

**Occupation : Boatbuilder****Level: 3****Profile**

Boatbuilders build boats such as yachts, workboats and superyachts and/or refit and repair existing boats. Boats may be made of composites, metals or wood so a boatbuilder can work with and understand the capabilities of a variety of materials. They can read and interpret engineering and technical drawings to produce moulds, jigs, plugs and templates to create complex shapes using a variety of measuring equipment, machines and hand tools. They manufacture and assemble components that form the structure of a boat as well as the interior and exterior fit out. They will be expected to work both individually and as part of a team. They understand and comply with organisational and statutory safety including sustainability requirements and can work with minimum supervision. They are responsible for the quality and accuracy of their work and are good communicators and problem solvers. Boatbuilders typically work with associated trades such as Marine Engineers and have a strong understanding of the marine industry. Upon successful completion of their apprenticeship, the individual will be multi-skilled and thus capable of adapting to changing demands as boats become more complex, and new materials and methods are introduced.

**Requirements: Skills & Knowledge**

<b>WORK ASPECTS</b>	<b>SKILL</b> The boatbuilder will:	<b>KNOWLEDGE AND UNDERSTANDING</b> The boatbuilder will know and understand:
<b>Work methods</b>	<ul style="list-style-type: none"> <li>• Prepare the work area</li> <li>• Maintain safe, clean and efficient work methods and environments</li> <li>• Identify and minimise hazards and risks in the workplace</li> <li>• Select, use, maintain and store equipment, tools and materials</li> <li>• Follow and maintain work procedures, method statements and production records</li> <li>• Make the most efficient and effective use of resources, time and materials</li> </ul>	<ul style="list-style-type: none"> <li>• The purpose of a range of equipment, tools and materials</li> <li>• The characteristics and reaction of materials to their environment e.g. temperature, humidity, pressure</li> <li>• Safe and efficient methods of use, maintenance, movement, protection and storage of materials</li> <li>• Work hazards and safe working methods</li> <li>• Broad knowledge of other marine trades to understand their needs</li> <li>• How to produce and interpret engineering drawings and understand boatbuilding terminology</li> </ul>
<b>Identify and respond to customer needs</b>	<ul style="list-style-type: none"> <li>• Prepare for meetings and discussions</li> <li>• Use appropriate listening, questioning, recording and presentation techniques</li> <li>• Use appropriate marine terminology</li> <li>• Use estimating techniques to support discussions</li> </ul>	<ul style="list-style-type: none"> <li>• The international marine industry and the company's place within it</li> <li>• The company's products and services</li> <li>• The role of formal and informal communication</li> <li>• The uses of information technology in the workplace</li> <li>• Principles of costing, pricing and budgeting</li> </ul>
<b>Planning and set up</b>	<ul style="list-style-type: none"> <li>• Review and verify designs and plans</li> <li>• Finalise time and cost of the work to be done</li> <li>• Identify and source equipment, machinery, tools and materials</li> <li>• Make, produce and use jigs and templates as required</li> <li>• Set up tools and machinery</li> </ul>	<ul style="list-style-type: none"> <li>• The company's process for design, planning and set up</li> <li>• How to obtain the required specifications using selected procedures</li> <li>• The conventions underpinning technical documentation the roles and safe and efficient uses of machinery</li> <li>• The uses of templates</li> <li>• Vessel design and construction, complex shapes and the applications of geometry</li> <li>• The bill of materials methodology and reporting of discrepancies</li> <li>• Feedback on drawing and specification errors of modifications required</li> </ul>
<b>Manufacture and assemble/disassemble and repair components</b>	<ul style="list-style-type: none"> <li>• Manufacture or repair components to the required specification</li> <li>• Move components using the appropriate safe methods</li> <li>• Check components for robustness, fit and tolerances</li> <li>• Analyse problems with machinery, equipment, tools and material, proposing/implementing solutions where appropriate</li> <li>• Move, shape and manipulate components to achieve best fit</li> </ul>	<ul style="list-style-type: none"> <li>• The appropriate uses of measuring aids and equipment</li> <li>• The basic principles of contingency planning and of problem solving</li> <li>• The options and constraints during assembly</li> <li>• Working with complex shapes and curves</li> <li>• The scope of materials for shaping and manipulation</li> <li>• The options for holding and clamping components prior to assembly</li> <li>• The properties, uses and limitations of materials for connecting, fixing and assembling components</li> <li>• De-storing a vessel for repair, safeguarding and protecting</li> </ul>

