

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

Blocklaying

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INTRODUCTION

WorldSkills Jamaica , by a resolution of the National Organizing 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 National Skills Competition.

The Technical Description consists of the following:

- Section 1 – Technical/Competition Description (TD)
- Section 2 – Project Design Criteria (PD)
- Section 3 – Skill Management Procedures (SM)
- Section 4 – Workshop Setup (WS)
- Section 5 – Infrastructure List (IL)
- Section 6 – Appendices

Effective 01.04.07

Grace Mclean (GM)

Chairman, Competition Committee

01.04.07

Daphne Simmonds

Co-Chair

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The National Skills Competitions Sub-Committee has adopted the following minimum requirements for applicants' entry in the Skills Jamaica Competition.

The effective date will be that date on which this document is issued, and is subject to change by the World Skills Jamaica Competition National Committee.

1. NAME AND DESCRIPTION OF TRADE

1.1 The name of the trade is:

1.1.1. Blocklaying

1.2 Blocklaying covers the construction of buildings and parts of buildings block and block walls, walls of artificial and natural stone, rendering and paving.

1.3 This technical description must be known to every candidate.

1.4 Words implying masculine gender only shall include the feminine gender

2. SCOPE OF WORK AT COMPETITIONS

2.1 The modular test projects consist of practical work including, blocklaying, block laying, setting out, speed tests must include standards of work and time, paving and rendering.

2.2 The theoretical knowledge is limited to that necessary to carry out the practical work. Knowledge on rules, regulations and standards is not tested.

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2.3 PRACTICAL WORK

2.4 The test project includes the construction of block walls, or surfaces of facing blocks and blocks of different materials.

2.5 For example:

- decorative blockwork with projections and recesses in all possible bonds
- sections of walls with Segmental, Semi-Circular, Triangular, 3 Centre, Flat, Gothic Arches; curved walls, cavity walls and rendering to provide a smooth finish by use of sand, lime, cement, and paving with natural or artificial materials.

2.6 The test project will be modular with a maximum of 4 modules, which includes module duration/time.

2.7 The competition may be designed from the following

- 70% to 85% Blockwork
- 7% to 8% Render
- 5% to 7% Arch set out or other details
- 5% to 10% Paving
- Block cutting to be limited do a maximum of 20% of the total number of blocks. It can be increased to 30% on small modules.

2.8 The appropriate technical and craft skills are:

- Measuring and marking out with strings
- Laying project materials
- Levelling and plumbing
- Cutting and finishing blocks

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2.9 Building walls of different bonds: using stretcher or header, block-on-end, block-on-edge, raking; corbels, decorative bonds sloping or battering walls according to the drawing and using appropriate materials.

- Finish to mortar joints
- Cleaning
- Building in openings
- Paving
- Arch supports
- Rendering
- Templates

3. SKILL MANAGEMENT PROCEDURES (SM)

3.1. DOCUMENTS REQUIRED

3.1.1 The Chief Expert will have available a current copy of all documents associated with this skill for the Competition.

3.1.2 The documents required are:

- Technical Description
- Competition Rules
- Health and Safety documents
- QAMS – all documents
- Any other documents referred to in the documents listed above.

3.1.3 While it is understood that the Chief Expert will have a copy of these documents in there shall also be a complete set that is available for the experts and other competition workers.

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3.1.4 The Chief Expert is expected to have a sound knowledge of the requirements and procedures specified in the documentation.

3.1.5 The Jury President is expected to have a thorough knowledge and understanding of the requirements and procedures specified in the documentation.

3.2. PRE-COMPETITION RESPONSIBILITIES

3.2.1 In the period between one National Skills Competition and the next, the elected Chief Expert is responsible to ensure that the requirements of Section 2 – Project Design Criteria are complied with.

