



Key Features

- Self-levels to a high gloss finish
- Pour 1mm to 15mm thickness
- Clear and UV resistant
- Expels trapped air
- Tough and hard-wearing

Product Description

GlassCast[®] is a remarkable clear epoxy resin developed specifically to provide a beautiful, hard-wearing, clear gloss surface for tabletops, bar-tops, decorative floor effects, furniture and creative projects.

GlassCast can be poured at thicknesses from just 1mm to very thick 15mm sections opening up a world of possibilities for embedments within the resin such as bottle tops, crushed glass, pebbles, pennies... the list is endless!

This amazing resin is self-levelling and cures to leave a stunning smooth, glossy surface which requires no flattening, polishing or further finishing - a true 'pour and leave' process. If you do need to polish the resin however, to remove scratches or add a soft radiused edge to a cast surface for example, GlassCast is very easy to polish using simple abrasive paper and polishing compounds to restore a full gloss.

Special additives in the resin help to expel trapped air after mixing meaning that in most circumstances there is no need to pop bubbles with a torch or heat-gun.

The advanced 'UV' formulation of GlassCast means that it has non-yellowing properties far superior to those conventional epoxies meaning that it will start beautiful and stay beautiful for years to come.

Recommended Uses

- **Tabletops**
Including embedments like bottle tops, corks, pebbles, 'riverbeds' etc.
- **Bar-Tops / Counters**
Including crushed glass, beer mats etc.
- **Furniture**
Including reclaimed wood, driftwood, decoupage etc.
- **Penny Floors**
- **Coasters / Placemats**
Including photos, decoupage.

How to Use

GlassCast has been designed to be as easy to use as possible, making it possible for users with little or no experience of working with resins to achieve professional quality results.

It is important for users to familiarise themselves with the following information and ensure that instructions are followed correctly, particularly those points relating to working temperatures, weighing and mixing. Unsatisfactory results are almost always caused by unsuitable ambient temperatures or improper weighing or mixing. See the 'Troubleshooting' section later in this guide for help with common problems.

Before You Begin...

Ambient Temperature

Like most epoxy resins, the way that GlassCast will cure is very dependent upon the ambient temperature. The system has been designed to work in ambient temperatures between 15°C and 30°C. For best results, an ambient temperature of between 20°C and 25°C is recommended.

Do not attempt to cure GlassCast at temperatures below 15°C. Doing so will result in a cure so slow that moisture from the air will be absorbed into the resin, affecting its clarity and surface finish.

Humidity

Whilst GlassCast is curing it can absorb moisture from the air. In higher humidity environments this moisture absorption can affect the surface finish and therefore, for best results, avoid pouring GlassCast in humid environments (relative humidity of 70% or more). This becomes particularly important in lower ambient temperatures where a slower cure leaves the uncured resin exposed to humid area for longer.

Surface Preparation

In much the same way that GlassCast can be adversely affected whilst curing by moisture in the air, it will also be affected by any moisture on the surface onto which it is poured. Whatever surface you are pouring onto, it is important to ensure that the surface is as dry and stable as possible. This is particularly relevant when working with natural materials like wood and cork or concrete where moisture levels within the substrate can be high.

When working with wood that is either freshly sawn or reclaimed/salvaged from a damp environment it will be necessary to dry the wood thoroughly - which could take days or weeks indoors - before use. Failure to ensure that wood is properly dried and stabilised can result in a surface reaction with the resin as well as 'bowing' or distortion if the wood starts to dry after the resin layer has been cast.

Sealing Coat - Required for All Porous Surfaces

When working with porous substrates such as wood, chipboard, concrete or ceramics it is highly recommended to first seal the substrate with a thin application of GlassCast. Doing so will seal and stabilise the surface, greatly improving the flatness of the final pour. The sealing coat must be allowed to fully cure and then 'keyed' before proceeding.

