

# 11 ETIKETT bin

## Description

A square tapered waste bin in an easy wipe clean plastic material.

## Materials

Sides - polyurethane  
Base - EVA plastic

## Process of manufacture

Sides - thermal extrusion  
Base - thermal extrusion

## Method of assembly

Sides to base - stitched

## Questions ?

1 Explain why it is important for a waste bin to have an easy wipe surface.

2 State three properties of polyurethane which make it a suitable material for this product.

3 If this product was made from galvanised steel explain how the sides would be joined to the base.

4 State two alternative materials which could have been used in the manufacture of the bin.

5 Using suitable aesthetic terms describe the look and style of the bin.

## Assignment

It is decided to extend this single product into an office range.

Produce a design solution which includes ideas for a magazine file, pen/pencil holder and paper filing tray.



# 12 KNODD bin lid

## Description

This round bin lid fits onto the traditionally designed KNODD bin.

## Materials

Lid - steel/lacquered  
Handle - steel/galvanised

## Process of manufacture

Lid - pressed  
Handle - stamped and formed

## Method of assembly

Handle to lid - riveted

## Questions ?

1 Explain what is meant by the term 'traditionally designed'.

2 Describe the process which has been used to manufacture the round lid.

3 Describe the process which has been used to join the handle to the round lid.

4 State two other suitable methods for joining the handle to the bin lid.

5 State the name of a plastic which could be used to manufacture the bin lid and describe a suitable manufacturing process for use with this material.

## Assignment

To help reduce costs it is decided to dispense with the separate handle.

Produce a design solution which would allow a 'handle' to be incorporated as part of the pressed bin lid.



## 13 SKEN table lamp

### Description

A spherical shaped table lamp with a shiny, planished finish.

### Materials

Lamp - tin plate  
Bulb holder - thermoplastic

### Process of manufacture

Lamp - spun  
Bulb holder - compression moulding

### Method of assembly

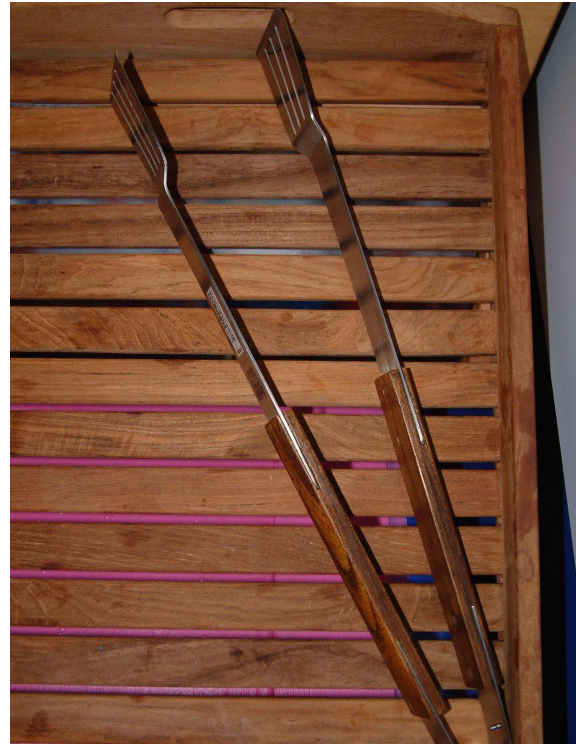
Bulb holder to lamp - threaded tube and nuts.

### Questions ?

- 1 Explain which properties of tin plate make it a suitable choice for this product.
- 2 Describe how the planished finish could have been applied to the lamp.
- 3 State three ergonomic factors which the designer would have considered when designing the lamp.
- 4 State the name of a suitable thermoset which could be used to manufacture the bulb holder and describe the process of compression moulding.
- 5 Explain why a thermoset has been used for this component of the lamp.

### Assignment

It has been decided to produce another table lamp with the same material and finish. The difference being the form should be 'cubic'. Produce a design solution for a table lamp which will meet these criteria.



## 14 BESTO tongs

### Description

A pair of food tongs which could be used for general cooking but were designed for use on a barbecue.

