SHOT BLASTING VS. GRINDING: SELECTION CRITERIA & TECHNIQUES

OVERVIEW

Mechanical preparation is essential to achieving proper adhesion for resinous coatings. The two most common methods are shot blasting and diamond grinding. Selection depends on coating system requirements, substrate condition, and desired CSP. Using the wrong method may lead to insufficient profile, coating failures, and warranty issues.

Shot Blasting Advantages:

- Produces deeper, consistent CSP (3–7).
- Removes weak laitance effectively.
- Ideal for moisture mitigation systems and high-build coatings.

Limitations:

- May leave “cornrows” or inconsistent passes if poorly executed.
- Not ideal for creating smooth profiles.
- Requires edge grinding afterward.

Best Practices:

- Overlap each pass by 50%.
- Use appropriate shot size (S-170 to S-390 depending on CSP).
- Adjust feed speed to avoid streaking.

Diamond Grinding Advantages:

- Creates smooth CSP 1–3.
- Ideal for primers, urethanes, and low-build systems.
- Effective for removing coatings and adhesives.

Limitations:

- May polish concrete if improper tooling is used.
- Can leave micro-dust if vacuum extraction is inadequate.

Best Practices:

- Select the correct bond diamonds (soft, medium, hard).
- Use multiple passes to refine profile.
- Always grind edges and transitions.

Choosing the Right Method

- Use shot blasting for high vapor primers, self-leveling coatings, and urethane cement floors.
- Use grinding for thin-mil coatings, recoats, and decorative broadcast finishes.