COMBUSTIBLE WOOD DUST INSPECTION CHECKLIST

This checklist is intended for MAINTENANCE and MANAGERIAL personnel who can make decisions about facility inspections and implementation of preventive and corrective action. This checklist is designed to be a PLAIN ENGLISH, PRACTICAL Self-Assessment that gives users the ability to calculate their preparedness, and their exposure to increasing hazards. You won't find complicated metrics here!

Regarding the checklist itself, wood processing produces variable sizes of dust particles. Without dust size sampling, you must assume that the dust mixtures present are combustible. This means your dust passes through a #40 Sieve, and is 420 Microns or less in size, and that moisture content is NOT a factor. Assessment questions are ordered so that conditions are assessed in increasing order of hazard, which are:
1-Fire Hazard;
2-Combustible Dust Deflagration; and
3-Dust explosion.

Both OSHA and NFPA requirements are summarized. Section scores less than 100% require preventive or corrective action. The checklist is also designed to assess the same criteria on a follow-up basis so that a percent performance increase (or decrease) can be measured!

OSHA NFPA, and COPYRIGHTS. Users of this checklist are advised that the Occupational Safety & Health Administration (OSHA) makes extensive references to codes published by the National Fire Protection Association (NFPA). Those codes are Copyrighted publications. This checklist paraphrases key sections of the applicable NFPA codes, so that users can identify areas of concern.

Questions are grouped by "Best Fit" which is not necessarily in ascending order. Additionally, not ALL sections of an NFPA codes applies to timber products manufacturing operations. For these reasons, checklist users should consider acquiring a paid copy of the NFPA code for their use and reference.

CHECKLIST INFORMATION

PLEASE COMPLETE THE INFORMATION BELOW.

Company Name: _____

Equipment in Area: _____

INITIAL Checklist Date: _____

Reviewer Names: _____

_____

Process Description: _____

_____

Time: _____ AM or PM

Building or Location: _____

Shift (1st, 2nd, 3rd) _____

Product(s) Manufactured: _____

Area or Activity: _____

2-Month Follow-Up Checklist Date: _____

HOW TO USE THIS CHECKLIST EFFECTIVELY.

Follow the Steps below. Complete all questions with a YES or NO.

1. Review definitions and references for meanings of each term, and review OSHA Standards & NFPA Codes.
2. Form a review team and assign areas of responsibility.
3. Walk through the assigned areas, and respond to the checklist questions based on observed and/or measured conditions.
4. Transfer the walkthrough results to the electronic checklist version and develop a corrective action plan.
5. 2 months after initial checklist, review again! Performance Increases or decreases will result.

START HERE - CAN YOU USE THIS CHECKLIST?

Assess your operation before using this checklist.
If ONLY non-combustible particulate solids are at this location, or specific area, this checklist CANNOT be used for COMBUSTIBLE WOOD DUST at the location or specific area.
Answer the questions below to determine your status.

Section A. (NFPA 91)
Does this location have ONLY non-combustible particulate solids?

❑ YES - STOP HERE
You CANNOT use this checklist for Combustible Wood Dust

❑ NO Wood Dust IS COMBUSTIBLE.
If you generate wood dust, you MUST also answer Section B.

Section B. (NFPA 6641)
ANSWER ALL the questions below first to determine IF your location can use this Combustible Wood Dust Checklist.
Doing anything with wood qualifies as a "process."

B.1	Does this location process wood?	❑ YES	❑ NO
B.2	Does this location manufacture wood products?	❑ YES	❑ NO
B.3	Does this location use wood or cellulosic fiber as a substitute for or additive to wood fiber?	❑ YES	❑ NO
B.4	Does this location create wood chips, particles, or dusts?	❑ YES	❑ NO
B.5	Does this location make wood flour?	❑ YES	❑ NO
B.6	Does this location do industrial woodworking?	❑ YES	❑ NO
B.7	Does this location make furniture?	❑ YES	❑ NO
B.8	Does this location make plywood?	❑ YES	❑ NO
B.9	Does this location make composite board?	❑ YES	❑ NO

B.10 Is this location a lumber mill? ❑ YES ❑ NO

B.11 Does this location do production woodworking and carpentry that is incidental to the operation that would not otherwise fall under NFPA 664? ❑ YES ❑ NO

If ALL answers are NO, stop here. You do not qualify for this checklist.

If you answered YES to any of Section B please continue through Section C.

Section C (NFPA 664)

ANSWER ALL the questions below to determine IF ANY condition apply at your location.

C.1 This location conducts woodworking operations that occupy areas which equal or exceed 5000 square feet (Ft^2) which is equivalent to 465 square meters (M^2).
(Length X Width = 5,000 ft^2 OR 465 M^2) ❑ YES ❑ NO

If you answered NO continue to question C.2.
If you answered YES you are subject to NFPA 664.

C.2 This location operates production equipment requiring a total dust collection air flow rate of 1500 cubic feet per minute (Ft^3/Min) which is equal to 2549 cubic meters per hour (M^3/Hr). ❑ YES ❑ NO

If you answered NO - You do not qualify to use this checklist.
If you answered YES continue to Section 1.

SECTION – 1 _____

NFPA 77 - RECOMMENDED PRACTICE on STATIC ELECTRICITY
NFPA 79 - ELECTRICAL STANDARD FOR INDUSTRIAL MACHINERY

Please note that several questions may seem to be duplicates, but they are referencing different NFPA codes or OSHA standards.

NFPA 77

1.1 Any ungrounded, conductive objects? ❑ YES ❑ NO
Where? _____

1.2 Any evidence of static electricity (e-) accumulation? ❑ YES ❑ NO
Where? _____

1.3 Any suspended (wood) dust in air? ❑ YES ❑ NO
Where? _____

1.4 All conductive bag house parts always grounded? ❑ YES ❑ NO
Where? _____

1.5 NON-NFPA - Has a qualified electrician been consulted for ways to reduce or prevent static e-discharge(s)? ❑ YES ❑ NO
Where? _____

1.6 Is the design and e-power supply correct for all machinery? ❑ YES ❑ NO
Where? _____

NFPA 79

1.7 Are ground terminals & enclosed local disconnects present for machinery? ❑ YES ❑ NO
List ONLY if missing:_____

1.8 Are LIVE electrical parts at or above 50 Volts guarded against contact (including by insulation)? ❑ YES ❑ NO
List ONLY if missing:_____

1.9 Are over current protection devices in place? ❑ YES ❑ NO
List ONLY if missing:_____

1.10 Is ALL equipment electrically grounded? ❑ YES ❑ NO
List ONLY if missing:_____

SECTION – 2 _____

NFPA 70 - NATIONAL ELECTRIC CODE
NFPA 70E - STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE
NFPA 499 - RECOMMENDED PRACTICE FOR THE CLASSIFICATION OF COMBUSTIBLE DUSTS AND OF HAZARDOUS (CLASSIFIED) LOCATIONS FOR ELECTRICAL INSTALLATIONS IN CHEMICAL PROCESS AREAS

NFPA 70

2.1 ANY energized damaged electrical conduits? ❑ YES ❑ NO
List ONLY if missing:_____

2.2 ANY exposed breakers within a breaker panel? ❑ YES ❑ NO
List ONLY if missing:_____

2.3 ANY SUBSTANDARD electrical repairs? ❑ YES ❑ NO
List ONLY if missing:_____

2.4 ANY exposed wiring that could short, or cause a spark? ❑ YES ❑ NO
List ONLY if missing:_____

2.5 ANY electrical conditions that can cause material ignition? (consult electrician) ❑ YES ❑ NO
List ONLY if missing:_____

NFPA 70E

2.6 At hazardous locations (in hazardous atmospheres) are there equipment breaks that void effectiveness? ❑ YES ❑ NO
(If NO hazardous locations, answer NO) SEE OSHA 1910.30
List ONLY if effectiveness voided:_____
_____

2.7 Is HOT WORK controlled by a permit system? (Both NFPA & OSHA 1910.252 apply) ❑ YES ❑ NO
VERIFY by signature below that location has a "Written Program" & "Hot Work Permit."

Signature: _____

NFPA 499

2.8 Is your location subject to NFPA 499?
Answer the Questions below to determine your location's status under NFPA 499. It only applies if the area under review is also a CHEMICAL PROCESS area.

2.8.1 Is there a DUST that is produced, processed, handled, or likely to be at the area that's under review? ❑ YES ❑ NO

2.8.2 Can or is the dust released into the atmosphere or accumulated on surfaces? ❑ YES ❑ NO

2.8.3 Are there sources of ignition, such as electrical systems or equipment? ❑ YES ❑ NO

2.8.4 Is this area also a CHEMICAL PROCESS area? ❑ YES ❑ NO

IF YES, Consult NFPA 499 for code specifics. Also answer Question 2.9. (NOTE: Chemical Process areas are not common, and go significantly beyond the scope of this checklist.)

