning project is sent to the WorldSkills Secretariat.
Immediately after the previous Competition	<ul style="list-style-type: none"> ● Module 4 is circulated on the website.
6 months before the Competition	<ul style="list-style-type: none"> ● Choice of wallpaper, module 2: <ul style="list-style-type: none"> ○ The wallpaper must be 53 cm wide, it must have a pattern (with repeat) and has to be washable. ○ The Chief Expert selects a minimum of three wallpaper samples (www.marburg.com) and requests all the registered Experts to vote on them via the Discussion Forum on the WorldSkills website. ○ The wallpaper that receives the most votes is selected. ○ The selected wallpaper is ordered by the Chief Expert.
3 months before the Competition	<ul style="list-style-type: none"> ● 2 rolls of the chosen wallpaper are sent to each competitor and the Workshop Supervisor is informed of the number of rolls of wallpaper required for the competition. It is the Chief Expert's responsibility. ● The Test Project (all modules) is circulated to Competitors on the WSI website. It includes beside the chosen Test Project the final list of tasks written in the three official languages. Module 5: the last Test Project at the Competition.

Time	Activity
Before the current Competition	<ul style="list-style-type: none"> • The Experts choose the lettering (module 4, paragraph 2.3), decide on the method of application and prepare the Test Project for the competition for each competitor. The file format for the lettering must be available in Adobe Illustrator format. • The Experts vote on module 5 (paragraph 3.2). The winning project is sent to the Technical Director. • The Experts determine a colour shade as a sample for module 5 (paragraph 2.3). All competitors are provided with a colour sample, approx. 20 x 20 cm in size and also a white sheet of paper for the colour shade approximately 20 x 30cm. • 20 measurement points are fixed for modules 2, 4 and 5. 13 of these measurement points will be drawn by lot at the end of the competition and included in the rating. • The Experts make the final assessment of modules 4 and 5 on the basis of the submitted assessment criteria.

3.4 Test Project marking scheme

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

3.4.1 The marking scheme proposal is developed by the person(s) developing the Test Project. The detailed and final marking scheme is developed and agreed by all Experts at the Competition.

3.4.2 Marking schemes should be entered into the CIS prior to the Competition.

3.5 Test Project validation

Each submitted Test project must be accompanied by a functional demonstration/proof of construction/feasibility in the given time etc. for example with a photograph of a project that was completed in compliance with material and equipment specifications, the required professional skills and the time limit.

3.6 Test Project selection

The Test Project is selected as follows:

By vote of Experts at previous Competition for Module 4 (Design) and by vote of Experts 6 months before the current Competition for Module 2 (Wallpaper). Module 5 will be chosen before the current Competition.

Choice of the modules 4 and 5 according to paragraph 3.2.

Statement

The majority of the Experts (at least 50% + 1), including the Chief Expert and Deputy Chief Expert must agree on decisions. If there is parity of votes, the Jury President has the deciding vote.

Only projects that comply with all the specifications outlined under paragraphs 3.2 will be put to the vote.

Only those are entitled to vote who have submitted a project that has been accepted for the voting process.

3.7 Test Project circulation

The Test Project is circulated via WorldSkills International website as follows:

Module 4 is circulated immediately after the previous Competition

All other modules are circulated 3 months before the current Competition.

3.8 Test Project coordination (preparation for Competition)

Coordination of the Test Project will be undertaken by:

Chief Expert

3.9 Test Project change at the Competition

Decisions to change the modules 1 and 3 can only be made for the next Competition. Up to 30% of the modules may be changed by the Experts at the venue of the current competition according to the following scale:

- 9%: choice of lettering (part of module 4). The lettering (name of the venue and year) will be decided in accordance with the chosen design. Furthermore, the Experts will decide on the application technique.
- 17%: choice of the mural (module 5) including colour tone and the colour shades.
- Other changes are not permitted.

3.10 Material or manufacturer specifications

The following material specifications must be complied with at the competition venue:

- All coating materials must be water-based
- Wallpapers according to paragraph 3.3.3.
- The door must be a real door with moulding and pre-primed.
- For modules 3, 4 and 5 MDF panels are required, minimum 22mm thick, for stability. The Competitor workstations need to be a minimum of 5m x6m.

4. SKILL MANAGEMENT AND COMMUNICATION

4.1 Discussion Forum

Prior to the Competition, all discussion, communication, collaboration and decision making regarding the skill must take place on the skill-specific Discussion Forum (<http://www.worldskills.org/forums>). All 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 moderator for this forum. Refer to Competition Rules for the timeline of communication and competition development requirements.

