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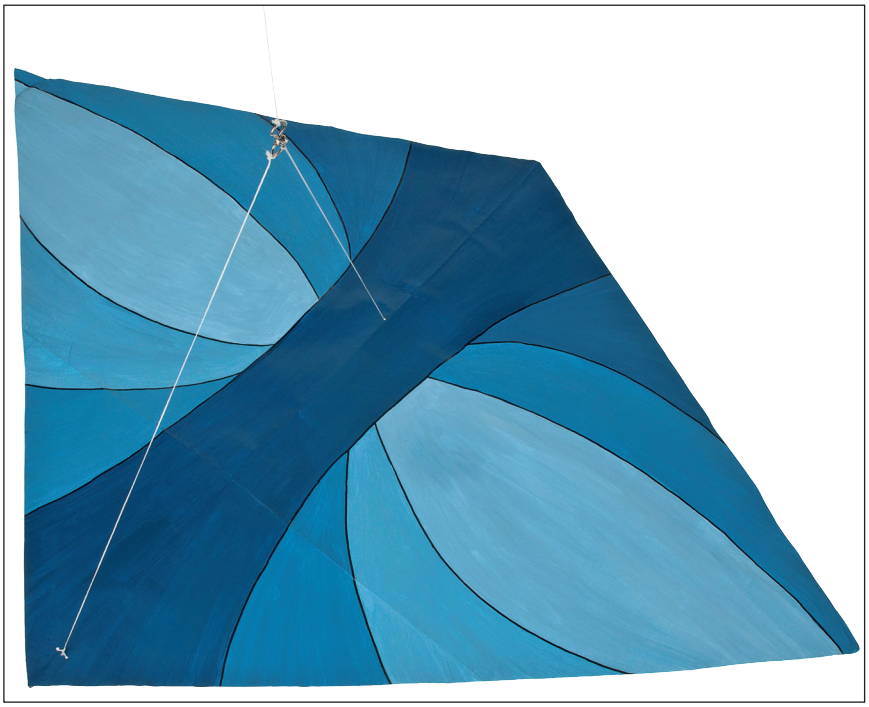
Diamond kite



Contents

4 x dowels	4mm dia x 500mm
1 x TYVEK sheets, white 55g/m2	700 x 1000mm
2 x Brass tube	5m dia/0,5 x 50mm
1 Ring	

