

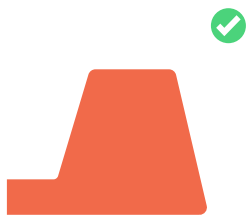
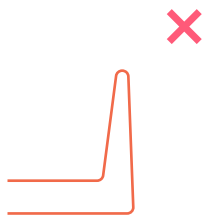
# Design Considerations

Grow It Yourself™ material strengths and limitations



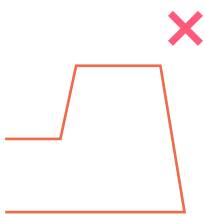
## Draft Angles

There should be at least a 3° draft angles on all vertical walls so the part will pop out of the growth form. There cannot be undercuts, the part will be stuck in the form.



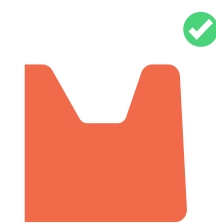
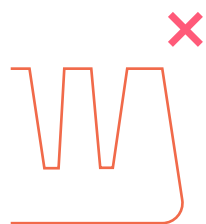
## Wall Thickness

The walls should be a minimum thickness of 10 mm to ensure they are structurally sound and the substrate will fill all the voids in the growth tray. Avoid intricate shapes and large, thin walls.



## Edges

Every edge should have a fillet with a minimum radius of 4 mm to achieve a smooth surface with substrate. This ensures a stronger growth tray that will last much longer.



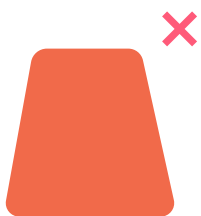
## Draw Ratio

The draw ratio should be at least 1 unit wide by 1 unit tall. This means every feature should be equal to if not wider than it is tall. Tall features in close proximity can create webbing in the growth tray if thermoforming.

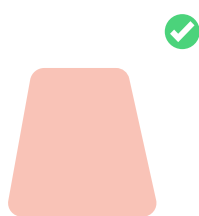


## Depth

Material packed thicker than 12 cm will need supplemental airflow. Mycelium respire just like humans do, therefore the material on the inside will not have access oxygen to grow and bind the substrate together.



Wet/Living



Dry/Dead

## Contraction

The growth form is scaled larger than the finished product to account for contraction when the part dries.

The contraction percentages are:

**4% in the X and Y axis, 7% in the Z axis.**



## Velvet Overgrowth

To achieve a “velvety” layer of overgrowth, we grow the part for 4 days in the mold, pop and pod the part to grow for 2 more days. The part is then dried for 1 day (some larger parts require more time) to prevent future growth.