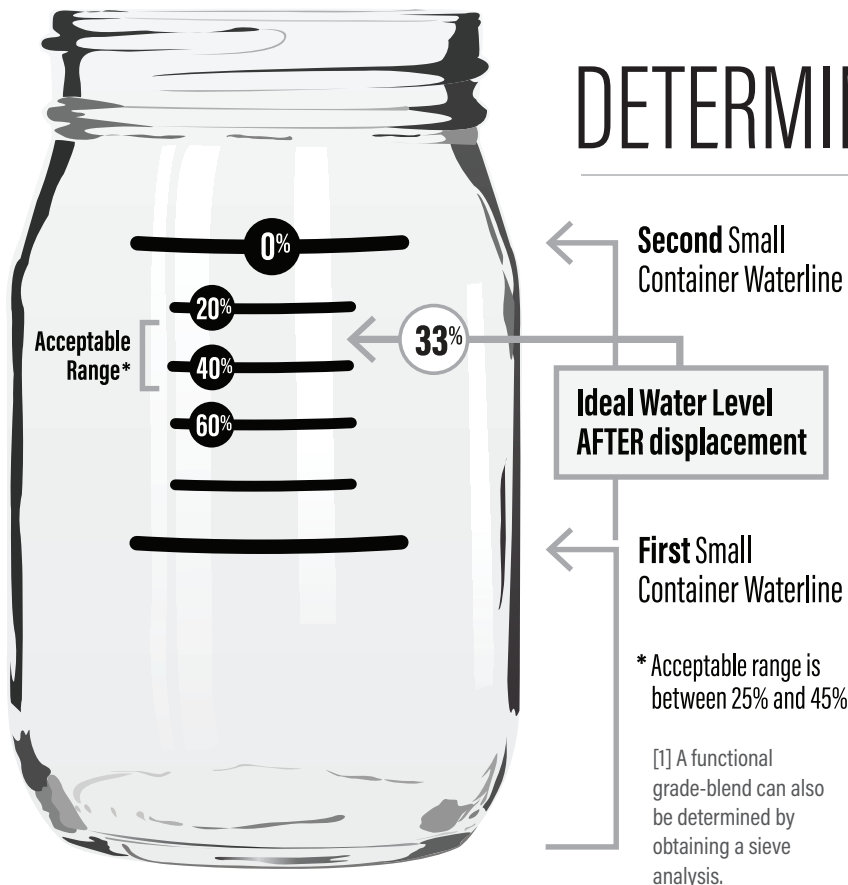


DETERMINING VOID RATIO



ONE WAY TO DETERMINE if a sand has the right grade-blend for lime plaster^[1] is to check the **ratio of voids to sand**. The ideal void ratio is **33%**, leaving the other 67% as sand. This **simple test** will tell you what you have. Get two clear containers, one at least twice as big as the other (like a one-cup measure or pint jar and a quart jar).

1) Fill the small container with water and pour into the large container. Mark the water level on the side of the large container.

2) Again, fill the small container with water to previous level used; add to the water in the large container and mark the new/second level.

3) Empty the large container and make four evenly-spaced marks between the first water mark and the second, for a total of six marks.

4) Fill the small container with water to previous level used. Pour water into the large container (it should reach the lowest of the six marked lines).

5) Dry the inside of the small container and fill it with the dry sand you want to test. Pour sand into the large container and allow it to settle.

6) The marks you made will show how much water is displaced by the sand particles—the topmost line/mark represents 0%; the next one down represents 20%, the next 40% and the next 60%. The new water level from the sand displacement shows the percentage of void ratio in the sand—you're looking to be as close to 33% as possible. Avoid using sand with a void ratio of 50% or more.

NOTE: If the displaced water gets cloudy/dirty, then the sand isn't clean enough...it contains silt and/or clay and/or organic contaminants.