Successful application of very high-velocity, low-volume local exhaust has been reported by British investigators, which is of special interest to those confronted with the control of dust from portable devices.[11]

Tables 9 and 10 are recommendations from the American Standards Association on the fundamentals of exhaust systems.[12]

TABLE 9

Range of Capture Velocities

Condition of dispersion of contaminant	Examples	Capture velocity (l.f.m.)
Released with no velocity into quiet air	Evaporation from tanks; degreasing, plating, pickling	50–100
Released at low velocity into moderately still air	Spray booths; intermittent container filling; low speed conveyor transfers; welding	100–200
Active generation into zone of rapid air motion	Spray painting in shallow booths; barrel filling; conveyor loading; crushers	200–500
Released at high initial velocity into zone of very rapid air motion	Grinding; abrasive blasting, tumbling	500–2000

TABLE 10

Capture Velocities for Specific Operations

(Velocity at furthest point of source unless otherwise specified.)

Operation	Capture velocity (l.f.m.)	Remarks
Abrasive blasting		
Cabinets	500	Virtually complete enclosure
Rooms	60–100	Downdraft in room
Bagging		
Paper bags	100	Booth or enclosure
Cloth bags	200	Booth or enclosure
	400	At point of origin (local exh.)
Barrel filling	75–100	Point of origin
Bins and hopper	150–200	Face of enclosing hood
Bottle washing	150–250	Face of booth
Conveyor transfer points	150–200	Face of enclosing hood
Core sanding	100	Point of origin (sanding lathe)
Forge (hand operated)	200	Face of enclosure
Foundry screens		
Cylindrical	400	Openings in enclosure
Flat deck	200	Openings in enclosure

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[11] W. B. Lawrie, A. T. Holman, and E. B. James, *Proceedings of the Conference on Exhaust Ventilation and Dust Control*, Harrogate, England, 1955. The British Cast Iron Research Association, Birmingham, 1956, pp. 245–54.

[12] American Standard, Fundamentals Relating to the Design and Operation of Exhaust Systems, Z9. American Standards Association, New York, 1936 (revision in process, 1958).

TABLE 10 (*continued*)

Operation	Capture velocity (l.f.m.)	Remarks
Foundry shakeout	200	Openings in enclosure
[illegible]	250	Cold castings, downdraft
[illegible]	600	Hot castings, downdraft
Furnaces		
Aluminum	150–200	Openings in enclosure
Brass	200–250	Openings in enclosure
Grain elevators		
Boot and head	500	Face of enclosing hood
Granite cutting		
Hand tool	200	Point of origin—suspended hood
Surfacing machine	1500	Point of origin
All tools	1500	Face of enclosing hood
Grinding		
Disc and portable	200–400	Downdraft grilles in bench or floor
Swing frame	100–150	Face of booth
Kitchen range	100–150	Face of canopy
Laboratory hood	100–150	Face of hood, door open
[illegible]	125–200	Downdraft through bench grille
Metallizing (toxic materials require air-line respirators)		
Toxic (lead, cadmium)	200	Face of enclosing booth
Nontoxic (steel, aluminum)	125	Face of enclosing booth
[illegible]	200	Face of local hood
Mixers		
Sand	100–200	Face of enclosure
Packaging machines	50–100	Face of booth
[illegible]	75–150	Downdraft
[illegible]	100–400	Openings in complete enclosure
Paint spray	100–200	At face of booth. Depends on size and depth of booth, size of work
Pharmaceutical coating pans	100–200	At point of escape (opening of pan)
Pottery		
Dippers mangle	500	Point of origin
Biscuit brushing	750	Point of origin
Aerographing	100–150	Face of booth
Glaze fusing	150–200	Face of booth. Varies with size work.
Rubber rolls (calenders)	75–100	Hood opening
Silver soldering	100	Point of origin
Steam kettles	150	Face of canopy
Tanks		
Degreasing	50	Point of origin
Dip (Benzol)	150	Openings in partial enclosure
Pickling	75–100	Point of origin
Plating	50–100	Point of origin
Quench	100	Face of hood opening
Steam	75–100	Point of origin
Welding (arc)	100–200	Point of origin (suspended hood)
[illegible]	100	Face of enclosing booth