2.9 IF NFPA 499 APPLIES, is this location meeting ALL REQUIRMENTS? ❑ YES ❑ NO

SECTION – 3 _____

NFPA 68 - EXPLOSION PROTECTIONS BY DEFLAGRATION VENTING
NFPA 69 - STANDARD ON EXPLOSION PREVENTION SYSTEMS
NFPA 654 - STANDARDS FOR THE PREVENTION OF FIRE AND DUST EXPLOSIONS FROM THE MANUFACTURING, PROCESSING, AND HANDLING OF COMBUSTIBLE PARTICULATE SOLIDS

NFPA 664 - STANDARD FOR THE PREVENTION OF FIRES AND EXPLOSIONS IN WOOD PROCESSING AND WOODWORKING FACILITIES

NFPA 68

The following questions apply to NFPA 68, 69, and 664. 3.1 Answer the questions below FIRST to determine if NFPA 68 specifics apply, then continue through the questions.
IF you produce WOOD DUST, and you have a bag house or any other type of enclosure, You MUST answer YES.

3.1.1 Are there any ENCLOSURES where combustible wood dust is present? ❑ YES ❑ NO
(If NO, NFPA 68 does not apply. Skip to NFPA 69, at question 3.2.5)

3.1.2 Are there ANY IGNITION SOURCES that can possibly reach the inside of a process enclosure? ❑ YES ❑ NO

3.1.3 Prior to today, was there a deflagration or explosion event involving combustible wood dust? ❑ YES ❑ NO

3.1.4 Were engineering controls in place during the event? ❑ YES ❑ NO

3.1.5 Did the engineering controls activate during the event? ❑ YES ❑ NO

3.1.6 Are the engineering controls on a periodic maintenance and testing schedule? ❑ YES ❑ NO

3.1.7 If Engineering Controls ARE NOT currently in place, was NFPA 68 reviewed in detail by representatives of

your company? ❑ YES ❑ NO
(If already in place, answer YES)

3.1.8 Were enclosures evaluated for needed engineering controls per NFPA 68? ❑ YES ❑ NO

3.1.9 If engineering controls ARE NOT CURRENTLY IN PLACE, has an installation date for them been scheduled? ❑ YES ❑ NO

NFPA 69

3.2 Answer the questions below to determine your location's status. (Only applies if you have listed conditions.)

3.2.1 Does a DEFLAGRATION hazard exist? ❑ YES ❑ NO
(IF you produce wood dust, and it can become airborne, you MUST answer YES. IF YES, continue. IF NO, STOP HERE! NFPA 69 DOES NOT APPLY. Skip to Question 3.3)

3.2.2 Has the design basis of the deflagration scenario been identified and documented? ❑ YES ❑ NO

3.2.3 Are there ENGINEERING CONTROLS present? ❑ YES ❑ NO

3.2.4 Were the controls acceptance tested? ❑ YES ❑ NO

3.2.5 Are the controls on a periodic inspection & maintenance schedule? ❑ YES ❑ NO

3.2.6 Is location aware of required housekeeping under NFPA 654 or 664? ❑ YES ❑ NO

3.2.7 Has the engineering control system been checked against NFPA requirements for Operation, Maintenance, and Safety requirements? ❑ YES ❑ NO

3.2.8 Does the system allow for automatic shutdown? ❑ YES ❑ NO

NFPA 69

3.3 Do the ENGINEERING CONTROLS use ANY of the following detection system(s) or methods? Answer the questions below to determine your location's status.

3.3.1 Are deflagration suppression and explosion venting components used? ❑ YES ❑ NO

3.3.2 Is there a deflagration passive isolation system in place? ❑ YES ❑ NO

3.3.3 Is there a deflagration pressure containment system in place? ❑ YES ❑ NO

3.3.4 Is there a deflagration pressure containment system in place? ❑ YES ❑ NO

3.3.5 Does the control system use Oxidant Reduction Concentration to prevent combustion? ❑ YES ❑ NO

NFPA 664 Chapter 4 - General Requirements

3.4 Answer the questions below to determine your location's status.

3.4.1 PROCESS ANALYSIS - is the design, physical and chemical properties, and documented results, maintained for the life of the process & and on location? ❑ YES ❑ NO

3.4.2 MANAGEMENT of CHANGE (MOC) - Are there written procedures to manage the change of process materials, technology, equipment, procedures, and facilities? ❑ YES ❑ NO

3.4.3 Does (MOC) Include - Technical basis of Changes, Safety & Health Implications, Temporary-Permanent, Procedure Modifications, Employee Training, Authorization requirements for proposed change? ❑ YES ❑ NO

3.4.4 DESIGNER & INSTALLER QUALIFICATIONS - Are systems designed and installed under the supervision of a knowledgeable, qualified engineer? ❑ YES ❑ NO

3.4.5 LIFE SAFETY - Is the design, construction, & equipment maintained to prevent building occupants from Fire/Deflagration/Explosion? ❑ YES ❑ NO

3.4.6 LIFE SAFETY - Is the structure located, designed, constructed, & maintained to prevent propagation of Fire/Deflagration? ❑ YES ❑ NO

3.4.7 LIFE SAFETY - Is structure designed, constructed, & equipped to maintain Structural Integrity in spite of the effects of Fire/Deflagration? ❑ YES ❑ NO

3.4.8 MITIGATION of FIRE SPREAD & EXPLOSIONS - are there sufficient safeguards to prevent failure of adjacent building compartments? ❑ YES ❑ NO

3.4.9 COMPLIANCE OPTIONS - PERFORMANCE BASED - Is the design documented with calculations, references and sources, per NFPA 101 (Life Safety Code) and NFPA 664 (Chapter 5)? ❑ YES ❑ NO

3.4.10 COMPLIANCE OPTIONS - PRESCRIPTIVE BASED - does the design meet the requirements of NFPA 664 - Chapters 6 through 11? ❑ YES ❑ NO

NFPA 664 Chapter 5 - Performance-Based Design Option

3.5 These questions assess the Performance Based Design Option at the location. Consult NFPA 664 for definitions and specific details.
Answer the questions below to determine your location's status.

3.5.1 APPROVED QUALIFICATIONS & INDEPENDENT REVIEW - Was design prepared by a person acceptable to the Authority Having Jurisdiction (AHJ)? ❑ YES ❑ NO

3.5.2 INDEPENDENT REVIEW - IF REQUIRED by the AHJ, was the design REVIEWED by an independent 3rd Party? ❑ YES ❑ NO
(If NOT REQUIRED, answer YES)

3.5.3 DATA SOURCES - Have data sources for design aspects been identified? ❑ YES ❑ NO

3.5.4 DESIGN FEATURES MAINTAINED - Are they maintained for operation as originally designed, or modified with AHJ approval? ❑ YES ❑ NO

3.5.5 PREVENTION of IGNITION - Has the NFPA criteria been met? ❑ YES ❑ NO

3.5.6 PREVENTION of FIRE EXTENSION - Has the NFPA criteria been met? ❑ YES ❑ NO

3.5.7 EFFECTS of DEFLAGRATION - Has the NFPA criteria been met? ❑ YES ❑ NO

3.5.8 DESIGN FIRE SCENARIOS - Has the NFPA criteria been met? ❑ YES ❑ NO

3.5.9 DEFLAGRATION SCENARIOS - Has the NFPA criteria been met? ❑ YES ❑ NO

3.5.10 EVALUATION of PROPOSED DESIGN - Did the AHJ approve all items identified by NFPA 5.4? ❑ YES ❑ NO

NFPA 664 Chapter 6 - Building Construction

3.6 These questions assess the Prescriptive Based Design Option for Building Construction at the location. Consult NFPA 664 for definitions and specific details.
ANSWER ALL - Do ANY of the following exist?

