Making An Open Segmented Turning

1. Decide on the size and shape and make a drawing.
2. Make a decision as to the number of segments for each row. For example 12, 15, 28, 20, 24, 25.
3. Prepare the wood and cut the segments.
   a. Figure the angle

      1. 360^0 ÷ 12 = 30^0 (Divide by the number of segments)

      2. 1/3 overlap, 10^0 leaving 20^0 for each segment. This gives you 10^0 each side of each segment.

      3. Length = Formula Tangent (20^0 ÷ 2) x diameter = length of each segment. a. Every layer will have a different size segment

      b. Look up on AAW's website for lengths and angles.

      c. Use a cutting sled for safety

4. Prepare a base and then let's start building.

5. If your lathe does not have an index you can make a wheel and stop jig.

6. Make a glue-up jig.

7. Glue on the first row of segments.
   a. Allow about 10 minutes for glue to set. Then sand flat.

8. Move index point 10^0 and glue on the next row.

9. Continue adding rows until you complete the form.

10. Let this dry for at least 24 hours – 48 hours is even better.

11. Turn the outside to shape.

    a. Turn from top to bottom.

    b. Work up hill (on the curve)

12. After the final shape is achieved, sand with strips of sand paper or power sand.

13. Turn the inside of the vase. Turn one row and finish as you go; only come back for 2 layers to blend in.

14. Spray with varnish or apply the finish of your choice. Part off the bottom and finish.

Information presented here is taken from <u>Segmented Wood Turning</u> by William Smith

Have fun!!

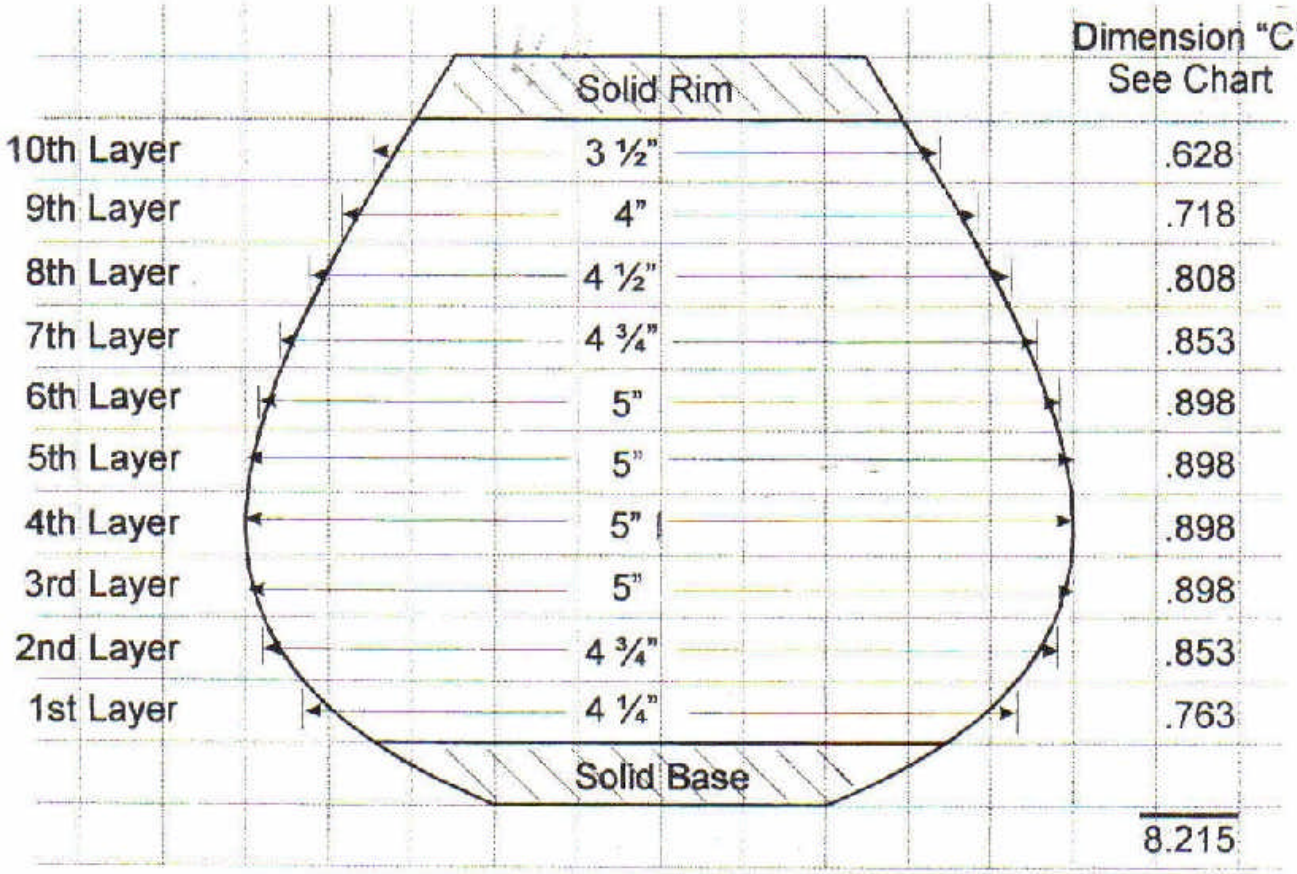

Diagram 6

I have now shown the dimension C for each layer. This is shown to 3 decimal places, which is more accuracy than needed in a 12 segment turning.

Find the column for the number of segments in your turning

Find the row for the diameter of the layer

Appendix I: Chart to find dimension "C"

Segments	12	15	16	20
Mitre Gauge	10°	8°	7.5°	6°
Diameter				
4	.718	.570	.533	.424
4¼	.763	.605	.566	.451
4½	.808	.641	.600	.478
4¾	.853	.676	.633	.504

Diagram 7

To find the dimension C for the first layer, find the row for 4-1/4 inches and look in the column for 12 segments. If you use a rule for measuring you can round this to 24/32 inches.

Recap: Steps To Design Open Segment Vase

1. Select graph paper with the height of the squares equal to the height of each layer on the finished piece. The width of the squares is optional; I have found 1/2 inch to be convenient.

2. Draw the outline of the finished piece on the graph paper.

3. Measure the diameter of each layer. Be sure to measure the layer at the widest point and always round up to the closest 1/4 inch.

4. Based on the diameter of each layer, look up segment length C in the chart (Appendix I). Diameters are listed down the left column. Locate the diameter then read across to the column for the number of segments you are using (12 segments in our example). This will give the length of the value C for that layer in inches. Use this value to cut segments to length.

1. William Smith, *Segmented Wood Turning* (Atglen, PA: Schiffer Publishing Ltd , 2002) 7.