

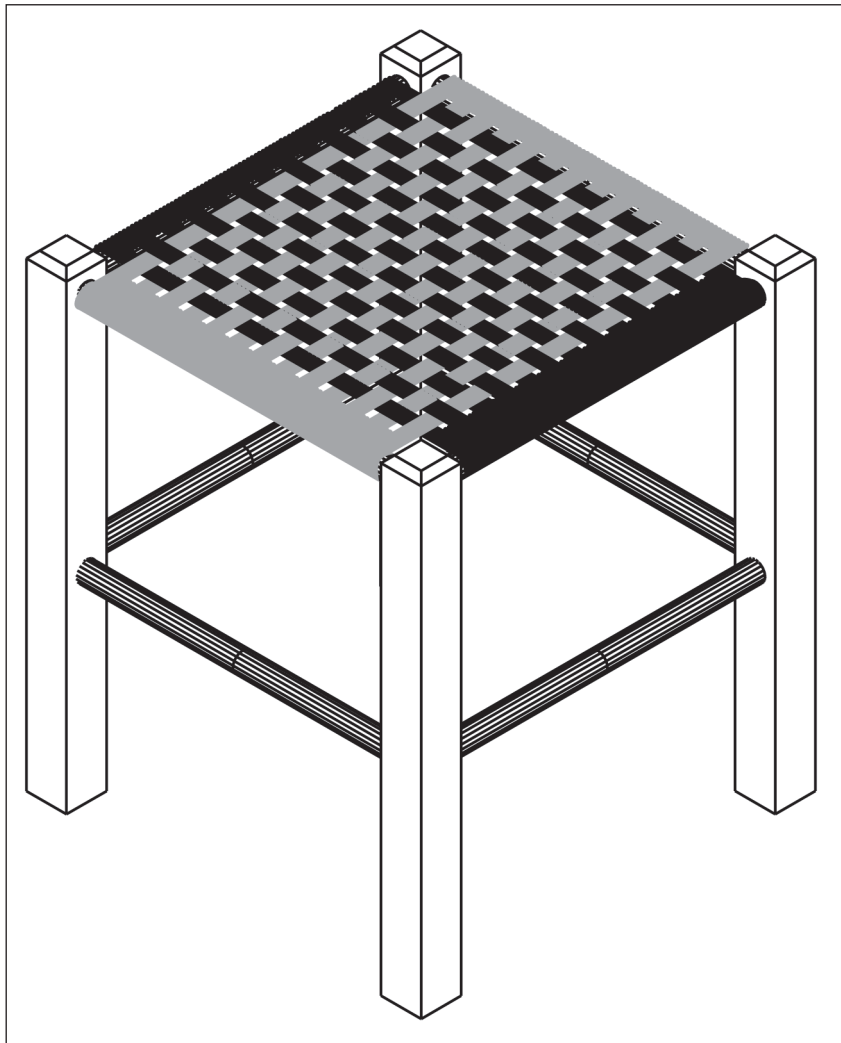
OPITEC

Hobbyfix

1 0 8 . 6 6 1

Stool,

with woven seat



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!

1. Information:

Article: Stool design with woven seat in construction pack format

Use: In Design Technology, Key stage 3/4

2. Material information:

Material: Pine (Coniferous) softwood
Wood should be relatively dry before working

Working: Wood can be shaped, planed, sawn, drilled and sanded. Measure out according to the plan or use the patterns.

Joining: Simple wood joints using dowels-PVA glue

Finish: Wax (Liquid or solid)
Wood varnish (Base and top coat)
Staining (Water soluble-colour) then varnish
Linseed

3. Tools:

Saws: Use an **adjustable mitre saw** or a Tenon saw for straight cuts in wood or dowels



Note: hold work securely

Sanding: Use glasspaper and block for flat surfaces and sheet glasspaper for curves.

