### Technical data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixing ratio</td>
<td>2 parts powder mixed with 1 part resin. Fill the beaker or bucket with the required amount of resin. Use the stainless steel high shear mixer to create a slurry. Then add the correct amount of powder into the slurry. Continuous mixing until a smooth mixture is achieved without lumps and continue to mix for an additional 30 seconds approx. Ensure that none of the material sticks to the bottom and sides and that everything is included in the mixture. Maintain a maximum number speed of 750 rpm when mixing with the high shear mixer.</td>
</tr>
<tr>
<td>Colour</td>
<td>creamy white (*1)</td>
</tr>
<tr>
<td>Density (water)</td>
<td>1.76 kg / dm³</td>
</tr>
<tr>
<td>Density (dry)</td>
<td>1.46 kg / dm³</td>
</tr>
<tr>
<td>Processing time</td>
<td>20 minutes</td>
</tr>
<tr>
<td>Demoulding time</td>
<td>approx. 1 hour</td>
</tr>
<tr>
<td>Shelf life</td>
<td>85º Shore D</td>
</tr>
<tr>
<td>Hardness</td>
<td>approx. 60 MPa</td>
</tr>
<tr>
<td>Expansion during hardening</td>
<td>approx. 0.1 - 0.6% (*2)</td>
</tr>
<tr>
<td>Compressive resistance</td>
<td>approx. 20 MPa</td>
</tr>
<tr>
<td>MOR (Modulus of rupture)</td>
<td>approx. 50 MPa</td>
</tr>
<tr>
<td>LOP (Limit of proportionality)</td>
<td>&gt; 20 MPa</td>
</tr>
<tr>
<td>NOH (Modulus of rupture)</td>
<td>approx. 60 MPa</td>
</tr>
</tbody>
</table>

*1 The colour of A1 can be slightly vary with every production batch.
*2 Provided that A1 is contained in a closed and frost free packaging.
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### Two-component material

A1 is a two-component material and consists of a mineral powder and a water based acrylic resin. This bond and result in a very strong material. A1 is environmentally friendly, non toxic, fire resistant, has good weather resistance properties and is easy to use.

### Processing time

The standard processing time after mixing is 20 minutes. When a shorter or longer processing time is required, this can be achieved by adding additives.

### Curing time

A1 is a water based product. Residual moisture must evaporate before obtaining the final result. The time needed for curing depends on external factors, such as the dimension of the object, the temperature and humidity. When the object has been laminated or cast in a mould, it can be removed from the mould as soon as it is strong enough to cope with the forces present. The product will achieve the optimum strength outside of the mould.

### Gel coat

A gel coat is often used when working with A1. This gel coat can be applied as follows:

- Add the desired amount of A1 Thix A to the mixture, by adding it in drops until the desired viscosity is achieved. Never exceed the maximum amounts.
- Add to the A1 resin pigment in the desired colour and/or other fillers like sand or metal powders if needed.
- Then mix the A1 resin with the powder until a smooth mixture is obtained.
- Apply the gel coat layer in the mould of at least 1 mm layer thickness, with a brush or other tool.
- After the gel coat has set, which takes 20 minutes, you need to proceed the job within one hour to make sure the gel coat and the underlying material achieve optimal adhesion.

### Weighing and mixing

A1 must be carefully weighed and mixed. The mixing ratio of A1 is 2 parts powder mixed with 1 part resin. Fill the beaker or bucket with the required amount of resin. Use the stainless steel high shear mixer to create a slurry. Then add the correct amount of powder into the slurry. Continuous mixing until a smooth mixture is achieved without lumps and continue to mix for an additional 30 seconds approx. Ensure that none of the material sticks to the bottom and sides and that everything is included in the mixture. Maintain a maximum number speed of 750 rpm when mixing with the high shear mixer.

### Cleaning

Hands and skin can be washed using soap and water. Clean the equipment with water directly after use. We suggest that the brushes and equipment are cleaned in a bucket of water instead of in a wash basin, as the hardening process continues under water.

### Important areas of application

- Architecture, indoor as well as outdoor
- Decorations and stage-setting
- Laminated panels
- Reproductions
- Casing
- Model building
- Moulding constructions and supporting moulds
- Covering polystyrene

### Properties

- Solvents free
- Low generation of heat (max 40°C)
- No shrinkage
- Environmentally friendly
- Better working conditions
- Very high standard of fire resistance
- UV stabilized
- Pigments can be added and can be painted over
- Great variety in surface structures
- Rain water proof (when sealed)
- Good mechanical properties

A1 can be casted, laminated, applied with spatula, brushed or rolled. These techniques can be used in combination and can be applied in a mould or on an object.

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A1 can be casted, laminated, applied with spatula, brushed or rolled. These techniques can be used in combination and can be applied in a mould or on an object.
When laminating in a mould, one can apply a gel coat first. As soon as the gel coat has set (after 20 minutes), the object can be laminated immediately (within one hour for best result) to ensure that an optimum adhesion between the gel coat and the laminate is achieved. Apply some A1 in the mould and spread it evenly over the surface.

