

GULF COAST PAINT MFG., INC.

Manufacturers of High Performance Industrial Coatings

Owners at Industrial Facilities often come to us wondering what type of coating system is needed to protect their assets. Whether it is protecting steel or concrete surfaces exposed to chemicals or concrete that needs a coating or damaged concrete that needs to be repaired, we are often asked to come up with a solution to protect their facility. With so many different options available, it can be difficult to decide what is best for your facility. Here are some different types of epoxies and urethanes that can be used in your facility:

Epoxy Coatings

Epoxies have excellent adhesion to many substrates. They're known for being "surface tolerant" which is why so many epoxy primers are specified. They can also be used as an intermediate coat and top coat due to their durability and impact resistance. They generally have very good chemical resistance which allows the higher performing epoxies to be used for tank linings, containment areas, and for general protection against chemicals. One of the downsides of epoxies is that they will eventually chalk and fade. This is where Polyurethanes come in to play, which we will discuss later. Here's some of the different types of Epoxy Coatings:

- **100% Solids Epoxy:** These epoxies generally have very little or no Volatile Organic Compounds (VOCs) and little to no odor. They can be used as a primer, intermediate and topcoat depending on application. They can be mixed with different aggregates for trowel downs to resurface concrete. Another benefit is the use as binder to be mixed with metallic flakes, color quartz, and as a base coat for color flakes. There is some downside to 100% Solids Epoxies. They have a short pot life – generally 20-40 minutes and they usually can't be recoated until 6+ hours. (PC-1703, PC-1000, PC-1801, PC-1803, PC-1850, CL-696)
- **High Solids Epoxies:** Most high solids epoxies provide excellent protection against acids and alkalis. These epoxies can generally be used on steel, concrete, and galvanized steel. Most H.S. epoxies have "fast cure" and "low temperature cure" hardeners that allow for a high level of productivity in the warmer months and the ability to cure down to cooler temperatures in the colder months. One of the most popular high solids epoxies is Amine Adduct Epoxies. These epoxies are designed by having the curing agent with a small amount of epoxy resin. (CM-15, PC-155, PC-275, PC-650)
- **Polyamide Epoxies:** Polyamide Epoxies are one of the older epoxy technologies that are still used today. Usually these epoxies are economical and are used as a primer and finish coat. They're not as high performing as the high solids and 100% solids epoxies but they offer a great solution in areas where there's no aggressive chemicals. (PC-110, PC-145, PC-149, PC-200)
- **Cycloaliphatic & Novolac Epoxies:** Both of these epoxies are very high performing epoxies that are ideal for harsh chemicals. They're great choices for internal tank linings, secondary containment, pump pads, trenches, and other high exposure areas. Most novolacs are designed to handle 98% sulfuric acid and 37% HCL for splash & spillage. (PC-517, PC-555, PC-590, PC-1500, PC-1875)
- **Phenalkamines:** Phenalkamine cured epoxies are excellent for low temperature / cold weather applications. These coatings are fast setting, and can be recoated the same day which is beneficial for owners and contractors. Phenalkamines are usually lower viscosity than some of the other epoxies, which makes it a great choice for line stripping in facilities. It has a long pot life, great adhesion, and good chemical resistance. (PC-636)

Polyurethane Coatings

Polyurethanes are known for their outstanding UV resistance, gloss retention and color stability. These coatings are usually sold as finish coats and are usually applied at 2-3 mils DFT. One concern with polyurethanes is their sensitivity to humidity and moisture. As a rule of thumb, it is best to apply these coatings between 10 AM – 4 PM, which is when the humidity is generally at its lowest point of the day. Depending on the product, polyurethanes can have better chemical resistance and provide better abrasion and impact resistance than the epoxies. Here's some of the different types of Polyurethane Coatings:

- **Moisture Cured Urethanes:** Moisture Cured Urethanes are one component urethanes that cure off of moisture and humidity. These coatings can normally handle higher dry service temperatures than epoxies and two component urethanes. They provide a hard finish that is very durable. Most MCU's are aromatic, which basically means they can change color over a period of time. ([MCU-100](#), [MCU-101](#), [MCU-104](#))
- **Acrylic Polyurethanes:** Acrylic Polyurethanes are known for their excellent gloss and color retention, UV resistance, and provide a tough and durable finish. These coatings are used for exterior steel surfaces for long term protection. Acrylic Polyurethanes are usually made with an aliphatic compound which provides the long term stability needed in an Acrylic Polyurethane. ([CT-370](#), [CT-371](#), [CT-373](#), [CT-380](#), [CT-398](#))
- **Polyester Polyurethanes:** Polyester Polyurethanes is the premier Polyurethane in terms of abrasion, scratch, impact resistance and have excellent gloss and color retention. These coatings are made with 100% Polyester resin which provides an extremely durable finish. Recommended as a finish coat for concrete floors in high traffic areas and exterior structural steel surfaces. Polyester Polyurethanes are a true C.R.U. (Chemical Resistant Urethane), which makes it a great choice for aircraft hangars, service bay floors and other high traffic areas due to its resistance to a wide range of chemicals including salt, oil, gas, grease, skydrol, caustic, and most acids that you may come in contact with on your floor. ([CT-332](#), [CT-352](#))

Conclusion

Selecting epoxies and polyurethanes requires careful selection. The right choice can add longer service to your assets and prevent you from having early failures. For over 40 years, Gulf Coast Paint has been helping owners and contractors determine the best coating solution for their specific need. Contact us today at info@gulfcoastpaint.com or 251-964-7911 for assistance on your upcoming coating project.