Embedments

Just as with the surface preparation, it is important to ensure that any materials that are going to be embedded within the resin, such as pennies, crushed glass, bottle tops, corks, leaves etc. are thoroughly dry. If the items or materials to be embedded are porous (i.e. they will absorb resin) then they should be sealed first with a thin application of GlassCast, allowed to cure fully before proceeding.

Curing Time

GlassCast will take several days to reach full hardness. Before starting your project, ensure your new surface can be kept traffic/use free for a number of days.

Depending on the ambient temperature, your GlassCast surface will take around 24hrs to become touch-dry. During this initial 24hrs it is essential to keep all dust and dirt away from the uncured pour. For smaller projects, simply covering the surface with a clean container or board is easy to do but for larger projects, including bar-tops or even floors, you should plan to limit airborne dust as much as possible.

Once the surface is 'touch-dry' it is much less susceptible to contamination from dust but it will still be quite soft and easy to mark and so you should avoid touching or using the surface for as long as possible. The time it takes for the surface to harden fully will depend very much on the ambient temperature; at 25°C you should allow at least 48hrs before using the surface although the hardness of the resin will continue to develop for several days.

Where practical, it is recommended to increase the ambient temperature as much as possible to fully cure (or post-cure) the resin before subjecting the surface to normal use.

Trapped Air - Heat Gun or Blow Torch Required?

GlassCast includes advanced technology to help it to expel air that has been entrapped by the mixing and pouring process and so in many cases the resin will fully release any trapped air to leave a beautiful bubble-free finish. After pouring, it usually takes the resin around 5-10 minutes to expel trapped air. After around 5 minutes you can exhale lightly on the poured surface to help to trigger this process.

Factors such as ambient temperature, mixing action, pouring thickness and the substrate you're pouring onto can all influence the appearance of trapped air (bubbles) within the resin. After around 10 mins, if you find that you can still see trapped air bubbles with this resin then lightly passing over the surface of the resin with a heat gun or better still a gas blow torch. In both cases only ever use a light pass and wait for any heat in the surface to dissipate before repeating.

Safety Precautions

Work in a well ventilated area.

Whenever weighing, mixing, pouring or checking the state of cure of the resin, you should be wearing suitable protective gloves and eye protection as a minimum precaution.

Always wear gloves when you are 'testing' to see if the surface has cured. Do not touch or handle the surface without gloves until you are sure that it is fully cured.

Please download the safety datasheet from the GlassCast product page on www.easycomposites.co.uk and ensure you understand and follow the detailed safety information it contains.

How Much Resin?

For solid surfaces, it's easy to calculate the amount of resin you'll need to cover a given area. For uneven surfaces or those including embedments like pennies, crushed glass or bottle tops; some compensation will be required. Typically for a grouted penny floor a 2mm layer is needed which is 2kg per square meter.

1kg = 1mm over 1sqm

You will require 1 kilo of resin per millimetre of thickness required over a 1 sqm area. Therefore, to calculate how much resin to mix, simply multiply the thickness you require (in millimetres) by the area of your surface (in square metres). Don't forget that porous (absorbent) materials like wood should be sealed before the main pour.

	Area of Surface to be Covered				
	25cm x 25cm (0.0625sqm)	50cm x 50cm (0.25sqm)	50cm x 100cm (0.5sqm)	100cm x 100cm (1sqm)	200cm x 100cm (2sqm)
1mm	62.5g	250g	500g	1kg	2kg
2mm	125g	500g	1kg	2kg	4kg
3mm	375g	750g	1.5kg	3kg	6kg
4mm	500g	1kg	2kg	4kg	8kg
5mm	625g	1.25kg	2.5kg	5kg	10kg

How to Measure and Mix

What You'll Need

- Set of digital scales
- Accurate spirit level
- Two clean mixing containers
- Two clean mixing sticks
- Nitrile gloves/safety glasses
- Plastic sticky tape or plastic strips to form 'barriers'
- OPTIONAL: Heat gun or blow torch

Mix Ratio

2:1 by Weight

GlassCast Epoxy Resin should be mixed with GlassCast Epoxy Hardener at a ratio of 2 parts resin to 1 part hardener. These parts should be measured by weight.