- Then apply an A1 triaxial fibre, which has been cut to size.
- Then apply A1 again and work it into the triaxial fibre.
- Another layer of triaxial fibre can then be applied, the process is repeated this way.

Apply at least two layers of fibres, depending on the desired thickness and strength. Each layer of triaxial fibre results in a thickness of approximately 1 mm. Should the product be cast in a mould with supporting moulds. The supporting moulds can also be made by using A1!

Silicone moulds are the easiest products to use for casting. The silicone moulds are self-releasing and flexible. Small shapes must be free of wax, oil, dirt and dust. Using moulds, the level of release will need to be checked. When the moulding material is not self releasing, a release agent will need to be applied. Based on the standard curing time and the shape of the product, it is possible to remove the product from the mould after approximately 60 minutes. Fragile shapes could take longer to set.

The advantages are: 1 component, free of solvents, water based, quick drying, easy to apply, good UV-resistance, excellent adhesion, dirt resistant and water resistant.

Data:
- Minimum processing temperature: 10 °C
- Average use: 5-10 g per m²
- Shelf life: 1 year in closed packaging
- Storage: frost-free and protected against direct sunlight.

Triaxial fibre
Triaxial fibre (Glass fibre) is used during laminating A1. Using triaxial fibre, A1 objects can be made in moulds or objects can be covered with A1. Triaxial fibre strengthens the A1 objects.


## Laminating around an object

### Release agents

When using moulds, the level of release will need to be checked. When the moulding material is not self releasing, a release agent will need to be applied. Based on the standard curing time and the shape of the product, it is possible to remove the product from the mould after approximately 60 minutes. Fragile shapes could take longer to set.

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### Casting

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### Additives

There are additives available for the enhancement of the A1 process, for shortening or lengthening the processing time or for dilution or thickening of A1.

**A1 retarder** can be used to lengthen the processing time. The retarder must always be added to the A1 resin. Add a maximum of 2% retarder in proportion to the total weight.

**A1 accelerator** can be used to shorten the processing time. Always add the accelerator to the A1 resin. Add a maximum of 1% in proportion to the total weight. The accelerator can also be used to correct any retarding effects of some pigments and fillers.

**A1 Thix** is an additive to thicken the product and to give it a gel texture. This thixotropy agent is applied to produce gel coats and vertical or suspended parts. By adding 2% in proportion to the total weight the maximum achievable thickness is increased.

**A1 Thix B** is an additive to thicken the product. While stirring the thixotropy A1 mixture until the required thickness has been achieved. We recommend that you do not use this product if the object is expected to be exposed to water.

**A1 Thix A** is an additive to thicken the product. It can be used to cast complicated products or to enable the use of more than one filler. A1 thixotropic agent can be used to make complicated products or to enable the use of more than one filler. A1 thixotropic agent can be used to make complicated products or to enable the use of more than one filler.

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**A1 sealer** is a water based coating to protect the product against moisture and to give the product a weather resistant quality. TNO testing has shown that A1, if applied correctly with a sealer, can last for approximately 10 years (we can supply you with the TNO report on request).

- Always add 20% water to A1 sealer before use.
- A1 sealer can be applied in one or more layers to improve the protective qualities.
- The surface must be free of wax, oil, dirt and dust.
- Apply the sealer with a brush, roller or with a spray.
- Allow applying each layer of still wet sealer needs to be rubbed with a soft cloth.
- A second layer can be applied after 45 minutes, depending on the temperature and humidity.

## Fillers

A1 can be filled with various materials, such as pigments, sand and stone, organic fillers and lightweight fillers. This makes the look of A1 can be adjusted to the wishes and requirements of the user: a number of fillers affect the weather resistance.

A1 can be coloured by using pigments. The pigments are added into the resin before mixing. The maximum quantity of pigment is 2% of the total weight.

There are various metal powders available which can be added to A1 to achieve a metal effect. When you would like to achieve a rusted effect, use the iron powder.

- Add an equal amount of iron powder as the amount of powder used to produce A1.
- When the applied layer has dried, it needs to be sanded using a wet scourer pad or sanding paper.
- The surface can now be treated with hydrochloric acid, ammonia or any other agent of your choice. This accelerates the rusting process.

The same process can be used with bronze of copper powders.

**ATP powder** is a volume thickener. It enables the A1 to be thickened to a putty thickness. This putty can be used to make the surface smooth and add the finish to the object. A1 powder can only be used for indoor applications.

**Sand and quartz mix** is a thickener, which mixes with A1 in a scratch resistant and hard top layer. A granito or granite look can be achieved by using different colours and sizes of quartz. If that is the look you are looking for, you need to sand the top layer after it has set to bring the stone to the surface and achieve a bigger contrast.

**Poraver** is a very light weight fillers. This product is used to make light weight fillings in objects for instance when solid casting would be too heavy.

**Triaxial fibre** TPO (Triaxial fibre) is used during laminating A1. Using triaxial fibre A1 objects can be made in moulds or objects can be covered with A1. Triaxial fibre strengthens the A1 objects.

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