3.3. SKILL MANAGEMENT PROCEDURES FOR THE CHIEF EXPERTS

The following speaks to the procedures prior to and during the Competition

3.3.1 The procedures specified below must be adhered to.

3.3.2 On arrival at the Competition site for the first time, the Chief Expert must:

- Welcome the experts and ensure introductions are made
- Inform them of their duties and responsibilities in terms of the Competition Rules and Standing Orders
- Ensure that the project is endorsed by all the experts and that a copy is signed by all the experts

3.3.3 The Chief Expert will then divide the experts into teams for the following activities:

- Verify that the material on site is appropriate and sufficient
- Verify again that the quantities of material as specified on the material list is accurate
- Develop a program for the competitors to complete the modules
- Develop timetables for activities
- Set up equipment

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- Confirm that the layout, work areas and equipment are in accordance with the workshop setup requirements
- Confirm that all machinery/equipment is in a safe working order
- Confirm that all workstations/machinery/equipment are in accordance with the plan, and that they are numbered
- Confirm that there is sufficient illumination
- Confirm that there is sufficient space for the competitors to work efficiently
- Confirm that the barriers are far enough removed from the competitors to ensure that there will be no interference, and if they are not, set up a roster among the experts to police the area during the Competition
- If necessary, set up duty rosters for activities during the Competition – e.g. keeping watch during lunch, preventing access of unauthorised persons, etc

3.3.4 The Chief Expert will then divide the experts into teams for purpose of marking and setting up marking schedules in accordance with the requirements.

3.3.5 Suggestions and comments for the revision and improvement of the Technical Description are to be provided to the Deputy Chief Expert in writing. The Deputy Chief Expert will reduce the information to a single typed document ready for discussion by all experts. Prior to leaving the

Competition site, the Chief Expert, the Deputy Chief Expert and the Jury President will facilitate the discussion and revision of the Technical Description.

3.3.6 At any time that a unanimous decision is not achieved within a reasonable time, the Chief Expert will put the matter under discussion to the vote. A majority will be 50% of the experts present plus one. This decision will be final. In the event that an expert is absent at the time that the vote takes place, he/she has the right to be informed of the decision but the matter will not be raised again or voted upon again. The exception to this majority rule will be in the case of approval of the changes to the Technical Description, where the majority of 80% is required.

3.3.7 In the event that an extension of time is requested for the Competition to exceed the allotted hours, the matter must be discussed with the Jury President. All

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possible alternative solutions must be investigated before approval of an extension of time is requested, or will be approved.

3.3.8 Prior to the end of the Competition, the Jury President will facilitate the selection of the Chief Expert and Deputy Chief Expert for the next national Skills Competition.

3.3.9 Experts are eligible for selection as a Chief Expert if they:

- Have attended the National Skills Competition at least twice before (if less than 4 experts have been to the National Skills Competition before, this criterion may be relaxed at the discretion of the Jury President)
- Demonstrate a high degree of expertise in the skill
- Demonstrate leadership qualities.
- Are competent using a computer and the Internet – specifically to facilitate the Discussion Forum for their skill category.

3.3.10 The process by which selection will take place is by secret ballot and is as follows:

- Each expert present will list their choice of three experts in order of preference
- The Jury President will allocate a score of three (3) points to each experts first preference, two (2) points to the second preference and one (1) point to the third preference
- The Jury President will then calculate total scores and announce the three highest scoring experts
- The expert with the highest score will be appointed Chief Expert for the next National Skills Competition
- If the first choice cannot attend, then the second choice will be Chief Expert
- If the first and second choice cannot attend, then the third choice will attend
- If none of the choices can attend, then the jury president will appoint, or facilitate the appointment of a Chief Expert

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- The names of the selected experts will be entered into the provided documentation and signed by the Jury President and returned to the co-chair of the competitions committee.
- 3.3.11 Changes to the method of Competition design or suggestions offered for the next Competition design process or tasks must be written down and signed by 80% of the experts.
- 3.3.12 The Deputy Chief Expert's primary role is to ensure that the Technical Description is updated to reflect the technological advances of the skill category and include overall improvements for the preparation and running of the Competition. He/she will ensure that all changes to the Technical Description are entered, that all experts sign it, and that it is delivered to the co-chair of the competitions committee as a hard copy and digitally.
- 3.3.13 The Deputy Chief Expert also assists in the distribution and collection of the QAMS Audit Questionnaires and assists the Chief Expert where necessary.

