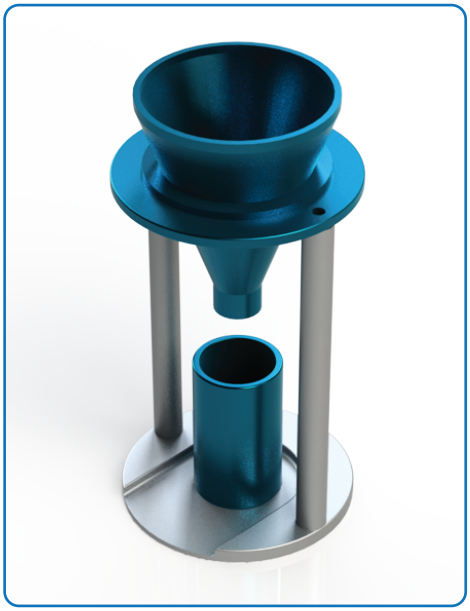
“ARMO” Dry Flow & Bulk Density Test Kit

How does your powder compare to the World Standard?



The Dry Flow & Bulk Density Test is meant to give you a good idea of the performance of a powder during the rotomoulding process.

Dry Flow Test

Dry flow is the time taken for 100 grams of powder suitable for rotomoulding to flow through a standard funnel and fill the measuring cup. Dry flow is the measure of how a powder will tumble and flow in the mould during the rotational moulding process.

Flowability affects the heat transfer in the powder pool and how the powder distributes itself within the mould. Flowability depends mostly on the particle shape and to a lesser extent on particle size. Particles that have been ground poorly will have “tails” which will cause powder to have poor flow properties, possibly leading to pinholes on the surface, bridging across narrow recesses, a rough internal surface, a high void content within sharp corners and threads in the moulded part.

Test results can be also affected by the funnel’s shape and dimensions, surface roughness of the inside of the funnel and powder temperature, hence look after your funnel and do all tests at room temperature, 23˚C.

Dry flow is probably the single most used test to reflect overall quality of a powder.

Having the ability to identify significant variations in powder quality can minimise unsatisfactory moulded products.

Bulk Density Test

Bulk density is the measure of how well the powder particles will pack together, which will affect the entrapment of air (bubbles in the wall thickness of the part) affecting density and cycle times.

A good quality powder with small or no “tails” or good particle shape will pack better and thus will result in a higher bulk density. Powders with a high number of “tails” or bad particle shape will not pack together as well and therefore will result in a lower bulk density.

The Bulk Density Test consists of measuring the bulk density of a sample of powder which has passed through the funnel at a set height into the 100ml measuring cup below. Once the cup is completely full it must be levelled without disturbing the powder, and then measured.

Bulk density indicates the handling properties of a plastic powder, plus is an indicator of the weight per unit volume with which powder can be transferred into moulds or storage containers.

Bulk density results can be affected by powder temperature, so tests should be done at room temperature, 23˚C.