

How Much Material Do I Need?

To create a quality mold, you will need to begin the project prepared for your task. One of the first stages - after making sure that you have all of the right tools and other necessities - is to judge how much material you will require for your particular project.

Making an estimate about the quantity of material you need often is a daunting task, especially for one with limited experience in general, or with that precise type of project. You will want to guess the quantity as closely as possible, as not having enough material, or having too much left over can be a frustrating and costly error. Therefore, becoming proficient in assessing the amount of material you'll need for a particular project is as important as learning any of the other mold making skills; and like your other mold making abilities, your estimating will become more precise, the more you practice them.

There are many different factors that you must consider when you are measuring the amount of material. These factors include:

- Dimensions of your model
- Configuration
- Undercuts
- Draft
- Type of mold to be made
- Type of material being used
- Other variables to the complexity and design of the mold

Figuring in each of these factors gives you a very good basis from which you can mathematically guess the extent of material that you will need.

One of the easiest techniques that you can practice for estimating the requirements (by volume) that you'll be needing for your project, is by placing the model into a container or containment field, and then pouring water up and over the model. The amount of water that it takes represents the amount of mixed material that you will need. It is as easy as that.

Before actually pouring in the material, be certain to dry your model and your containment field extremely well, to ensure that there isn't any moisture left behind.

To calculate your material requirements by weight, you'll need to calculate the volume of the required material for the mold, and then calculate the weight for that volume in the specific material that you will be using.

This is done in a simple calculation. For the purposes of this example, let us pretend that your container or containment field had the dimensions of 4"x4"x4", and the model is a cube with the dimensions 3"x3"x3":

1. Calculate the volume of your containment field: $4 \times 4 \times 4 = 64$ cubic inches.
2. Calculate the volume of the model: $3 \times 3 \times 3 = 27$ cubic inches.
3. Subtract the volume of the model from the volume of the containment field, to discover the volume of material that you will be requiring: $64 - 27 = 37$ cubic inches. Therefore, you will need 37 cubic inches of material for your project.
4. Convert the volume to a weight value. To accomplish this, you will need to know the weight of the material in cubic inches per pound. This value will be called the "specific volume" and will often be marked on the product. For this example, we shall say that the material yields 27.7 cubic inches per pound.
5. To calculate the weight you will require for your project, divide the volume of the material you'll need by the specific volume of the material: $37 \div 27.7 = 1.34$ pounds. So you will require 1.34 pounds of material.