4.2 Competitor information

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

This information includes:

- Competition Rules
- Technical Descriptions
- Test Projects
- Other Competition-related information

4.3 Test Projects

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

4.4 Day-to-day management

The day-to-day management 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 finalised at the Competition by agreement of the Experts. The Skill Management Plan can be viewed in the Expert Centre (<http://www.worldskills.org/expertcentre>).

5. ASSESSMENT

This section describes how the Experts will assess the Test Project / modules. It also specifies the assessment specifications and procedures and requirements for marking.

5.1 Assessment criteria

This section defines the assessment criteria and the number of marks (subjective and objective) awarded. The total number of marks for all assessment criteria must be 100.

Section	Criterion	Marks		
		Subjective (if applicable)	Objective	Total
A	Door	0	20	20
B	Wall papering	0	17	17
C	Free Technique	2	8	10
D	Lettering, design	0	36	36
E	Mural, colour matching	0	17	17
	Total =	2	98	100

5.2 Subjective marking

Scores are awarded on a scale of 1 to 10

5.3 Skill assessment specification

Days and allocation of subjective and objective marks will be finalised at the Competition by the Experts, however 30% minimum of objective and/or blind marking must be carried out on day C4.

Schedule of completed work for marking

(Subjective = S, Objective = O / Marks)

	Day 1	Day 2	Day 3	Day 4
A: Door:				O/20
B: Wall papering		O/17		
C: Free Technique			S/2, O/8	
D: Design lettering (Lettering)			O/9	
Design Lettering (Design)				O/27
E: Mural, Colour Matching	O/3	O/14		
Total marks per day	3	31	42	47

Each completed module (or parts thereof) will be assessed on the day on which it is completed, except wallpapering:

- Module 1 (door):
 - door 12 marks, moulding 8 marks

- Module 2 (wallpaper):
 - speed 4 marks, surface 3 marks, pattern 4 marks, connections 4 marks, dimensional accuracy 2 marks
- Module 3 (Free Technique):
 - Info sheet 3 marks, artistic composition (subj.) 2 marks, technical execution 2 marks, colour concept 1 mark, accurate implementation 2 marks.
- Module 4 (Lettering, design):
 - Lettering: correct colour 1 marks, clean surfaces 2 marks, straight lines, clean corners 3 marks, no visible reference lines 1 marks, dimensional accuracy 2 marks
 - Design: correct colour 4 marks, clean surfaces 7 marks, straight lines, clean corners 7 marks, no visible reference lines 2 marks, dimensional accuracy 7 marks
- Module 5 (Mural):
 - speed 4 marks, clean surfaces 4 marks, mixing colour tone 4 marks, mixing colour shade 2 marks, dimensional accuracy 3 marks
- No assessments will be made on day 1.

Marking scale will be made available on the forum 6 months prior to the Competition.

Systems of assessment

- Blind marking (Module 1, 4 and 5)
 - Blind marking is the objective marking of elements which can be dismantled and folded up outside the work booth. It will be used for the following elements, are all objective criteria:
 - Door
 - Design
 - Lettering
- Colour mixing (Module 5)
 - Colour tone
 - Colour shade

In the first instance the various elements will be arranged according to their quality. The best overall work will be placed first, the worst work last. Works of an identical quality will be grouped together and given the same number of points.

In the second instance the best work is given the maximum number of points possible for this element, the other works are given lower numbers of points according to their quality.

- Speed competitions (Modules 2 and 5)
At the speed competition all Competitors have to work as fast and as precisely as possible.

The expenditure of time will be awarded with maximum 4 marks.

The swiftest Competitor will be awarded 4 marks, the others in the order in which they complete the task 0.25 marks less (if there are more Competitors than 16, the marking needs to be changed). Competitors who finish simultaneously will receive the same number of marks, the next competitor 0.5 or more marks less.

- Dimensional Accuracy
For the dimensional accuracy tests, a deviation of ± 1 mm from the required measurement will be tolerated, deviations ranging from 1-3 mm will give rise to deductions, deviations of more than 3 mm from the required measurement will be given 0 marks:
 - ± 1 mm = 1 Pkt.
 - ± 2 mm = 0.5 Pkt.
 - ± 3 mm = 0.25 Pkt.
 - > 3 mm = 0 Pkt.
 Max. 1 mark will be awarded per measurement point.

- Free technique
 - The free technique will be dismantled and marked according to three criteria:
 - Technical execution, max. 2 marks (objective)
 - The technical execution will be assessed with objective criteria. The detailed and final marking scheme is developed and agreed by all Experts before the Competition.
 - Artistic composition, max. 2 marks (subjective)
 - The artistic composition will be assessed with subjective criteria by all the Experts.
 - The information sheet will be assessed with objective criteria, max 3 marks
 - Colour concept 1 mark
 - Accurate implementation 2 marks
 - The final work needs to match the information sheet.