Drilling: Use a hand drill or Pillar drill

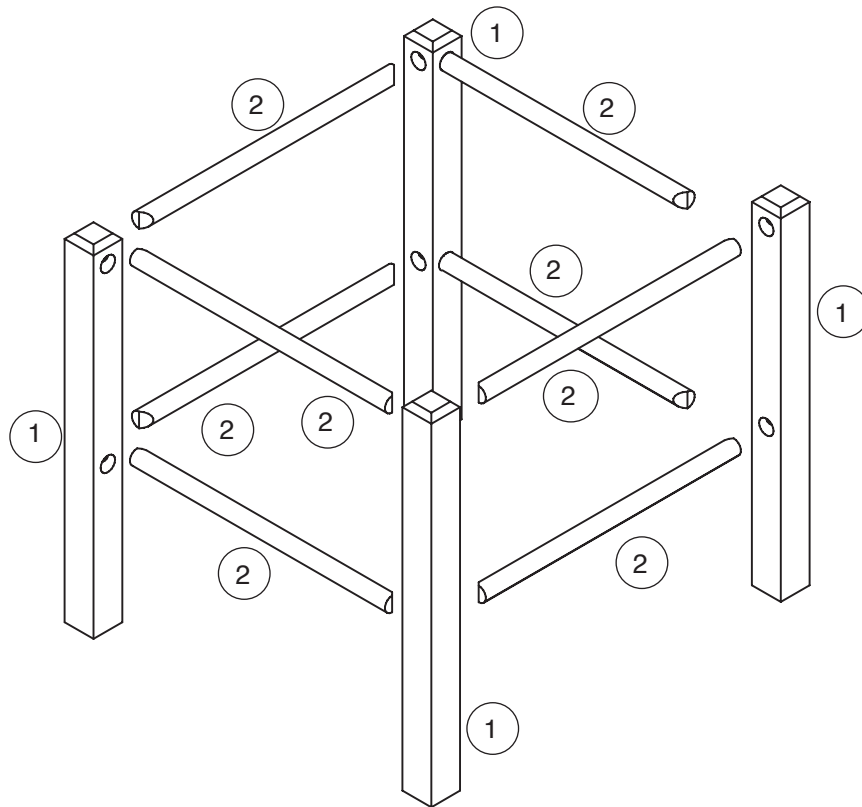
Note: Remember to keep the safety rules, tie all long hair back, remove rings and jewellery, no loose clothing. Wear an apron and use safety glasses. Hold all work to be drilled securely in a machine vice.

4. Parts List

Part	Material	Quantity	Size	Diagram
Leg	Pine	4	30 x 30 x 350 mm	
Rails	Pine dowel	8	15 dia x 275 mm	

'Please be aware that you use your finished stool at your own risk'

5. Exploded diagram



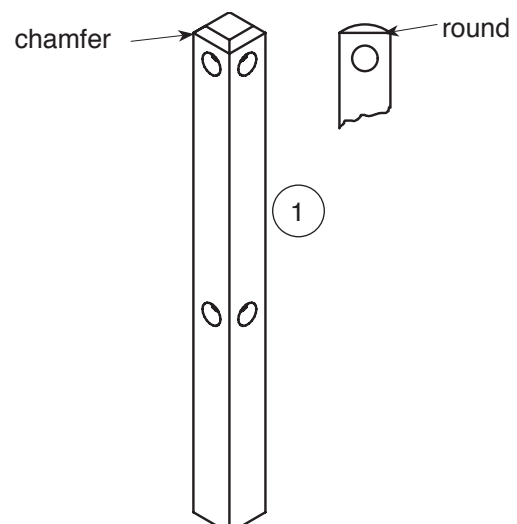
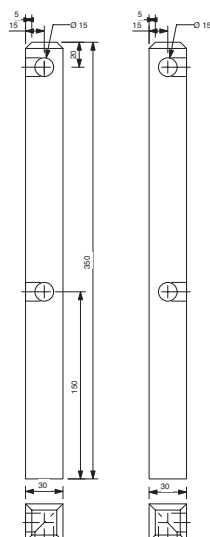
6. Planning overview

- 6.1 Planning and making the stool legs
- 6.2 Making the cross rails and assembling the stool
- 6.3 Weaving the seat

6.1 Planning and making the stool legs

6.1.1 Take care when marking out the position of the holes in the legs, ensure that they are all marked out together at the same time.

