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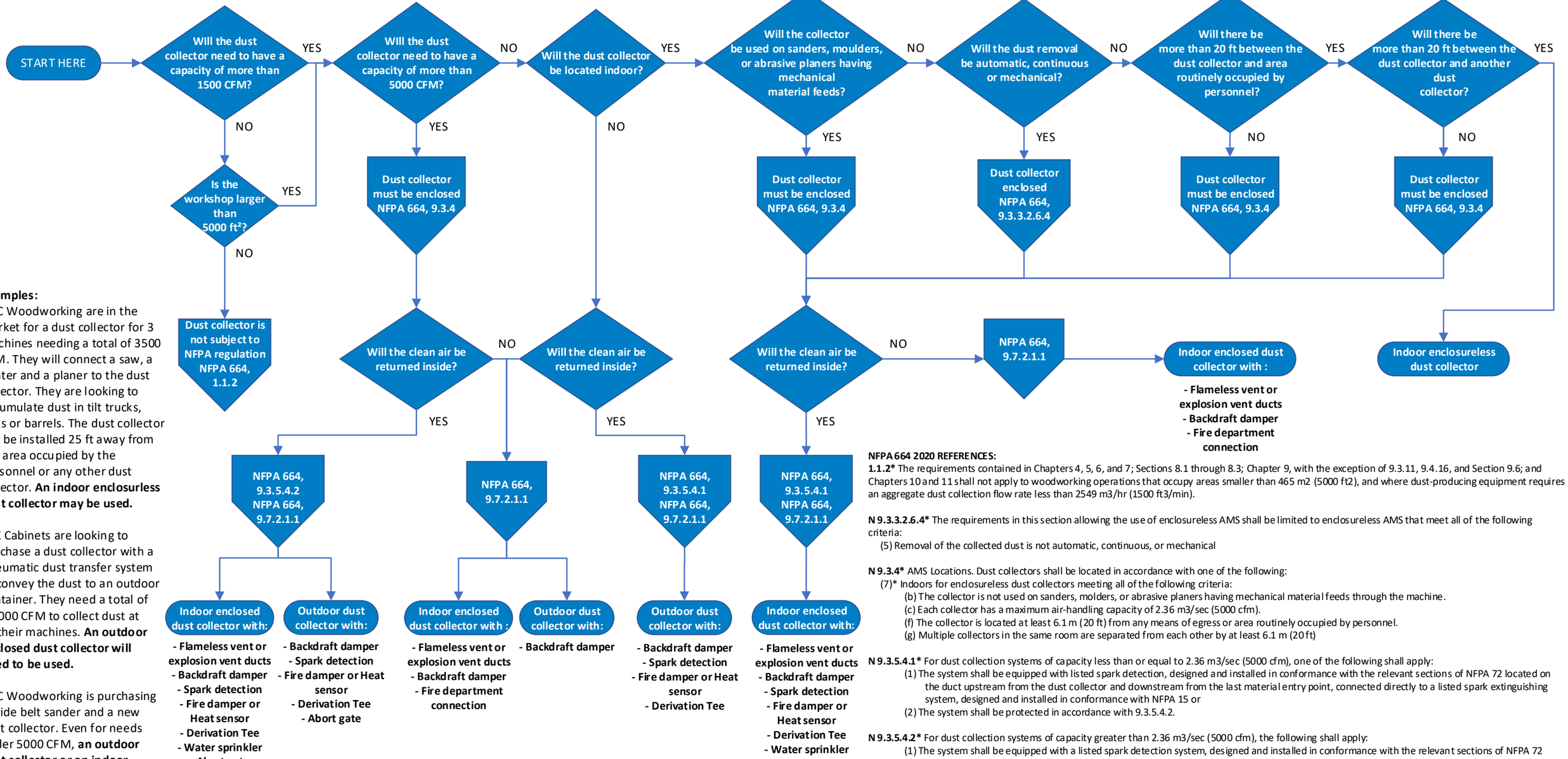
Guideline for wood dust collector selection following NFPA regulation



Examples:

ABC Woodworking are in the market for a dust collector for 3 machines needing a total of 3500 CFM. They will connect a saw, a jointer and a planer to the dust collector. They are looking to accumulate dust in tilt trucks, bags or barrels. The dust collector will be installed 25 ft away from the area occupied by the personnel or any other dust collector. **An indoor enclosurless dust collector may be used.**

ZYX Cabinets are looking to purchase a dust collector with a pneumatic dust transfer system to convey the dust to an outdoor container. They need a total of 12 000 CFM to collect dust at all their machines. **An outdoor enclosed dust collector will need to be used.**

ABC Woodworking is purchasing a wide belt sander and a new dust collector. Even for needs under 5000 CFM, **an outdoor dust collector or an indoor enclosed dust collector must be used.**

Disclaimer: *Consult your local authorities to verify all governing codes and regulations that apply in your locality in regards to the use of dust collectors. It is the buyer's responsibility to follow all applicable national, local codes and regulations for installation and system operation. Other regulations may apply.*

NFPA 664 2020 REFERENCES:

1.1.2* The requirements contained in Chapters 4, 5, 6, and 7; Sections 8.1 through 8.3; Chapter 9, with the exception of 9.3.11, 9.4.16, and Section 9.6; and Chapters 10 and 11 shall not apply to woodworking operations that occupy areas smaller than 465 m2 (5000 ft2), and where dust-producing equipment requires an aggregate dust collection flow rate less than 2549 m3/hr (1500 ft3/min).

N 9.3.3.2.6.4* The requirements in this section allowing the use of enclosureless AMS shall be limited to enclosureless AMS that meet all of the following criteria:
(5) Removal of the collected dust is not automatic, continuous, or mechanical

N 9.3.4* AMS Locations. Dust collectors shall be located in accordance with one of the following:
(7)* Indoors for enclosureless dust collectors meeting all of the following criteria:
(b) The collector is not used on sanders, molders, or abrasive planers having mechanical material feeds through the machine.
(c) Each collector has a maximum air-handling capacity of 2.36 m3/sec (5000 cfm).
(f) The collector is located at least 6.1 m (20 ft) from any means of egress or area routinely occupied by personnel.
(g) Multiple collectors in the same room are separated from each other by at least 6.1 m (20 ft)

N 9.3.5.4.1* For dust collection systems of capacity less than or equal to 2.36 m3/sec (5000 cfm), one of the following shall apply:
(1) The system shall be equipped with listed spark detection, designed and installed in conformance with the relevant sections of NFPA 72 located on the duct upstream from the dust collector and downstream from the last material entry point, connected directly to a listed spark extinguishing system, designed and installed in conformance with NFPA 15 or
(2) The system shall be protected in accordance with 9.3.5.4.2.

N 9.3.5.4.2* For dust collection systems of capacity greater than 2.36 m3/sec (5000 cfm), the following shall apply:
(1) The system shall be equipped with a listed spark detection system, designed and installed in conformance with the relevant sections of NFPA 72 located on the duct upstream from the dust collector and downstream from the last material entry point, or on the exhaust side of the dust collector, to detect fire entering or occurring within the dust collector, respectively, and
(2) The exhaust air duct conveying the recycled air back to the building shall be equipped with a high speed abort gate activated by the spark detector in 9.3.5.4.2(1), and the abort gate shall be sufficiently fast to intercept and divert any burning material to atmosphere before it can enter the plant.

N 9.7.2.1.1 Conveying systems with deflagration hazards shall be isolated to prevent propagation of fire and deflagration both upstream and downstream into occupied areas or other critical process equipment. (See Annex D.)

NFPA® Standard for the Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities 2020 Edition. National Fire Protection Association.