

AREAS FOR FURTHER DEVELOPMENT

T LEVEL: ENGINEERING, MANUFACTURING, PROCESSING AND CONTROL

T Level learners will have covered a broad spectrum of knowledge and understanding of the concepts, theories and principles relevant to the T level in the core content. They will then specialise and cover the knowledge and skills required in that occupational specialism, putting this into practise during the industry placement. There may be some areas a learner will need to further develop in a workplace environment following a T Level to reach full competence, such as behaviours. Following engagement with employers, industry experts and providers, we have captured below what these areas for development may be following a T Level. This will depend on the learner and an initial assessment. The RPL guidance gives further details.

Occupational Specialism: Fabrications and Welding Technologies

Standard: Plate Welder

Aspects for further development

Knowledge:

- K2: Fundamentals of welding metallurgy (weld solidification and Heat Affected Zone) and how this can affect the weldability of materials and final joint integrity.
- K3: Common manual arc welding processes and the relative merits for a given application, including Manual Metal Arc (MMA), Metal Inert Gas (MIG), Metal Active Gas (MAG), Flux Cored Arc Welding (FCAW), Tungsten Inert Gas (TIG), Plasma Arc Welding (PAW)
- K4: Common joint types associated with welding plate and structural components (Fillet, Butt, T-Butt, Corner/Lap; Single-Sided, Double-Sided, Metallic Backed, Ceramic Backed).
- K10: Performance success factors in production, inspection reporting, productivity including time and duration, dimensional, Non-Destructive Examination, defect rates etc.
- K11: Causes and detection of typical welding defects and how their occurrence can be reduced.
- K17: Non-destructive testing reports and radiographs to identify particular defect types and the associated improvements to process and technique needed to prevent recurrence.

- K20: Typical problems that may arise within their normal work activities/environment.

Skills:

- S7: Receive, inspect, condition and maintain consumables.
- S9: Deal promptly and effectively with problems within the limits of their responsibility using approved diagnostic methods and techniques and report those which cannot be resolved to the appropriate personnel.
- S10: Use manual processes and equipment to remove material (powered and non-powered).
- S14: Produce welds in plate and/or structural components using two welding processes from TIG, PAW, MMA, MIG/MAG, FCAW.
- S15: Produce welds in plate and/or structural components using two materials from Carbon Steel, Low Alloy Steel, High Alloy Ferritic/Martensitic Steel, Austenitic Stainless Steel, Nickel & Nickel Alloys, Aluminium & Aluminium alloys, Titanium & Titanium Alloys, Copper & Copper Alloys.
- S16: Produce welds in plate and/or structural components covering three plate welding positions which must include Vertical (either upward or downward progression) and overhead.
- S17: Produce plate welds in 3 main joint configurations (Single or Double Sided Butt, Single or Double Sided T-Butt & Fillet)

Additional Learning

Further Practical Application of knowledge and skills to reach full occupational competence. They will need further support to apply their knowledge and skills, particularly in non-routine situations to develop their:

- Quality of skill
- Pace
- Adaptability
- Independence and focus
- Appropriate workplace behaviours

Behaviours.