5.4 Skill assessment procedures

The final detailed aspects for the objective marking will be decided by the Experts prior to the Competition.

The Experts will be deployed for marking purposes as follows:

- Subjective marking - total 2 marks
 - Free technique (artistic composition), max.2 marks
 - The artistic composition will be assessed by all the Experts including Chief Expert and Deputy Chief Expert and an average mark will be calculated.
- Objective marking, blind marking - total 98 marks
 - 3 Experts for the evaluation which they will do together
 - 1 Expert compiles the results
 - 1 Expert checks the compilation
- Speed competition, total 8 marks
 - 1 Expert compiles the results
 - 1 Expert checks the compilation
 - 2 Experts checks the reports
 - All other Experts checks the competition
- Colour mixing, total 6 marks
 - 5 Experts line the elements according to their quality (as described at paragraph 5.3) where-as at least 4 Experts have to agree to it.
 - 1 Expert to compile the results
 - 1 Expert to check the compilation
- Groups of Experts
 - The groups of Experts will be put together by the Chief Expert and the Deputy Chief Expert. The groups must consist of both experienced and new experts.
 - Each Expert in the group assesses every competitor.

6. **SKILL-SPECIFIC SAFETY REQUIREMENTS**

Refer to Host Country Health & Safety documentation for Host Country regulations.

The following skill-specific safety requirements apply:

- All Competitors must 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.
- Experts will use the appropriate personal safety equipment when inspecting, checking or working with a competitor's project.

- All Competitors must bring with and use:
 - Coveralls
 - Work gloves
 - Rubber gloves
 - Safety goggles (white glass)
 - Regular vapour respirator
 - Working shoes in leather

7. MATERIALS & EQUIPMENT

7.1 Infrastructure List

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

The Infrastructure List is online (<http://www.worldskills.org/infrastructure/>).

The Infrastructure List specifies the items & quantities requested by the Experts for the next Competition. The Competition Organiser will progressively update the Infrastructure List specifying the actual quantity, type, brand/model of the items. Items supplied by the Competition Organiser 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.

7.2 Materials, equipment and tools supplied by Competitors in their toolbox

The following tools and materials (incl. tools and materials for the special painting technique) will be brought by the Competitor in a toolbox:

- Filler for wood
- Abrasive materials
- Personal tools for all modules
- Materials for module 3, free technique
- Drawing and measuring tools
- Various brushes, rollers and pads
- 1 x set of paper hanging tools
- 1 x Mahl stick and Painters ruler
- 1 x disposable sieves
- 1 x pliers
- 1 x spirit or digital level
- 1 x sponge
- 1 x set of palettes knives
- 1 x glass scraper
- 1 x grid for roller tray several foam rubber rolls
- 1 x masking tape dispenser

7.3 Materials, equipment and tools supplied by Experts

Not applicable

7.4 Materials & equipment prohibited in the skill area

Not applicable

7.5 Proposed workshop and workstation layouts

The Experts will consider and confirm the following criteria prior to the Competition.