3.4. HONESTY AND TRANSPARENCY

- 3.4.1 The competitors that attend the National Skills Competition have the right to expect fair and honest treatment during the Competition in terms of the following:
- Instructions that are clear and unambiguous
 - Marking schedules that provide no advantage to an opposing competitor
 - All necessary equipment and material specified within the skill
- documentation that are required to complete the Competition
- The assistance necessary from judges and officials to ensure that he is able to complete the project. (The assistance deemed necessary will be provided equally and at the same time to all competitors present)
 - No undue interference by officials or spectators that may hinder them in the completion of their project

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- 3.4.2 Every competitor has the right to expect and demand that no opposing competitors will receive undue or unfair assistance or intervention that may provide that opposing competitor with an unfair advantage.
- 3.4.3 All officials and judges present on the Competition site are expected to ensure that paragraphs 3.4.1 and 3.4.2 above are complied with and maintained.
- 3.4.4 It is the responsibility of the Chief Expert or his Deputy to ensure that all competitors, interpreters, officials and judges comply with and maintain the integrity of the Competition, and additionally ensure that all necessary steps are taken to ensure that:
- Outside influences do not unduly improve or decrease competitors' abilities to provide a worthy performance.
- 3.4.5 A briefing will be provided to all experts and competitors on the requirements for integrity during the Competition.
- 3.4.6 Additionally, the Chief Expert is expected to identify these and any other factors that may exist on the Competition site that may result in the contravention of paragraphs 3.4.1 and 3.4.2 above, and reduce them to a checklist for continuous reference.
- 3.4.7 In the event that any competitor, judge, official, observer or competitor compatriot is found to be attempting to gain or provide assistance in any form that may result in an unfair advantage, the Chief Expert is to immediately refer the matter to the Jury President.
- 3.4.8 The Chief Expert will receive nominations and appoint a Security Officer whose responsibility it will be to ensure that these requirements are carried out.
- 3.4.9 It will be explained to all experts and competitors that nothing is to come in or out of the site unless specified by the Chief Expert as being allowed after being briefed on this topic.
- 3.4.10 Security checks will be carried out each day on experts and competitors (by experts and competitors) upon entry and exit to the site.

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3.5. INFORMATION POLICY

3.9.1 During the competition a modified project plan without measurements is to be made available to the public.

4. THEORETICAL KNOWLEDGE

4.1 Interpretation and execution of drawings, sketches and specifications according to industry standards.

4.2 Laying and marking out to 1:1 scale.

4.3 Knowledge of design.

4.4 Knowledge of materials and processes.

4.5 Technical assessment may include:

- Knowledge of bonding
- Calculations
- Drawing interpretation
- Construction knowledge
- Flexible sheets of 1:1 block work is allowed

5. MATERIALS

(Local materials eg – limestones, marbels, fine-glazed clays/ceramics, sands and sand by-products)

- Blocks, face blocks, backing blocks, special blocks, uniformly baked or formed, dimensionally accurate and sharp-edged, Building Blocks
- Blocks 10 kg maximum weight
- Bonding agents: lime, cement

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- A suitable trowel ready mortar must be available.
- Auxiliary materials: cleaning and scouring materials
- Mortar additives may be used to make mortar softer (workable) (local material)
- The use of block cleaning fluids or oil is not allowed
- Rendering
- Paving

6. WORKSHOP INSTALLATIONS

6.1 Each competitor will have a working area of at least 5.0 x 5.0 m.

General Requirements

6.2 There should be a space of 2.0 m between the public barrier and the competitor's materials. Materials should be supplied and mixed by experienced operators.

6.3 Water supply, electric power, PC with printer and telephone, photocopier and overhead projector will be provided. Also machines and equipment: mortar mixer, forklift truck, lifting equipment.