When working with any epoxy resin, it is essential to mix the resin and hardener exactly at the correct mix ratio. Failure to do so will result in a poor or only partial cure of the resin. Under no circumstances add 'extra hardener' in an attempt to speed up the cure time; epoxies do not work in this way.

Use digital scales to accurately weight the correct amount of resin into a cup, re-zero the scales and then weigh in the correct amount of hardener. Try to be accurate to within 1-2 grams, particularly on smaller mixes.

	Mix Ratio Examples		
	Total	Resin	Hardener
50g	33g	17g	
100g	67g	33g	
150g	100g	50g	
200g	133g	67g	
300g	200g	100g	
400g	267g	133g	
500g	333g	167g	
750g	500g	250g	
1kg	667g	333g	
2kg	1.333kg	667g	
3kg	2kg	1kg	
4kg	2.667kg	1.333kg	
5kg	3.333kg	1.667kg	

Mixing Instructions

Weigh or measure the exact correct ratio of resin and hardener into a straight sided container. Using a suitable mixing stick begin to mix the resin and hardener together to combine them completely.

Spend 3 minutes mixing the resin and hardener together, paying particular attention to the sides and base of the container. Remember: Any resin that has not been thoroughly combined with hardener will not cure.

Once you have finished mixing in one container, it is good practice to transfer the mixed resin into a second, clean mixing container and undertake further mixing for another 3 minutes using a new mixing stick. Doing so will eliminate the risk of accidentally using unmixed resin from the bottom or sides of the original container.

Step by Step Guide

Depending on your requirements (and artistic ideas) there are many different ways in which you can work with GlassCast to achieve some really stunning effects. The following step-by-step guide describes the most standard way to work with GlassCast which is a sealing coat (for porous surfaces) followed by a single main pour. For other ways to work with GlassCast, including undertaking multiple pours or working with pigments or embedments, please see the 'Advanced Techniques' section towards the end of this guide.

Step 1 - Sealing Coat

If the material you are pouring GlassCast onto is not porous, for example plastics, metals, marble or granite then you do not need to seal the surface and you can skip to Step 3.

If the material you will be pouring GlassCast over is porous such as wood, chipboard, MDF or ceramic materials then it is highly recommended to apply a sealing coat before the main pour. Doing so will improve the flatness of the final surface and help to eliminate warping of the substrate after cure.

Mix around 500g of GlassCast per square metre of surface you need to seal. Don't worry if most of the resin seems to be absorbed by the substrate; this is normal for the sealing coat.

Allow the 'sealing coat' to cure before proceeding to Step 2. Depending on the ambient temperature, this is likely to take around 24 - 48hrs.

Step 2 - Prepare the Sealing Coat for the Next Pour

In order to ensure that the next layer of GlassCast bonds will to the sealing coat it is necessary to 'key' the surface of the sealing coat using some coarse abrasive paper. This will also help to flatten off any slight raised texture where the substrate has absorbed some of the sealing coat.

Having checked that the sealing coat is well cured (it should feel hard and not at all tacky), use a sheet of coarse abrasive paper (such as P120) to 'key' or scratch the entire surface. Don't worry that the surface then looks scratched and light in colour - this will disappear as soon as the next layer of resin is poured.

Once the whole surface has been keyed, proceed to Step 3.

Step 3 - Adding Barriers

For shallow pours of around 1mm, it is possible to do the pour without the need for any 'barriers' around the edge of the surface. In this case, surface tension is usually enough to prevent excessive resin run-off and so you can proceed to Step 4.

For pours of 2mm or more it will be necessary to contain the resin at the edges of the surface to prevent excessive run-off. For smaller surfaces, simple barriers can be made using plastic sticky tape. For larger surfaces, you will need to make your barriers using strips of plastic. Before proceeding, ensure the barriers are tightly sealed to your surface and secured well in place.

