

Refractories material

Firebrick are massive refractory products with a certain shape & size. Made from a **mixture** of various refractory materials. According to different manufacturing procedures can be divided into burnt bricks, unburned bricks and fused cast bricks; in addition, it can be divided into porous lightweight and dense heavy refractory bricks according to the density.

Firebricks contains pores. The quality, characteristics and the selection of **raw materials** have a great relationship, whether it is from raw materials to the **finished product test**, it is necessary to measure apparent porosity, absorption, apparent density, bulk density, and true density.



Density & Quality

How to distinguish the quality of firebricks?

Sintering temperature & holding time are important causes of refractory sintering. As the temperature increases, the vapor pressure & diffusion coefficient increase, and the viscosity of the liquid phase decreases, thereby promoting the process of evaporation and condensation, so the sintering speed is accelerated.

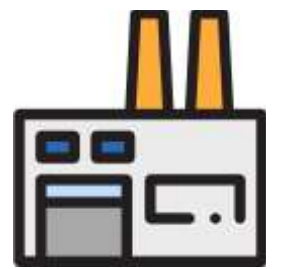
In addition, prolonging the sintering time can also promote the sintering completion. However, in the later stage, unreasonably prolonging the sintering time will aggravate the secondary recrystallization effect, and on the contrary, a sufficiently dense product cannot be obtained. At this time, in order to reduce R&D time and consolidate product quality, density measurement in the manufacturing process is an important key.

In summary, **the high density and high temperature resistance** can clearly reflect the excellent quality of the product.

As the density increases, the porosity decreases, and the degree of density increases. (The porosity of refractory materials is generally 10-30%)



True density measures the density of raw materials, porosity measures the density of products



What MatsuHaku Do:

