Blasting Booth
Design Review Checklist

- ACGIH Industrial Ventilation Manual, 28th Edition
- UFC 3-410-04N, Industrial Ventilation, 25 October 2004
- ANSI Z9.4-2011, Abrasive-Blasting Operations – Ventilation and Safe Practices for Fixed Location Enclosures (Withdrawn)
- 29 CFR 1910.94, Ventilation
- International Building, Mechanical and Fire Codes

Means of Egress

1. Emergency Exits located on opposing walls (UFC)?

2. Doors are operable from inside and outside of booth (UFC)?

3. Four foot of clearance between work and ceiling, walls, and doors (UFC)

Fire Protection

1. Industrial occupancy in which the blasting booth is located is separated from other occupancies (2 hours from business; 3 hours from educational; 2 hours from assembly)? Reduce by 1 hour if sprinkled.

2. Is the area sprinkled?

3. Are fire extinguishers provided and located for instant use in emergency?

4. Is agricultural media used?

5. Is designed protection per NFPA 91 (noncombustible media) and 654 (combustible media)?

Construction

1. Non-combustible walls, floors and ceiling/roof (UFC)?

2. Acoustical treatment or hearing protection provided if noise levels exceed 85 dB for room where booth is located?
Must be noncombustible if provided. (OSHA 1910)

3. Exit doors on opposing walls (UFC)?

4. Doors are flanged and tight when closed (UFC)?

5. Observation window of safety glass (UFC)

HVAC

1. Dust collector provided (1910.94)? Can be emptied without contaminating work area (1910.94)? Pulse-jet or other?

2. Air velocity at openings into the booth is 250 fpm (continuous) (ANSI Z9.4)?

3. Separate exhaust and media recovery systems (UFC)?

4. General ventilation of 1.5 cfm per square foot of floor area (ASHRAE 62)?

5. No recirculation when toxic materials are used/generated (UFC)?

6. Exhaust system runs continuously while operations are in progress and as long as necessary afterwards (1926.57)?

7. Openings are baffled and/or and inward flow of 500 fpm is maintained to prevent contaminants from escaping booth (1910.94, IV Manual, UFC)?

8. Make up air system provided?
Plenum provided to distribute air evenly across the booth (ANSI Z9.4)?

9. Differential pressure gauges across replacement air filters (1910.94)?
Across any filters in system?

10. Static pressure sensors for each blasting room (UFC)?

11. Ventilation provides -0.02 to -0.06”w.g. pressure differential (UFC)?

12. Ductwork has a transport velocity of 3500 fpm (UFC, IV Manual)?

13. Duct elbows are flat-backed (UFC)?

14. Exhaust fan is centrifugal type with backward curved or radial blades (UFC)?

15. Exhaust fan takes into account dirty filter condition (UFC)?

16. Booth is downdraft type? (UFC)
    a. Exhaust plenums no wider than 8 feet?
    b. Supply air provided by a plenum which evenly distributes air across the cross-section of the booth?
    c. Supply air plenum holes sized for 1000 fpm?
    d. Exhaust slots run length of booth and sized for 2000 fpm?
    e. Exhaust plenum can be cleaned?

17. Booth is crossdraft type? (UFC)
    a. Exhaust plenums no wider than 8 feet?
    b. Supply air provided by a plenum which evenly distributes air across the cross-section of the booth?
    c. Exhaust air removed by a plenum which runs evenly across the cross-section of the booth?
    d. Maximum supply air plenum velocity of 500 fpm?
    e. Supply air plenum holes sized for 2000 fpm?
    f. Exhaust air plenum open area sized for 1000 fpm?
    g. Maximum exhaust air plenum velocity of 1000 fpm?
    h. Exhaust plenum can be cleaned?

18. Blasting Cabinets (IV Manual VS-80-02)
    a. 20 AC/Minute?
    b. 500 fpm inward velocity at openings?
    c. Duct velocity = 4000 fpm?
    d. Baffled air vents?
    e. Gasketed doors?
    e. Exhaust to dust collector?

19. Air volumes meet the requirements below?

Minimum Design Ventilation Air Volumes for Downdraft Blast-Cleaning Rooms and Ventilation Rates for Crossdraft Blast-Cleaning Rooms Occupied by Blasters (ANSI Z9.4, Table A-1)

Type of Abrasives	Downdraft (cfm/sq. ft. net floorspace)				Crossdraft (cfm/sq. ft. c-s area)
	0-100	100-200	200-300	>300	
Abrasives or material that can generate airborne asbestos fibers or free silica containing lead, chromates, or other toxic compounds with PELs <1 mg/m3	90	70	60	60	100
Abrasives or coatings w/PELs from 1-5 mg/m3	60	50	40	35	80
Low tox matls (steel or aluminum oxide)& contaminants (iron oxide scale) w/ PELs 5 mg/m3 or more)	40	35	30	20	60
Shot Peening, clean metal, metal shot	30	20	20	20	50

Plumbing

1. Large booths have multiple air outlet locations for the air hoses (UFC)?

2. Blasting tool is interlocked with ventilation system (UFC)?

3. Compressed air provided for blasting tools? (UFC)

4. Suitable breathing air provided for respirators (UFC, 1910.134)?

5. Climate controlled hoods (UFC)?

6. Equipment isolated to reduce noise (UFC)?

Electrical

1. If combustible media is used, electrical components in the blast enclosure meet NFPA 70 (National Electric Code)?