Step 4 - Make Sure the Surface is Perfectly Level

GlassCast is self-leveling which makes it very important to ensure that your

surface is perfectly flat before you do the main pour. It is essential to use a spirit level to ensure that your surface is perfectly flat - use very thin wedges or packers underneath your surface to adjust it until it is exactly level (in both axis).

Step 5 - The Main Pour

- Ensure you work area is as free of airborne dust as possible.
- Ensure the ambient temperature is at least 15°C but ideally 20°C or more.

Calculate how much resin you will need for the main pour using the information in the 'How much resin?' section earlier in this guide.

Follow the instructions for measuring and mixing the resin making sure that your mix ratio is very accurate and that your mixing is very thorough.

Pour the mixed GlassCast of the whole surface to be covered. Use a spreader to distribute the resin as evenly as possible.

GlassCast has excellent properties for expelling air bubbles trapped in the resin from the mixing a pouring stage. Wait for several minutes until after pouring and you should start to see trapped air bubbles begin to rise and pop by themselves. You can encourage this process by exhaling lightly onto the surface of the resin which you should see further popping of any entrapped air.

After around 10 minutes, take a careful look over your resin surface. If any trapped air bubbles still persists, you can use a heat-gun or gas blow torch lightly over the surface of the resin to lift any remaining air bubbles out of the resin.

Once you are happy with the surface, cover it as soon as possible to prevent any airborne dust or contamination from landing on the surface.

Leave the surface to cure fully before handling; this is likely to be around 48hrs, depending on the ambient temperature. Please see the Curing Time section earlier in this guide for full information. The resin surface will continue to harden for a period of several days. Pay particular attention to not put your new surface into service for as long as possible.

Penny Floors

Laying the Penny's

First of all ensure your floor is as level as you can practically achieve as well as clean and free from dust and debris. Be aware that you may need to fill any large gaps or voids around pipe work or toilets, so that any resin cannot leak through.

You then want to glue down your penny's. Any good quality DIY adhesive will be suitable. Only a thin bead is needed to hold the penny's in place as the resin itself will bond the penny's to the floor. We chose a glue that cures clear to help see when it is dry and ready for the next stage. At this stage, your creativity can take over arranging the coins into patterns eg a mix of new versus older corroded coins or even set mosaic style patterns or a mix of different coin types.

Application of the coins is generally the longest part of the project but is key to a successful penny floor. Allow the glue to cure fully before moving onto the next stage.

Grouting the Floor

Grouting the floor helps produce a smoother overall finish in the resin and also fills the gaps between the pennies to create a nicer looking floor. Any good quality black grout is suitable. It does not really matter what brand you use. Black does look the best although you could use different colours subject to your own personal preference.

Apply the grout according to the manufacturers instructions using a squeegee to help spread the grout and fill any gaps. Once the grout has been applied and cleaned up, allow it to fully dry before moving onto the next stage. The grout MUST be dry before resin is poured onto it as the GlassCast is sensitive to moisture which could seriously damage the cosmetic effect and cure of the resin.

Mixing and Pouring the GlassCast Resin

Once the grout is fully dry, give the floor a quick sweep and vacuum clean to ensure there is no dust or loose debris that could ruin the resin pour.

For large floors, the biggest batch size we recommend doing in one go is 5kg of combined resin and hardener. This is because large batches are both hard to mix and also in large volumes the resin can quickly heat up in the bucket and potentially exotherm curing in the bucket. Keeping the batch size down and pouring the resin as soon as possible after mixing will avoid these issues.

Label up two buckets 1 and 2. The reason we are using 2 buckets is that even with thorough mixing, the edges and bottom of bucket 1 will still have a residue of improperly mixed resin. If you then pour this bucket onto the floor, it is possible you may pour some unmixed resin onto the floor which may not fully cure leaving tacky patches where the unmixed resin has ended up. The 2 bucket method minimises the chance of this happening.

