



Powder Coating Line Repair vs. Replacement Checklist

This checklist is designed to help owners, managers, and operations leaders evaluate whether continued repair is economically justified.

For each question, check Yes or No. A "Yes" indicates elevated risk and increasing justification for replacement.

A. Reliability & Downtime

1. Unplanned downtime exceeds 4 hours per month. ☐ Yes ☐ No
2. Unplanned downtime is increasing year-over-year. ☐ Yes ☐ No
3. The line experiences repeated failures in the same sub-system (oven, booth, washer, conveyor). ☐ Yes ☐ No
4. Mean Time Between Failure has dropped below acceptable production requirements.
☐ Yes ☐ No
5. Urgent repairs regularly occur outside normal working hours. ☐ Yes ☐ No
6. Repair and maintenance parts must be sourced with long lead times, necessitating excessive spares inventory or causing extended downtime. ☐ Yes ☐ No

If 3 or more are "Yes," reliability is no longer predictable.

B. Maintenance Cost & Asset Life

7. Annual repair/maintenance costs equal or exceed 8–12% of replacement cost. ☐ Yes ☐ No
8. Major components (burners, fans, controls) have been replaced multiple times. ☐ Yes ☐ No

9. Contractor or manufacturer labor (electrical/mechanical/troubleshooting) is required more than once per quarter. ☐ Yes ☐ No
10. Downtime-related overtime is a recurring cost. ☐ Yes ☐ No
11. Line managers and maintenance staff spend more time “keeping it running” than improving throughput or finish quality. ☐ Yes ☐ No

If 2 or more are “Yes,” the system is approaching end-of-life economics.

C. Process Control & Repeatability

12. Throughput rates vary unpredictably due to equipment issues. ☐ Yes ☐ No
13. Pretreatment, drying, coating, or curing results vary unpredictably due to equipment issues. ☐ Yes ☐ No
14. Operators must manually compensate for process instability by adjusting line speed, powder output, oven setpoints, etc. ☐ Yes ☐ No
15. Process data (temperatures, alarms, airflow readings) indicates decreased performance or reliability. ☐ Yes ☐ No
16. Reject/rework rates have increased over the last 12–24 months. ☐ Yes ☐ No

If 2 or more are “Yes,” the system is no longer process-controlled and quality costs will continue rising.

D. Oven Performance & Energy Efficiency

17. Gas usage has increased relative to production volume. ☐ Yes ☐ No
18. Heat-up times have increased compared to historical performance. ☐ Yes ☐ No
19. The oven has incurred damage to its structure, ductwork, heat unit, exhaust, or doors/ware openings. ☐ Yes ☐ No
20. Door seals, ductwork, heat unit housing, or structural components are undamaged but warped, leaking, or frequently repaired. ☐ Yes ☐ No
21. Burners cycle excessively or the oven experiences frequent alarms or ignition failures. ☐ Yes ☐ No
22. Performance is degraded due to airflow issues attributable to heat unit fans, exhaust fans, or bearings. ☐ Yes ☐ No

If 3 or more are “Yes,” the oven is likely wasting fuel and limiting throughput.

E. Spray Booth & Powder Collection Performance

- 23. Powder escapes the booth and accumulates in nearby locations. ☐ Yes ☐ No
- 24. Filter life is declining or pressure gauges rise rapidly. ☐ Yes ☐ No
- 25. Booth airflow is inconsistent in the work envelope. ☐ Yes ☐ No
- 26. Reclaim efficiency is poor or inconsistent. ☐ Yes ☐ No
- 27. Ducting or exhaust components contain significant powder buildup or are increasingly difficult to clean. ☐ Yes ☐ No
- 28. Fan(s) no longer maintain design CFM. ☐ Yes ☐ No

If 2 or more are “Yes,” booth performance may be driving powder waste and safety risk.

F. Pretreatment System Capability

- 29. Pretreatment does not have adequate stages or dwell time to meet customer specifications with current chemistries. ☐ Yes ☐ No
- 30. Nozzle plugging, sludge buildup, or pump performance issues are recurring. ☐ Yes ☐ No
- 31. Chemical concentration, pH, or temperature is difficult to control. ☐ Yes ☐ No
- 32. Carryover contamination is present between stages. ☐ Yes ☐ No
- 33. Adhesion, corrosion, or cosmetic failures occur despite proper chemical management. ☐ Yes ☐ No

If 2 or more are “Yes,” pretreatment may be limiting coating performance and increasing warranty risk.

G. Conveyor Reliability

- 34. The conveyor does not provide appropriate line speed to meet current demands. ☐ Yes ☐ No
- 35. The conveyor rate cannot be accurately controlled or “drifts” during use. ☐ Yes ☐ No
- 36. The conveyor chain must be replaced or significantly adjusted every few months. ☐ Yes ☐ No
- 37. The conveyor is not rated for current loading or stops frequently due to safety alarms. ☐ Yes ☐ No

38. The conveyor rail or supports are degraded near the pretreatment washer or wash area.
☐ Yes ☐ No

39. The conveyor occasionally “binds up” and must be reversed or manually cleared. ☐ Yes
☐ No

If 2 or more are “Yes,” conveyor issues are impacting overall line performance and increasing rework risk.

H. Controls Obsolescence and Automation Limitations

40. PLC, HMI, VFD, temperature controller, or safety hardware or software is discontinued or not easily sourced from the finishing line provider. ☐ Yes ☐ No

41. Line repair or maintenance requires using aftermarket or used components. ☐ Yes ☐ No

42. The system cannot support upgrades like data logging, recipe control, or remote troubleshooting. ☐ Yes ☐ No

43. The line is incompatible with future automation plans. ☐ Yes ☐ No

If 2 or more are “Yes,” the line is approaching “forced replacement” status due to obsolescence.

I. Safety and Compliance Exposure

44. Environmental, Health, and Safety (EHS) or insurance audits have identified deficiencies.
☐ Yes ☐ No

45. Powder accumulation exists in booth plenums, ductwork, or exhaust housings. ☐ Yes
☐ No

46. Electrical equipment is not properly protected or not appropriately rated. ☐ Yes ☐ No

47. Equipment safety devices or interlocks are outdated, absent, “jumped out,” or unreliable.
☐ Yes ☐ No

48. Oven explosion venting is missing or inadequate. ☐ Yes ☐ No

49. Oven or pretreatment burner systems frequently trip high temperature limit safeties.
☐ Yes ☐ No

50. Operators express legitimate safety concerns about the line. ☐ Yes ☐ No

If 1 or more are “Yes,” replacement should be evaluated urgently. Safety issues should not be ignored.

How To Use This Form

Count the total number of “Yes” responses:

0–8 Yes: Continue maintaining your equipment but monitor system performance and unscheduled repairs at least quarterly to detect unfavorable trends.

9–16 Yes: Replacement planning should begin.

17–25 Yes: Strong justification for prompt replacement.

Notes:

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Reliant Finishing Systems
2541 AL-67, Somerville, AL 35670
(256) 355-9000
www.reliantfinishingsystems.com