1.2 Timber and manufactured boards: Test Pack

AQA 8552 · Calculator allowed · about 15 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions.

1 A workshop tests three properties of timber. Test P presses a steel ball into the surface. Test Q measures the force needed to snap a sample by pulling along its length. Test R measures the mass of a known volume. Name the material property measured by each test.

(Total for Question 1 is 3 marks)

2 Two supplied batches are tested using identical indentation tests; a smaller dent indicates greater hardness. Batch H is a hardwood and gives a mean dent depth of 1.8 mm. Batch S is a softwood and gives a mean dent depth of 1.1 mm. A pupil says, "Every hardwood must be harder than every softwood." Identify the harder batch in these tests, use the results to assess the pupil's claim, and state what hardwood and softwood classifications actually describe.

(Total for Question 2 is 3 marks)

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3 Board X is made from thin wood veneers bonded with adjacent layers having grain directions at right angles. Board Y is made from fine wood fibres bonded with resin and pressed into a sheet. Name X and Y. A painted indoor display needs a routed decorative edge without visible veneer layers. Supplied samples give these results: X shows veneer bands on a routed edge; Y gives a uniform routed edge after sanding and edge primer. Both meet the display load requirement and both cost £14 per panel. Choose the more suitable board and justify your choice for the specified edge.

(Total for Question 3 is 4 marks)

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Mark scheme · 1.2 Timber and manufactured boards: Test Pack

Question 1

Hardness for P; accept resistance to indentation. Do not accept toughness alone.	**B1**
Tensile strength for Q; accept tensile breaking strength. Strength alone needs the pulling or tension context.	**B1**
Density for R; accept mass per unit volume.	**B1**

Answer: P: hardness. Q: tensile strength. R: density.

Question 2

Batch S, linked to its shallower 1.1 mm dent compared with 1.8 mm for H.	**B1**
The universal claim is contradicted by this counterexample; accept an equivalent explanation that the supplied softwood batch is harder than the hardwood batch.	**B1**
Classification by source tree: hardwoods are from angiosperms/flowering trees and softwoods from gymnosperms, commonly conifers. Accept botanical group of the source tree. Do not require technical botanical names. Do not accept deciduous versus evergreen as an absolute distinction.	**B1**

Answer: Batch S is harder in these tests because its dent is shallower. These results contradict the claim. Hardwood and softwood classify timber by the botanical group of its source tree, not by a hardness ranking.

Question 3

X: plywood.	**B1**
Y: medium-density fibreboard; accept MDF.	**B1**
Choose Y/MDF for the display.	**B1**
Justification linked to the specified edge: uniform routed edge after sanding and edge primer, whereas X reveals veneer bands. Accept equivalent reasoning tied to the provided sample results. No cost advantage is available.	**B1**

Answer: X is plywood; Y is medium-density fibreboard (MDF). Choose Y/MDF because its tested routed edge is uniform after sanding and edge primer, meeting the required appearance without visible veneer layers.

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