

2 3 1 e Composites

Preparation

- Read pages 39 - 41

Resources

- MDF off cuts

Carbon fibre	Glass reinforced plastics (GRP)	Medium Density Fibreboard (MDF)
Suggest teacher finds an image of a carbon fibre tennis racquet	Suggest teacher finds an image of a GRP boat hull	Suggest teacher finds an image of MDF flat pack furniture

Wider study

- Table 2.7 Composite materials (page 41)
- Carbon fibre manufacturer <http://www.qualitycomposites.co.za>
- GRP Hand lay process
<http://www.norco.co.uk/portal.aspx?mlmenuid=2068&TargetPortal=51&ApplicationID=33>
- GRP applications <http://www.plancraftindustrial.co.uk/serv01.htm>
- A few notes about GRP <http://www.btinternet.com/~hognosesam/gcse/page50.html>
- A few notes about MDF (made by women as well)
<http://www.technologystudent.com/designpro/mboard1.htm>
<http://www.designandtech.com/mypages/woods/manmadeboards.htm>

Assignment

- Look around the world about you for examples of products made from these materials, eg sports shops
- In particular, flat pack furniture

Homework

- As above

Revision questions

1. Describe the properties of GRP and MDF

Specification and Learning Objectives

Aesthetic, functional and mechanical properties, structural composition, application and advantages/disadvantages of the following composite used by the graphics industry:

- carbon fibre
- glass reinforced plastics (GRP)
- medium density fibreboard (MDF)

Solutions to revision questions

Next page

Describe the properties of GRP and MDF

GRP

- Loose strand matt/ fibres of glass
- A woven string/matt
- Held together with a polyester resin (0 marks for resin or plastic)
- Has (high tensile) strength / tough / rigid
- Has high compressive strength
- A light / lightweight, hard-wearing surface
- Excellent resistance to corrosion

MDF

- Fibres are made from (waste) wood/ particles of wood
- Bonded together with a synthetic resin adhesive
- Heat or pressure involved in the process
- Produces a uniform mixture/fine textured surface
- A very stable material
- Hard wearing material
- A good electrical insulator
- Takes paint (and other finishes) well