



Acid Etching Concrete Sport Surfaces

Purpose of Acid Etching

Acid etching is a crucial step in the process of applying acrylic coatings to concrete sport surfaces. Its primary function is to neutralize the high alkaline (high pH) surface of new concrete. As concrete cures, water evaporates, bringing salts (efflorescence) to the surface and creating a high pH crust (approximately 13.5). Acrylic coatings, however, adhere best in a neutral pH environment (around 7). Acid etching brings the surface pH back to neutral, ensuring a strong chemical bond between the concrete and the acrylic coatings. It also helps to remove the powdery efflorescence that can cause the final coatings to flake, peel, or appear cloudy.

The Acid Etching Process

Acid etching is a critical step in preparing a concrete court for resurfacing. Here is a step-by-step guide on how to perform this process safely and effectively.

Safety Precautions

Working with acid requires proper safety gear. Always wear thick rubber gloves, safety glasses, and protective clothing and boots. Avoid inhaling the fumes of concentrated acid, and ensure the work area is well-ventilated.

Materials and Preparation

- **Acid Quantity:** Plan to use approximately 2 to 3 gallons of acid for a smaller court, such as a 30' x 60' pickleball court. For a full-sized tennis court (60' x 120'), you will need about 8 to 9 gallons.
- **Protect Surrounding Areas:** Before you begin, protect any nearby sensitive plants or materials. While the rinsed-off acid will be highly diluted, it's best to minimize contact with the surrounding environment.

Application

1. **Dampen the Surface:** Thoroughly wet the concrete court with water.



- 2. Mix the Solution:** Dilute the acid with water according to the manufacturer's instructions for "masonry etching". Pour water in first, then add the acid to the water to avoid splashing concentrated acid.
- 3. Apply and Scrub:** Apply the acid mixture to the court in small, manageable sections. Use a stiff push broom to scrub the solution into the concrete, ensuring even coverage.
- 4. Rinse:** Once the solution has reacted, use a hose to thoroughly rinse the entire court. Make sure all residual acid and contaminants are washed away.
- 5. Common Misconceptions** A common misconception is that acid etching's main purpose is to create a physical texture for adhesion. While a medium-broom finish (or CSP 3 to 4 surface profile) is still necessary for a physical bond, the primary role of acid etching is to create a strong chemical bond by neutralizing the surface pH.
- 6. Conclusion** Acid etching is a necessary and required step when coating a new concrete court. By neutralizing the high pH surface and removing efflorescence, it ensures optimal chemical adhesion and the long-term durability of the acrylic sport surface.