Note: Use a Try square to check the accuracy of your measurement.
 The holes should be drilled exactly 15mm deep so that the distance between the legs will be correct.
 Either chamfer or round the top of the legs

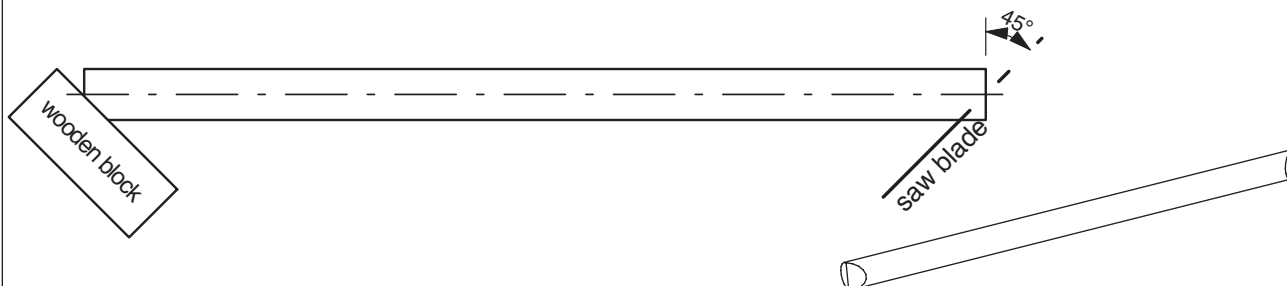


6.2 Assembling the parts

6.2.1 Saw the dowels (2) to 265mm long

Mark out and saw a 45 degree mitre the on each end of the dowel as shown, be careful that they do not slip or turn during this stage.

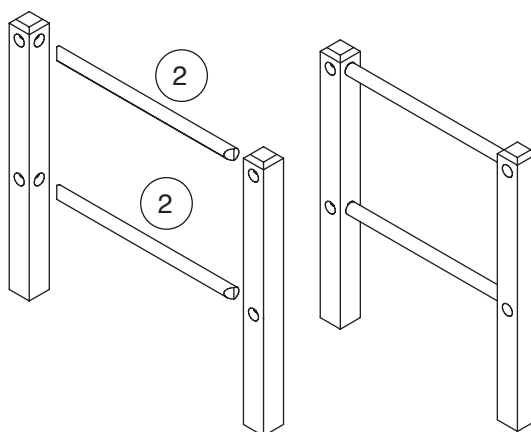
Note: The dowels must all be cut accurately to the same length so that the distance between the stool legs is accurate.



