2 4 7 Forming techniques

Preparation

- Read pages 60 – 61
- The product you machined during the Modelling project

Resources

- The product you machined during the Modelling project
- Workshop demonstration: Injection moulding
- Workshop access: Vacuum forming
- Commercial D&T video **Product Processes** Section 3 Vacuum forming; Injection moulding

Lesson plan

- Notes and diagrams (see assignment below)
- Video
- Vacuum form over the product you machined during the modelling project

! You should NOT do this until after you have applied Vinyl lettering in 2 4 8 Finishing processes

- Injection moulding workshop demonstration

Wider study

- Table 2 16 Advantages, *disadvantages* and applications of thermoforming techniques
- Technology Student http://www.technologystudent.com/equip1/equipex1.htm
- Designandtech http://www.designandtech.com/resistantmaterials
  (Scroll down to the relevant links)

Assignment

- Commercial D&T programme Focus Resistant Materials/Plastics
  - Blow moulding
  - Injection moulding
  - Vacuum forming
- Use Edit – Copy animation to clipboard to extract images and compile a set of notes and diagrams on each process
- Commercial D&T programme Manufacturing Process Identifier
  Analyse a range of manufactured Plastics components to identify the industrial process used

Coursework link (Product Investigation D QA)

In Table 2 15 note the use of the terms

- Preparation
- Processing
- Assembly
- Finishing
- (After sales)

Homework

- As above

Revision questions

1 Explain the process of blow moulding

Specification and Learning Objectives

Characteristics, preparation, processes, application and advantages/disadvantages of the following methods for the batch and mass production of graphic products and components:

- blow moulding
- injection moulding
- vacuum forming.

Solutions to revision questions

Next page

1 Explain the process of blow moulding

- A plastic tube (parison), softened by heating, is extruded from a nozzle above a split mould until it extends to the length of the mould.
- The split mould is closed and the hot tube is nipped top and bottom.
- Compressed air is blown into one end of the tube forcing the sides of the tube to be pressed against the side of the mould.
- The plastic solidifies and when the two halves of the mould are separated the plastic retains the shape of the cavity inside the mould.
- Example sketches