CONSTRUCTION AND BUILDING TECHNOLOGY

# Wall and Floor Tiling




## WorldSkills Occupational Standards

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# WorldSkills Occupational Standards (WSOS)

## General notes on the WSOS

The WSOS 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/WSOS).

The skill competition is intended to reflect international best practice as described by the WSOS, and to the extent that it is able to. The Standard 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 Standard 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. This is often referred to as the "weighting". The sum of all the percentage marks is 100. The weightings determine the distribution of marks within the Marking Scheme.

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

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

# WorldSkills Occupational Standards

| Section | | Relative importance (%) |
|---|---|---|
| 1 | **Work organization and management** | 5 |

The individual needs to know and understand:

- Health, hygiene, and safety legislation, obligations, regulations, and documentation
- The principles of working safely with electricity
- Accident/first-aid/fire/emergency procedures and reporting
- The situations when personal protective equipment must be used
- The purposes, uses, care, maintenance, and storage of all hand and powered tools and equipment together with their safety implications
- The purposes, uses, care, and storage of materials
- Sustainability measures applying to the use of 'green' materials and recycling
- The ways in which working practices can minimize wastage and help to manage costs
- The principles of time management, workflow, and measurement
- The significance of planning, accuracy, checking, and attention to detail in all working practices
- The importance of integrity and trustworthiness
- The value of managing own continuing professional development

The individual shall be able to:

- Follow health, hygiene and safety standards, rules, and regulations
- Identify and use the appropriate personal protective equipment including safety footwear, ear, and eye protection
- Select, use, clean, maintain, and store all hand and powered tools and equipment safely
- Select, use, and store all materials safely
- Plan the work area to maximize efficiency and maintain the discipline of regular tidying
- Consistently measure accurately
- Work efficiently under pressure and check progress/outcomes regularly to meet deadlines
- Establish and consistently maintain high quality standards and working processes

| Section | | Relative importance (%) |
|---|---|---|
| 2 | **Communication and interpersonal skills** | 5 |

- The individual needs to know and understand:
- The significance of establishing and maintaining customer confidence
- The roles and requirements of related trades
- The value of building and maintaining trust and productive working relationships
- The importance of swiftly resolving misunderstandings and conflicting demands

The individual shall be able to:

- Visualize and translate customer wishes making recommendations which meet/improve their design and budgetary requirements where qualified to do so
- Provide specialist technical advice and guidance on heritage where qualified to do so project
- Present portfolio of previous work to demonstrate range and quality of experience and expertise
- Produce a cost and time estimate for customers
- Introduce related trades to support customer requirements
- Understand the needs/demands of other trades and work around/with them
- Work effectively in a team to facilitate efficiency/productivity/quality and cost control

| | | |
|---|---|---|
| 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 including new products/interior designs, materials, and equipment

The individual shall be able to:

- Check work regularly, particularly for accuracy/standard, to minimize problems at a later stage
- Recognize and understand problems swiftly and follow a self-managed process for resolving
- Challenge incorrect information to prevent problems
- Develop creative solutions to challenges when working on restoration projects
- Recognize opportunities to contribute ideas to improve the product and overall level of customer satisfaction
- Keep up to date with changes in the industry
- Demonstrate a willingness to try new methods and embrace change

| Section | | Relative importance (%) |
|---|---|---|
| 4 | **Produce and interpret drawings** | 5 |

The individual needs to know and understand:

- The essential information required for floor plans in construction drawings including sections, datum levels, wall constructions, material codes, depth dimensions, heights, schedules, and specification
- Interpretation and execution of drawings to ISO-A or ISO-E standards
- The importance of checking for missing information or errors, anticipating problems and resolving in advance of the 'setting out' process
- The role and use of geometry
- Mathematical processes and problem solving
- The range of costs to be included in estimates

The individual shall be able to:

- Accurately interpret and produce building information
- Produce basic outline drawings (hand and CAD) including elevations, plans, and sections to full size
- Produce accurate complex drawings on wood to make figure on the wall/floor
- Identify drawing errors or items that require clarification
- Determine and check quantities of materials required
- Calculate a cost and price for the work

| | | |
|---|---|---|
| 5 | **Setting out and measurement** | 5 |

The individual needs to know and understand:

- Methods of setting out horizontal, vertical, raking, and curved surfaces forming plain areas, patterns, and motifs

The individual shall be able to:

- Check measurements of the wall/floor conform to the drawing specifications
- Produce setting out for templates

| Section | | Relative importance (%) |
|---|---|---|
| 6 | **Preparations** | 15 |

The individual needs to know and understand:

- Properties of materials
- How to locate information on falls and positions of outlets, materials, and tiled features from drawings and schedules
- Procedures for measuring, marking, and setting out for channels, outlets, and gullies
- The function of materials: wastewater fittings, channels, outlets, gullies, fixings, and fittings
- Types of sands used for internal/external rendering; the effects of selecting incorrect types; site tests used on sands
- Types of one-coat renders and reasons for using water proofers and plasticizers
- Types of trims and beads including expansion strips, external angle, and stop beads
- Characteristics of components including binder, aggregate, plasticers, and water proofers

The individual shall be able to:

- Remove old tiles, grout, cement, or adhesive
- Fill all holes/cracks and clean surfaces
- Provide drainage: interpret information with reference to falls and position of outlets from location, assembly, and component drawings; install channels, outlets, and gullies and finish surface and joints
- Prepare materials to specification requirements including sand and cement mixes, beads and trims
- Gauge and mix renders: sand and cement mixes in the correct proportions
- Apply render to internal and external backgrounds to provide the specified finish, to include three-coat work and key for tiling

| | | |
|---|---|---|
| 7 | **Fix** | 40 |

The individual needs to know and understand:

- The range of fixing methods
- The materials to be used to protect existing finished surfaces

| Section | | Relative importance (%) |
|---|---|---|
| | The individual shall be able to:<br>• Minimize damage to surrounding surfaces by applying protective material and using barriers<br>• Install tiles to flat, inclined, and curved surfaces<br>• Cut and shape tiles needed for edges, corners, and to fit around fittings and pipes ensuring no chipping/sanding<br>• Apply correct adhesive evenly to tiles, avoiding excess<br>• Attach tiles to surfaces and floors to form patterns and motifs, ensuring no lipping<br>• Accurately space tiles, checking level, plumb and square to ensure aligned and levelled<br>• Prepare and apply seal and grout to joints ensuring symmetrical and equal<br>• Remove excess seal and grout, clean and polish to provide a good finish which meets the specification/customer requirements<br>• Finish edge and corners with appropriate finishing methods and strips | |
| **8** | **Quality** | **20** |
| | The individual needs to know and understand:<br>• The required quality standards for the task in hand<br>• The nature and causes of substandard work and defects<br>• The available range of quality checks and methods Alternative methods for effecting remedies and repairs | |
| | The individual shall be able to:<br>• Inspect equipment, structures, and/or material to identify the nature and causes of errors, defects, or problems<br>• Think critically by using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.<br>• Identify actual and potential problems.<br>• Analyse information and evaluate options to choose and use the best solution<br>• Make and follow through decisions<br>• Evaluate solutions and optimize results | |
| | **Total** | **100** |

# References for industry consultation

WorldSkills is committed to ensuring that the WorldSkills Occupational Standards 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 Occupational Standards 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/) ILO 7122
- ESCO: (https://ec.europa.eu/esco/portal/home)
- O*NET OnLine (www.**onet**online.org/)

Your WSOS appears most closely to relate to *Tile and Marble Setters*:
https://www.onetonline.org/link/summary/47-2044.00

or *Tile Fitter:*
http://data.europa.eu/esco/occupation/02447817-ea01-4d8b-b09c-8bc128e447e6

These links can also be used to explore adjacent occupations.

The following table indicates which organizations were approached and provided valuable feedback for the Description of the Associated Role and WorldSkills Occupational Standards in place for WorldSkills Shanghai 2021.

| Organization | Contact name |
|---|---|
| Liebenauer Gerhard e.U. Hafnermeister – Fliesenlegermeister (Austria) | Liebenauer Thomas, Master of wall and floor tiling |
| Schlüter-Systems (France) | Laurent Gazagnes, General Director |