6.2.2 Insert the dowels (2) into the holes in the stool legs and check that they fit correctly

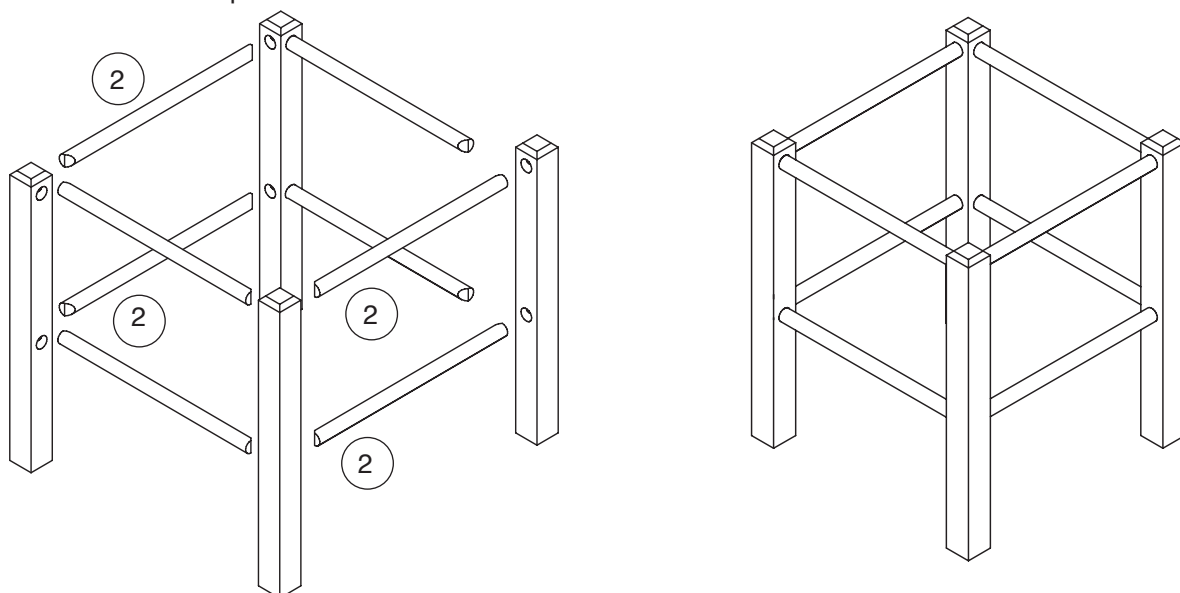
6.2.3 Insert the dowels into the holes in the legs (1) one beech, one dowel (2) as shown in the diagram and glue them in position.

Note: Check the assembled parts for squareness



6.2.4 Once you are satisfied, assemble the rest of the frame.

Note: Check the completed stool frame again, to ensure that it is steady and does not rock. Use a ruler to measure the diagonals, check to see if they are of equal length. Clean up any excess glue with a damp cloth. Leave the stool to dry before weaving the top



6.3 Weaving the seat of the stool

General:

These instructions show you how to weave the top in a chessboard pattern

To weave the seat you need approx 30 metres of cord 0.35mm diameter for each direction. The cord is NOT included in this pack and must be ordered separately

We recommend using two contrasting colours so that the pattern is easy to see. Of course you can use a single colour if you wish.

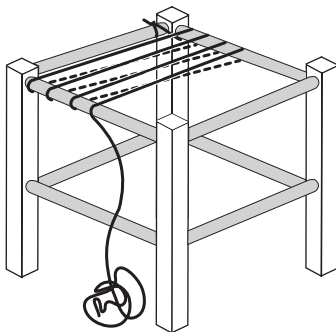
Note: The weaving consists of 13 stripes each made up of 4 strands which are separated by a gap (2 turns).
The cord must be applied evenly and pulled tight with each turn.
A cross member made of thin wood (which can be removed) will stop you from winding the cord to tight and will make the application of the next layer easier
To ensure that your work is accurate we suggest marking out 13 equal spaces on the dowel with a pencil

6.3.1 For the first colour cut off approximately 30 metres of cord.

(For ease of use the cord can be applied in two lengths of 15 metres)

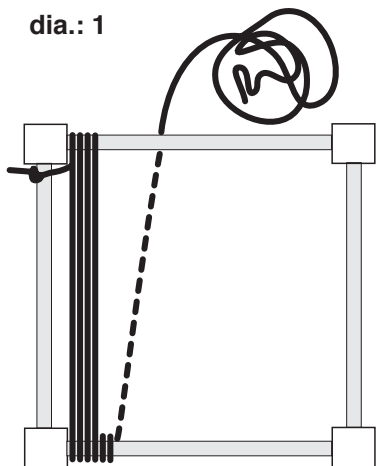
Firstly tie and knot one end of the cord around one of the rails near a back leg (See diagram) Then wind the cord back and forth between the two upper rails as shown in the diagram. Carry out this action 4 times

Note: In this band there are only 3 strands underneath!