3.6.1 COMPARTMENTATION - are there passive fire protection features in place to prevent the spread of FIRE/DEFLAGRATIONS? ❑ YES ❑ NO

3.6.2 COMPARTMENTATION - are there Fire Walls, Fire Partitions, & Fire Barrier Walls? ❑ YES ❑ NO

3.6.3 PROTECTION of OPENINGS & PENETRATIONS - are listed systems or approved materials used that conform to NFPA 221? ❑ YES ❑ NO

3.6.4 OCCUPANT LIFE SAFETY SYSTEMS MEANS OF EGRESS - does the design, construction, installation, & maintenance of Life Safety Systems meet NFPA 101 - Life Safety Code? ❑ YES ❑ NO

3.6.5 SPECIAL REQUIREMENTS - SURFACES & LEDGES IN DUST AREAS - are interior areas designed to minimize dust accumulation? ❑ YES ❑ NO

3.6.6 SPECIAL REQUIREMENTS - DAMAGE LIMITING CRITERIA - are enclosed areas designed to prevent breach, provide explosion resistance, and include venting to a safe outside location? ❑ YES ❑ NO

3.6.7 SPECIAL REQUIREMENTS - DRAFT CURTAINS - where required, are they made of noncombustible materials? ❑ YES ❑ NO

3.6.8 SPECIAL REQUIREMENTS - DRAFT CURTAINS - are they made of a minimum of 26 gauge steel, and NOT made of Aluminum? ❑ YES ❑ NO

3.6.9 SPECIAL REQUIREMENTS - DRAFT CURTAINS - do they fit tightly against the roof deck, and extend

downward a minimum of 10 Percent of the total height? ❑ YES ❑ NO

3.6.10 SPECIAL REQUIREMENTS - BEAMS, PURLINS & OTHER STRUCTURAL MEMBERS - Does this location have these structures that extend downward equal to or greater than 10 Percent of floor to ceiling height? ❑ YES ❑ NO
(IF YES - they are a substitute for DRAFT CURTAINS)

NFPA 664 Chapter 7 - Prevention of Ignition & Control of Ignition Sources

3.7 These questions assess the Prevention of Ignition and Control of Ignition Sources at the location.
ANSWER ALL - Do ANY of the following exist?

3.7.1 HOT WORK - Is Hot Work controlled according to NFPA 51B? ❑ YES ❑ NO
(Consult 29 CFR 1910.276 - Welding, Cutting, Burning)

3.7.2 ELECTRICAL SYSTEMS - Do electrical systems meet NFPA 70? ❑ YES ❑ NO
(See OSHA 29 CFR 1910.303 and the following.)

3.7.3 HOT SURFACES - Are exterior surfaces of heated process equipment in contact with wood prevented from a MAXIMUM allowable temperature of 500 degrees (500°F or 260°C)? ❑ YES ❑ NO

3.7.4 BEARINGS - Are they monitored for adequate lubrication and excessive wear? ❑ YES ❑ NO

3.7.5 POWERED INDUSTRIAL TRUCKS - If they operate in areas with a deflagration hazard, are they the correct classification? ❑ YES ❑ NO
(See NFPA 505)

3.7.6 LIGHTING - Are they designed, installed, & maintained so they aren't an ignition hazard during normal operation OR catastrophic failure? ❑ YES ❑ NO

3.7.7 FUEL FIRED EQUIPMENT - Are they designed, installed, & maintained so they aren't an ignition hazard? ❑ YES ❑ NO
(See NFPA 31-Oil Burning, NFPA 54-Fuel Gas, NFPA 85-Boilers Combustion)

3.7.8 STATIC ELECTRICITY - Does equipment contain design features that include - Conductivity, bonding & grounding, grounded metal combs, other effective means approved by the AHJ? ❑ YES ❑ NO

3.7.9 MACHINES & PROCESSING EQUIPMENT - Are they operated per manufacturer's specifications, at a condition of sharpness to minimize heat, and abrasives used within design life? ❑ YES ❑ NO

3.7.10 FOREIGN MATERIAL - Is wood stock inspected for nails and other objects prior to processing? ❑ YES ❑ NO

3.7.11 FOREIGN MATERIAL - Is fugitive (A.K.A "tramp") metal prevented from entering wood and dust process equipment? ❑ YES ❑ NO

(These are materials capable of creating a spark that could ignite materials.)

3.7.12 FRICTION - Is all equipment designed, installed, and operated to maintain alignment and lubrication to avoid frictional heat ignition? ❑ YES ❑ NO

3.7.13 FANS - Is combustible residue on fans, fan shrouds, and drive mechanisms prevented to avoid frictional heat ignition of the deposits? ❑ YES ❑ NO

3.7.14 SPONTANEOUS IGNITION & CHEMICAL ACTION - Has the storage of wood particulates been evaluated to determine any spontaneous ignition hazards due to chemical reaction(s)? ❑ YES ❑ NO

3.7.15 PROPELLANT ACTUATED TOOLS - Is their use PROHIBITED, UNLESS - dust producing machinery is shut down AND, equipment/floors/walls are cleaned, AND dust accumulations are removed? ❑ YES ❑ NO

3.7.16 SMOKING - Is smoking restricted to designated areas having devices for smoking material disposal that is free of combustible/flammable hazards or storage? ❑ YES ❑ NO

3.7.17 PORTABLE ELECTRIC EQUIPMENT & APPLIANCES - Is their use LISTED for the areas where they're used? ❑ YES ❑ NO
(Example - Space heaters approved for use in dusty areas.)

NFPA 664 Chapter 8 - Processes, Operations, & Special Systems

3.8 These questions apply to SYSTEMS, such as pneumatic, dust control, mechanical conveyors, and all other equipment types used to convey, re-size, dry, or otherwise process wood, wood particles, & cellulosic material.
ANSWER ALL - Do ANY of the following exist?

3.8.1 PARTICULATE CONVEYING & DUST COLLECTION SYSTEMS - Was a HAZARD ANALYSIS done to determine if the materials was GREEN, DRY NON-DEFLAGRABLE, or DEFLAGRABLE? ❑ YES ❑ NO

3.8.2 FIRE & DEFLAGRATION HAZARD - Is ONLY GREEN MATERIAL collected or conveyed in A SPECIFIC area? ❑ YES ❑ NO
(IF YES, Fire & Deflagration hazards are deemed non-exist in that area.)

3.8.3 FIRE & DEFLAGRATION HAZARD - Is DRY WOOD PARTICULATE collected or conveyed in A SPECIFIC area? ❑ YES ❑ NO
(IF YES, A Fire hazard is deemed to exist in that area.)

3.8.4 FIRE & DEFLAGRATION HAZARD - Is OR could dry wood particulate be suspended in air? ❑ YES ❑ NO
(IF YES, a deflagration hazard is deemed to exist in that area.)

3.8.5 PNEUMATIC CONVEYING & DUST COLLECTION SYSTEMS - Are all such systems designed per NFPA 654? ❑ YES ❑ NO

3.8.6 PNEUMATIC CONVEYING & DUST COLLECTION SYSTEMS - Are ANY OTHER spark producing systems tied into the woodworking particle conveying system? ❑ YES ❑ NO

3.8.7 PNEUMATIC CONVEYING & DUST COLLECTION SYSTEMS - Were any system modifications made (capture points, etc) without system rebalancing? ❑ YES ❑ NO

3.8.8 PNEUMATIC CONVEYING & DUST COLLECTION SYSTEMS - Are dust collection systems operated whenever wood stock is being processed? ❑ YES ❑ NO

3.8.9 DUCT SYSTEMS - GENERAL REQUIREMENTS - Are Duct systems METALLIC, and NOT made of plastic(s)? ❑ YES ❑ NO

3.8.10 DUCT SYSTEMS - GENERAL REQUIREMENTS - Are Duct systems protected from corrosion AND bonded and grounded? ❑ YES ❑ NO

3.8.11 DUCTS WITH A FIRE HAZARD - Answer the questions below FIRST - Are ducts conveying DRY MATERIAL where equipment generates sparks protected by one of the following? ❑ YES ❑ NO

WHAT TYPE of CONTROL SYSTEM do you have for 3.8.11? ❑ System A ❑ System B ❑ System C
(See next page for System descriptions.)

System A (3.8.11.1) 1-Material Entry Point, 2-Listed Spark Detection & Extinguishing System, 3-Collection Equipment

System B (3.8.11.2) 1-LiSTED spark Detection & Extinguishing System, 2-Actuating a High Speed Abort Gate, 3-Diversion to Atmosphere before entry to collection or storage equipment

System C (3.8.11.3) 1-Conveying to location with minimal personnel and personnel risk, 2-Acceptable Risk Analysis to the Authority Having Jurisdiction.

3.8.12 DUCTS WITH A DEFLAGRATION HAZARD - Are ducts having a deflagration hazard designed, constructed, and installed by at least ONE of the following? ❑ YES ❑ NO

WHAT TYPE of CONTROL SYSTEM is in place for 3.8.12? ❑ A ❑ B ❑ C ❑ D ❑ E ❑ F

Control System A (3.8.12.1)1-Ducts and all metal hatches constructed of metal; 2-Able to withstand maximum deflagration pressures.

Control System B (3.8.12.2)1-Metal Ducts protected by a LISTED EXPLOSION SUPPRESSION SYSTEM that is able to withstand maximum deflagration pressures.

Control System C (3.8.12.3)1-Metal Ducts located INDOORS; 2-Equipped with DEFLAGRATION RELIEF PIPES less than 20 feet length; 3-Extending to safe areas outside of building; 4-Able to withstand maximum deflagration pressures.