### Materials

Tongs - stainless steel  
Handles - acacia wood

### Process of manufacture

Tongs - Blanked and pressed  
Handles - machined

### Method of assembly

Handles to tongs - riveted

### Questions ?

- 1 Explain in functional and aesthetic terms why a wooden handle has been added to the tongs.
- 2 Describe the process of blanking and explain how it would have been used to make the tongs.
- 3 State a suitable plastic which could be used to replace the wood handles and describe the process which would be used to manufacture them.
- 4 State two ergonomic factors which would have influenced the design of the tongs and explain why they are important.
- 5 Using suitable aesthetic terms describe the look and style of the tongs.

### Assignment

The range of barbecue cooking utensils is to be extended. Produce a design solution for a fork and ladle in the same style as the tongs.





## 15 RINGO stool

### Description

A wooden three-legged stool, height adjustable by means of screw thread.

### Materials

All parts - rubberwood.

### Process of manufacture

All parts - machined/turned

### Method of assembly

All parts - screw and bolt

### Questions ?

1 Explain the process of wood turning on a lathe. Use sequence diagrams to illustrate your answer.

2 State where anthropometric data would have been used in the design of the stool.

3 State two ways in which the designer could have obtained this data.

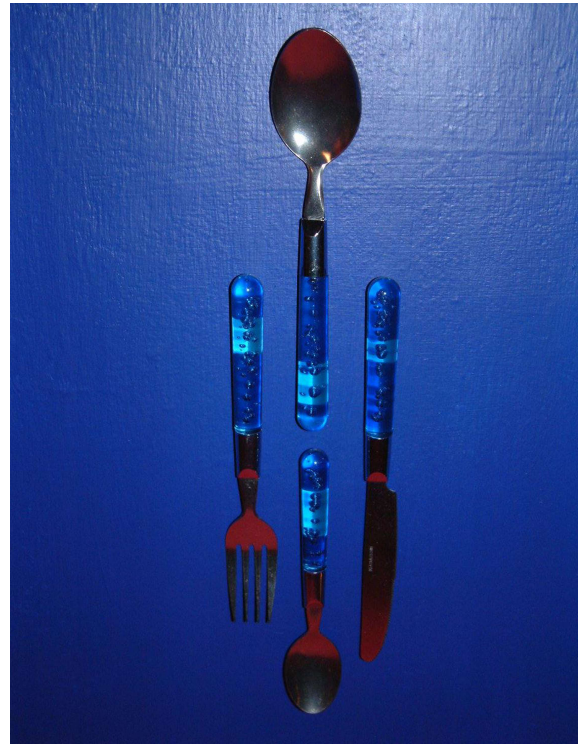
4 If the seat had been made from solid aluminium name and describe a process which would have allowed it to be manufactured.

5 Describe two methods of fixing this aluminium seat to the threaded adjuster.

6 Explain in aesthetic terms the effect that the all black finish has on the 'look' of the stool.

### Assignment

It is decided to dispense with the threaded height adjustment screw and provide a foot bar. Produce a design solution which has the seat at a fixed height and has a suitable foot bar.



## 16 BUBBLOR cutlery

### Description

A set of dining cutlery in stainless steel with a range of colourful plastic handles. Air bubbles have been incorporated into the handle design.

### Materials

implement - stainless steel

Handle - acrylic

### Process of manufacture

Implement - blanked / pressed

Handle - injection moulded

### Method of assembly

Handle implement - glued

### Questions ?

1 Safety and hygiene are important factors in the design of cutlery. State two safety aspects and two hygiene aspects which would have been considered and explain why they are important for this product.

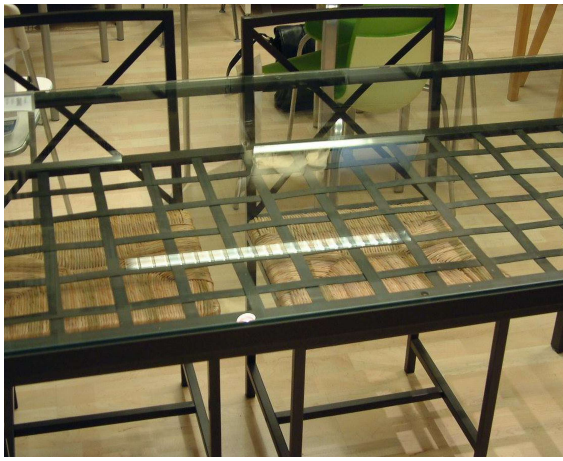
2 State two properties of acrylic which make it a suitable choice for the manufacture of the cutlery handles.