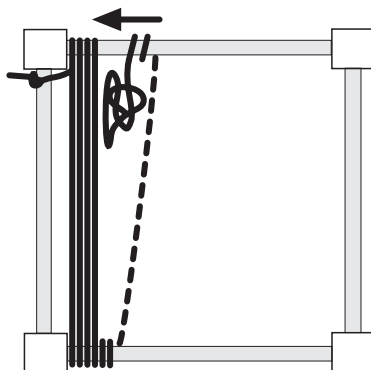


6.3.2 Now wind it twice around the front rail (dia 1) and then around under the rear rail. This time wind it on the rail in the opposite direction. (dia 2) and pull it tight. Then cross the cord underneath the so that it

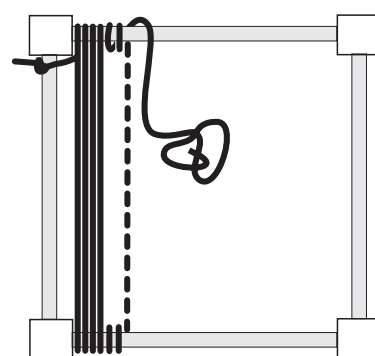
dia.: 1



dia.: 2

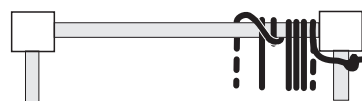


dia.: 3



dia.: 3.1

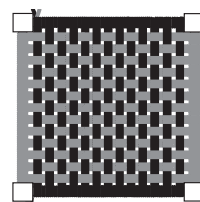
view from underneath



can be wound on again in the original direction

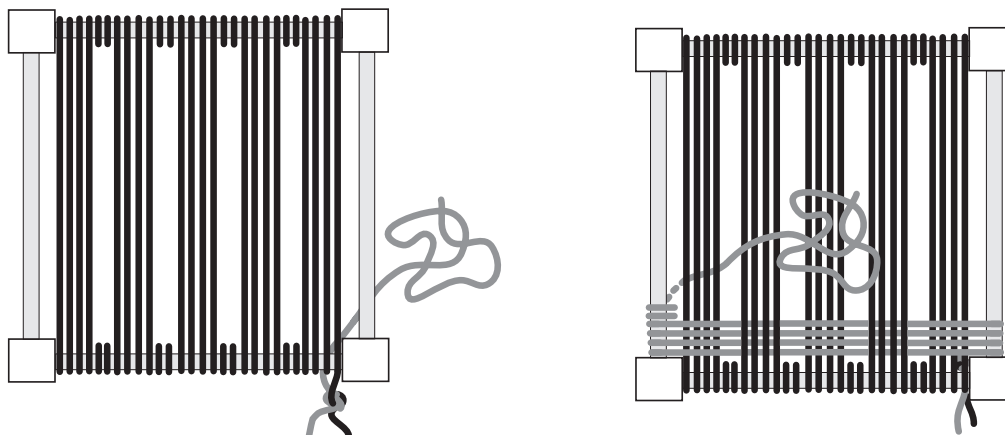
6.3.3 Now wind the cord a further four times around the dowel rails and repeat step

6.3.2



6.3.4 To produce the pattern in the opposite direction the 30 metres of cord can be divided into 3 lengths, this will make it easier to handle