Control System D (3.8.12.41-Metal Ducts located INDOORS; 2-equipped with deflagration relief vents EXHAUSTING THROUGH LISTED FLAME QUENCHING DEVICES; 3-Able to withstand maximum deflagration pressures.

Control System E (3.8.12.5)1-Metal Ducts located Outdoors; 2-equipped with deflagration relief vents; 2-Able to withstand maximum deflagration pressures.

Control System F (3.8.12.6)1-Metal Ducts located Outdoors; 2-Having weaker construction permitted IF subject to a RISK ANALYSIS acceptable to the AHJ.

3.8.13 HOODS & ENCLOSURES - Do hoods & enclosures capture wood dusts and particulates? ❑ YES ❑ NO (The air flow rate must be sufficient to capture & carry it into the ductwork.)

3.8.14 HOODS & ENCLOSURES - Are hoods & enclosures made of NON-COMBUSTIBLE MATERIALS? ❑ YES ❑ NO (IF NO, they MUST be protected by sprinklers described by NFPA 13)

3.8.15 DUST COLLECTORS - GENERAL REQUIREMENTS – CAUTION! NFPA 664 Specifies permitted dust collector placement is based on SPECIFIC requirements. Pick the system placement at your location and consult NFPA for detail. (Description below.)

❑ A ❑ B ❑ C ❑ D ❑ E

A SUMMARY of conditions appears below.

A 3.8.15.1 OUTSIDE OF BUILDINGS

B 3.8.15.2 INDOORS - ONLY IF NO fire hazard or deflagration is deemed to exist.

C 3.8.15.3 INDOORS - Because ONLY A FIRE HAZARD exists AND it is PROTECTED by the design requirements of NFPA 664

D 3.8.15.4 INDOORS - Because A DEFLAGRATION HAZARD exists BUT it is PROTECTED by deflagration relief vents or pipes per the design requirements of NFPA 664

E 3.8.15.5 INDOORS - Because it is an ENCLOSURE-LESS device that MEETS the following:

1-Used ONLY for wood processing machinery;
2-NOT used on Sanders or abrasive planers;
3-Each collector has maximum air flow rate of 5000 cfm;
4-Fan motor is totally enclosed and fan cooled;
5-Daily or greater removal of collected dust;
6-Collector located 20 ft or more from persons or other collectors.

3.8.16 DUST COLLECTORS WITH FIRE or DEFLAGRATION HAZARDS - CAUTION! NFPA 664 requires specific construction methods. Consult NFPA for requirements. ANSWER ALL - Do ANY of the following exist?

3.8.16.1 Do Dust collectors WITH FIRE HAZARDS meet the design requirements in NFPA? ❑ YES ❑ NO

3.8.16.2 Do Dust collectors WITH DEFLAGRATION HAZARDS meet the design requirements in NFPA? ❑ YES ❑ NO

3.8.17 RECYCLED EXHAUST AIR - CAUTION! NFPA 664 prohibits recycling air UNLESS certain equipment is installed based on the air flow rate of the system. Choose the air flow rate at your location and consult

NFPA for detail.
ANSWER The Question that applies to your system:

3.8.17.1 Do RECYCLED AIR SYSTEMS less than or equal to 5000 cubic feet per minute (CFM) meet the design requirements in NFPA 664? ❑ YES ❑ NO

3.8.17.2 Do RECYCLED AIR SYSTEMS greater than 5000 cubic feet per minute (CFM) meet the design requirements in NFPA 664? ❑ YES ❑ NO

3.8.18 MECHANICAL CONVEYING SYSTEMS - GENERAL REQUIREMENTS - CAUTION! NFPA 664 has specific requirements for mechanical conveying system design.
ANSWER ALL - ALL QUESTIONS APPLY
What design features does your system have?

3.8.18.1 Designed, Installed, & Operated to maintain alignment and minimize excessive heat build-up? ❑ YES ❑ NO

3.8.18.2 Fugitive dust emissions minimized? ❑ YES ❑ NO

3.8.18.3 Dust tight ball or roller bearings used wherever practical? ❑ YES ❑ NO

3.8.18.4 Bearings and bushings located outside of equipment UNLESS there's no other alternative? ❑ YES ❑ NO

3.8.18.5 Shaft seals provided where rotating shafts penetrate equipment walls? ❑ YES ❑ NO

3.8.18.6 Access hatches & covers tightly fitted & fastened for dust tight operation? ❑ YES ❑ NO

3.8.18.7 Do Mechanical Conveying Systems with a FIRE or DEFLAGRATION Hazard meet NFPA 664 sprinkler & isolation requirements? ❑ YES ❑ NO

3.8.19 THERMAL OIL HEATING SYSTEMS - CAUTION! NFPA 664 has specific requirements for thermal oil heating systems. Inspect your location's equipment based on the specific requirements below. Consult NFPA for detail.
ANSWER ALL - Do ANY of the following exist?

3.8.19.1 Designed, Operated, & Maintained to minimize thermal oil spills, fires, & explosions? ❑ YES ❑ NO

3.8.19.2 Physically separated from a manufacturing area? ❑ YES ❑ NO

3.8.19.3 Discharged to a safe location? ❑ YES ❑ NO

3.8.19.4 Uses a WELDED piping system? ❑ YES ❑ NO

3.8.19.5 Are piping systems INSULATED if routed through production areas? ❑ YES ❑ NO

3.8.19.6 Do expansion or storage tanks meet design requirements? ❑ YES ❑ NO

3.8.19.7 Are there SAFETY CONTROLS & INTERLOCKS? ❑ YES ❑ NO

3.8.19.8 Has FUEL BURNER CONTROLS & INTERLOCKS? ❑ YES ❑ NO

3.8.19.9 Have OPERATIONAL CONSIDERATIONS been completed? ❑ YES ❑ NO
(Procedures, operator training, etc.)

3.8.19.10 Is FIRE PROTECTION provided, IF REQUIRED, for areas where a hot oil spill could accumulate? ❑ YES ❑ NO
(SEE NFPA 664 8.3.2.10)

3.8.20 PARTICULATE SIZE REDUCTION EQUIPMENT - CAUTION! NFPA 664 has specific requirements for particulate size reduction equipment.
These requirements apply to operations that include specific types of products or production equipment.
Consult NFPA for detail.
ANSWER ALL

3.8.20.1 Was the HAZARD ANALYSIS based on particle size? ❑ YES ❑ NO

3.8.20.2 Is foreign material (AKA, “Tramp metal”), removed by self-cleaning magnets, air separators, or BOTH? ❑ YES ❑ NO

3.8.20.3 Does equipment meet NFPA requirements for FIRE or DEFLAGRATION hazards? ❑ YES ❑ NO
(SEE NFPA 664 beginning at 8.4.2.3)

REVIEWER(S)- SPECIAL REQUIREMENTS APPLY TO PANEL MANUFACTURERS
Does the reviewed location MAKE Panel Products like PLYWOOD or MDF? ❑ YES ❑ NO

IF NO - SPECIAL REQUIREMENTS DON'T APPLY to you. You've been FULLY CREDITED. SKIP Questions 3.8.21 & 3.8.22 & 3.8.23"

IF YES, SPECIAL REQUIREMENTS DO APPLY to you. ANSWER QUESTIONS 3.8.21 & 3.8.22 & 3.8.23 for results and complete the rest of this checklist.

3.8.21 PANEL PRODUCT MANUFACTURING EQUIPMENT - CAUTION! NFPA 664 has specific requirements for panel product manufacturing equipment. Consult NFPA for detail.
ANSWER ALL - Do ANY of the following exist?

3.8.21.1 Is dust controlled within enclosures? ❑ YES ❑ NO

3.8.21.2 Designed, Installed, & Operated to maintain alignment and minimize excessive heat build-up? ❑ YES ❑ NO

3.8.21.3 Foreign material is removed by self-cleaning magnets, air separators, or BOTH? ❑ YES ❑ NO

3.8.21.4 Designed, Installed, & Operated for dust tight operation? ❑ YES ❑ NO

3.8.22 DRYER SYSTEMS - CAUTION! NFPA 664 has specific requirements for dryer systems. Consult NFPA 664 for detail.
ANSWER ALL - Do ANY of the following exist?

3.8.22.1 IF PRESENT, does my location meet requirements for VENEER and/or FIBERBOARD DRYERS? ❑ YES ❑ NO

3.8.22.2 IF PRESENT, does my location meet requirements for ROTARY DRYERS? ❑ YES ❑ NO

3.8.22.3 IF PRESENT, does my location meet requirements for CONVEYOR DRYERS? ❑ YES ❑ NO

3.8.22.4 IF PRESENT, does my location meet requirements for FLASH TUBE DRYERS? ❑ YES ❑ NO

3.8.22.5 IF PRESENT, does my location meet requirements for KILN DRYERS? ❑ YES ❑ NO

3.8.22.6 IF PRESENT, does my location meet requirements for FINISH ROOM DRYERS? ❑ YES ❑ NO

3.8.23 POLLUTION CONTROL EQUIPMENT -
Does pollution control equipment meet NFPA 664 requirements? ❑ YES ❑ NO
(SEE NFPA 8.9 for detail).