3 Describe the process of injection moulding. Sketches should be used in your answer.

4 Explain a possible method of producing the bubbles in the acrylic handles.

### Assignment

It is decided to extend the range by producing a plate and mug in bubble acrylic. Produce a design solution for a matching plate



# GRANAS 17 t a b l e

## Description

This glass topped table has a set of matching dining chairs.

## Materials

Frame - steel  
Top - glass

## Process of manufacture

Frame - rolled/welded  
Top - floated

## Method of assembly

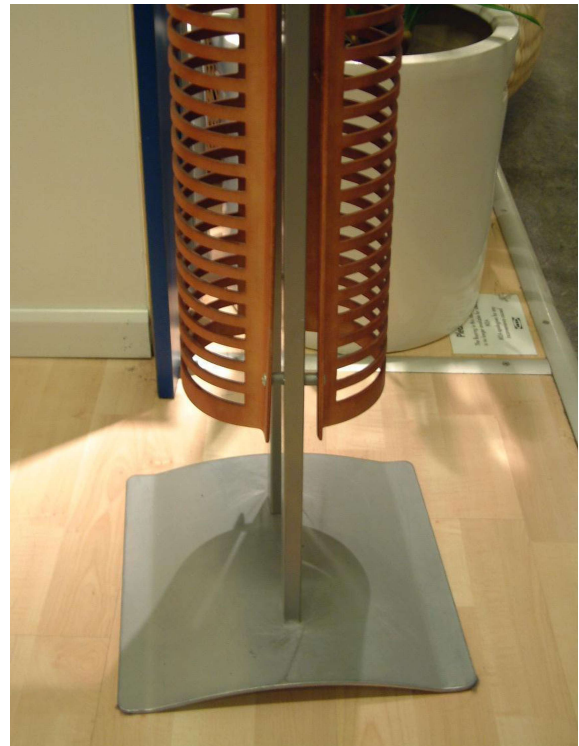
Frame parts - bolted  
Top to frame - placed

## Questions ?

- 1 State a suitable finish for the steel frame and describe the process of applying the finish.
- 2 State three properties of steel which make it a suitable material for this product.
- 3 For this table, select three factors which the designer would have considered and explain their importance.
- 4 State two aspects of the design which could be evaluated and describe the strategies which might be used to evaluate them.
- 5 Describe three ways in which the aesthetics of the table could have been changed by the designer.
- 6 With reference to the structure of the table explain why glass was used for the top.

## Assignment

It is decided to replace the glass with a wooden top.  
Produce a design solution for the top of the table manufactured in wood. State a suitable wood and show a method for fixing the top to the frame.



# HACKAS cd tower 18

## Description

A tall floor-standing cd rack which holds 120 compact disc boxes.

## Materials

Rack - aspen veneer  
Uprights - steel / lacquered  
Base - steel / lacquered

## Process of manufacture

Rack - laminated / formed  
Uprights - extruded  
Base - pressed

## Method of assembly

Uprights to rack - bolted  
Uprights to base - bolted

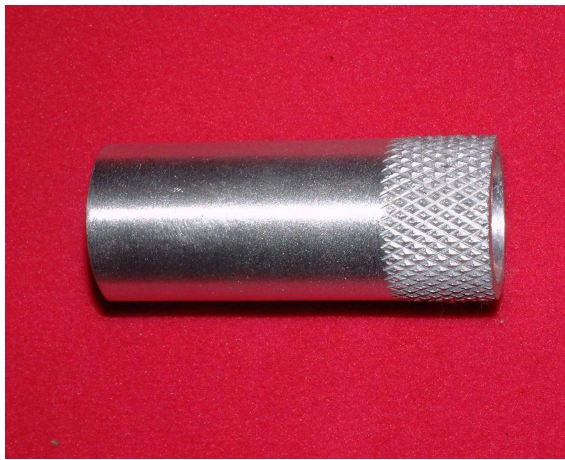
## Questions ?