Using bucket 1, weigh out the GlassCast. Remember to follow the mixing ratio of 2 parts resin to 1 part hardener by weight. Using a clean mixing stick, thoroughly mix the resin and hardener for 3 minutes taking care to ensure all the resin from the top to the bottom and right around the sides is fully mixed. Once 3 minutes have elapsed, transfer the resin in bucket 1 into bucket 2. Mix thoroughly for a further 3 minutes.

Once the Resin is mixed in bucket 2, immediately begin to pour the resin onto the penny floor. You must work quickly at this stage to prevent the resin exotherming in the bucket. Once the bucket is empty, repeat the mixing processes in bucket 1 and 2, again immediately pouring onto the penny floor, until all the necessary resin has been poured.

Each subsequent pour of resin will blend seamlessly with the previous pours as the resin begins to self level and spread out on the floor. You can help the process on large areas by using a notched spreader to move the resin around ensuring it reaches the edges of the floor.

At this stage the resin may appear to have a lot of little bubbles within it. However, do not worry, GlassCast's unique formulation includes agents that help expel air during the curing process. Wait around 10 minutes after pouring and spreading the resin and you will see most of the bubbles come to the surface and dissipate.

Curing the GlassCast Resin

Now the pouring is complete, we must allow the resin to fully cure to give us the hard finish we desire. The resin will achieve an initial cure in approximately 24 hours - temperature dependent. You must not touch or attempt to use the floor during this period and avoid opening doors and windows in that room to reduce the chance of dust and debris falling on the floor.

Once the initial cure has been achieved, the floor will be safe to walk on. The resin can take up to 7 days to achieve full strength so we recommend you minimise traffic for that time where possible.

You will now have a stunning floor that with care will last many years, amazing family and guests alike. Over time you may pick up minor scuffs and scratches but these can be polished out to restore the high gloss finish.

Advanced Techniques

Multiple Pours

There are a number of situations where you might choose to cast your GlassCast using a number of pours. Examples of multiple pour projects:

- If you want to achieve a pour thickness in excess of the recommended 15mm (please note that special additives in GlassCast will cause the resin to appear slightly 'cloudy' at increased thicknesses, especially over 25mm).
- In order to 'suspend' embedments so that they appear to float above a layer of clear resin.
- When using pigments to create layered colour effects.

Whatever your reason for undertaking a multiple pour, there are two options for ensuring a good bond between separately poured layers.

OPTION 1: B-Stage

In most cases, a second layer can be poured onto a previous layer if the original layer is at its 'B-stage'. This means that the resin has gone firm but still has a still tack left in the surface. At this stage, it is possible to pour the new layer over the top of the original layer without the need for any surface preparation because during this B-stage, the two layers will still form a chemical bond.

If the original layer has cured past its B-stage, i.e. once there is no longer any tack left in the surface of the original pour, it becomes necessary to allow the first pour to cure fully and then 'key' the surface using a coarse abrasive paper; see OPTION 2.

OPTION 2: Cure then Key

If the original layer has cured past its B-stage (see OPTION 2) then a second pour of resin will no longer be able to chemically bond to the first layer. Instead, we must ensure a good mechanical bond between the two layers. In order to achieve this it is necessary to 'key' the surface of the original layer using a coarse abrasive paper such as P120 wet-and-dry paper.

Before keying the surface, it's important to ensure that the first layer of resin is fully cured (not tacky on the surface). Use a sheet of coarse abrasive paper (such as P120) to 'key' or scratch the entire surface. Don't worry that the surface then looks scratched and light in colour - this will disappear as soon as the next layer of resin is poured.

Inclusions / Encapsulation

One of the stunning applications of GlassCast is the inclusion of other materials within the GlassCast surface. Such materials could be coins, bottle-tops, beer mats, playing cards, photographs, pebbles, crushed glass; in fact, just about anything.

With so many different types of material that could potentially be encapsulated within your GlassCast pour it's essential to experiment first to ensure that you understand how your chosen material will behave when encapsulated in the GlassCast. All materials will need to be thoroughly dry before you encapsulate



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