



Australian Government

MSFFL3048 Select and fit diamond tools for concrete surface preparation and polishing

Release: 1

MSFFL3048 Select and fit diamond tools for concrete surface preparation and polishing

Modification History

Release 1 - New unit of competency

Application

This unit of competency covers selecting and fitting appropriate diamond grinding and polishing tools for use in concrete floor preparation and finishing machines. It applies to concrete cleaning and polishing operations on-site in commercial and residential environments and involves application of skills and knowledge at a sub-trade worker level

Licensing, legislative or certification requirements may apply to this unit and relevant state/territory and local government agencies should be consulted to determine any necessary certification or licensing for undertaking flooring work. Access to construction sites requires certification of general induction training specified by the National Code of Practice for Induction for Construction Work (ASCC 2007).

Pre-requisite Unit

Competency Field

Unit Sector

Flooring technology

Elements and Performance Criteria

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1	Identify the required concrete surface application	1.1	Concrete surface to be prepared and polished is examined to evaluate the level, any undulations and surface condition
		1.2	Types of grinding and polishing techniques required for the job are established, including wet or dry application and any additional abrasives required
		1.3	Floor moisture test results, where applicable, are evaluated to determine the floor grinding and polishing steps for the job

2	Select diamond grinding tools	2.1	Required diamond tools and bond type for surface preparation are identified
		2.2	Grit size for the grinding job is determined
		2.3	Segments of diamond tool and bond type are matched to the job requirements and machine to be used for grinding
		2.4	Diamond tools are fitted to the planetary machine for surface preparation operations ensuring tool rotation is correct for the machine set-up
3	Select floor diamond polishing tools	3.1	Required diamond tools and bond type for surface polishing are identified
		3.2	Grit size for the polishing job is determined
		3.3	Segments of diamond tool and bond type are matched to the job requirements and machine to be used for polishing
		3.4	Diamond tools are fitted to the planetary machine for surface polishing operations ensuring tool rotation is correct for the machine set up
4	Clean up work area and tools	4.1	All diamond tools are examined to establish which are able to be re-used then cleaned and stored
		4.2	Diamond tools that can no longer be used are identified, recorded in workplace documentation and disposed of in accordance with manufacturer recommendations
		4.3	Work area is cleared and waste removed

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency. Detail on appropriate performance levels for each furnishing unit of competency in reading, writing, oral communication and numeracy utilising the Australian Core Skills Framework (ACSF) are provided in the Furnishing Training Package Implementation Guide.

Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential

operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Range is restricted to essential operating conditions and any other variables essential to the work environment.

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|---|---|
| Legislative requirements include: | <ul style="list-style-type: none">• applicable legislation from all levels of government that affect organisational operation• award and enterprise agreements• industrial relations• Australian Standards• confidentiality and privacy• work health and safety (WHS)• the environment• equal employment opportunity (EEO)• anti-discrimination• relevant industry codes of practice• duty of care and heritage |
| WHS requirements include: | <ul style="list-style-type: none">• Commonwealth, state or territory legislation and regulations• organisational safety policies and procedures• the use of personal protective equipment and clothing• firefighting equipment• first aid equipment• hazard and risk control and elimination• control of hazardous materials and substances• manual handling, including lifting and carrying |
| Organisational requirements include: | <ul style="list-style-type: none">• legal, organisational and site guidelines• policies and procedures relating to own role and responsibility• quality assurance• procedural manuals• quality and continuous improvement processes and standards• WHS• emergency and evacuation• ethical standards• recording and reporting• access and equity principles and practices• equipment use, maintenance and storage• environmental management (waste disposal, recycling and re-use guidelines) |
| Concrete surface condition includes: | <ul style="list-style-type: none">• rain damage• contaminants, such as glue/adhesives and epoxy paint• loose debris |

