



**Australian Government**

# **CPCCSG3005 Engrave signs**

**Release: 1**

# CPCCSG3005 Engrave signs

## Modification History

Release 1.

This version first released with CPC Construction, Plumbing and Services Training Package Version 2.

Revised unit of competency. Replaces superseded non-equivalent CPCCSI3005A Use engraving systems.

## Application

This unit of competency specifies the outcomes required to engrave signs using specialist rotary engravers. It covers setting up and initialising computer software to interact with the engraving system, preparing tools and materials for engraving, and operating high speed equipment to produce detailed sign artwork that meets client requirements.

The unit supports sign manufacturers who produce fine, detailed markings on various materials, including metal and non-metal.

No licensing, legislative, regulatory or certification requirements apply to this unit of competency at the time of endorsement.

## Pre-requisite Unit

Nil

## Competency Field

Signs and graphics

## Unit Sector

Construction

## Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.

- |   |                        |     |                                                                                                                |
|---|------------------------|-----|----------------------------------------------------------------------------------------------------------------|
| 1 | Plan and prepare work. | 1.1 | <b><i>Job requirements</i></b> are identified, confirmed with client, and applied to planning and preparation. |
|---|------------------------|-----|----------------------------------------------------------------------------------------------------------------|

- |   |                                         |     |                                                                                                                                                                                       |
|---|-----------------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                                         | 1.2 | <b>Health and safety requirements</b> are identified according to specified tasks and workplace operations, and applied to planning.                                                  |
|   |                                         | 1.3 | Tools and equipment suited to the task are selected, checked for serviceability, and faults are rectified or reported before starting work.                                           |
|   |                                         | 1.4 | Materials are selected, checked for quality, and faults are remedied or reported before starting work.                                                                                |
|   |                                         | 1.5 | Client artwork is checked for compatibility with existing software and used to produce working file.                                                                                  |
| 2 | Set up engraving hardware and software. | 2.1 | Connections between engraving software and hardware are established, tested for operational functionality, and faults are identified and rectified or referred to relevant personnel. |
|   |                                         | 2.2 | <b>Specifications</b> are entered into engraving software.                                                                                                                            |
|   |                                         | 2.3 | Cutter starting position is identified and set up in engraving software.                                                                                                              |
|   |                                         | 2.4 | Home position is located in engraving system and set up according to the task.                                                                                                        |
| 3 | Use engraving materials and systems.    | 3.1 | Material is set out and fixed into starting position to correct cut depth, ready for engraving.                                                                                       |
|   |                                         | 3.2 | Cutter tools are positioned over materials and engraving system is operated according to manufacturer specifications.                                                                 |
|   |                                         | 3.3 | Operation of cutter tools is routinely checked for performance and, when necessary, tools are safely removed for sharpening or replacement.                                           |
|   |                                         | 3.4 | Quality of engraving is checked against client requirements and faults are identified and rectified as required.                                                                      |
| 4 | Finish engraved                         | 4.1 | Engraved sign is cleaned of any loose surface materials.                                                                                                                              |

|   |           |     |                                                                                                                                                    |
|---|-----------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------|
|   | sign.     | 4.2 | Engraved sign is paint filled according to client requirements.                                                                                    |
|   |           | 4.3 | Engraved sign is polished and buffed and sign edges smoothed according to job requirements.                                                        |
|   |           | 4.4 | Engraved sign is checked to be clean and blemish free and carefully stored to prevent surface damage.                                              |
| 5 | Clean up. | 5.1 | Work area is cleaned and waste materials removed according to statutory and regulatory authority requirements.                                     |
|   |           | 5.2 | Tools and equipment, including personal protective equipment (PPE), are safely cleaned, maintained and stored according to workplace requirements. |

## Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

| Skill                         | Performance feature                                                                                                                                                                                                  |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Learning skills to:           | <ul style="list-style-type: none"> <li>• engrave a sign that contains complex lettering and graphics requiring new techniques.</li> </ul>                                                                            |
| Numeracy skills to:           | <ul style="list-style-type: none"> <li>• calculate and measure required distances between sign elements.</li> </ul>                                                                                                  |
| Oral communication skills to: | <ul style="list-style-type: none"> <li>• confirm sign job requirements with client and colleagues.</li> </ul>                                                                                                        |
| Reading skills to:            | <ul style="list-style-type: none"> <li>• read and interpret a range of source documents, including client briefs, manufacturer specifications, safety data sheets, and software prompts and instructions.</li> </ul> |
| Writing skills to:            | <ul style="list-style-type: none"> <li>• report faults in engraving systems to manufacturers and colleagues.</li> </ul>                                                                                              |

## Range of Conditions

This section specifies 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. Bold italicised wording, if used in the performance criteria, is detailed below.

***Job requirements***

must include:

- purpose of sign
- quality requirements
- size and style of sign.

***Health and safety requirements*** must include:

- selection, correct fitting, and use of PPE prescribed under legislation, regulations and workplace policies and practices
- emergency procedures, including:
  - evacuation
  - first aid
  - location and use of firefighting equipment
- sufficient lighting to perform detailed engraving work
- processes for the safe:
  - set-up and operation of cutting tools and equipment
  - handling and storage of materials
- safe operating procedures, including the conduct of operational risk assessment and treatments associated with:
  - exposure to dust
  - working in proximity to others
  - working with high speed cutting equipment.

***Specifications*** must include:

- cut depth
- material type and thickness.

## Unit Mapping Information

No equivalent unit.

## Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

# Assessment Requirements for CPCCSG3005 Engrave signs

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## Performance Evidence

A person demonstrating competency in this unit must satisfy all of the elements, performance criteria and foundation skills of this unit, and must engrave three signs each containing four lines of text, with a border and a centred graphic or logo as follows.

- at least one sign must be engraved on one of the following metal surfaces:
  - aluminium
  - brass
  - stainless steel
- at least one sign must be engraved on one of the following non-metal surfaces:
  - acrylic
  - engraving laminate.

In doing the above work, the person must:

- select and prepare cutter tools and equipment for the task
- set up engraving software with accurate parameters for the task, including speed, depth and number of passes appropriate to the task
- engrave and finish the sign to client requirements using cleaning and polishing materials.

## Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- application of the following typography elements in sign-writing and engraving, including:
  - font types
  - principles of layout
  - size and spacing
- engraving processes and their use of:
  - cutter types
  - engraving depths
  - engraving materials and their uses

- engraving software
- guillotine systems
- types, uses and limitations of engraving systems
- manufacturer specifications for the safe use and maintenance of engravers and cutters
- processes to check and ensure correct grammar, spelling and punctuation and their application in engraving signs
- safe operating procedures for the use of high speed cutting tools and equipment used in engraving
- safety data sheets (SDS) relevant to the use of engraving tools.

## Assessment Conditions

Suitable assessment of performance requires:

- equipment:
  - cutting tools
  - engraving system
  - industry-recognised engraving software
  - laser engravers
  - personal protective equipment, including:
    - chemical proof gloves
    - dustcoats
    - glasses
    - hearing protection
  - rotary engravers
- materials:
  - acrylic
  - aluminium
  - brass
  - cleaning chemicals, including thinners and methylated spirits
  - cutting lubricants
  - engraving laminate
  - glass
  - paints to fill engraved letters or graphics
  - stainless steel
- contingencies:
  - faults in hardware and software
  - need to change cutter tools to rectify faults or resharpen
- specifications:
  - client requirements
  - SDS

- physical conditions:
  - workshop with workspace and lighting suitable for using engraving systems and producing engraved signs
- timeframe:
  - according to job requirements.

#### Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

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