Combustible Wood Dust Mitigation and Control Checklist

(Organization name)

Combustible wood dusts in the work place present a risk of both fire and explosion if they are not managed effectively. A dust explosion or serious fire can cause catastrophic loss of life, injuries, and destruction of buildings.

Controlling combustible wood dust hazards requires a systematic long term approach contained in a combustible wood dust management program. WorkSafeBC requirements contained in *Prevention Policy Item D3-115-3 Employer Duties-Wood Dust Mitigation and Control* identify reasonable steps for an employer to take to address these hazards. The reasonable steps include developing and implementing a combustible wood dust management program.

Assistance for developing a combustible wood dust management program can be found in the *Combustible Wood Dust Management Program Development Guide*, available online at www.worksafebc.com\sawmills. After implementing a combustible wood dust management program, an employer should undergo a wood dust mitigation and control audit as soon as reasonably possible.

This checklist may be used to assist in the development and implementation of a combustible wood dust management program. **This checklist should not be used in place of an audit but may be used to prepare for an audit.**

Employers who elect to use an audit tool other than the Wood Dust Mitigation and Control Audit developed by B.C.'s sawmill industry may consult this document for guidance on the components of a thorough audit.

Policy Statement

1. Does _____ **have a written policy statement which:**
(Organization name)

	Yes	No	Comments
I. Confirms (Organization name) _____ 's commitment to fully and completely implementing the combustible wood dust management program			
II. Clearly articulates the aims and objectives of the combustible wood dust management program			
III. Establishes the responsibilities that (Organization name) _____ has as the employer for managing the hazards of combustible dust in the workplace			
IV. Sets out worker responsibilities around managing the hazards of combustible dust in the workplace			
V. Sets out supervisor responsibilities around managing the hazards of combustible dust in the workplace			
VI. Defines operational accountability in the key areas of responsibility, including:			
• Orientation and training			
• Hazard assessment			
• Implementation of dust mitigation systems and controls			
• Housekeeping			
• Inspections, measuring, and monitoring of combustible wood dust accumulations			
• Electrical and mechanical preventative maintenance programs			
• Tracking and completion of corrective actions			
• Emergency preparedness			
• Conducting a wood dust mitigation and control audit			
• Annual combustible wood dust program review			
• Record keeping and statistics			

2. **Are all personnel assigned to individual areas of responsibility qualified to manage those areas based on their training, education, and experience?**

☐ Yes
☐ No

Risk Assessment

3. **Has your assessment included all work areas where combustible dust is produced or may accumulate?**

NOTE: This list should be adapted to meet the unique nature of your workplace, including where there are multiple work areas or outbuildings.

	Yes	No	Comments
All buildings and structures on site			
Concealed spaces including ceilings, crawl spaces, and attics			
Elevated horizontal surfaces			
Basement areas			
Fully or partially contained, enclosed, or compartmentalized areas			
Mechanical and electrical equipment and their enclosures			
Outside areas adjacent to buildings and structures			
Processes which use, consume, or handle combustible dust			
Work activities that may increase the hazard of combustible dust			

4. Has your assessment considered all potential ignition sources?

NOTE: This list should be adapted to reflect the work that takes place in your workplace.

	Yes	No	Comments
Hot work, such as welding or cutting			
Hot surfaces			
Open flame or fuel-fired heating equipment			
Friction points, including bearings, drives, and gear reducers			
Machine and processing equipment			
Electrical systems (including facility lighting)			
Smoking			
Static electricity			
Lightning strikes			
Tramp metal or foreign material			
Other			

5. Has your assessment considered all means of dust dispersion?

NOTE: This list should be adapted to reflect the work that takes place in your workplace.

	Yes	No	Comments
Discharge from saws or other dust handling equipment			
Equipment vibration			
Conveyor transfer points			
Compressed air use			
Upset conditions			