- Diamond tools include:**
- full set of single or twin segments (for when a flat floor finish is required)
 - half set of single or twin segments (for when flat floor finish is not required)
- Diamond tool bond types include:**
- metal
 - resin
 - ceramic
 - hybrid
- Diamond tool applications include:**
- floor flattening and removing undulation (hard, medium and soft concrete)
 - removal of surface contaminants:
 - carpet glue
 - vinyl adhesive
 - epoxy paint
 - smoothing exposed aggregate
 - grinding exposed aggregate
 - concrete surface polishing (hard, medium and soft)
- Diamond abrasive wear includes influence of:**
- hardness of material being ground (e.g. aggregate and sand abrasiveness)
 - the grinding/polishing pressure
 - hardness of the bond
 - diamond grit size
 - number of segments
 - presence of water
 - use of additional abrasives such as sand, silicone or carbide
- Diamond tool selection faults include:**
- grit size
 - too small so surface contaminants, such as glue smears
 - too coarse leaving scratching and excessive diamond wear
 - bond
 - too soft, leaving machine marks and excessive diamond wear
 - too hard, resulting in glazed surface
 - not using hardest bond first
 - incorrect choice of segments could result in an uneven floor, excessive diamond consumption and overloading the planetary machine
- Instructions include:**
- equipment manufacturer specifications and operational procedures
 - workplace procedures relating to WHS, tool handling and operation, reporting and communication
 - work instructions, including job sheets, plans, drawings and designs

- Fault reporting includes:**
- verbal or written reporting
- Personal protective equipment includes:**
- that prescribed under legislation, regulation and enterprise policies and practices

Unit Mapping Information

No equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73>

Assessment Requirements for MSFFL3048 Select and fit diamond tools for concrete surface preparation and polishing

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Performance Evidence

- Comply with legislation, regulations, standards, codes of practice and established safe practices and procedures for operating and maintaining planetary grinding/polishing equipment
- Apply safe handling practices for equipment, products and materials
- Follow work instructions, operating procedures and inspection practices to:
 - prevent damage to goods, equipment and products
 - maintain required production output and product quality
 - minimise the risk of injury to self and others
- Select and fit appropriate diamond grinding and polishing tools to be used in planetary action concrete finishing equipment correctly and safely
- Modify activities to cater for variations in workplace contexts and environment
- Communicate ideas and information to enable confirmation of work requirements and specifications and the reporting of faults and problems
- Collect and understand information related to the use and maintenance of diamond grinding and polishing tools and maintain current knowledge of tools and materials
- Work with others and in a team by recognising dependencies and using cooperative approaches to optimise work flow and productivity
- Use pre-checking and inspection techniques to anticipate floor surfacing problems to avoid re-work and wastage
- Recognise and respond to circumstances outside instructions or personal competence
- Plan and organise activities including the preparation and layout of the worksite and the obtaining of tools
- Use mathematical ideas and techniques to correctly complete measurements and estimate material requirements
- Use workplace technology related to the use and maintenance of diamond grinding and polishing tools for concrete finishing

Knowledge Evidence

- State or territory WHS legislation, regulations, standards and codes of practice relevant to the use of grinding equipment
- Organisational and site standards, requirements, policies and procedures for the use of concrete polishing equipment
- Types of concrete finishing machines and procedures for their safe use, operation and maintenance

- Diamond polishing tools, uses and wear factors
- Environmental protection requirements
- Established communication channels and protocols
- Relevant problem identification and resolution

Assessment Conditions

- Assessors must:
 - hold training and assessment competencies as determined by the National Skills Standards Council (NSSC) or its successors
 - have vocational competency in the furnishing industry at least to the level being assessed with broad industry knowledge and experience, usually combined with a relevant industry qualification
 - be familiar with the current skills and knowledge used and have relevant, current experience in the furnishing industry.
- Assessment methods must confirm consistency of performance over time rather than a single assessment event and in a range of workplace relevant contexts.
- Assessment must be by observation of relevant tasks with questioning on underpinning knowledge and, where applicable, multimedia evidence, supervisor's reports, projects and work samples.
- Assessment is to be conducted on single units of competency or in conjunction with other related units of competency. Foundation skills are integral to competent performance in the unit and should not be assessed separately.
- Assessment must occur on the job or in a workplace simulated facility with relevant process, equipment, materials, work instructions and deadlines.
- Access is required to diamond grinding and polishing tools, planetary action grinders/polishers and manufacturer/user instructions and/or manuals.

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