

Hot Wire Cutting A Polystyrene Sign

Objectives

Students develop their D&T capability by learning how to use a hot wire cutter and in the process, designing and making a polystyrene sign.

By the end of the assignment, students will know that:

- shapes can be formed by wastage
- expanded polystyrene may be cut with a hot wire cutter
- expanded polystyrene gives off poisonous fumes when over heated and so:
 - risk assessments of the hazards should be carried out
 - safe working practices should be adopted

Success criteria

Each student:

- has designed and made a polystyrene sign that satisfies the given design brief and specification
- knows that expanded polystyrene can be cut with a hot wire cutter
- has used a hot wire cutter safely and has strived to achieve quality in marking out and cutting expanded polystyrene
- has assessed the risks associated with working with a hot wire cutter and has worked safely throughout the assignment
- shows evidence of having evaluated his/her work.

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Situation

1. People walking around a large exhibition hall without signs would find it hard to find their way around exhibits.
2. Parents walking around school during open day may find it difficult to find subject departments.

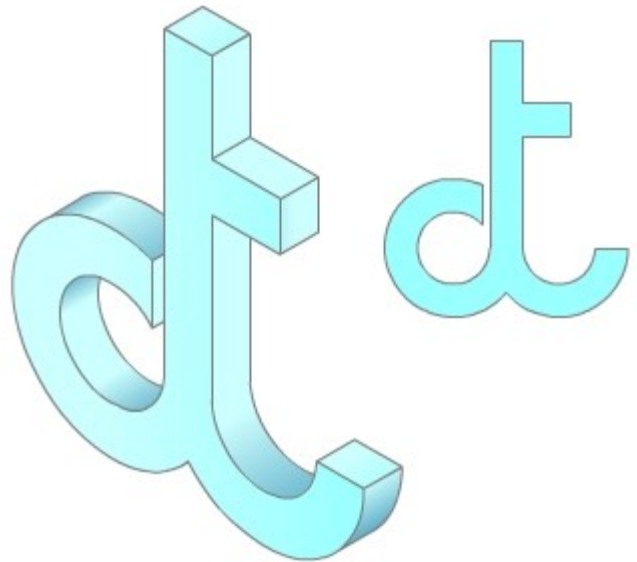
Design brief

1. Design a logo for a school subject.
2. Use your design to create a sign that could be used on school open days and parents' evenings.

Specification

The sign must be:

- made using expanded polystyrene
- large enough to see clearly



What you must do

1. Analyse the design brief and specification and pick out the essential requirements.
2. Use notes and sketches to illustrate designs for a logo for a school subject.
3. Develop your best idea into a final design.
4. Transfer your design onto a sheet of expanded polystyrene
5. Prepare a Risk Assessment of the hazards involved with using a hot wire cutter
6. Use a hot wire cutter to cut your design out of a sheet of expanded polystyrene
7. Evaluate the final product, e.g.:
 1. how good the design looks
 2. how well the design works
 3. discover what others think about your product.
8. Work safely and complete the assignment on time.

Safety Notice

1. Only expanded polystyrene may be cut with a hot wire cutter. Other foams are not allowed to be cut with this equipment.
2. Styrene fumes are given off when polystyrene is over heated during a hot wire cutting operation. The room should be well ventilated and may require fume extraction facilities.

CLEAPSS

Please refer to **CLEAPSS**, Model Risk Assessments for Design and Technology in Secondary Schools and Colleges, **Part 1.057COSHH Regs.**