25-Point Combustible Dust Safety Self-Assessment

Use this checklist to evaluate your facility's current dust explosion prevention controls. Be honest in your assessment - identifying gaps is the first step to a safer operation.

Date _____

Assessor _____

Elimination & Substitution (The Best Defense)

1. Material transfer points are fully enclosed to minimise dust generation. ☐ Yes ☐ No ☐ N/A
2. Feedstock is processed (pelletized/ briquetted) to reduce fine, combustible dust. ☐ Yes ☐ No ☐ N/A
3. Mechanical conveyors are used instead of pneumatic where possible. ☐ Yes ☐ No ☐ N/A
4. Processes are designed to minimize the number of transfer points (conveyor drops) ☐ Yes ☐ No ☐ N/A

Engineering Controls (Robust Protection)

5. Dust collection systems (LEV) are installed at all primary dust generation points ☐ Yes ☐ No ☐ N/A
6. Equipment in hazardous zones is rated for explosive atmospheres (ATEX/NFPA compliant). ☐ Yes ☐ No ☐ N/A
7. Inerting systems maintain oxygen below safe levels in process equipment (if required). ☐ Yes ☐ No ☐ N/A
8. Material is screened/filtered early in the process to remove fine dust (fines). ☐ Yes ☐ No ☐ N/A
9. Spark detection and suppression systems are installed in high-speed conveyors/ducts. ☐ Yes ☐ No ☐ N/A
10. Automated monitoring detects temperature, pressure, or smoke anomalies with alarms. ☐ Yes ☐ No ☐ N/A

Administrative Controls (System & Discipline)

11. A Dust Hazard Analysis (DHA) has been completed within the last 3 years. ☐ Yes ☐ No ☐ N/A
12. All personnel are trained on combustible dust hazards and emergency procedures. ☐ Yes ☐ No ☐ N/A
13. Preventive maintenance schedules are followed and documented. ☐ Yes ☐ No ☐ N/A
14. A formal Management of Change (MOC) process exists for all modifications. ☐ Yes ☐ No ☐ N/A
15. Safety-critical equipment is tested on a regular, documented schedule. ☐ Yes ☐ No ☐ N/A
16. Near-misses and abnormal operating conditions are reported and investigated. ☐ Yes ☐ No ☐ N/A

Foundational & Critical Gaps

17. Explosion protection systems (vents/suppression/isolation) are in place, based on DHA results. ☐ Yes ☐ No ☐ N/A
18. Hazardous Area Classification (HAC) has been performed and documented. ☐ Yes ☐ No ☐ N/A
19. Dust explosion parameters (Kst, Pmax, MIE) are known for your specific feedstock/biochar. ☐ Yes ☐ No ☐ N/A
20. Site-specific emergency response procedures are practiced. ☐ Yes ☐ No ☐ N/A
21. All equipment is properly grounded and bonded for static electricity control. ☐ Yes ☐ No ☐ N/A
22. A documented housekeeping program is followed (prohibits compressed air cleaning). ☐ Yes ☐ No ☐ N/A
23. Hot work permits are required and enforced ☐ Yes ☐ No ☐ N/A
24. Flame-Resistant Clothing (FRC) is mandatory in areas with potential flash fire / deflagration risk. ☐ Yes ☐ No ☐ N/A
25. N95/P100 or better respirators are available and correctly worn when needed. ☐ Yes ☐ No ☐ N/A

Calculate Your Risk Assessment

Step 1: Count Your Responses

1. Count total "No" responses (excluding N/A items) in Q 1 - 16: _____
2. This is your **Gap Score**

Step 2: Count Your Critical Responses

1. Count total "No" responses (excluding N/A items) in Q 16 - 25: _____
2. This is your **Critical Gap Score**

✓ EXCELLENT	↗ GOOD	⚠ MODERATE RISK	⚠ HIGH RISK
0 Gaps	**1 - 2 Gaps**	**3 - 5 Gaps**	**6 + Gaps or 1 + Critical Gap**
Strong safety posture. Maintain through regular audits.	Good foundation. Address identified gaps to strengthen safety.	Priority action needed. Multiple critical controls missing.	Immediate expert consultation strongly recommended.