Jesmonite

Jesmonite has become a very popular modelling, casting and mouldmaking product. It is a water based filled acrylic compound which can be used in a variety of ways depending on the base formula.
Available in two basic types from Tiranti – we stock both the AC 100 and AC 300 compounds.
We can also order the AC 730 and AC 830 for specialist applications on request.

Jesmonite compounds can be both gypsum and cement based, as the powder part of the compound is specially formulated to suit application.

AC 100 standard composite gypsum based compound is suitable for casting, laminating, pigmenting metal and stone finishing.
AC 100 sets to a hard shell ideal for sculpture casting – although its base colour being very pale can mean that it is better suited to lighter colours (unless pigmented).
Takes the Jesmonite pigments very well but will also colour nicely with Earth Pigments – lighter stone fillers are particularly effective.
AC 100 is particularly strong when laminated with Quadaxial Mat – it produces a strong lightweight and attractive casting.

AC 300 softer gypsum based compound well suited to making mould jackets using our Quadaxial mat – AC 300 can also be used to make decorative mouldings and lightweight decorative wallhangings – the lightness of the product is a definite plus point, however it is not so sculptural.
AC 300 has a slightly lower acrylic content making the product slightly less costly than AC 100 – the product takes pigmentation and also laminates well with the Quadaxial Mat although not ultimately as strong as AC 100.

AC 730 standard cement based compound suitable for casting, laminating and a variety of more structural uses than the gypsum based compounds.
When it is cured AC 730 is waterproof (it is even suited to full immersion) and weatherproof – ultimately suitable for outdoor sculptural applications, water features, kitchen worktops, decorative wallhangings etc…
Particularly suited to stone finishes – the product can be mixed to resemble several natural stones and be polished too.

AC 830 is a specialist bulk cement based compound for structural and decorative building type applications in particular.

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AC 100 is our most regularly sold and most versatile of the compounds, available in smaller kits ideal for the "starter" – because the product has a higher acrylic content, there is less chance of issues such as pigmentation and fillers not mixing easily.

Jesmonite accessories are something which have been developed specially to make using the range easier to use. Pigments with very high levels of base colour, this makes the colours more vivid without reducing the overall strength of the product. Metal and stone fillers that are similarly formulated to suit the colour, weight and strength of the compounds.

Pigments:
Jesmonite colour pigments are typically added at 2% by weight – although you can also achieve very vivid effects by adding additional pigment (experimentation is fun). Colours deepen and become almost pearlescent – blue and red are particularly vivid.

Quadaxial Mat:
This glassfibre matting has been formulated for Jesmonite to use with their compounds, the mat is soft and compliant, woven in four directions with a more open pattern than conventional chopped strand matting.
The resulting product gives a lightweight, yet strong laminate that is ideal for mould jackets in particular.

Quadaxial Mat (Quadax) can also be used to make strong and lightweight castings – it is also possible to laminate conventional chopped strand matting between layers of Quadax to further improve torsional rigidity.

For worktops it is also desirable to inlay sections with polystyrene to aid structure without adding weight.

Mixing Blades:
These stainless steel mixing blades can be used with a battery drill to mix the components together – this improves the quality of the mixed compound, reduces the formation of air bubbles and also reduces clumps and lumps from forming.

Thixotrope:
When added to the AC 100 the Thixotrope transforms the mixture and you can then apply the compound to a vertical surface without the compound running off.
You can use Thixotrope on compounds with fillers and pigments – ideal for gel coat layers in particular.

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Retarder:
Can be added to compounds to extend the pot life and slow the curing time of a cast, this is particularly ideal for larger ultra complicated castings, allowing the user to stipple the compound into the detail and avoid the compound setting too quickly.

Acrylic Sealer:
Can be applied over an AC 100 casting to give it added weather resistance.
The product is clear and UV stable.

Metal and stone filler powders – specialist effects are also available.

Tiranti are always able to supply Jesmonite products not necessarily kept in stock – please contact us for details.

Uses:

Jesmonite can be used instead of a resin for glass-fibre, mainly because it is stronger than the more traditional plaster bandage or scrim, but also because Jesmonite is a more pleasant product to work with in comparison to polyester – the product is an acrylic/gypsum based polymer which is water soluble.
Jesmonite has no unpleasant odour – the fumes are not harmful and the product is much less likely to cause health issues for the user than other resins and chemical based compounds.

Jesmonite AC 100 and AC 300 are especially good for use as a mould jacket when laminated with Quadax – the compounds work especially well with silicone moulds, the light weight combined to good strength.