6.4 The masonry cutting machines must be bench type and the saw room must have suitable lighting, water supply and sound proofed.

6.5 Each competitor will have a working area of at least 5.0 x 5.0 m. The floor surface must be even, horizontal and of adequate loading capacity (concrete floor).

6.6 There must be sufficient space for the delivery and storage of material. The candidate's tool box must be located in their 5 x 5m area (these tools must remain in their work area throughout the competition), and shall also allow for the equipment and machines specified in Sec. 6.4 below.

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6.7 Each workstation floor area must be covered by a material that is suitable to set out and construct masonry on. The tolerance of the floor is 10mm in 2m.

6.8 The following machines and equipment will be made available to each competitor:

- Mortar boxes round, rectangular and boards
- Wheelbarrow
- Water bucket
- Board for templates and other practical exercises 2.40m x 1.20m x 10mm thick
- Shovel
- Nails
- Broom
- Blocks
- Straight edges 3.5 m and 1.5 m wood and aluminum approximately 50 x 25mm, 50 x 50mm and 70 to 80mm.
- Profiles as required approximately 70mm x 70mm wood or aluminum
- 90° square
- Static electric block cutting machines for wet cutting (one machine for 2 competitors)
- Wood for templates
- Locker for each candidate and expert and tables and chairs.
- A1 board suitable for drawing details with parallel motion or tee-square.
- Electric panel and jig saws for cutting templates (one for every 5 competitors)

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6.9 The competitor may also be providing: (note Can be provided by Worldskills Jamaica)

- Trowel
- Folding rule
- Measuring tools
- Mason's hammer
- Square
- Mallet
- Pencil
- Lump hammer
- Angle bevel
- Spirit level
- Pointing trowel
- Plumb line
- Cleaning material
- Marking out string
- Large compass
- Safety footwear
- Ear and eye protection
- Tee square and drawing equipment

7. TEST PROJECT MARKING

7.1 The experts will decide together on the marking criteria and the dimensional tolerances on forms provided and they will prepare the material list.

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7.2 MARKS:

Perfect	=	10 points
Very good	=	9 points
Good	=	8 points
Rather good	=	7points
Sufficient	=	6 points
Medium	=	5 points
Weak	=	4 points
Insufficient	=	3 points
Very bad	=	2 points
Zero	=	1 point

7.3 RATING

Section	Item	Maximum Points
A	Dimensions	20
B	Level	10
C	Plumbing	20
D	Alignment	5
E	Angles	5
F	Technical features	15
G	Technical assessment	10
H	Jointing/Finish	15

Conversion to the 400 - 600 scale will be done by computer.

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8. COMPETITION PROCEDURE

- 8.1 The competition will be worked on over two days. Wherever possible, modules will be completed on each day for all competitors so that progressive marking can take place, and for results to be made available each day.
- 8.2 Competitors will have time made available to familiarize themselves with material and processes. Where processes are particularly difficult, the competition's will provide a subject matter expert to demonstrate the process and the competitors will be given the opportunity to practice.
- 8.3 The complete project will be given to the competitors at the familiarization session to be held before the first day of the competition. They will then complete each project in sequence for example complete project one then start project two and so on.
- 8.4 Prior to the start of the competition, each competitor will receive a detailed timetable reflecting the timing for the completion modules.

9. JUDGING PROCEDURAL REQUIREMENTS

- 9.1 The experts that attend the competition will be divided into marking groups to deal with each section of the marking criteria.
- 9.2 Every completed module will be marked on the same day in which it was completed.

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10. GENERAL SAFETY REQUIREMENTS

- 10.1 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.
- 10.2 All competitors must wear appropriate clothing and footwear.
- 10.3 All competitors must wear hearing protection when necessary.
- 10.4 Competitors must keep their workspace clear of obstacles and the floor space clean of material and equipment - any items likely to cause the competitor to trip, slip or fall.
- 10.5 Failure by the competitor to comply with safety directions or instructions may incur loss of marks for safety or penalties.