

Nature and functions of the fillers

It is essential to thoroughly mix the resin **SR** with the hardeners **SD** before adding the fillers.

Lightening microballoons

Whitecell: *microballoons of white thermoplastic copolymer.*

Very low apparent density. Very low density of the finished filler. Fine particle sizes, easy to apply (good, even consistency and flow characteristics, easy to smooth), easily sanded. Ideal for hyper light structures, radius or fillet joints under laminate, finishing filler or « stopper » before painting.

Glasscell 10: *white glass microballoons.*

Ultra light version of the **Glasscell 25** for filling and finishing before painting, increases the density of foam, bonding of soft wood, syntactic foam having excellent compression characteristics. Mechanical performances and chemical stability, excellent density / compression resistance ratio.

Phenolic microballoons : *brown coloured phenolic microballoons.*

This filler do not « fly » and is easier to mix than **Whitecell**.

Structural applications : syntactic foams, bonding, brown coloured radius or fillet joints blending with wood, finishing filler and « stopper » before painting. Easy to apply (good, even consistency and flow characteristics, easy to smooth), easily sanded.

Hygroscopic : keep the packing tightly sealed when not in use.

Glasscell 25 : *white glass microballoons.*

Easy to mix and to apply, better abrasion resistance than phenolic microballoons. Finishing filler and « stopper » before painting, increases the density of foam, bonding of soft wood, syntactic foam having excellent compression characteristics. Mechanical performances and chemical stability, excellent density / compression resistance ratio.

Fillite: *aluminium silicate microballoons*

Easy to mix, good hardness and rigidity of the mouldings. Used for coarse fillers, resurfacing, sound-proofing and thermal insulation, volume filling.

The best of the microballoons fillers for compression resistance, chemical stability. Economical.

Thixotropic agent

Silicell: *fumed colloidal silica*

Thickening and thixotropic agent (increases the holding qualities on vertical surface). Added to the epoxy systems, it increases the viscosity, the initial adherence (tack), the bonding rate and maintains fillers in suspension during cure.

Hygroscopic : keep the packing tightly sealed when not in use.

Formulated fillers ready to use

Mixfill 30 : fillers for sanding mastic.

Formulated filler mainly made with microballoons for the fabrication of medium particle size paste which is easy to sand. Usually used with the **SR 1610 / SD 2613** system.

Saves time : only one filler to add, **reproducible consistency**. Very interesting economically compared to the ready to use epoxy fillers. Fill up **3 cm** deep defects (with a spatula or a long ruler).

The finishing paste will be made with a softer filler as the **Mixfill 10**, the **Whitecell** or the **phenolic microballoons**.

Mixfill 10 : fillers for sanding mastic

Softer than **Mixfill 30**, easy to sand, fine particle size. Used before polyurethane or epoxy primers.

The dust is not sticky, doesn't clog the sandpaper.

Wood Fill 250 : polyvalent and resistant filler.

Cream coloured powder blending with wood after being mixed with the resin. Used for making high density radius or fillet joints, to bond wood and increase its density.

Wood Fill 130 : polyvalent and low density filler.

White filler for low density radius or fillet joints, mastic, gap or hole filling.

Fill' Tool 400: hard filler for tooling gel-coat.

Formulated grey filler for making tooling gel-coat on site. Increases the hardness of the surface and abrasion resistance of the epoxy systems. Its dark colour help the control the void content of laminates. Thixotropy modified by the quantity of **Fill' Tool** added.

Fill' Tool Alu : filler for aluminium filled tooling.

Formulated filler made with aluminium powder for the fabrication of tooling gel-coat on site. Used with aluminium granules casting, when thermal conduction parameter must be optimal.

Other fillers:***Treecell : pure cellulose microfibers.***

White cotton texture powder. Used generally with epoxy system for the wood (**SR5550, SR 8450**) as an structural additive. Excellent thickening properties and good filling of the bonding surfaces on the wood, high density radius or fillet joints. Combined with **Silicell**, it is easier to smooth and more thixotropic

Graphite powder

Black plate shape filler. Applications : chemical resistance, friction modifier, lubricating properties, wear reduction, thermal shocks resistance, vibrations absorbing properties, electric and thermal conductivity.

Coarse aluminium powder 200-1000 microns

Permits the fabrication of large volume tooling having an excellent thermal conductivity : thermoforming under vacuum or pressure. For an equal volume and the same epoxy system, the casting made with the coarse aluminium powder will be less exothermic and more resistant in compression, than the one made with microballoons. Can be added as much as 3 : 1 by weight with the mixed epoxy system for vac form tools.

In practice, the fillers are often combined together. We give the mini-maxi to add, as well as the densities that you can obtain.

Proportions Of The Fillers In The Resin

Fillers	Appearant Density g / l	Weight min. – max for 100 g of R + H*	Volume min. – max for 100 ml de R + H*	Maximum density of the filled mix (g/l)
Whitocell	36	2 - 7	120 - 190	370
Glasscell 10				
Phenolic	104	7 - 35	60 - 320	500
Glasscell 25	140	5 - 25	30 - 200	600
Fillite	350	30 - 110	85 - 320	730
Mix Fill 30	310	40 - 100	130 - 320	600
Mix Fill 10	100	24-30	240-300	660
Wood Fill 250	250	20 - 80	80 - 320	1080
Wood Fill 130	130	20 - 50	150 - 380	770
Treecell	80	5 - 17	40 - 210	1150
Silicell	50	3 - 9	60 - 180	1170
Fill' tool 400	930	80 - 200	90 - 210	1800
Fill' tool Alu		60 - 180		1630
Graphite powder	415	20 - 70	50 - 170	1360
Coarse alu powder 200-1000	1160	100 - 250	90 - 220	1720

Spreadsheet 3 :- Mini-maxi rates of fillers that you can add, in a resin system having a viscosity of 800 Cps at 20°C.

* : R+H Mélange Resin et Hardener

SICOMIN's fillers are not constituting an initiating base to the professional diseases. However , the same precautions than the ones regarding the manipulation of powder and dust, must be taken to avoid their inhalation.

The informations that we give by writing or verbally, in the context of our technical assistance and our trials, do not engage our responsibility. We advice the users of SICOMIN's epoxy system, to verify by some practical trials if our products are suitable for the envisaged processes and applications. The use, the implementation and the transformation of the supplied products, are not under our control and your responsibility only will respond for it.

If our responsibility should nevertheless be involved, it would be, for all the damages, limited to the value of the goods supplied by us and implement by you. We guaranty the non-reproachable quality of our products, in the general context of sales and delivery.