3.8.24 FIRE CONTROL SYSTEMS - CAUTION! NFPA 664 has specific requirements for fire control that vary by system type and location. Assess the presence of systems and check local requirements.
ANSWER ALL - Do ANY of the following exist?
(If not required, ANSWER YES)

3.8.24.1 IF REQUIRED, are fire control systems in place for DRY LUMBER storage? ❑ YES ❑ NO

3.8.24.2 IF REQUIRED, are fire control systems in place for FLAMMABLE LIQUID storage?❑ YES ❑ NO

3.8.24.3 IF REQUIRED, are fire control systems in place for SILOS and/or STORAGE BINS? ❑ YES ❑ NO

3.8.24.4 IF REQUIRED, are fire control systems in place for Indoor DRY, FINE PARTICULATE storage? ❑ YES ❑ NO

3.8.24.5 IF REQUIRED, are fire control systems in place for HOT PRESSES - Continuous or MULTI-OPENING Batch-Type? ❑ YES ❑ NO

3.8.24.6 IF REQUIRED, are fire control systems in place for WOOD SCRAP PROCESSING & DISPOSAL? ❑ YES ❑ NO

NFPA 664 Chapter 9 - Fire Protection Systems

3.9 These questions apply to FIRE PROTECTION SYSTEMS. Requirements may vary and may not apply in every location. ANSWER ALL - Are the following items, IF REQUIRED, present and properly designed?

3.9.1 Automatic sprinklers? ❑ YES ❑ NO

3.9.2 Detection and Extinguishing systems? ❑ YES ❑ NO
(SEE NFPA 11, 12, 15, 17, 25, 69, 72, 750, 2001)

3.9.3 Inside Hose Stations? ❑ YES ❑ NO
(SEE NFPA 14)

3.9.4 Water Supply? ❑ YES ❑ NO
(SEE NFPA 20, 22, 24)

3.9.5 Portable Fire Extinguishers? ❑ YES ❑ NO
(SEE NFPA 10)

NFPA 664 Chapter 10 - Human Element

3.10 These questions apply to the HUMAN ELEMENT under the NFPA 664 definition.
ANSWER ALL - Do ANY of the following exist?

3.10.1 Is there an INSPECTION, TESTING, & MAINTENANCE program for Fire & Explosion protection systems? ❑ YES ❑ NO

3.10.2 Does the INSPECTION, TESTING, & MAINTENANCE program also cover Dust Collection systems? ❑ YES ❑ NO

3.10.3 Are RECORDS for INSPECTION, TESTING, & MAINTENANCE kept for their useful life? ❑ YES ❑ NO

3.10.4 Is GENERAL & JOB SPECIFIC Employee Training being done? ❑ YES ❑ NO

3.10.5 Are CONTRACTORS properly trained, qualified, and their documentation retained on-site? ❑ YES ❑ NO

3.10.6 Is PORTABLE APPLIANCE use regulated by a written policy? ❑ YES ❑ NO

3.10.7 Is EVERY INCIDENT that results in a FIRE or EXPLOSION investigated & recorded? ❑ YES ❑ NO

3.10.8 Is there a procedure for Fire & Explosion System Impairments? ❑ YES ❑ NO

3.10.9 Is the procedure being used? ❑ YES ❑ NO

3.10.10 SMOKING - Is smoking restricted to designated areas having devices for smoking material disposal that is free of combustible/flammable hazards or storage? ❑ YES ❑ NO

3.10.11 HOT WORK - Is Hot Work controlled according to NFPA 51B? ❑ YES ❑ NO

(Consult 29 CFR 1910.276 - Welding, Cutting, Burning)

3.10.12 EMERGENCY PLANNING & RESPONSE - Does it meet the requirements of NFPA 600? ❑ YES ❑ NO
(Consult 29 CFR 1910.38 - Emergency Action Plan)

NFPA 664 Chapter 11 – Housekeeping

3.11 These questions apply to HOUSEKEEPING requirements under the NFPA 664 definition.
CHECK and VERIFY the following conditions:

3.11.1 Is the Housekeeping & Inspection program is DEVELOPED, MAINTAINED, & DOCUMENTED? ❑ YES ❑ NO

3.11.2 Are large quantities of waste or debris that impede energized or moving equipment removed immediately? ❑ YES ❑ NO

3.11.3 Is combustible waste placed in metal covered receptacles until removed for daily disposal? ❑ YES ❑ NO

3.11.4 Is non-reusable combustible waste placed in metal covered receptacles until removed for daily disposal? ❑ YES ❑ NO

3.11.5 Is collected Fugitive (Tramp) metal SEPARATED so it can't re-enter the process? ❑ YES ❑ NO

3.11.6 Is Production Equipment maintained and operated to minimize debris & dust escape? ❑ YES ❑ NO

3.11.7 If an area can't be reached for housekeeping purposes, is it sealed? ❑ YES ❑ NO

3.11.8 If an area can't be reached TO ASSESS OPERATING TEMPERATURE, is a remote detection method considered? ❑ YES ❑ NO

3.11.9 Are Combustible or Flammable liquid spills cleaned up without delay? ❑ YES ❑ NO

3.11.10 Are volatile oil & resin residues removed from areas such as Ovens, Dryers, Fume Extraction, or Ventilation systems? ❑ YES ❑ NO

3.11.11 Are volatile oil & resin residues that are removed STORED near sources of ignition or areas such as Ovens, Dryers, Fume Extraction, or Ventilation systems? ❑ YES ❑ NO

3.11.12 Are OILY soaked cloths or waste material stored in approved metal receptacles with self closing lids? ❑ YES ❑ NO

3.11.12 Are FLAMMABLE LIQUIDS, IF PRESENT, stored per the requirements of NFPA 30? ❑ YES ❑ NO (Flammable & Combustible Liquids Code)

3.11.13 CLEAN-UP METHODS - CAUTION! NFPA 664 has specific requirements for clean-up methods. Several procedures are allowed if other procedures are followed.
ANSWER ALL - Are the following conditions met?

3.11.13.1Floor & Equipment areas are vacuumed with a the correct equipment? ❑ YES ❑ NO
(Equipment MUST be approved for CLASS II, Division 1, Group G Per NFPA 70, Article 502) (National Electrical Code)

3.11.13.2 Electrical and other Ignition Sources are either 1-SHUT DOWN or REMOVED from the area, OR, 2-Classified for use in dusty areas. ❑ YES ❑ NO

3.11.13.3 ONLY LOW Gauge air pressure of 15 Pounds Per Square Inch (PSI) is used. ❑ YES ❑ NO

3.11.13.4 There are NO open flames, sparks from spark producing equipment, or hot surfaces that can ignite a dust cloud or layer. ❑ YES ❑ NO

SECTION – 4 _____

4.1 DETERMINATION, REQUIREMENT, OBSERVATION, MEASUREMENT
Is DUST ACCUMULATION equal to or greater than 1/32 of an inch? ❑ YES ❑ NO
Where?_____

SECTION – 5 _____

5.1 DETERMINATION, REQUIREMENT, OBSERVATION, MEASUREMENT
Is there VISIBLE DUST ACCUMULATION at the following areas?

ANSWER ALL - Do ANY of the following exist?

5.1.1 Slopes ❑ YES ❑ NO

5.1.2 Overhead beams ❑ YES ❑ NO

5.1.3 Joists ❑ YES ❑ NO

5.1.4 Ducts ❑ YES ❑ NO

5.1.4 Equipment tops ❑ YES ❑ NO

SECTION – 6 _____

6.1 Are DUST ACCUMULATIONS on all surfaces GREATER THAN 5% of surface area? ❑ YES ❑ NO
Where?_____

SECTION – 7 _____

7.1 Are DUST ACCUMULATIONS CONTROLLED under the Housekeeping standard ❑ YES ❑ NO
(FED 29 CFR 1910.22)

SECTION – 8 _____

8.1 DETERMINE if IGNITION SOURCES are present anywhere in the inspection area.
Complete the questions below:

ANSWER ALL - Are ANY of the following devices present?