6. Identify existing combustible dust controls and describe their effectiveness.

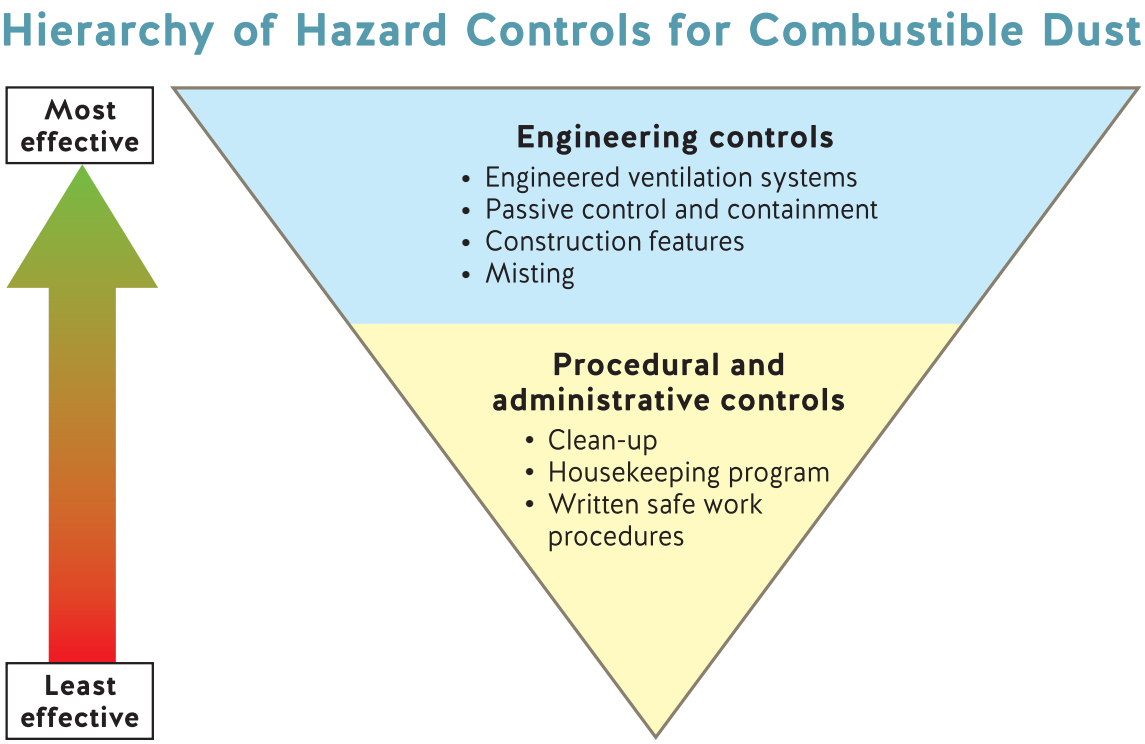
Engineering controls	Existing control (details)	Effectiveness of control		
		Very	Somewhat	Not at all
Local exhaust ventilation systems				
Dust collection system				
Passive controls or containment, such as:				
• Improving chuting and drop-outs to collect dust and debris				
• Designing drop-outs and grizzlies to capture debris and reduce carryover				
• Shielding machine centre				
• Diverting dust from potential ignition sources				
Construction features such as:				
• Covering walls and ceilings with smooth materials				
• Boxing-in beams and other structural steel with horizontal surfaces				
• Building sharply sloped covers or caps on windows, ledges, or other horizontal surfaces				
Misting				
Personal protective equipment (PPE)				
Procedural and administrative controls				
Manual clean-up				
Housekeeping program				
Tools or alternative methods to facilitate safe clean-up				
Written safe work procedures				
Other				

7. **Have you identified priorities for clean-up and control efforts?**

☐ Yes
☐ No

8. **Do existing controls and identified priorities for clean-up and control efforts reflect the hierarchy of hazard controls for combustible dust?**

☐ Yes
☐ No



9. **Were the following considered in establishing priorities?**

	Yes	No	Please explain
Assessment of dust characteristics			
Accumulation rates			
Ignition potential			
Propagation potential			
Other			

10. **Under what circumstances have you, or would you, reassess the priority of combustible dust hazards?**

11. **Is there a process for conducting a risk assessment as a result of changing conditions, including production-related changes, installation of new equipment, seasonal changes, or other changes that could impact or introduce combustible dust risks?**

☐ Yes
☐ No

Control Measures – Control Plan

12. **Which of the following control measures have you put in place, or do you intend to put in place?**

Engineering controls	Control is in place	Control is planned (include expected implementation date and capital plan if applicable)	If control is not in place and not planned, explain
Ventilation and dust collection systems			
Passive controls (describe)			
Dust containment (describe)			
Construction features (describe)			
Misting			
Other engineering controls (describe)			
Procedural and administrative controls			
Manual clean-up			
Housekeeping program			
Tools or alternative methods to facilitate safe clean-up			
Written safe work procedures (describe)			
Other procedural controls (describe)			

13. **Do these control efforts align with your priorities?**

- ☐ Yes
- ☐ No

14. **Have you established clearly defined thresholds for the accumulation of combustible dust? Record the criteria and thresholds for both primary and secondary dusts in the table below.**

	Threshold	Comments
Primary dusts		
Secondary dusts		

15. **Do clean-up workers, including supervisors and contractors, understand these thresholds?**

