

FAUX MARBLE

WITH EXPANDABLE MICROSPHERES

Make cultured marble easier to handle and more shock resistant, with superior elasticity



OVERVIEW

Product Type

Expanded Microspheres

Main Benefits

Improved machining
Reduced cracking during production
Reduced weight

Applications

Bath tubs
Bathroom counter tops
Kitchen work tops
Shower trays
Wash basins

Expandable Microspheres

Faux, or cultured, marble is becoming increasingly popular as a material in **sanitary goods**, as well as in **counter tops** and **work tops**.

Faux marble containing **dry expanded microspheres** is **lower in weight**, has improved **resistance to hot/cold cycles**, and is **easier to cut, sand, trim and drill**.

Resin demand is **decreased**, and the risk of **cracks** caused by shrinkage and warpage during the cooling of faux marble is **reduced**.

Benefits can usually be achieved without increasing raw material costs.

Boud Minerals produce **dry expanded microspheres** in the **United Kingdom** to bring down costs, make production more environmentally friendly and improve product availability. This gives our **customers** more freedom in the choice of densities and packaging.



Reducing Weight & Other Improvements

The most obvious advantage of using expanded microspheres in faux marble is **lowering** the **weight**, even at small additions.

With just a **0.3%** w/w addition of **dry expanded microspheres** having an average particle size of 40 μm and density of 0.025 g/cm^3 , it is possible to achieve a **density reduction** of **~18%**.

The microspheres, spherical in shape with a small surface area to volume ratio, have a **lower oil absorption** than most heavy weight fillers. This means the amount of **resin** used in faux marble can often be **reduced**.

Adding expanded microspheres gives a slightly **more elastic** material which **improves processing**. The elastic properties of the microspheres reduce tension which results in **less cracks** during cooling, and after the exothermic reaction.

Thermal **shock resistance** is **improved** since the slightly more elastic faux marble can withstand more hot/cold cycles. Risk of **cracking** due to **mechanical impact** is also **reduced** since the microspheres act as impact modifiers.

After treatment, drilling, cutting, sanding and trimming, of faux marble containing expanded microspheres is easier. **Lifespan** of **tools** is extended.

Using Microspheres

A starting point



A good **starting point** for a formulation with expanded microspheres is to **exchange heavy fillers** with approximately the particle size of dry **expanded microspheres**. The exchange should be carried out on a **volume** basis.

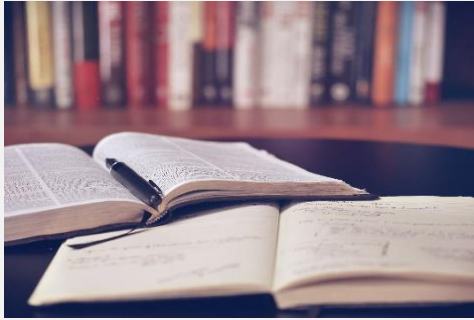
A **0.3%** w/w addition of dry expanded microspheres with an average particle size of 40 μm and density of 0.025 g/cm^3 is approximately an **18%** addition by **volume**.

When **producing** faux marble with dry expanded microspheres, it is recommended to **pre-mix** the spheres with the **heavy filler**, prior to adding it to the polyester resin.

For **batch production** add the microsphere and heavy filler pre-mix to the polyester resin, and mix.

When **auto-casting machines** are used, expanded microspheres can be dosed continuously with the help of a peristaltic pump to the hopper, before the mixing screw.

It is also possible to add the microspheres via the side feeder, directly to a continuous screw dosing the heavy fillers.



Further Reading

Our **Technical Guide – Expandable Microspheres** takes an in depth look at the properties of expandable microspheres. A great introduction if you are new to the world of expandable microspheres.

Installations of faux marble, such as sanitary goods, require the use of sealants to create a waterproof and sanitary seal. To discover the benefits of using expandable microspheres in sealants, refer to our **Application Guide – Sealants with Expandable Microspheres**.

For guidance on the best way to handle and mix dry expanded microspheres take a look at our **Technical Guide – Handling of Expandable Microspheres**.

What's Next?



Do you need help **choosing the right grade** for your application, **more information** or a **sample** to try?

We are always happy to help and answer any questions you may have. Please do not hesitate to contact us:

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Something to Note

The information contained in this guide is a result of our experience and research. It is given in good faith but under no circumstances does it constitute a guarantee on our part, nor does it hold us responsible, particularly in the case of legal action by a third party.