8.1.1 Space heaters (electrical, gas, etc)? ❑ YES ❑ NO

8.1.2 Heat Guns, Soldering irons, other electrical heat producing items? ❑ YES ❑ NO

8.1.3 HOT WORK - Welding, Burning, Cutting in area? ❑ YES ❑ NO

8.1.4 Camp stoves or gas lanterns or other flame sources? ❑ YES ❑ NO

8.1.5 Hot Plates or other appliances? ❑ YES ❑ NO

8.1.6 Halogen or Metal Halide lamps near the auto-ignition temperature of wood (At approximately 399 *F) as verified by DIRECT MEASUREMENT or Thermographic Imagery? ❑ YES ❑ NO

8.1.7 Metal surfaces such as bearings, drive motors, etc. near the auto-ignition temperature of wood (approx 399 *F) as verified by DIRECT MEASUREMENT or Thermographic Imagery? ❑ YES ❑ NO

8.1.8 OTHER Heat or Ignition causing SOURCES? ❑ YES ❑ NO
(IF YES, LIST)_____

SECTION 9

9.1 Could wood dust become dispersed in air due to vibration, other disturbances, OR a primary explosion? ❑ YES ❑ NO
Where?_____

9.2 Determine if ANY of the following processes are occurring WHEN dust could become dispersed in air due to vibration, other disturbances, OR a primary explosion.
ANSWER ALL - Are ANY of the following processes performed WHILE MACHINERY IS OPERATING?

9.2.1 Uncontrolled DUST BLOW DOWN operations on process equipment? ❑ YES ❑ NO

9.2.2 Uncontrolled AIR LANCING (at greater than 15 Pounds per Square Inch [psi]) of equipment or areas? ❑ YES ❑ NO

9.2.3 Uncontrolled FLOOR SWEEPING? ❑ YES ❑ NO

9.2.4 Vibrating, moving, or milling equipment CAUSING DUST TO BE AIRBORNE? ❑ YES ❑ NO

9.2.5 Has the Dust collection system failed OR been turned off? ❑ YES ❑ NO

9.2.6 Is Excessive dust accumulation subjected to wind or other environmental conditions? ❑ YES ❑ NO

9.2.7 Are Mechanical conveying systems in use, and CAUSING DUST TO BE AIRBORNE?`❑ YES ❑ NO

9.2.8 OTHER Conditions or equipment that CAUSE DUST TO BE AIRBORNE? ❑ YES ❑ NO
(IF YES, LIST)_____

_____

SECTION 10 _____

10.1 Is the material explosible under the OSHA Lab test?
(You MUST assume the answer is YES, UNLESS the particle size is too large OR the OSHA lab result is known. Randomly generated particles will include less than 420 micron size)

SECTION – 11 _____

11.1 ANSWER the questions BELOW to determine if your location has wood dust suspended in air, AND under confinement.
ANSWER ALL - Does this location have any of the following process equipment that has wood dust in air AND under confinement?

11.1.1 Silos, Bunkers, Cyclones? ❑ YES ❑ NO

11.1.2 Covered screw conveyors? ❑ YES ❑ NO

11.1.3 Air Ducts and associated piping? ❑ YES ❑ NO

11.1.4 Dust Bins? ❑ YES ❑ NO

11.1.5 Bag houses, either in-doors or outside areas? ❑ YES ❑ NO

11.1.6 Intermediate stage collection vessels? ❑ YES ❑ NO

11.1.7 OTHER - List:_____

_____

_____

11.2 Are there WORKING ENGINEERING CONTROLS that are currently protecting ALL of these systems from prevention or mitigation of Deflagrations and/or Explosions? ❑ YES ❑ NO

List areas where NOT working:_____

_____

_____

Congratulations, you have collected all the information you will need to proceed to calculate your readiness.

After collecting the information about your location on the checklist, enter the information on the electronic version of the “Combustible Wood Dust Inspection Checklist.”

The electronic Checklist will:

1. Automatically calculate a “percent of readiness” score,
2. Advise you when no additional controls are needed, and
3. Specify required actions and NFPA Standards to consult.

Save the information on your electronic file and keep it for your records.

Repeat the process in two months, after you have made the necessary corrections and to calculate your improvement.

The following “Table of Recommended Action” is provided to you for your reference.

Each question has a corresponding number on the table with appropriate Yes and No recommendations.

You can lookup any recommended course of action, for each question or response.

1.1	Yes	Find and fix all ungrounded conductive objects
	No	No fix needed
1.2	Yes	Find static e sources & Minimize
	No	No fix needed
1.3	Yes	Control accomulation and apply housekeeping
	No	No fix needed
1.4	Yes	No fix needed
	No	Check and fix ground on conductive baghouses
1.5	Yes	No fix needed
	No	Consult electrician AND survey areas where static E- is generated
1.6	Yes	No fix needed
	No	Review machinery power supplies & fix as needed
1.7	Yes	No fix needed
	No	Install ground and enclose local disconnects as needed
1.8	Yes	No fix needed
	No	Guard all live parts at or above 50 Volts

1.9	Yes	No fix needed
	No	Install overcurrent devices as needed”
1.1	Yes	No fix needed
	No	Test & Ground all electrical equipment as needed
2.1	Yes	Repair or Replace
	No	No fix needed
2.2	Yes	Provide Cover
	No	No fix needed
2.3	Yes	Repair and Upgrade to Code
	No	No fix needed
2.4	Yes	Repair and Upgrade to Code
	No	No fix needed
2.5	Yes	Repair and Upgrade to Code
	No	No fix needed
2.6	Yes	Repair-Upgrade-Check against Code
	No	No fix needed

2.7	Yes	No fix needed
	No	Implement written program-Formulate procedures-Acquire equipment & Train employees
2.8	Yes	499 Applies-REFER to NFPA for Specific Requirements
	No	499 Does Not Apply
2.8.1	Yes	99 May Apply if area is also a Chemical Process Area
	No	99 Does Not Apply
2.8.2	Yes	499 May Apply if area is also a Chemical Process Area
	No	499 Does Not Apply
2.8.3	Yes	499 May Apply if area is also a Chemical Process Area
	No	499 Does Not Apply
2.8.4	Yes	499 Applies-CHECK Specific Requirements
	No	499 Does Not Apply
2.9	Yes	499 Applies-CHECK Specific Requirements
	No	499 Does Not Apply
3.1.1	Yes	Codes Apply
	No	NFPA 68 Does not apply. OTHER NPFA Codes may apply
3.1.2	Yes	SEE NFPA 664 for methods of preventing ignition source transmission

	No	NFPA 68 Does not apply. OTHER NPFA Codes may apply
3.1.3	Yes	Implement controls specified under NFPA 664 and other codes
	No	VERIFY requirements met
3.1.4	Yes	VERIFY requirements met
	No	Implement controls specified under NFPA 664 and other codes
3.1.5	Yes	Conduct incident investigation and apply needed controls
	No	Determine reason for non-activation and correct it
3.1.6	Yes	Maintain documentation
	No	Implement periodic maintenance and testing schedule & doucmentation
3.1.7	Yes	Maintain documentation
	No	Review NFPA 68 in detail as required
3.1.8	Yes	Maintain documentation
	No	Evaluate enclosures per NFPA
3.1.9	Yes	Schedule Acceptance Testing per requirements
	No	Determine an installation date after review with AHJ and others
3.2.1	Yes	NFPA 69 Applies
	No	NFPA 69 Does not apply-OTHER NFPA Codes may apply

3.2.2	Yes	Proceed to next question
	No	MUST identify & document design basis of deflagration scenario
3.2.3	Yes	Maintain as required
	No	ALL controls MUST be either or both-specify
3.2.4	Yes	Maintain as required
	No	Controls MUST be acceptance tested
3.2.5	Yes	Maintain as required
	No	Controls MUST be periodically inspected and maintained
3.2.6	Yes	VERIFY actual requirements are implemented & retain documentation
	No	Housekeeping under NFPA 654 OR 664 MUST be applied
3.2.7	Yes	Maintain as required
	No	CHECK Requirements and be able to prove they are met
3.2.8	Yes	Maintain as required
	No	Automatic system shutdown MUST be required
3.3.1	Yes	Component indicated as present-verify its appropriate
	No	Check NFPA 69 to verify if component is needed
3.3.2	Yes	Component indicated as present-verify its appropriate

	No	Check NFPA 69 to verify if component is needed
3.3.3	Yes	Component indicated as present-verify its appropriate
	No	Check NFPA 69 to verify if component is needed
3.3.4	Yes	Component indicated as present-verify its appropriate
	No	Check NFPA 69 to verify if component is needed
3.3.5	Yes	Component indicated as present-verify its appropriate
	No	Check NFPA 69 to verify if component is needed
3.4.1	Yes	Requirement Met
	No	Implement PROCESS ANALYSIS
3.4.2	Yes	Requirement Met
	No	Implement MANAGEMENT of CHANGE
3.4.3	Yes	Requirement Met
	No	UPGRADE to meet all requirements
3.4.4	Yes	Requirement Met
	No	UPGRADE to meet all requirements

