



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

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**DESIGN AND TECHNOLOGY**

**0445/22**

Paper 2 Graphic Products

**May/June 2016**

MARK SCHEME

Maximum Mark: 50

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**Published**

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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## Section A

- A1 (a)** Right base added [1]  
Triangle added [1]  
Triangle in correct orientation [1]  
Right triangle correct to overlay [1]  
Top right glue tab added [1]  
Left bottom glue tab added [1]  
Left side glue tab added [1]  
All fold lines and cut lines correctly shown [1] **[8]**
- A2 (a)** Top right side line draw at 60 degrees (joins two given points) [1]  
Top horizontal line extended [1]  
Top horizontal line extended to the correct length [1]  
Top left line at 60 degrees [1]  
Bottom left line at 60 degrees [1] **[5]**
- (b)** Notes or labels indicate the text is raised or indented [1]  
Sketch shows the text is raised or indented [1] **[2]**
- A3 (a)** Some grain added to the top and sides [1]  
End grain added (annual rings) [1]  
Rendering with side and end grain matching [1] **[3]**
- (b)** Right half of base correct to overlay [1]  
Right half of top correct to overlay [1]  
Line across the top of the recess [1]  
Some hatching [1]  
Sectional view hatched correctly [1] **[5]**
- (c)** The sides are angled so that the vacuum forming [1] can easily  
be removed from the former [1] **[2]**

**[Total: 25]**

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## Section B

**B4 (a) (i) Front view**

Outer edge of left side added [1]

Inner edge of left side added [1]

Top completed [1]

Horizontal line shows top edge of seat in projection [1]

Horizontal line shows bottom edge of seat to candidate's soln [1]

[5]

**(ii) Plan**

Left inner vertical line added [1]

Inner edge of back of seat shown [1]

Line shows front of seat [1]

Two part lines show angle of top on sides [1]

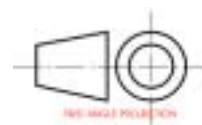
[4]

**(iii) Two concentric circles drawn [1]**

Truncated cone drawn [1]

Truncated cone and circles in correct orientation for first angle projection [1]

[3]

**(b) No. of sides 2 [1]**

Seat and back [1]

Length of seat between 170 and 190 [1]

No. of (1) seats and back [1]

[4]

**(c) Sketches and/or notes show:****Marking out**

Use of a pencil/pen [1] &amp; ruler/template/set square /try square [1]

[2]

**Cutting**

Use of a craft knife [1], safety/steel rule [1] and cutting mat [1]

[3]

**Folding**

Part of foam board removed [1] and understanding of 45 degree v cut [1]

or

Cut through the top layer or paper and foam [1] and back layer of paper used as a hinge [1]

[2]

Or

Part of foam board removed [1] and understanding of Slot and tennon [1]

**Joining**

Method – glue or joint [1] accept Glue Gun

Explanation – PVA or housing joint [1]

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- B5 (a)** The paper band can be drawn in any orientation.  
 Bottom surface drawn in isometric (any size) [1]  
 Bottom surface correct to overlay (100mm x 30mm) [1]  
 Right end surface drawn in isometric (any size) [1]  
 Right end surface correct to overlay (25mm x 30mm) [1]  
 Top surface drawn in isometric (any size) [1]  
 Top surface correct to overlay (100mm x 30mm) [1]  
 Left end surface drawn in isometric (any size) [1]  
 Left end surface correct to overlay (25mm x 30mm) [1]  
 Joining tab (over or under) [1]  
 Drawing shown open not closed box [1] [10]
- (b)** Sketches and or notes show:  
 The method is non-permanent (slots but will not hold) [1]  
 The method will not easily pull apart [1]  
 Sketches and notes show method clearly [1] [3]
- (c)** *Left side of top*  
 Top and bottom lines extended to the left [1]  
 45 degree line added to the left [1]  
 Left side of top correct to overlay (matches right side) [1]  
 Left end drawn at right angles to top [1]  
 Left end correct to overlay [1]  
*Right side (bottom)*  
 Bottom at right angles to top [1]  
 Ends of bottom evident [1]  
 Method of joining shown [1] [8]
- (d)** CAD  
 Understanding that the term refers to design [1]  
 Brief description of how the band could be designed on a computer [1] *For example, Open a programme [1] and draw design on the screen [1].* [2]
- CAM  
 Understanding that the term refers to make [1]  
 Brief description of how the band could be made on a computer [1] *For example, Send the drawing to a plotter cutter [1] and it will cut out the design [1].* [2]
- [Total: 25]**