Necessary tools and equipment

Pencil, ruler

Scissors

All purpose glue, or contact glue, transparent

Please Note

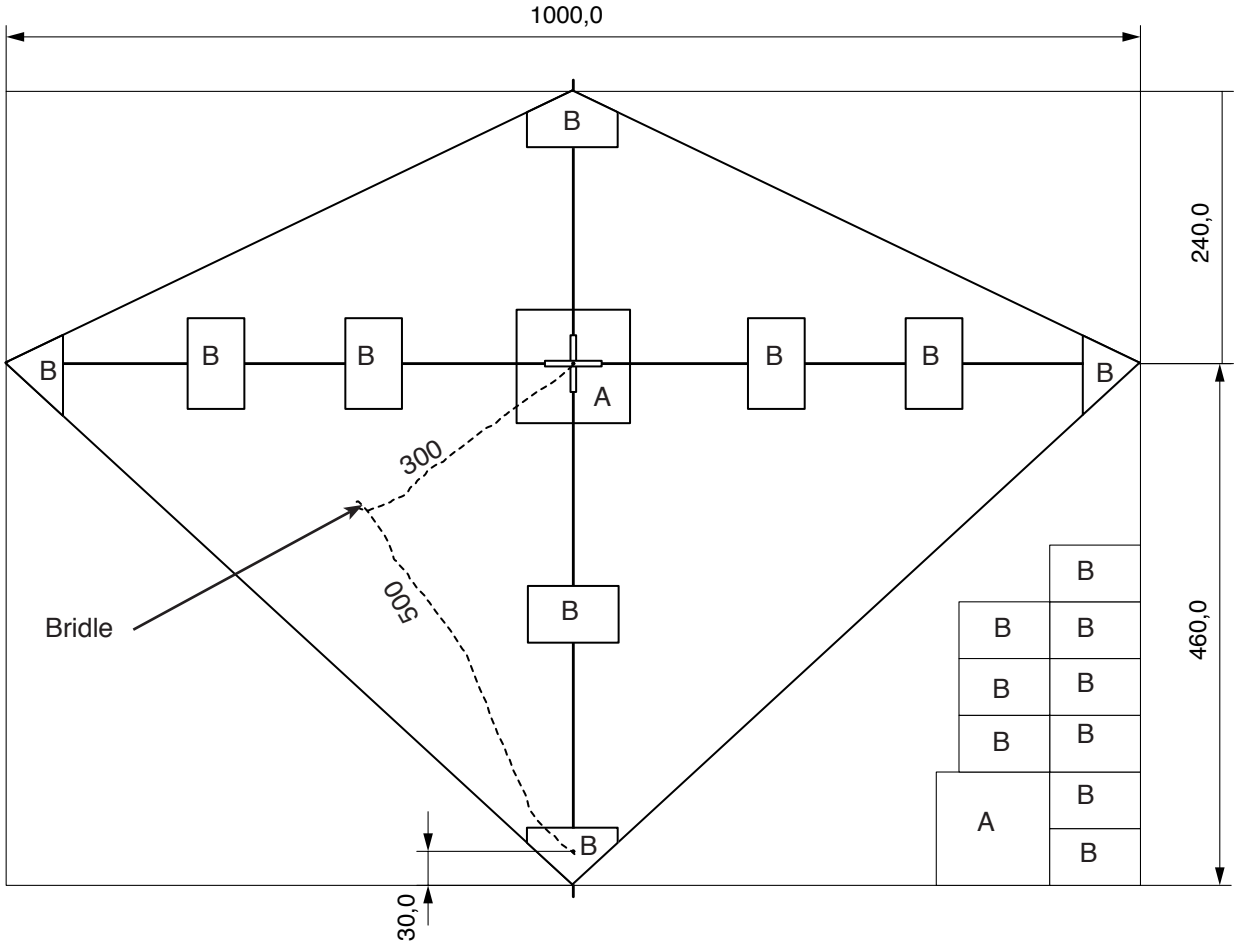
The OPITEC range of projects is not intended as play toys for young children.They are teaching aids for young people learning the skills of Craft, Design and Technology.These projects should only be undertaken and tested with the guidance of a fully qualified adult.
The finished projects are not suitable to give to children under 3 years old. Some parts can be swallowed. Danger of suffocation!

Construction

General

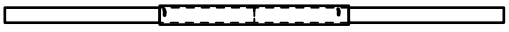
This diamond shape kite flies in a majestic fashion even in light wind conditions.
The design is so good that small in differences in the construction to do not effect its flying characteristics. In light regular winds the kite can be flown without a tail. Because of its forgiving nature it is an kite design for children to make.
Wingspan 100cm, height 70 cm
Tyvek is a polythene fibre type material and is brilliant for kite making, It is tear proof, foldable, waterproof and re-cyclable
The white surface is ideal for decorating and will accept allsorts of paints etc. We can recommend using, wax crayons, felt tips, silkpainting colours and acrylics. The only provision is that the kite surface is not overloaded with paint adding too much weight.

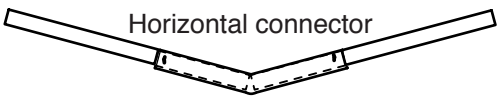
1. Cutting out the shape
   Measure out the shape and size of the kite with a pencil and then cut it out using scissors or a craft knife (See drawing)



2. Painting
   The design can be how you wish. We have given and idea on the front cover . Before painting the design on the kite test the paint on a scrap of the material .
   Draw on the design and colour it in

3. The brass connectors
   Making the kite you will need 2 brass connectors
   One connector joins the two longer dowels
   To achieve the angle joint for the two longer dowels take a brass connector and measure the middle. Place the connector tube on piece of rubber (pencil eraser) and press down hard on it with a screw driver – this will give and angle of 20 – 30 degrees . You can also bend it carefully by placing it in a vice