3.4.5	Yes	Requirement Met
	No	UPGRADE to meet all LIFE SAFETY requirements-SEE NFPA 101
3.4.6	Yes	Requirement Met
	No	UPGRADE to meet all LIFE SAFETY requirements-SEE NFPA 101
3.4.7	Yes	Requirement Met
	No	UPGRADE to meet all LIFE SAFETY requirements-SEE NFPA 101
3.4.8	Yes	Requirement Met
	No	ADD safeguards to mitigate fire spread and explosion
3.4.9	Yes	Requirement Met
	No	ACQUIRE missing items and create documentation
3.4.10	Yes	Requirement Met
	No	EE NFPA 664 Chapters 6 to 11 and UPGRADE as needed
3.5.1	Yes	Requirement Met
	No	VERIFY acceptability with Authority Having Jurisdiction-AHJ
3.5.2	Yes	Requirement Met
	No	VERIFY requirement with Authority Having Jurisdiction-AHJ
3.5.3	Yes	Requirement Met

	No	VERIFY Data Sources & Design Aspects with Authority Having Jurisdiction-AHJ
3.5.4	Yes	Requirement Met
	No	Maintain design features or obtain AHJ approval for change
3.5.5	Yes	Requirement Met
	No	Prevent ignition per NFPA criteria
3.5.6	Yes	Requirement Met
	No	Implement controls to prevent fire from spreading
3.5.7	Yes	Requirement Met
	No	Implement controls to prevent effects of deflagration-SEE NFPA 664
3.5.8	Yes	Requirement Met
	No	Perform Design Fire Scenarios per NFPA 664
3.5.9	Yes	Requirement Met
	No	Perform Deflagration Scenarios per NFPA 664
3.5.10	Yes	Requirement Met
	No	Obtain AHJ Evaluation of proposed design NFPA 664- at 5.4
3.6.1	Yes	Requirement Met
	No	Possible location UPGRADE may be needed - Consult AHJ

3.6.2	Yes	Requirement Met
	No	Possible location UPGRADE may be needed - Consult AHJ
3.6.3	Yes	Requirement Met
	No	Possible location UPGRADE may be needed - Consult AHJ
3.6.4	Yes	Requirement Met
	No	Possible location UPGRADE may be needed - Consult AHJ
3.6.5	Yes	Requirement Met
	No	MINIMIZE dust at these locations
3.6.6	Yes	Requirement Met
	No	Possible location UPGRADE may be needed - Consult AHJ
3.6.7	Yes	Requirement Met
	No	Possible location UPGRADE may be needed - Consult AHJ
3.6.8	Yes	Requirement Met
	No	Possible location UPGRADE may be needed - Consult AHJ
3.6.9	Yes	Requirement Met
	No	Possible location UPGRADE may be needed - Consult AHJ
3.6.10	Yes	Requirement Met

	No	Possible location UPGRADE may be needed - Consult AHJ
3.7.1	Yes	Codes Apply
	No	HOT WORK must be controlled
3.7.2	Yes	Requirements Met
	No	ELECTRICAL SYSTEMS must meet code requirements-SEE NFPA 70
3.7.3	Yes	Requirements Met
	No	Wood exposed to HOT SURFACES exceeding the auto-ignition temperature of wood at 399 degrees may ignite
3.7.4	Yes	Requirements Met
	No	Inadequate lubrication & wear leads to frictional heating and auto-ignition of wood dust
3.7.5	Yes	Requirements Met
	No	Powered Industrial Trucks are sources of ignition-CHECK Classification
3.7.6	Yes	Requirements Met
	No	Evaluate & Upgrade lighting to low temperature & enclosed devices
3.7.7	Yes	Requirements Met
	No	CHECK fuel fired equipment against NFPA 31 requirements
3.7.8	Yes	Requirements Met

	No	Consult electrician for Static Electricity minimizations
3.7.9	Yes	Requirements Met
	No	Look for equipment generation of sparks and ignition
3.7.10	Yes	Requirements Met
	No	Inspect for and minimize foreign material that can generate sparks and cause ignition
3.7.11	Yes	Determine materials sources and minimize
	No	Also consider the possibility of gravel or other materials that can spark by contact with internal metal surfaces
3.7.12	Yes	Requirements met
	No	CHECK equipment to minimize frictional heating
3.7.13	Yes	Requirements met
	No	Schedule and maintain cleaning of these parts
3.7.14	Yes	Requirements met
	No	Evaluate hazards and minimize
3.7.15	Yes	Requirements met
	No	DON'T use propellant actuated tools unless conditions are met
3.7.16	Yes	Requirements met

	No	Restrict smoking as specified
3.7.17	Yes	Requirements met
	No	Equipment MUST be either UL or FM listed and only sed where allowed
3.8.1	Yes	GREEN MATERIAL areas do not require NFPA 664 control
	No	A Hazard Analysis must be conducted
3.8.2	Yes	GREEN MATERIAL areas do not require NFPA 664 control
	No	IF green & dry material present - NFPA 664 controls required
3.8.3	Yes	NFPA 664 controls required
	No	NFPA 664 controls NOT required
3.8.4	Yes	NFPA 664 controls required
	No	NFPA 664 controls NOT required
3.8.5	Yes	VERIFY-Non professionally engineered systems WILL NOT qualify
	No	Refer to NFPA 654 controls for design requirements
3.8.6	Yes	NFPA 664 PROHIBITS THIS CONDITION. Separate systems As Soon As Possible
	No	Design condition has been met
3.8.7	Yes	System may need rebalancing to assure capture velocity

	No	Design requirements reported as met
3.8.8	Yes	NFPA 664 requirement met
	No	MUST operate system when wood stock processed
3.8.9	Yes	NFPA 664 requirement met
	No	MAXIMIZE METAL - MINIMIZE PLASTIC - See comment for specifics
3.8.10	Yes	NFPA 664 requirement met
	No	Provide corrosion protection and-or bond & ground
3.8.11.1	Yes	NFPA 664 requirement met
	No	Provide corrosion protection and-or bond & ground
3.8.11.2	Yes	NFPA 664 requirement met
	No	Provide corrosion protection and-or bond & ground
3.8.11.3	Yes	NFPA 664 requirement met
	No	Provide corrosion protection and-or bond & ground
3.8.12.1	Yes	NFPA 664 requirement met
	No	Provide corrosion protection and ELECTRICALLY bond & ground
3.8.12.2	Yes	NFPA 664 requirement met

	No	Provide corrosion protection and-or bond & ground
3.8.12.3	Yes	NFPA 664 requirement met
	No	Provide corrosion protection and-or bond & ground
3.8.12.4	Yes	NFPA 664 requirement met
	No	Provide corrosion protection and-or bond & ground
3.8.12.5	Yes	NFPA 664 requirement met
	No	Provide corrosion protection and-or bond & ground
3.8.12.6	Yes	NFPA 664 requirement met
	No	Provide corrosion protection and-or bond & ground
3.8.13	Yes	NFPA 664 Requirement met
	No	Check system performance against design specifications-check for leaks or material plugs
3.8.14	Yes	NFPA 664 Requirement met
	No	NFPA 13-Standard for the Installation of Sprinkler Systems-applies
3.8.15.1	Yes	NFPA 664 Requirement met
	No	Check system performance against design specifications-check for leaks or material plugs
3.8.15.2	Yes	NFPA 664 Requirement met
	No	Check system performance against design specifications-check for leaks or material plugs

3.8.15.3	Yes	NFPA 664 Requirement met
	No	Provide corrosion protection and-or bond & ground
3.8.15.4	Yes	NFPA 664 Requirement met
	No	Provide corrosion protection and-or bond & ground
3.8.15.5	Yes	NFPA 664 Requirement met
	No	Provide corrosion protection and-or bond & ground
3.8.16.1	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.8.16.2	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.8.17.1	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.8.17.2	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.8.18.1	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 - Minimize heat build-up
3.8.18.2	Yes	You have indicated design requirements met or are not needed

	No	Review NFPA 664 and Minimize fugitive dust emissions
3.8.18.3	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and UPGRADE bearings where possible”
3.8.18.4	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and correct where needed
3.8.18.5	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and correct where needed
3.8.18.6	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and UPGRADE as required
3.8.18.7	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and UPGRADE as required
3.8.19.1	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 requirements and corrrect
3.8.19.2	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 requirements and corrrect
3.8.19.3	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 requirements and corrrect

3.8.19.4	Yes	You have indicated design requirements met or are not needed
	No	NON-WELDED piping systems are NOT acceptable-Review NFPA 664 and corrrect
3.8.19.5	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.8.19.6	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 requirements and corrrect
3.8.19.7	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.8.19.8	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.8.19.9	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 requirements-Create procedures and conduct operator training
3.8.19.10	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 requirements and corrrect
3.8.20.1	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664-Hazard Analysis MUST be based on particle size
3.8.20.2	Yes	You have indicated design requirements met or are not needed

