



Design

Design Specification

Higher
Design & Manufacture

What is a Design Specification?

- *A design specification is a list of 'rules' that a product must fulfil in order to be successful.*
- *For example:*
 - *For a kettle to be successful it must:*
 - *Boil water*
 - *Have a suitable sized handle*
 - *Must not be too heavy when it is full*
 - *Must be made from a material that does not conduct heat to the exterior*
 - *Be easy to fill with water*
 - *Be easy to pour water*
 - *Be easy to clean and maintain*
 - *etc....*

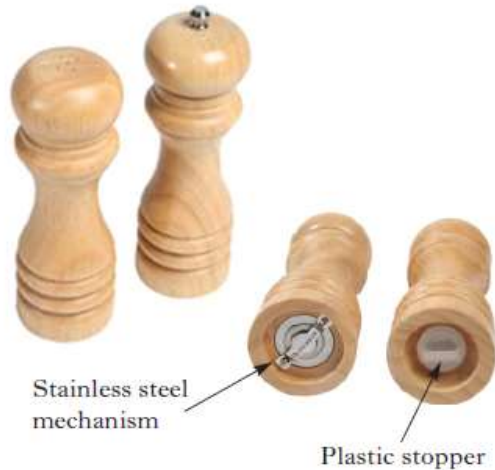
Why Create a Specification?

- *When designing a product it is important to make a list of things the product must do.*
- *This list will act as a rulebook or checklist as designers work through the design process.*
- *Throughout the design process, designers must make several decisions and they must always be justified.*
- *There must always be a logical reason for making a design decision and they must adhere to the points in the specification.*

Writing a Specification

- *Look at each design area individually and ask yourself the question 'in order for my design to be a success it must...' for example:*
 - *What must my design do in order to Function properly?*
 - *What requirements do I have of the Materials?*
 - *What requirements do I have of the Manufacturing Process?*
 - *What would my design have to look like in order to be Aesthetically pleasing for the customer?*
 - *What must my product do in order for it to be Safe to use?*
 - *How much must my product Cost in order for people to be able to afford it?*

Example Question 1



Condiment Set A

Price: £24.95

Material: Beech, also available in walnut.

Description: The manual twist mechanism for the pepper mill is crafted from solid, cutlery grade stainless steel to withstand the rigors of commercial use.

The pepper mill is constructed with an internal spring tension system which allows it to be adjusted to mill very fine to coarse pepper.

Outline a product specification for the design of one of the Condiment Sets. (6marks)

Condiment Set B

Price: £55.00

Material: Stainless steel with brushed finish.

Description: Designed for cooks who love gadgets. With a twist of the wrist, the electric mills lock into 6 pepper and 3 salt grind adjustments.

The pepper mill features an original Peugeot case-hardened steel milling mechanism, while the salt mill contains a stainless steel mechanism that will not corrode from the salt. The acrylic section allows easy viewing of contents. A touch of a button activates the mill and its illuminating lamplight. Each use six AAA batteries.

Question 1 Answers

The Condiment Sets must:

- be stable
- be light enough for intended user to lift and be able to use easily
- be durable (related to mechanism/life cycle)
- be manufactured from materials that are suitable and appropriate for the condiment set's function
- be safe (complying to appropriate hygiene standards)
- be comfortable to use for hand grip sizes for the 5%ile female to use (both sets)
- be comfortable for the 5%ile female to grip and press the push button control (Set B only)
- be costed to suit the market niche/consumer
- ensure aesthetics suit the market niche or consumer aspirations
- production costs significantly less than selling price
- provide a variety of grinding settings from fine to coarse
- be easy to change batteries (Set B only)
- be easy to refill
- to grind salt/pepper
- any other suitable statement eg maintenance issues

Six statements @ 1 mark each

NB no marks awarded for technical related specifications

Example Question 2

The products shown below have been designed and manufactured for use in pre-school, early years and primary schools.



Mobile Cloakroom Trolley

Laminated MDF Panels

Scratch resistant mild steel tubular frame

12 mild steel double hooks

Large base storage area

Self-assembly required

Retail price £235



Cubby Storage Unit

Strengthened tubular PVC plastic frame

4 HDPE plastic bins for shoe and bag storage

Wall mounted

Retail price £70

Outline a product specification for the design of **one** of the coat racks. **(6marks)**

Question 2 Answers

- **The coat rack must:**
 - provide appropriate storage
 - be accessible to the target users
 - be capable of being securely fixed to the wall [CSU]
 - be easily moved [MCT] – do not accept portable
 - be manufactured from **durable** materials that are suitable and appropriate for its function
 - lifespan issues (eg methods of construction)
 - be priced to suit the intended target market
 - ensure aesthetics suit the market niche or consumer aspirations
 - production costs significantly less than selling price
 - be produced in a variety of colours to give target market a wider choice
 - be easy to clean/maintain
 - conform to appropriate safety regulations
 - any other suitable statement.