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# Design & Technology
# AQA A-Level

# Wood enhancement

## Materials required for questions

- Pencil
- Rubber
- Calculator

## Instructions

- Use black ink or ball-point pen
- Try answer all questions
- Use the space provided to answer questions
- Calculators can be used if necessary
- For the multiple choice questions, circle your answer

## Advice

- Marks for each question are in brackets
- Read each question fully
- Try to answer every question
- Don’t spend too much time on one question

# Good luck!

**Q1.** What is the primary purpose of combining natural timber with resins during lamination?

**A** To reduce its weight

**B** To enhance strength and stability

**C** To increase flexibility

**Q2.** How do resins contribute to the stability of laminated timber?

**A** By increasing the timber's density

**B** By repelling moisture completely

**C** By reducing expansion and contraction due to humidity

**Q3.** Which timber product is commonly treated with preservatives for outdoor use?

**A** Decking and fencing

**B** Indoor wooden furniture

**C** Laminated kitchen worktops

**Q4.** What is the main role of coatings like varnish on timber products?

**A** To increase biodegradability

**B** To improve thermal insulation

**C** To protect against moisture and UV damage

**Q5.** Give two reasons why outdoor decking may be pressure treated before use **(2 marks)**

**Q6.** Describe the process of forming a timber product using lamination **(6 marks)**

**Answers**

**Q1**. B
**Q2**. C
**Q3**. A
**Q4**. C

**Q5**.

- Outdoor decking will be consistently exposed to the elements so the pressure treating (tanalising) process will protect the timber from weathering increasing its durability and extending its lifespan.
- Outdoor timber is prone to fungal decay and insect attack. The preservative used in the tanalising process will protect the timber against both fungal decay and insect attack.
- The pressure used in the process forces the preservative into the outer cell layer of the timber providing long lasting protection. This is important as not all surfaces of decking will accessible for subsequent maintenance.

**Q6.**

- Several thin layers of veneer or thin plywood (1.2 mm – 3 mm thickness) can successfully be combined to the required thickness
- Adhesive is placed between each layer
- A two part former is used and pressure applied with clamps or a press while the lamination dries
- Excess adhesive from the moulding process can be removed
- A bag press or vacuum bag could be used with a styrofoam mould or equivalent former
- Simple curved shapes can be achieved
- Cross linked adhesive or ‘cascamite’ can be used to create a stronger glued joint
- Lamination can be trimmed to size once formed
- Laminated products can also be achieved by combining several sheets of kerfed flexible MDF