	No	Review NFPA 664 and corrrect
3.8.20.3	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 requirements
3.8.21.1	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 - Provide enclosures to control dust
3.8.21.2	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.8.21.3	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.8.21.4	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.8.22.1	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.8.22.2	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.8.22.3	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect

3.8.22.4	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.8.22.5	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.8.22.6	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.8.23	Yes	Acceptance Testing is Due
	No	Schedule installation date and verify requirements with Authority Having Jurisdiction-AHJ
3.8.24.1	Yes	Maintain system if present
	No	CHECK requirements and VERIFY if needed
3.8.24.2	Yes	Maintain system if present
	No	CHECK requirements and VERIFY if needed
3.8.24.3	Yes	Maintain system if present
	No	CHECK requirements and VERIFY if needed
3.8.24.4	Yes	Maintain system if present
	No	CHECK requirements and VERIFY if needed
3.8.24.5	Yes	Maintain system if present

	No	CHECK requirements and VERIFY if needed
3.8.24.6	Yes	Maintain system if present
	No	CHECK requirements and VERIFY if needed
3.9.1	Yes	You have indicated design requirements met or are not needed
	No	Item NOT REQUIRED or Exempt, or Not in Place
3.9.2	Yes	You have indicated design requirements met or are not needed
	No	Item NOT REQUIRED or Exempt, or Not in Place
3.9.3	Yes	You have indicated design requirements met or are not needed
	No	Item NOT REQUIRED or Exempt, or Not in Place
3.9.4	Yes	You have indicated design requirements met or are not needed
	No	Item NOT REQUIRED or Exempt, or Not in Place
3.9.5	Yes	You have indicated design requirements met or are not needed
	No	Item NOT REQUIRED or Exempt, or Not in Place
3.10.1	Yes	Maintain as needed
	No	Implement an Inspection, Testing, and Maintenance program for fire & explosion protection systems
3.10.2	Yes	Maintain as needed

	No	Modify, if necessary, to cover dust collection systems
3.10.3	Yes	Maintain as needed
	No	Ensure records are kept for their useful life
3.10.4	Yes	Maintain as needed
	No	Conduct general & job-specific employee training
3.10.5	Yes	Maintain as needed
	No	Ensure contractors are properly trained, qualified, and their documentation is retained on-site
3.10.6	Yes	Maintain as needed
	No	Establish written policy & regulate portable appliance use
3.10.7	Yes	Maintain as needed
	No	Investigate and record every incident involving fire or explosion
3.10.8	Yes	Maintain as needed
	No	Establish a procedure for fire & explosion system impairment
3.10.9	Yes	Maintain as needed
	No	Determine why and implement procedures
3.10.10	Yes	Maintain as needed
	No	Restrict smoking as required

3.10.11	Yes	Maintain as needed
	No	Control hot work as required
3.10.12	Yes	Maintain as needed
	No	Meet requirements for Emergency Planning & Response
3.11.1	Yes	Maintain as required
	No	Develop, maintain & document Housekeeping & Inspection program
3.11.2	Yes	Maintain as required
	No	Immediately remove waste accumulation that impedes equipment operation
3.11.3	Yes	Maintain as required
	No	Place combustible waste in metal covered receptacles for daily disposal
3.11.4	Yes	Maintain as required
	No	Place non-reusable combustible waste in metal covered receptacles for daily disposal
3.11.5	Yes	Maintain as required
	No	Collect & separate fugitive metal to prevent system re-entry
3.11.6	Yes	Maintain as required
	No	Collect & separate fugitive metal to prevent system re-entry
3.11.7	Yes	Maintain as required

	No	Seal unreachable areas to prevent dust accumulation & ignition
3.11.8	Yes	Periodically assess temperature conditions
	No	Consider an assessment method - surfaces exceeding 399*F are an ignition hazard
3.11.9	Yes	Controlled
	No	Cleanup combustable & flammable liquid spills as soon as possible
3.11.10	Yes	Controlled
	No	Cleanup Volatile oil & resin residues - they are combustable or flammable
3.11.11	Yes	Controlled
	No	RELOCATE STORAGE-Manage and Dispose of volatile oil & resin residues per regulations
3.11.12	Yes	Controlled
	No	Provide approved metal receptacles having self-closing lids
3.11.12	Yes	Controlled
	No	Review NFPA 30 for specific requirements and UPGRADE storage methods as needed
3.11.13.1	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.11.13.2	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect

3.11.13.3	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
3.11.13.4	Yes	You have indicated design requirements met or are not needed
	No	Review NFPA 664 and corrrect
4.1	Yes	Control dust accumulation to less than 1/32 inch
	No	Controlled
5.1.1	Yes	Control accumulation on Slopes
	No	Controlled
5.1.2	Yes	Control accumulation on Overhead Beams
	No	Controlled
5.1.3	Yes	Control accumulation on Joists
	No	Controlled
5.1.4	Yes	Control accumulation on Ducts
	No	Controlled
5.1.4	Yes	Control accumulation on Equipment Tops
	No	Controlled
6.1	Yes	Calculate area square footage and control to less than 5%

	No	Controlled
7.1	Yes	Controlled
	No	Consult OSHA standard and minimize dust accumulation
8.1.1	Yes	Remove or prohibit DEVICES in areas when deflagration or explosion conditions exist
	No	Controlled
8.1.2	Yes	Remove or prohibit DEVICES in areaa when deflagration or explosion conditions exist
	No	Controlled
8.1.3	Yes	Remove or prohibit HOT WORK in area when deflagration or explosion conditions exist
	No	Controlled
8.1.4	Yes	Remove or prohibit these DEVICES in area when deflagration or explosion conditions exist
	No	Controlled
8.1.5	Yes	Remove or prohibit DEVICES in area when deflagration or explosion conditions exist
	No	Controlled
8.1.6	Yes	Inspect-Replace-Repair-VERIFY less than 399*F temperature with Thermographic Imagery
	No	Controlled
8.1.7	Yes	Inspect-Replace-Repair-VERIFY less than 399*F temperature with Thermographic Imagery
	No	Controlled

8.1.8	Yes	Inspect-Repair-Replace-Resolve as needed
	No	Controlled
9.1	Yes	Control by minimizing accumulation
	No	Controlled
9.2.1	Yes	Control by procedure that shuts down equipment-removes IGNITION SOURCES and requires immediate clean-up
	No	Controlled
9.2.2	Yes	Control by procedure that removes IGNITION SOURCES and requires immediate clean-up
	No	Controlled
9.2.3	Yes	Control by procedure that removes IGNITION SOURCES and requires immediate clean-up
	No	Controlled
9.2.4	Yes	Control by procedure that removes IGNITION SOURCES and requires immediate clean-up
	No	Controlled
9.2.5	Yes	Shut down system-Inspect-Repair unit-Start-up and check operation
	No	Controlled
9.2.6	Yes	Control by procedure that isolates and-or minimizes dust accumulation and controls all IGNITION SOURCES

	No	Controlled
9.2.7	Yes	Control by procedure that removes IGNITION SOURCES and requires immediate clean-up
	No	Controlled
9.2.8	Yes	Control by procedure that removes IGNITION SOURCES and requires immediate clean-up
	No	Controlled
10.1	Yes	Control by applying Housekeeping methods and engineering controls
	No	Controlled
11.1.1	Yes	Review & Select NFPA engineering control options and VERIFY with Authority Having Jurisdiction - AHJ
	No	NFPA Engineering Controls NOT Needed
11.1.2	Yes	Review & Select NFPA engineering control options and VERIFY with Authority Having Jurisdiction - AHJ
	No	NFPA Engineering Controls NOT Needed
11.1.3	Yes	Review & Select NFPA engineering control options and VERIFY with Authority Having Jurisdiction - AHJ
	No	NFPA Engineering Controls NOT Needed
11.1.4	Yes	Review & Select NFPA engineering control options and VERIFY with Authority Having Jurisdiction - AHJ

	No	NFPA Engineering Controls NOT Needed
11.1.5	Yes	Review & Select NFPA engineering control options and VERIFY with Authority Having Jurisdiction - AHJ
	No	NFPA Engineering Controls NOT Needed
11.1.6	Yes	Review & Select NFPA engineering control options and VERIFY with Authority Having Jurisdiction - AHJ
	No	NFPA Engineering Controls NOT Needed
11.1.7	Yes	Review & Select NFPA engineering control options and VERIFY with Authority Having Jurisdiction - AHJ
	No	NFPA Engineering Controls NOT Needed
11.2	Yes	Review & Correct Systems - AHJ
	No	NFPA Engineering Controls NOT Needed