- ☐ Yes
- ☐ No

16. **Have you validated this through interviews with clean-up workers, including supervisors and contractors?**

- ☐ Yes
- ☐ No

17. **Can you demonstrate that workers performing clean-up are trained and supervised?**

- ☐ Yes
- ☐ No

18. **Can you demonstrate that your clean-up schedule is reliable and effective?**

- ☐ Yes
- ☐ No

19. **If the existing clean-up schedule does not prevent combustible dust from accumulating beyond established thresholds, what steps will you take to prevent the excessive accumulation of combustible dust?**

Safe Work Practices and Procedures

20. **Have you provided written instruction and established safe work procedures for each of the following?**

	Yes	No	Comments
Compressed air use			
Safe methods of clean-up, including safe removal of dust			
Hot work			
Emergency response			
Other safety measures relating to clean-up work including de-energization, lockout, and fall protection			

21. **Do your safe clean-up procedures for the use of compressed air (blowdown) address the following:**

	Yes	No	Comments
Minimizing dust			
Minimizing dispersion			
Eliminating sources of ignition			
Emergency response			

Inspections (including preventative maintenance)

Clean-up and housekeeping

22. Do the combustible dust inspections address the following (check all that apply)?

Inspections for combustible wood dust accumulation should cover your entire facility. This sample checklist includes common work areas. You should customize this question to include all of the locations you identified in your risk assessment of your workplace.

	Yes	No	Comments
All buildings and structures on site			
Concealed spaces, including ceilings, crawl spaces, and attics			
Elevated horizontal surfaces			
Basement areas			
Fully or partially contained, enclosed, or compartmentalized areas			
Mechanical and electrical equipment and their enclosures			
Outside areas adjacent to buildings and structures			
Processes which use, consume, or handle combustible dust			
Work activities that may increase the hazard of combustible dust			
Other (describe)			

23. Have inspection frequencies been identified for specific areas or zones based on a risk assessment?

This sample list includes common processing areas or zones. You should customize this question to include all of the areas or zones specific to your workplace that you identified in your risk assessment.

	Yes	No	Comments
Log in-feed or debarker			
Primary and secondary break down line(s)/ area(s)			
Sorter/stacker area(s)			
Basement area(s)			
Chipper			
Blower rooms			
Planer in-feed			
Planer enclosure			
Energy systems			
Other(s)			

24. Do the inspections assess the following:

	Yes	No	Comments
The amount of dust which has accumulated, for both primary and secondary dust			
How quickly dust accumulates			
The extent of dust accumulation in relation to potential ignition points			
The adequacy of clean-up efforts			
Adherence to safe work procedures			

25. Are recommendations for corrective actions and improvements generated from the inspections?

- ☐ Yes
- ☐ No

26. Are inspection frequencies adjusted based on the inspectional findings or a subsequent risk assessment?

- ☐ Yes
- ☐ No

Equipment

27. Is there an inspection and preventative maintenance system for electrical and mechanical equipment?

- ☐ Yes
- ☐ No

28. Is there an inspection and preventative maintenance system for ventilation controls?

- ☐ Yes
- ☐ No

29. Is there an inspection and preventative maintenance system for dust conveyance?

- ☐ Yes
- ☐ No

30. Have inspection frequencies for the various equipment components within the mill been established?

Equipment Component	Yes	No	Comments
MCC cabinet(s)			
Other electrical cabinets / enclosures			
Ventilation system(s)			
Electrical motors and reducers			
Mechanical conveyor systems			
Bearings			
Pneumatic dust conveyance systems (blower systems)			
Other(s)			

31. How were the frequencies for each system or component type or system established?

Component type/system	Risk assessment	Manufacturer's instructions	Previous inspectional history	Other jurisdictional requirement
MCC cabinet(s)				
Other electrical cabinets or enclosures				
Ventilation system(s)				
Electrical motors and reducers				
Conveyor systems				
Bearings				
Other(s)				

32. Do electrical equipment inspections ensure that:

	Yes	No	Comments
Enclosures are properly sealed and maintained			
Dust is not accumulating within the enclosure			

33. Are recommendations for improvements generated from the inspections?

- ☐ Yes
- ☐ No

34. Does a review of the inspection results demonstrate that regular inspections are frequent enough to prevent the development of unsafe working conditions?