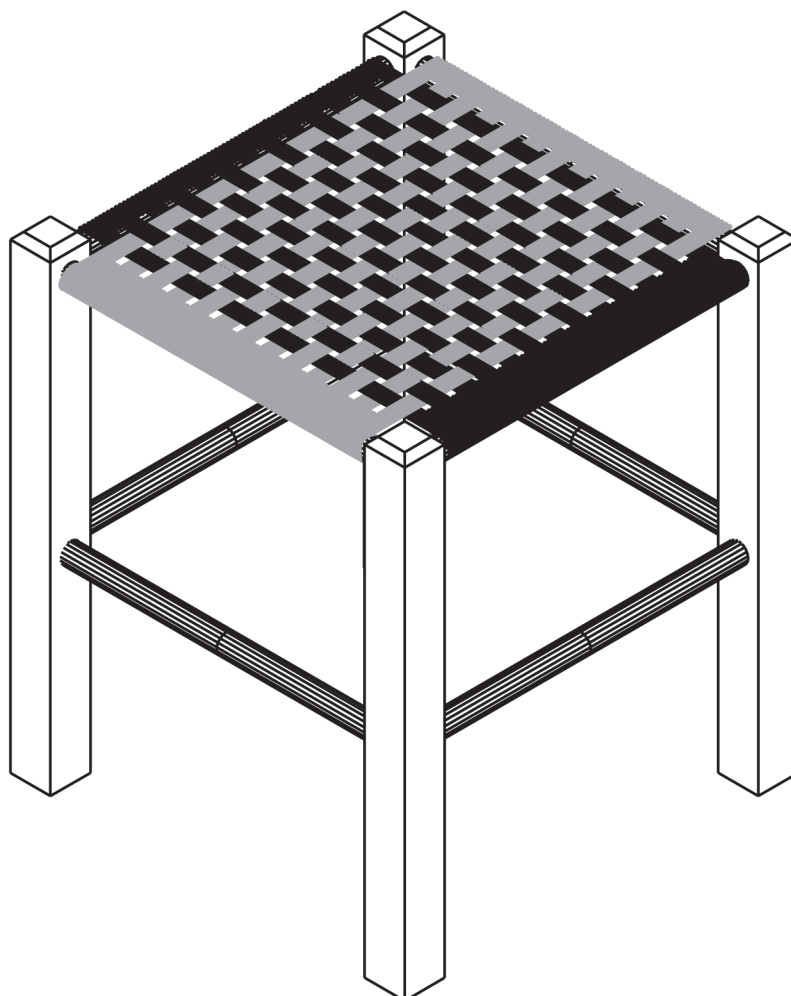
Tie the end of the cord (2nd layer) to the end of the first cord (1st layer). Then guide it under to the left over the first band and under the second, over the third and under the fourth etc. until you reach the dowel on the left hand side. Then from underneath around the top of the dowel and weave the cord back in the same way. Repeat this action 4 times.



6.3.5 Wind it twice around the dowel rail then stagger the pattern (firstly underneath, then over etc) Wind it twice around the left hand rail, pull tight and then from underneath weave the cord back to the right (Diagram 3/3.1) Then on top weave this new pattern back again. Repeat four times!

Note: Each new band is started staggered in relation to the last (under,over etc)

