



ProMarine
s u p p l i e s

Epoxy Resin Flooring – a Strong Foundation

- Introduction
- Why Resin Flooring?
- Applications & Advantages
- How to Apply Epoxy Resins



Installing the right flooring to meet the needs of a variety of requirements will save time, money and lots of aggravation in the future; take it from one who just had the floors in his home replaced. Choosing the right material for floors, whether for commercial, industrial or residential use, may be critical to meet safety and code requirements, as well as taking into account maintenance, budget and aesthetic specifications too.

Coating a flooring substrate with [epoxy resin](#) for instance, not only renders the surface exceptionally durable, but it is also an easy-to-apply polymer that protects the underlying foundation from moisture, grease, stains and cracks. Epoxy resin flooring is used in variety of applications from residential garages and work/play rooms - to commercial and industrial uses such as warehouse, factory and terminal floors. The nonstick, gleaming appearance, and spill- and stain-resistance of this material make it the go-to flooring sealant and protectant – as well as an aesthetically pleasing solution – for myriad surfaces around the globe.

Why Resin Flooring?

There are a number of options to consider for flooring – so why choose epoxy resin? The three common types of resin formulations for flooring

are epoxy, polyurethane and methyl methacrylate (MMA) – with epoxy resin being the most well-known and widely used due to its performance, durability, variety of colors available and ability to bond to substrates – protecting them from impact, abrasion, wear, moisture, stains and chemicals.



Resin Flooring Formulations – Pros & Cons...

Each of the three resin-flooring solutions outlined here have their own distinct characteristics – making them more suitable to certain applications than others...

MMA has the fastest curing time for example, and so could be used in applications where production down time is an issue. MMA flooring may also be installed and used in sub-zero temperatures, while polyurethane and epoxy resin are not designed for cold-weather installation. This synthetic resin is often used in temperature-controlled commercial factories and production facilities in the food and pharmaceutical industries. MMA does however have the highest costs and heavy fumes during installation – that are harmless but need to be anticipated and allowed to dissipate.

Polyurethane coatings are generally used in heavy-duty industrial environments where harsh conditions may be a factor such as roads, bridges, pedestrian walkways and car parks. The high-abrasion resistance, ability to resist



ProMarine
s u p p l i e s

Epoxy Resin Flooring – a Strong Foundation

rapid and extreme temperature changes and durable finish make for a great solution for vehicular and pedestrian traffic areas.

Polyurethane surfacing does however require long curing time and is a more costly option than epoxy resin.



Epoxy resin coating solutions provide the most flexible resin flooring options due to their easy and cost-effective installation. Versatile epoxy flooring systems may be used in multiple applications across a variety of industries. Epoxy resins may be applied in a range of thicknesses due to application requirements, and provide superior corrosion, abrasion, chemical, moisture and stain resistance. Like polyurethane, epoxy resin does require a longer curing time.

Epoxy Resin Flooring - Applications & Advantages

There are advantages and disadvantages to almost any decision in life – and flooring material selection is no different. It is generally agreed however, that Epoxy Resin enjoys many more pros than cons in a variety of uses including as a viable and versatile flooring solution. Epoxy floor coatings are frequently used in commercial, industrial and residential applications – providing a smooth and durable surface that lasts for years.

During installation, epoxies provide strong adhesion to substrates for a solid foundation. For concerns about odors and emissions during

the drying or curing process; there are water-based epoxy floor coatings. These are a bit less chemical and abrasion resistant than standard epoxies - but are a good solution in environmentally sensitive areas and applications. Plus, since epoxy resin is installed directly over concrete and other foundations, installation costs are much lower than alternatives.

Epoxy resins have a number of advantages to create a functional, hygienic, decorative and easy-to-maintain surface. Aesthetically, epoxies are available in a wide variety of colors (dyes), and may be infused with decorative effects (glitter, other small objects) and textures. All epoxy resin flooring is very durable, and bonds fully to concrete and other substrates - thereby protecting the underlying foundation from ongoing wear, abrasion, impact, moisture, oil/grease and a wide range of chemicals.

"Epoxy floor coatings are commonly used for commercial and industrial flooring. Epoxy coatings are normally applied over concrete floors to provide a high-performance, smooth, and durable surface that can last many years and withstand heavy loads. Many industrial sites, warehouses, and commercial buildings rely on epoxy floors to maintain clean and safe conditions for workers, equipment, and inventory," from '[Applications and Advantages of Epoxy Flooring](#)' by Juan Rodriguez.





ProMarine
s u p p l i e s

Epoxy Resin Flooring – a Strong Foundation

How to Apply Epoxy Resins

In commercial and industrial applications, where large surface areas are to be covered and sealed, contacting a flooring professional is probably a good idea. But for those do-it-yourselfers, who want to approach a residential or small business flooring surfacing project – we've got instructions, tips and a tools list for you...

If the flooring to be coated is a new concrete slab – the foundation should cure for at least 30 days. Per '[How to Apply Epoxy Resins on Floors](#),' from Home Guides on SFGate.com - "Moisture tests on the slab should indicate relative humidity of less than 80 percent before you begin the product application."

Our own website here at ProMarine Supplies, outlines a three-step process for [surface preparation](#):

1. Clean - Bonding surfaces must be free of grease, oil, wax, mold release or any contaminants. Use lacquer thinner, acetone or other appropriate solvents to clean surface. Then wipe the surface with paper towels before the solvent dries. Follow all safety precautions when working with solvents.
2. Dry - All bonding surfaces must be as dry as possible for good adhesion. To accelerate drying use a hot air gun, hair dryer or heat lamp. Use fans to move the air if working in confined or enclosed spaces. Watch out for condensation when working outdoors or whenever the temperature of the work environment changes.
3. Sanded - Sand smooth non-porous surfaces with 80-grit aluminum oxide paper will provide a good texture for the epoxy to "key" into. Remember to remove any flaking, chalking, blistering,

or old coating before sanding. Remove all dust after sanding.

The Home Guides site of the SF Chronicle also features a tools list, step-by-step instructions and both installation and safety tips – to help ensure a smooth and error-free flooring experience – to help you make the most of a strong foundation!

