
Overview

This standard covers the skills and knowledge required to be able to use wood or wood-based materials in appropriate ways to manufacture robust structures or products. This involves reviewing the likely performance of wood or wood-based materials and adapting designs and product specifications to ensure the robustness of structures or products. To do this, you will need to understand the properties and characteristics of wood and how it behaves when it is used in different ways.

This standard is most suitable for those involved in designing or manufacturing structures or products which use wood or wood-based material.

Performance criteria

You must be able to:

1. comply with health and safety requirements and procedures at all times
2. interpret designs or product specifications to identify expectations of wood or wood-based materials
3. review effects of design and manufacturing processes on properties, characteristics and likely behaviours of available wood or wood-based materials
4. check structures or products using wood or wood-based materials will meet requirements
5. communicate with others to explore possible solutions where structures or products may not meet requirements
6. consult recognised professional experts to obtain acceptability of revised designs or product specifications
7. keep abreast of the availability of newly available woods and new developments in wood-based products and processes
8. keep abreast of the effect of new designs or manufacturing processes on properties and characteristics of wood or wood-based materials

Knowledge and understanding

You need to know and understand:

1. legal duties for health and safety in the workplace and legislation covering your job role
2. species of timber in commercial use, their appearance, individual characteristics, properties and typical end uses
3. differences between softwood and hardwood and the impact this has on wood products used
4. what is meant by durability, differing levels of durability, how they are categorised and the woods listed within each category
5. ways to improve wood's ability to resist weathering, decay or infestation and mechanical durability or performance
6. how to recognise strength reducing characteristics in wood
7. how to protect wood from uptake of moisture, staining, distortion, deterioration or other degrade
8. types of preservative treatments available, level of protection they provide and how they should be applied
9. effects of wood treatments and exterior coatings on wood structure, properties, durability and appearance
10. effect that moisture content has and the reasons for drying wood
11. recommended moisture content for wood for its intended use
12. key features, advantages and limitations of the different woods and wood-based materials available and where to access information
13. standards relating to timber design and engineering and service classes for timber
14. types of loads on different timber components
15. loads and durations of loads
16. mechanical properties and why they are different at small and large scales
17. sources and suppliers of wood or wood-based materials
18. main trade dimensions for available wood
19. how the quality of wood affects the quality of end products
20. how to recognise wood that has been graded or classified for strength or appearance and what grades and strength classes mean
21. schemes related to environmental issues, sustainability and quality and how to work within them
22. differences between wood quality schemes, grading rules and

standards

23. how quality range differs between hardwoods and softwoods and appearance and strength grades
24. ways to maximise efficient use of timber
25. manufacturing processes and construction of main types of engineered wood
26. effect of wood properties and characteristics on tools and machinery
27. basic rules of storage, handling and protection for wood or wood-based materials and damage or deterioration that will occur if they are not followed
28. regulations and codes of practice that you need to comply with when working with wood
29. who to communicate with and how to present your views and concerns to others

PROWT4

Confirm manufacture of robust structures or products using wood or wood-based materials



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