CONCRETE SURFACE PROFILE (CSP) REQUIREMENTS FOR EACH RESIN SYSTEM

OVERVIEW

Concrete Surface Profile (CSP) directly impacts adhesion strength and long-term performance of resinous flooring systems. CSP describes the texture created through mechanical preparation, ranging from CSP 1 (smooth) to CSP 10 (very rough). Selecting the correct profile ensures a mechanical anchor for primers, build coats, and heavy-duty industrial systems. Improper profile selection often leads to delamination, fisheyes, pinholing, and premature wear.

Recommended CSP Levels by System

- Moisture Mitigation Primers: CSP 3–5
- Standard Epoxy Primers: CSP 2–3
- Industrial Epoxy Buildcoats: CSP 2-4
- Self-Leveling Epoxies: CSP 3-4
- Broadcast Systems (Flake/Quartz): CSP 2-4
- Polyurea Basecoats: CSP 2-3
- Polyaspartic Topcoats: CSP 2–3
- Water-Based Urethanes: CSP 1–2 (over existing coatings only)

Why CSP Matters

- Creates “mechanical tooth” for adhesion.
- Increases surface energy for primer wet-out.
- Reduces surface contaminants and weak layers.
- Enables uniform film build.

Verification

- Compare prepared slab to ICRI CSP chips.
- Ensure surface is uniform throughout jobsite.
- Spot-grind edges and difficult areas.

Best Practices

- Use shot blasting for CSP 3+ profiles.
- Use diamond grinding for CSP 1–3.
- Avoid acid etching—it does not create adequate CSP.
- Always vacuum and inspect for dust or weak zones.