Jesmonite AC 300 laminated 2 part mould jacket over a silicone mould for slush moulded polyester ball.

The mould was set in a silicone thixo layer over a rubber ball pattern, the mould was then layered with Jesmonite and Quadax (a thixo layer of AC 300 – then a layer of Quadax, then a second layer of AC 300). The pattern was then reversed, the clay support removed and a second mould of silicone and Jesmonite applied on the reverse side.

Once cured the mould jackets were drilled, prior to the mould jacket and the silicone moulds being separated.

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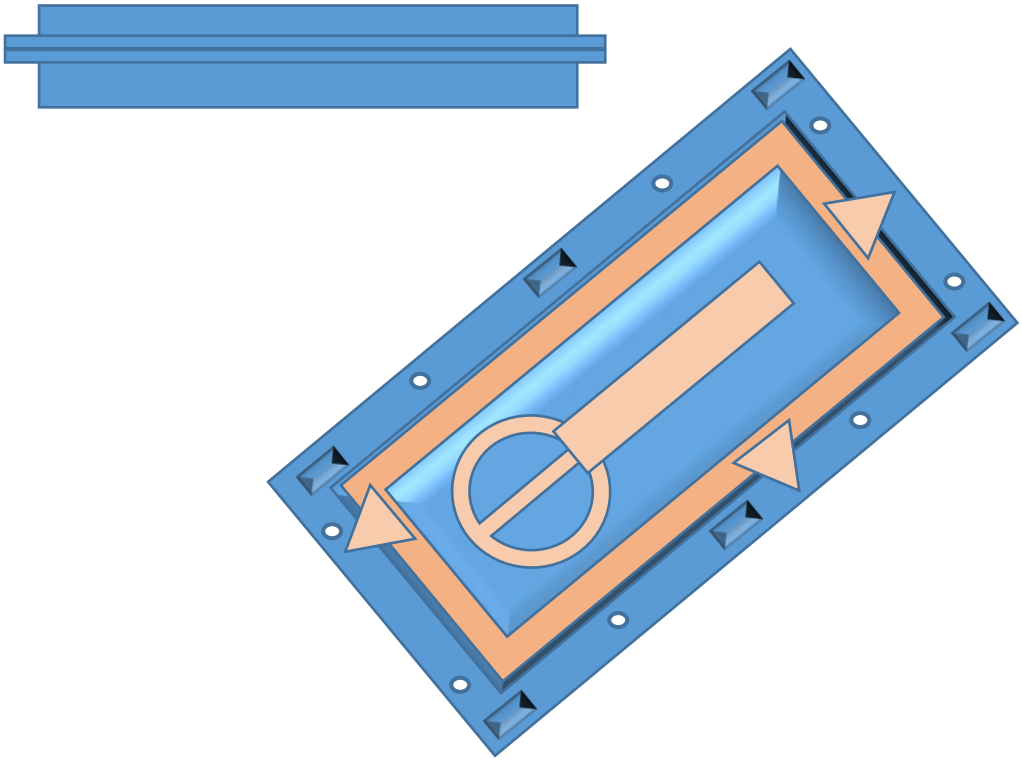
It is important with re-enforcing layers that these are accurately positioned by using fencing between the components of a multi part mould.
This used to be done using either thin brass or aluminium sheet, more recently there has been a move to a product called PLASTI-SHIM, but you can use blocks of old silicone if you prefer.

The mould jacket should ideally be cut to register onto the silicone mould too – this way it isn't possible for the silicone mould to be mistakenly placed in the wrong half of the mould jacket.

Either way the horizontal land areas surrounding the mould components should have a number of solid register points cast into them, this is to make sure the mould clips back together accurately.



This leaves you with a two part mould with an accurate register to allow assembly – a series of drilled holes allows the mould to be bolted securely together.

The assembly of the mould is best kept as simple as possible.

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Multi-piece moulds are ideal for large heavy pieces, this limits the risk of sagging and makes initial skin layers much easier.

The deisgn of the mould jacket also has to include pouring holes and air escape – this is covered in depth in the following books.
Mould Making and Casting and Advanced Mouldmaking and Casting, both of them by experienced mouldmaker, sculptor and technician Nick Brooks.
Nick also runs courses for mouldmaking and casting from his base in Norfolk.

At Alec Tiranti we are always happy to offer help and advice on projects however large or small, we can also put you in touch with other specialists that can help you.

We have people here at Thatcham and also at our shop in Warren Street who have a wide experience using Jesmonite in various forms.