



**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.

### **Legislative requirements include:**

- 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:**

- 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:**

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