- 1 Describe the process of laminating wood and explain why it has been used for this product.
- 2 Describe the process of extrusion. Sketches should be used in your answer.
- 3 The base and uprights could have been made from aluminium. State one advantage and one disadvantage of using aluminium for this product.

## Assignment

To help reduce cost and weight it is decided to have only one upright.  
Produce a design solution which allows the rack to stand with only one upright fixed to the base.





## INDEX ANG 19 f i n i a l

### Description

A small aluminium finial which fits on to the ends of a curtain rod.

### Materials

Finial - aluminium bar

### Process of manufacture

Finial - turned and knurled

### Method of assembly

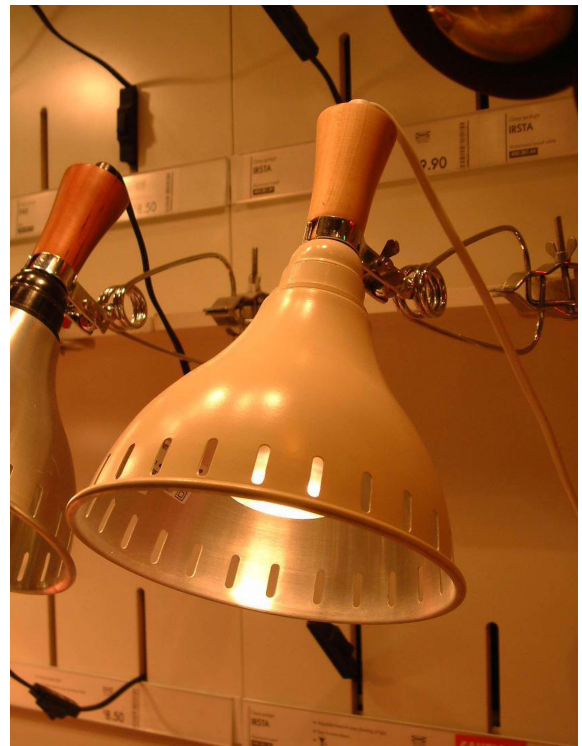
None

### Questions ?

- 1 Describe the processes used to manufacture the finial. Sketches should be used in your answer.
- 2 State two aspects of the design where the designer would have considered ergonomics..
- 3 Explain the importance of these aspects in the design of the finial.
- 4 Describe one functional and one aesthetic reason for the knurling on the finial.
- 5 Aluminium can be recycled. State two reasons why recycling should be considered in the design of products.
- 6 Explain why recycling might not be a suitable option for some products.
- 7 Describe two suitable methods of fixing the finial to a curtain rail.
- 8 The aluminium for the finial can be bought in by the manufacturer as *stock material*. State two advantages to the manufacturer of using stock material.

### Assignment

The finial has to be redesigned to incorporate '*tapers and holes*'. The same section of material has to be used. Produce a design solution which



## 20 I S T R A I a m p

### Description

This lamp has a clamp allowing it to be fixed to various surfaces. It also has a wooden handle which allows it to be adjusted to different angles.

### Materials

Shade - aluminium  
Handle - hardwood  
Clamp arm - steel / chromed

### Process of manufacture

Shade - spun  
Handle - turned  
Clamp arm - formed

### Method of assembly

Handle to shade - screw fit  
clamp arm to handle - clamped

### Questions ?

- 1 Using suitable aesthetic terms describe the look and style of the lamp.
- 2 State the market niche the lamp was designed for and justify your answer.
- 3 State the name of a suitable hardwood for the lamp handle.
- 4 State two properties of aluminium which make it a suitable material for the manufacture of the shade.

### Assignment

It is decided to incorporate the shade of the IRSTA lamp into the design for a table lamp. Produce a design solution for a table lamp using the IRSTA shade.