	<ul style="list-style-type: none"> <li>• Select and use appropriate methods for holding materials and components in place during assembly, and for the connecting, fixing and assembly of materials and components</li> <li>• Safeguard materials and components during assembly</li> <li>• Select suitable methods of repair that are effective and maintain original construction</li> <li>• Select suitable methods for fault finding and analysis</li> <li>• Make repairs whilst safeguarding the integrity of components and the surrounding area</li> <li>• Identify, mark, store and organise dismantled parts for reassembly</li> </ul>	<p>all removed items.</p> <ul style="list-style-type: none"> <li>• Methods of disassembling boats for repair</li> <li>• Fault finding techniques</li> <li>• A range of new and traditional techniques for boatbuilding</li> </ul>
<b>Fit out</b>	<ul style="list-style-type: none"> <li>• Determine the order and work methods</li> <li>• Install and fix components using the most appropriate method and material</li> <li>• Ensure that joins are suitably made and treated</li> <li>• Position and fit items</li> <li>• Finalise fit out for deck hardware</li> </ul>	<ul style="list-style-type: none"> <li>• The options for connecting similar and dissimilar materials</li> <li>• Types and uses of deck hardware and the forces applied</li> <li>• The options for fixing components in place</li> <li>• Understanding service and maintenance requirements</li> </ul>
<b>Finish</b>	<ul style="list-style-type: none"> <li>• Check joins are sealed and fit for purpose</li> <li>• Prepare surfaces, treat suitably and ensure are free from defects and protected</li> <li>• Soften or suitably finish edges</li> <li>• Assess quality of work</li> </ul>	<ul style="list-style-type: none"> <li>• The correct materials and sealants are used below the waterline.</li> <li>• The balance between the quality of finish, time and cost</li> <li>• The properties and applications of varnishes, paints and sealants</li> </ul>
<b>Support commissioning and sea trials</b>	<ul style="list-style-type: none"> <li>• Assess fixtures and fittings for quality and stability</li> <li>• Contribute to the commissioning of the boat as required</li> <li>• Assemble required documentation</li> <li>• Brief recipients verbally with necessary documentation</li> </ul>	<ul style="list-style-type: none"> <li>• Manufacturers' specifications and requirements</li> <li>• Guidance for the care and maintenance of materials</li> <li>• The relevant documentation</li> <li>• Boat handling skills</li> <li>• Understand the requirements for basin and sea trials</li> <li>• Principles of practice for working on or near water</li> </ul>

### Behaviours

Boatbuilders will be expected to demonstrate:

- Appropriate safety behaviours individually and towards others
- A commitment to quality and continuous improvement
- Commercial awareness and business acumen
- A focus on the requirements of the customer
- An ability to work effectively individually and as part of a team
- An ability to communicate with all levels of the organisation
- A strong work ethic including motivated, committed, meticulous, reliable, proactive and adaptable behaviours
- A recognition and appreciation of equality and diversity in the workplace

### Entry requirements

Individual employers will identify any relevant entry requirements. Most candidates will typically have GCSEs (or equivalent) at A\*- C including maths, English and possibly a relevant science.

### Duration

Boatbuilders require a significant amount of training and experience to undertake their role and an apprenticeship will typically last 48 months to build competence in the skills, knowledge and behaviors to become a Boatbuilder. This timescale may reduce if an apprentice is part-qualified on entry.

### Link to professional registration and progression

This will be recognised by Institute of Marine Engineering, Science and Technology (IMarEST) at 'Engineering Technician' level on successful completion of the apprenticeship.

**Review date** - The standard will be reviewed after 3 years.