WORLDSKILLS STANDARD SPECIFICATION

Skill 08
Architectural Stonemasonry

THE WORLDSKILLS STANDARDS SPECIFICATION (WSSS)

GENERAL NOTES ON THE WSSS

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

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

In the skill competition the assessment of knowledge and understanding will take place through the assessment of performance. There will not be separate tests of knowledge and understanding.

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

Each section is assigned a percentage of the total marks to indicate its relative importance within the Standards Specification. The sum of all the percentage marks is 100.

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

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

WORLDSKILLS STANDARDS SPECIFICATION

SECTION		RELATIVE IMPORTANCE (%)
1	**Work organization and management**	**5**
	The individual needs to know and understand: • The principles of working safely with electricity and compressed air equipment • Health, safety and hygiene legislation, obligations, regulations and documentation • Specific legislation and regulations governing vibration and noise at work within own country • Emergency procedures and reporting processes for accident , first-aid and fire • The situations when personal protective equipment (PPE) must be used • The purposes, uses, care, maintenance, storage of tools/equipment and safe handling implications • The purposes, uses, care, storage of materials and safe handling implications • The importance of keeping a tidy work area • The ways in which working practices can minimize wastage and help to manage costs • The importance of safe disposal of waste for re-cycling • The significance of planning, accuracy, checking and attention to detail in all working practices	
	The individual shall be able to: • Follow health, safety and hygiene standards, rules, and regulations • Maintain a safe working environment • Identify and use the appropriate personal protective equipment including safety footwear, hand, ear, eye and dust protection • Select, use, clean, maintain and store all hand and powered tools safely • Select, use and store all materials safely • Plan the work area to maximize efficiency and maintain the discipline of regular tidying • Measure accurately and avoid wastage • Work efficiently and check progress and outcomes regularly • Safely and sustainably dispose of recyclable and dangerous waste	
2	**Communication and interpersonal skills**	**5**
	The individual needs to know and understand: • The roles and requirements of related trades and the most effective methods of communication • The value of building and maintaining productive working relationships • The importance of swiftly resolving misunderstandings and conflicting demands	

	The individual shall be able to: • Determine requirements and manage expectations positively • Visualize and translate wishes, making recommendations which meet design and budgetary requirements • Recognize and adapt to the changing needs of architects and related trades • Clearly communicate to colleagues where drawings, variations to the documents and work restrictions are required • Challenge incorrect information to prevent problems	
3	**Problem solving, innovation and creativity**	**5**
	The individual needs to know and understand: • The common types of problem which can occur within the work process • Diagnostic approaches to problem solving • Trends and developments in the industry within own country	
	The individual shall be able to: • Check work regularly to minimize problems at a later stage • Recognize and understand problems issues swiftly and follow a self-managed process for resolving • Demonstrate a willingness to try alternative methods and positive change	
4	**Interpretation of drawings**	**5**
	The individual needs to know and understand: • The essential information that must be included in construction and detail drawings • The importance of checking for missing information or errors, anticipating problems and resolving in advance of the 'setting out' process and construction • The role of geometry • Mathematical processes and problem solving	
	The individual shall be able to: • Accurately interpret all plans, elevations, sections and enlarged details • Identify key dimensions and all angles • Identify curved work • Recognize all features, such as arch work, letters and symbols • Establish any features that require special equipment or templates and ensure they are available or created • Identify drawing errors or items that require clarification • Determine and check quantities of materials required to produce specified projects	
5	**Information and quantities**	**5**
	The individual needs to know and understand: • The essential information that must be included in specifications • The importance of checking for missing information or errors	

	The individual shall be able to: • Accurately interpret and produce building information from specifications • Produce basic outline drawings including elevations, plans and sections to full size	
6	**Produce complex templates**	**10**
	The individual needs to know and understand: • The characteristics of materials used for templates: zinc and aluminium sheets • Tracery features including: trefoil, quatrefoil, foils, cusps, dead eyes, pierced eyes • The differences between the orders of architecture: Doric, Ionic, Corinthian, Tuscan and Composite • The members of the entablature: cornice, frieze, architrave	
	The individual shall be able to: • Select resources, including: sheet zinc, aluminium and drawing paper • Produce complex templates and moulds including: tracery, foils, cusps, dead eye, pedestal, cornice, column coping, plinth, capital springer, keystone or pediment • Apply information/identification marks to templates and moulds	
7	**Produce complex templates**	**5**
	The individual needs to know and understand: • Traditional masonry features • Types of developed true shapes, raking sections and stretched mouldings	
	The individual shall be able to: • Set out work full size using standard drawing conventions • Use complex geometry to prepare templates in various materials • Produce templates from zinc sheet • Produce accurate, complex drawings prior to transferring to templates materials to within 1mm of specification • Produce mouldings to within 1mm of specification • Accurately cut templates and reverse templates in zinc or aluminium to within 1mm of specification	
8	**Produce Stonemasonry Components**	**50**
	The individual needs to know and understand: • Strategies to assist in the control of vibration • Strategies for reducing exposure to noise • Defects commonly found in natural stones • Specialist surface finishes • The characteristic and usability of the different types of stones, such as granite, sandstone, limestone, marble etc.	

	The individual shall be able to: • Apply complex templates to mark out the work • Position natural bedding plane in relation to component positions in structures • Use templates to mark out the whole of the work from the datum surface prior to commencing cutting operations to within 1mm of specification • Apply complex geometric shapes to prepared block of stone • Prepare stone surfaces straight, square and out of twist various types of stones • Prepare stone surfaces to complex shapes using various technical processes • Produce various specified surface finishes to prepared stones • Work the stones square and to give dimensions with 1mm of specification • Prepare a tooled finish to seen faces only • Produce complex worked stone components using hand and power tools to within 1mm of specification including: corners, arises and internal mitres; measurements and external mitres; profiles, profile, curved and flat surfaces	
9	**Produce letter cutting and carving**	**10**
	The individual needs to know and understand: • Different methods to transfer information onto the stone surface • The characteristics of letters • The characteristics of materials • The different methods of carving including intaglio and bas relief • The different techniques of applying different surface and textured finishes • The need for all work to be presented to meet customer needs and expectations	

	The individual shall be able to: • Select resources free form damage, faults or fissures to set out lettering and carving • Apply full size drawing to mark out the work • Identify the required position of lettering or carved motif on the stone • Use carbon paper to transfer information to stone surface using full size drawing details • Produce incised and letters in various types of stone • Cut incised and raised letters to the specification using hand or pneumatic tools only to reduce the effects of Hand Arm Vibration Syndrome (HAVS) - or pneumatic tools • Transfer from drawings and set out lettering in various modern or traditional styles • Lightly clean carbon ink marks on the surface by removing with water and fine wet/dry paper • Carve motif from given specification onto specified surface to required depth and finish using hand or pneumatic tools • Produce straight or flowing lines which provide sharp edges and a crisp appearance • Use texture, undercutting and shadow effectively • Organize any waste material in the correct way so that it can be disposed of or recycled efficiently • Accurately interpret the clients brief/instructions	