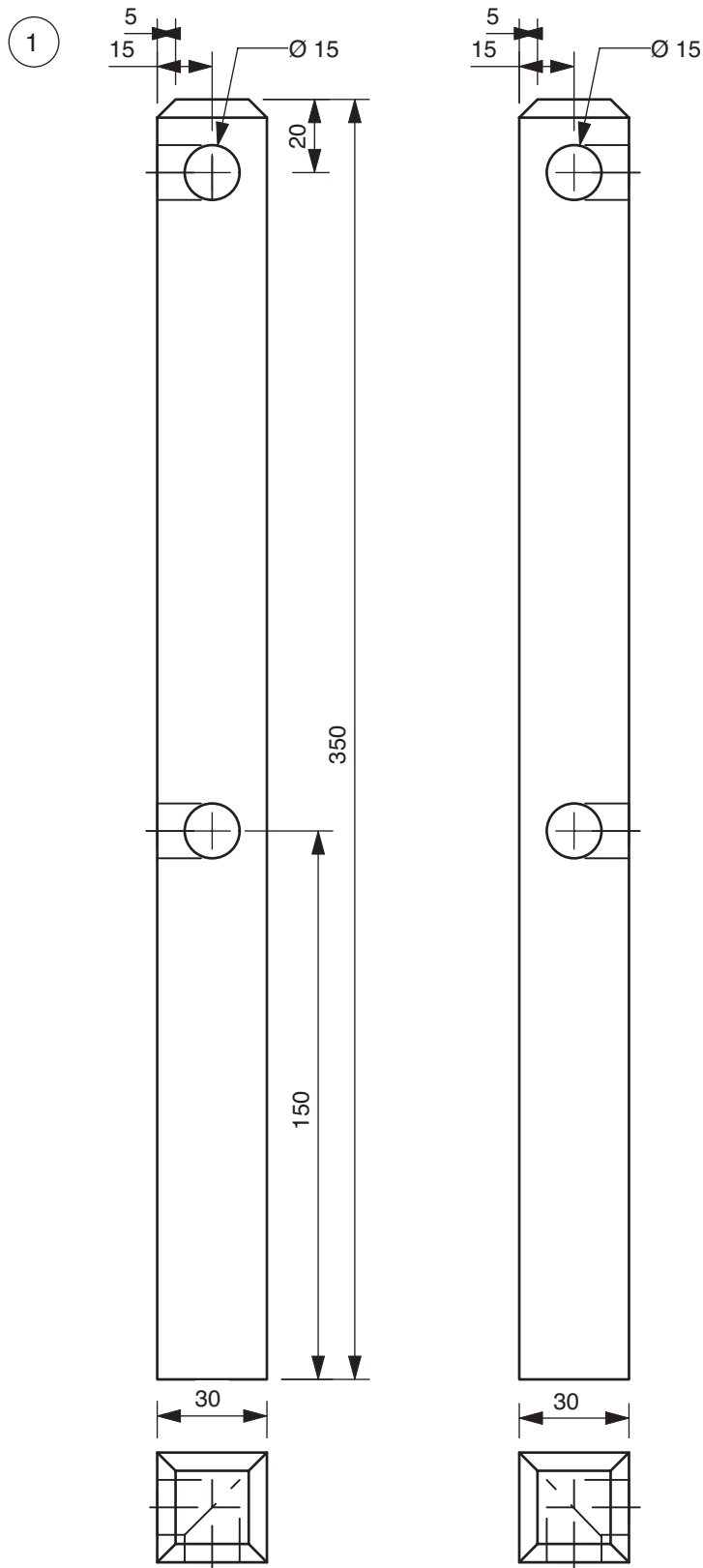
6.3.6 Finally finish the at the end by tying it to the starting cord (Loosen from dowel) tie the ends and tuck them into the woven pattern underneath.



7. Stool legs

Front / side/ plan view

M 1 : 2



8. Further patterns:

Note: To make the following patterns it is a necessity that an odd number of bands are woven (Best is to use the 13 bands as described in the chessboard weave) as in the previous first description

8.1 Diagonal pattern or Herring bone pattern

- First layer as before (Chessboard pattern)

- Cross direction

1 Band	over 2, under 2 over 2 under 2 etc
2 Band	over 1, under 2 over 2 under 2 etc
3 Band	under 2, over 2, under 2, over 2 etc
4 Band	under 1, over 2, under 2, over 2 etc
5 Band	the same as band 1 etc

8.2 Diamond pattern

- First layer as before (Chessboard pattern)

- Cross direction

1 Band	under 2, over 2, under 2, over 1 under 2, over 2, under 2
2 Band	under 1, over 2, under 2, over 3, under 2, over 2, under 1
3 Band	over 2, under 2, over 2, under 1, over 2, under 2, over 2
4 Band	over 1, under 2, over 2, under 3, over 2, under 2, over 1
5 Band	same as 1
6 Band	same as 2
7 Band	same as 3

From here the pattern must be worked backwards (Band 6- band 1)

8.3 Brokem diamond pattern

- First layer as before (Chessboard pattern)

- Cross direction

1 Band	over 1, under 2, over 2, under 3, over 2, under 2, over 1
2 Band	over 2, under 2, over 2, under 1, over 2 ,under 2, over 2
3 Band	under 1, over 2, under 2, over 3, under 2, over 2, under 1
4 Band	under 2, over 2, under 2, over 1, under 2, over 2, under 2
5 Band	same as band 1
6 Band	same as band 2
7 Band	same as band 3

From here the pattern must be worked backwards (6 Band-1 Band)