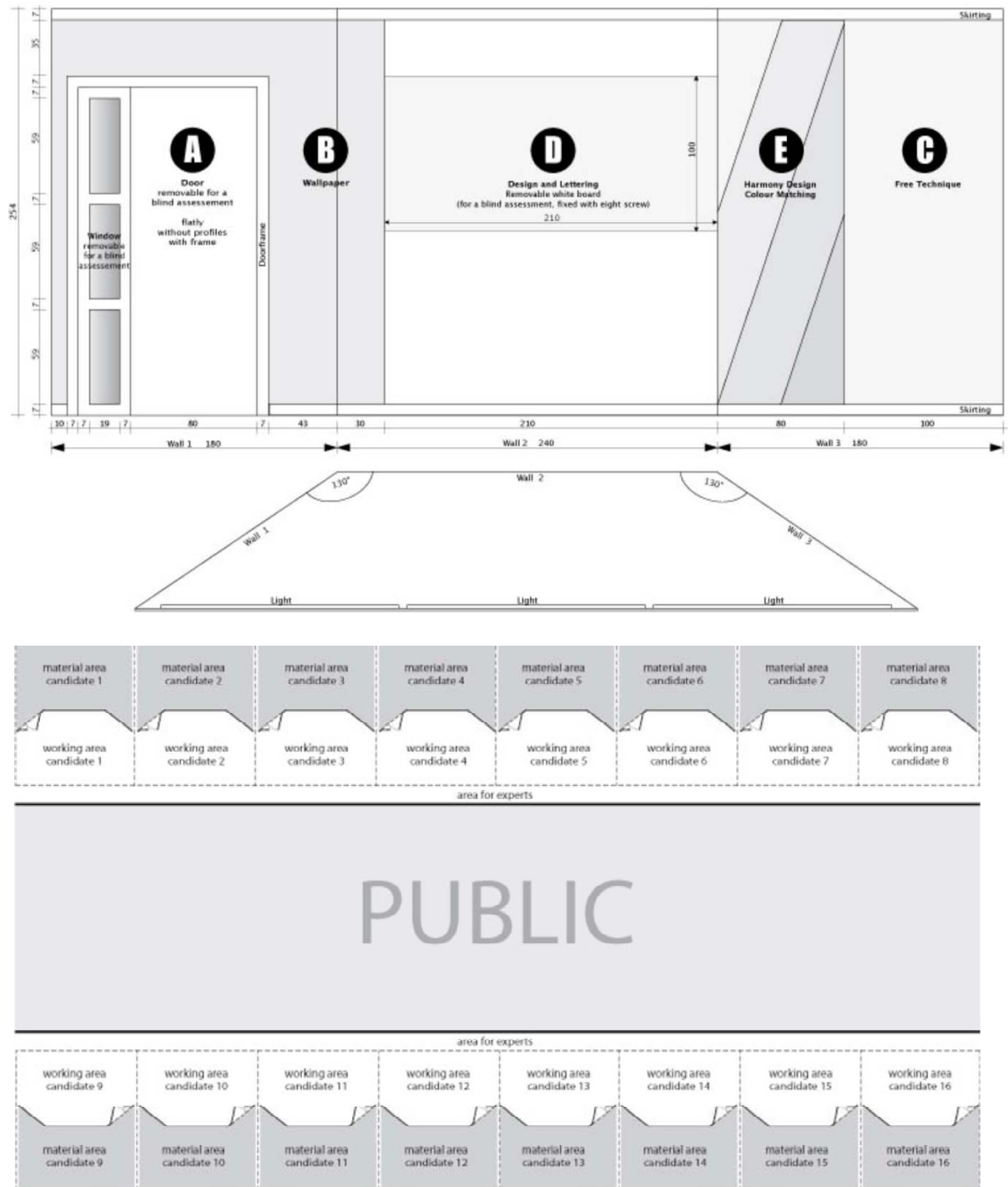
- Workstation
A workstation with a wall to work on will be made available to each competitor (see paragraph 7.5). On-site conditions must be taken into account.
The area for the workstation for each Competitor must be 5m x 6m.
- Type of construction
The walls must consist of wood, plaster or a similar material and must have been filled, sanded, primed and given an opaque coat of mat white, water-based paint of a quality suitable for walls (dispersion paint) before the beginning of the competition.
The finished walls must be tested for adhesion strength with adhesive tape!
- Preparation at the Competition venue (by the Workshop Supervisor)
The surfaces to be treated (walls, doors, panels etc.) must be prepared by the respective Workshop Supervisor according to the instructions for the assignment/given by the Chief Expert.
The templates, lettering and transfer sheets must adhere to the surface (work surface in the booth) but should not cause damage when removed. The sheets will be tested by the Workshop Supervisor and made available after consultation of the Chief Expert.
- Workstation layout
The space must be made available for the work booths and work stations of the competitors according to paragraph 7.5. This layout is an example and non-binding.
- General terms and conditions concerning the workstation
The following general requirements apply to the workstation:
 - The lighting of the worked on walls must remain constant at 600 lux (without shadows)
 - The room temperature must be at least 18°C and may not exceed 24°C.
 - The workstation may not be located close to professions that cause dust and must provide as much daylight as possible.
 - The workstation needs to include an Expert and Competitor corridor at the front. The corridor needs to be clean and walkable. The workstations are not included in the corridor.

The personal work station of each candidate is shown below (measurements in centimetres). There must be enough room for equipment and machines as outlined under 7.5.

Workshop layouts from London are available at:

http://www.worldskills.org/index.php?option=com_halls&Itemid=540

Workshop layout:



8. MARKETING THE SKILL TO VISITORS AND MEDIA

8.1 Maximising visitor and media engagement

- Speed module (Module 2 and 5)
- Display screens
- Detail descriptions of the Test Project
- Enhanced understanding of Competitor activity
- Competitor profiles
- Career opportunities
- Daily reports about the competition status

8.2 Sustainability

- Recycling
- Use of 'green' materials
- Use of completed Test Projects after Competition