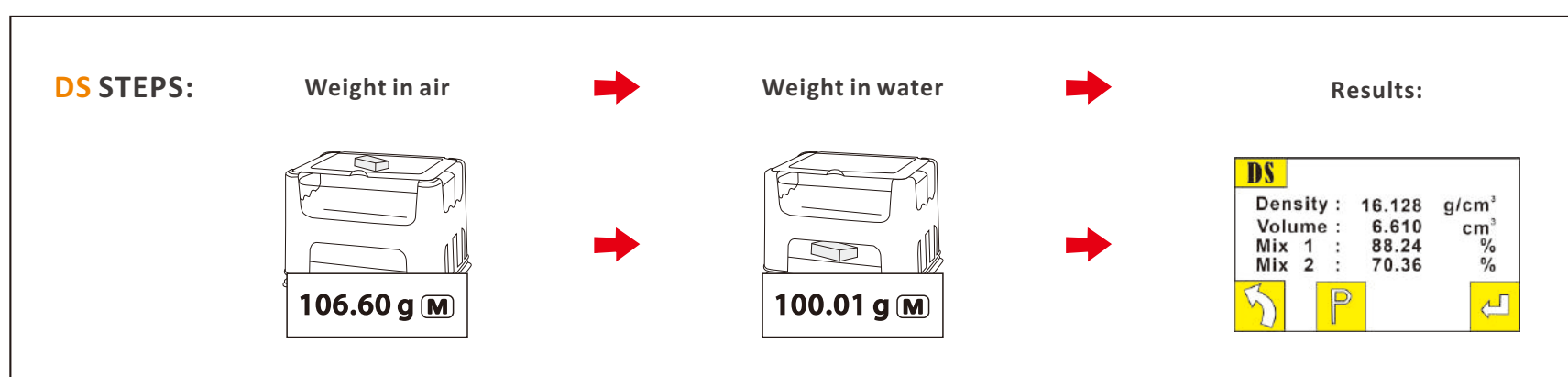
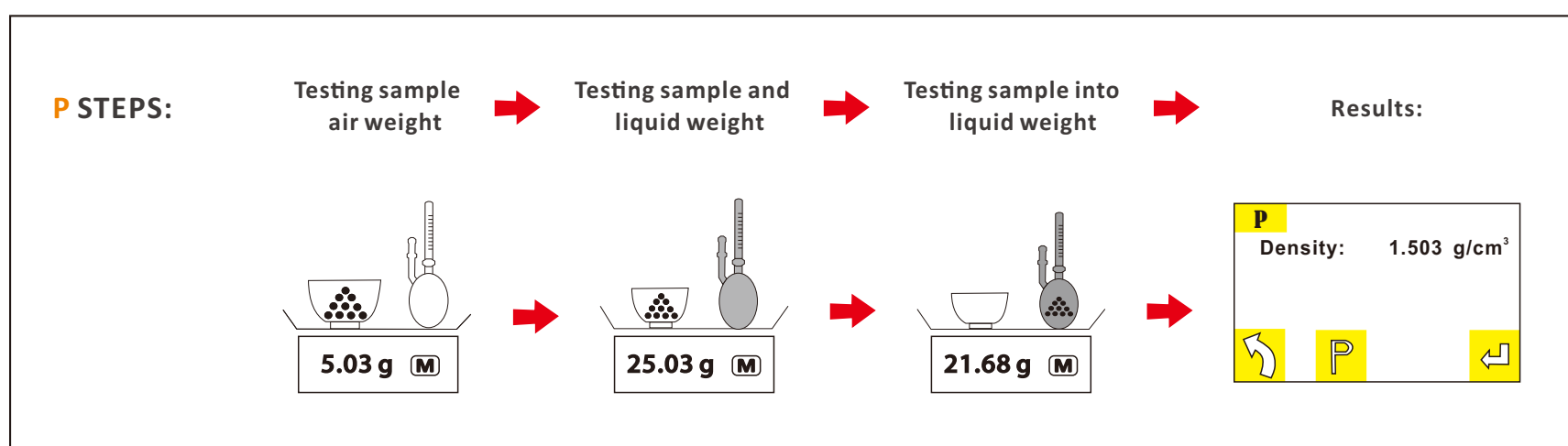
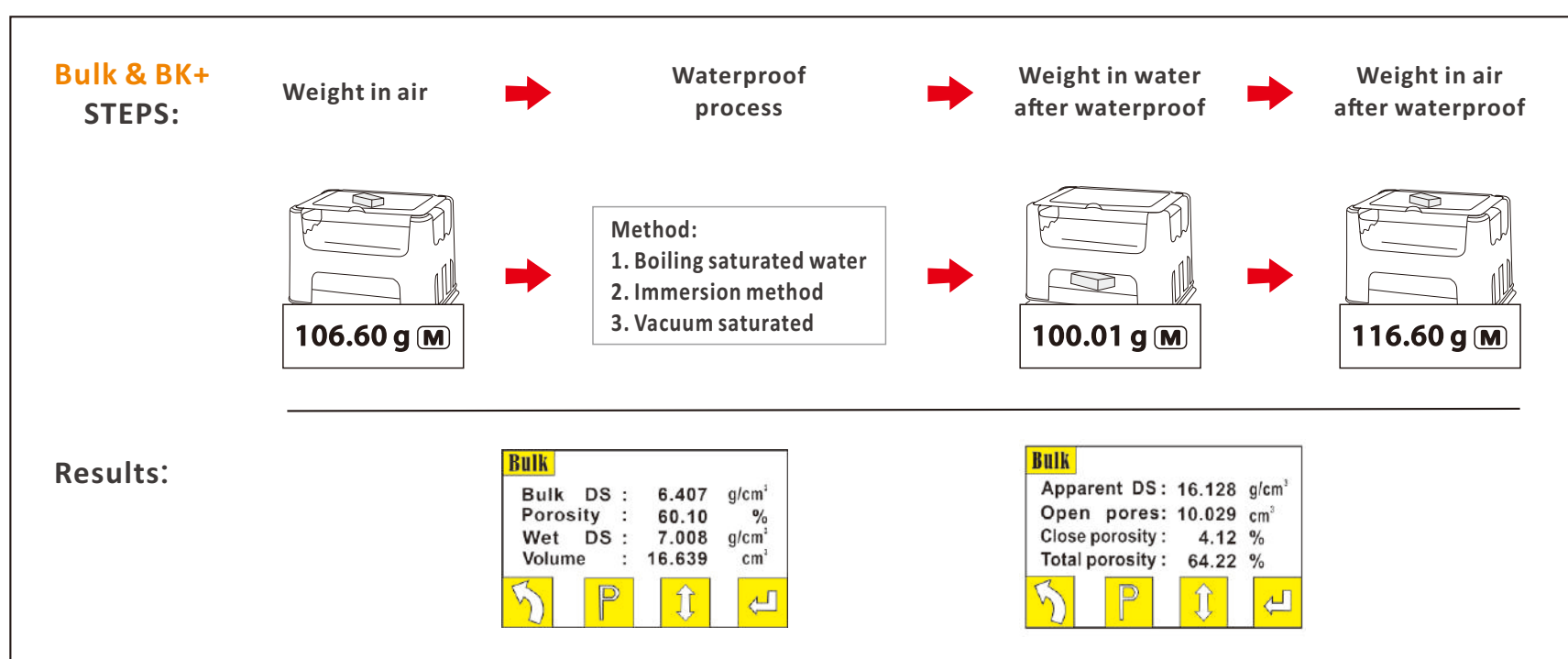


MatsuHaku PY series equipped **4** modes:

- BULK** - Adopting water saturation method for porous material. Show Bulk density, Wet density, Apparent porosity density, Volume.
- BK +** - Adopting water saturation method for porous absorbent material. Show Bulk density, Wet density, Apparent porosity density, Volume.
- P** - Show powder true density directly.
- DS** - Nonabsorbent material. Show Density, Volume, Mix ratio directly.

The pore structure **greatly affects the physical properties of the refractory**, so it is very important for the density detection of the green compact and sintered body.

If you want to **confirm the quality**, the very important point is to **know the density of it**.



MatsuHaku Density Tester Keep You Aware Of

1. **Reduce** the cost and the **Defect** loss
2. Fit the international **Standard**
3. Make sure the quality **Stable**



*With MatsuHaku Density Tester
Quality control is more easier than you thought*