Question/ Problem

What is the strongest kind of wood in a two point flexure test?

Hypothesis

I think that OSB will be the strongest because it is a mix of hard wood, softwood and adhesive.

Back to menu

Variables

- Independent Variable: The Wood

- Dependent Variable: How much weight it takes to break each board.

- Controlled Variables: Using multiple pieces of wood that are also the same size.

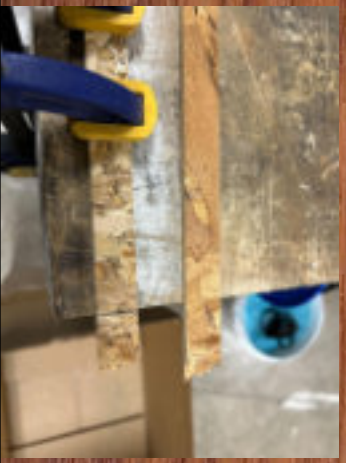
Back to menu

Materials

- Planer
- Tape measure
- Table saw
- Cardboard box
- Scale
- OSB board
- Plywood board
- Red Oak board
- Aspen board
- Fir board
- Pine board
- Sidewalk salt
- 3 clamps
- Bucket
- Safety gear
- Calipers

Back to menu

Pictures







Back to menu

Procedure

1. Prep wood (Makes all boards the same size.)

2. Place wood into clamps

3. Place bucket on end of the board and clamp it to the board

4. Put salt in the bucket until the wood breaks

5. Put the bucket and the clamp from the end on the scale

6. Record weight

7. Repeat steps 2-6 for the remaining pieces of wood

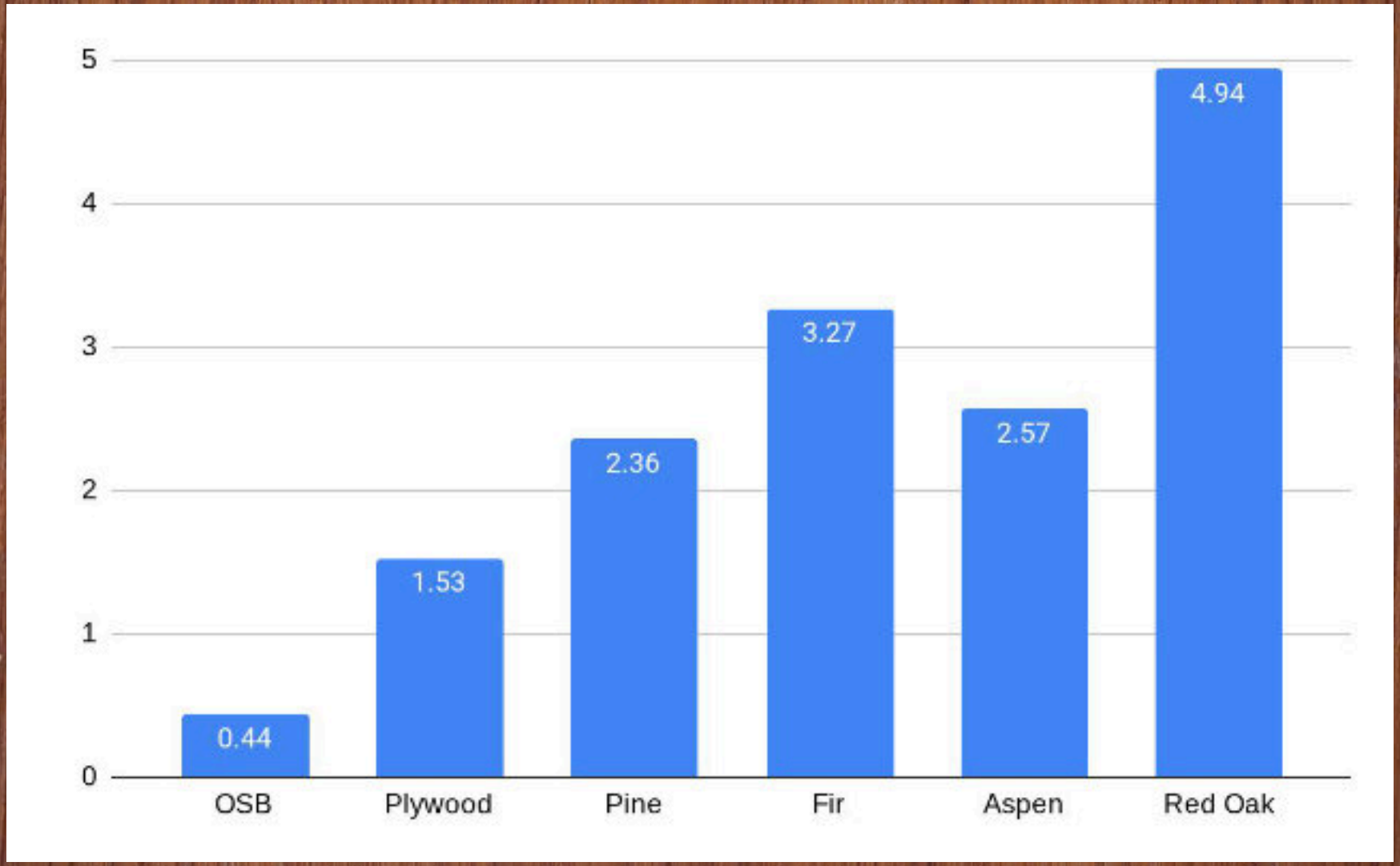
Back to menu

Data

OSB Test 1	0.58 kg	
OSB test 2	0.23 kg	
OSB Test 3	0.52kg	
		0.44kg
Ply Test 1	1.71kg	
Ply Test 2	1.23kg	
Ply Test 3	1.64kg	
		1.53 kg
Pine Test 1	2.72 kg	
Pine Test 2	2.40 kg	
Pine Test 3	1.96 kg	
		2.36 kg
Fir Test 1	3.00 kg	
Fir Test 2	3.49 kg	
Fir Test 3	3.31 kg	
		3.27 kg
Aspen Test 1	2.65 kg	
Aspen Test 2	2.50 kg	
Aspen Test 3	2.55 kg	
		2.57 kg
Oak Test 1	4.73 kg	
Oak Test 2	4.96 kg	
Oak Test 3	5.13 kg	
		4.94kg

Back to menu

Averages



Back to menu

Results

This shows that Oak is the strongest. Also that OSB is the weakest.

Conclusion

My hypothesis was wrong because OSB was the least strong wood. OSB had an average of 0.44 kg. Red Oak was the strongest with a average of 4.94 kg. One problem that I encountered was that one of the clamps that I was using broke because of stress.

Back to menu

Future Improvements

- Use more types of woods and test pvc trim and other sythnetics
- Make the measurements more accurate

Back to menu