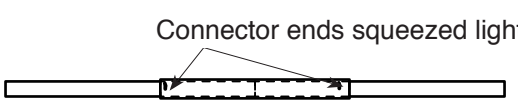


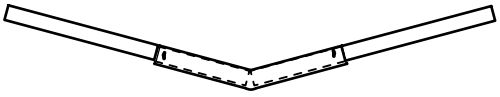
Construction

4 Dowels

For the vertical member dowels, cut one to 47cm long and the other to 25mm. Join both together with a brass connector . This may mean carefully sanding the ends of the dowel to sit in the tube. Insert 25mm of each dowel in the brass connector and give the brass connector a light crimp with a pair of pliers. This will stop it from becoming loose.

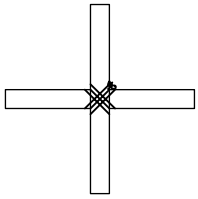
Do the same with the cross member dowels – pinch them in place with pliers





5. Making up the kite

- Lay the decorated side down on a table top. Lay on the back the vertical and horizontal cross members and mark out the point where they cross over.
- Now glue a patch of Tyvek (ca 10 x 10cm /A) over this point a reinforcement See diagram 2
- Mark the crossover point on both of the dowels.
- Once they are ready, bind the two together at 90 degrees and add a spot of glue as security (See diagram)
- To fasten the frame to the kite, the frame should protrude a few millimetres over the shape of the kite to protect it during the start and landing.



- To fix the frame in place cut out the remaining Tyvek shapes "B " and glue them in place as shown in the diagram
- To achieve the V form of the kite, firstly glue one side of the shape in place and then
- the other after this has dried . Be careful to see that the material shape is pulled tight.

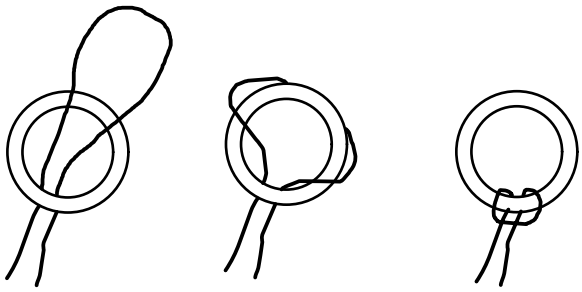
6. Making the bridle and ring

The bridle is fixed at the dowel crossover just under the middle point (3cm),make a hole (See drawing 2)

Cut off 1.5 metres from the thread and tie it through the centre hole around the dowels and make a knot . Tie the ring on as shown 300mm from the centre point (see diagram) and then tie the remainder of the bridle (50cm long) to the bottom of the vertical dowel.

For this you will need a light wind. Hold the kite into the wind by the bridle and adjust the ring by sliding it until you feel the kite flying smoothly.

Tying the ring on the bridle



Arbeitsschritte

7. Flying your kite

Fix the kite line ring making sure that it cannot slide (Close the kite line ring with pliers)

You now need a helper to launch the kite by holding the kite at the bottom (Never hold the kite across its width with both hands as it can lead to the dowels breaking)

Roll out a length of line and take a few steps back, the kite should start to climb. The diamond design should fly really well in light wind conditions. Do not attempt to fly this kite in windy conditions.

8. Kite tail

A well built diamond kite will fly well without a tail. If however it flies in a " skitty way" and loops etc.the addition of a tail will help to calm it down. You cam make a tail from coloured polythene or Tyvek. The size should be about 3cm wide 2 -3 metres long and should be fixed the bottom of the vertical dowel

9. Safety precautions

- Do not fly the kite in thundery conditions
- Fly in the correct wind conditions (4-7m / second -2,5-4,5 on Beaufort scale)
- Check the kite is built correctly
- Do not fly near electricity masts and power lines
- Do not fly near airports or landing strips.
- Use standard kite line (Do attempt to make it longer)
- Leave the flying area clean after use