- ☐ Yes
- ☐ No

35. **If no, how will you modify the inspection schedule?**

36. **Are there any special inspection procedures or practices for inspections that take place after an incident or equipment malfunction?**

- ☐ Yes
- ☐ No

37. **Have preventative maintenance inspection frequencies been adjusted based on the inspectional findings or a subsequent risk assessment?**

- ☐ Yes
- ☐ No

Investigation of unsafe conditions and fire incidents

38. **Have workers been trained on the procedures for reporting an unsafe condition, combustible dust hazard or fire incidents?**

- ☐ Yes
- ☐ No

39. **Are there written procedures for investigating unsafe conditions, combustible dust hazards and fire incidents?**

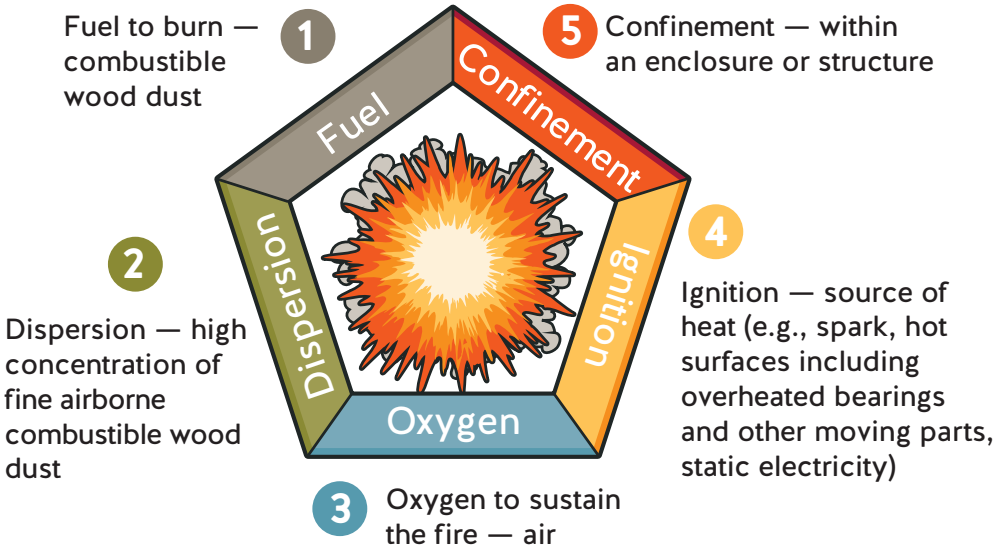
- ☐ Yes
- ☐ No

40. **Have you confirmed your requirements for reporting fire incidents with all local and provincial agencies?**

- ☐ Yes
- ☐ No

Education, Training and Supervision

41. Can workers identify the elements of a combustible dust explosion (Dust Explosion Pentagon)?



- ☐ Yes
- ☐ No

42. Do workers understand their right to refuse unsafe work?

- ☐ Yes
- ☐ No

43. Do workers understand safe work procedures for compressed air in the presence of combustible dust?

- ☐ Yes
- ☐ No

44. Do workers understand safe work procedures for hot work in the presence of combustible dust? (Hot work includes any work that uses open flames or other sources of heat that could act as an ignition point for a dust explosion.)

- ☐ Yes
- ☐ No

45. Can workers identify potential ignition sources within the mill?

- ☐ Yes
- ☐ No

Records and Statistics

Records of worker training, equipment maintenance and area inspections can help you to better manage the hazards of combustible dust, assess the risks in your workplace and help you analyze trends..

46. What records are you currently keeping?

	Yes	No	Nature and location of the records
Risk assessment results			
Control documents, including engineering designs and manufacturer's instructions			
Inspection documents			
Incident investigation reports			
Training and orientation records			
Supervision records			
Sampling results			
Audit reports			
Corrective actions			
Statistics			
Trend analysis			

47. Have you identified corrective actions and recommendations for improvement from each of the following components of your combustible wood dust management program?

	Yes	No	Comments
Risk assessment results			
Implementation of controls			
Inspections			
Investigations			
Audits			
Regular reviews			

48. Have the corrective actions and recommendations for improvement been:

	Yes	No	Comments
Clearly defined and documented?			
Assigned target dates for completion?			
Assigned to a specific person responsible for the completion?			
Monitored to ensure completion or implementation?			
Evaluated upon completion to ensure effectiveness?			

Checklist summary

49. Based on your answers to this checklist, are you satisfied that

(Organization name)'s

combustible wood dust management program has been fully implemented?

☐ Yes

☐ No

If no, what steps will you take to fully implement the program?

Steps required to fully implement the program	Timeframe for implementation

50. Based on your answers to this checklist, are you satisfied that the combustible wood dust management program is effective at controlling the hazards of combustible dust in your workplace?

☐ Yes

☐ No

If no, what steps will you take to control the hazards of combustible wood dust?

Steps required to control the hazards	Timeframe for implementation

51. Describe any additional opportunities that you have identified for continual improvement in addressing the hazards of working around combustible dust.