

TO BE RESCINDED

4123:1-5-99.2 **Examples of local exhaust ventilation.**

(A) Prints which appear in this rule are copied from "Industrial Ventilation, A Manual of Recommended Practice," of the "American Conference of Governmental Industrial Hygienists." They are identified with the name of the organization.

(B) Index.

- (1) "Principles of Dilution Ventilation"
- (2) "Principles of Exhaust Hoods"
- (3) "Building Air Inlets and Outlets"
- (4) "Principles of Duct Design"
- (5) "Stackhead Designs"
- (6) "Abrasive Blasting Ventilation"
- (7) "Auto Spray Paint Booth"
- (8) "Large Drive-Through Spray Paint Booth"
- (9) "Backstand Idler Polishing Machine"
- (10) "Bag Filling"
- (11) "Bag Tube Packer"
- (12) "Banbury Mixer"
- (13) "Rubber Calender Rolls"
- (14) "Barrel Filling"
- (15) "Bin and Hopper Ventilation"

- (16) "Bucket Elevator Ventilation"
- (17) "Circular Automatic Buffing"
- (18) "Soft Wheel Buffing Lathe"
- (19) "Straight Line Automatic Buffing"
- (20) "Buffing and Polishing"
- (21) "Conveyor Belt Ventilation"
- (22) "Core Grinder"
- (23) "Crucible Melting Furnace - High Toxicity Material"
- (24) "Dip Tank"
- (25) "Horizontal Double-Spindle Disc Grinder"
- (26) "Horizontal Single-Spindle Disc Grinder"
- (27) "Vertical Spindle Disc Grinder"
- (28) "Dry Box or Glove Hood for High Toxicity and Radioactive Materials"
- (29) "Drying Oven Ventilation"
- (30) "Electric Rocking Furnace"
- (31) "Hood for Top Electrode Melting Furnace"
- (32) "Side-draft Hood and Enclosing Hood"
- (33) "Double Side-draft and Downdraft Hood"
- (34) "Exhaust Requirement"

- (35) "Service Garage Ventilation - Underfloor"
- (36) "Service Garage Ventilation - Overhead"
- (37) "Granite Cutting and Finishing"
- (38) "Grinder Wheel Hood Speeds Below 6500 sfm"
- (39) "Grinder Wheel Hood Speeds Above 6500 sfm"
- (40) "Downdraft Hoods and Booth-type Hoods"
- (41) "Push Pull Hoods"
- (42) "Jointers"
- (43) "Laboratory Hood"
- (44) "Kitchen Range Hoods"
- (45) "Kitchen Range Hood - Low Side Wall Hood"
- (46) "Indoor Pistol and Small Bore Rifle Range"
- (47) "Lathe Hood High Toxicity Materials"
- (48) "Melting Pot and Furnace Non-tilt"
- (49) "Melting Furnace Crucible Non-tilt"
- (50) "Melting Furnace - Tilting"
- (51) "Die Casting Hood"
- (52) "Die Casting Machine or Melting Furnace"
- (53) "Metal Polishing Belt"

- (54) "Metal Shears High Toxicity Materials"
- (55) "Metal Spraying"
- (56) "Milling Machine Hood High Toxicity Materials"
- (57) "Mixer and Muller Hood"
- (58) "Mixer and Muller Ventilation"
- (59) "Upward Plenum, Downward Plenum, Central Slot"
- (60) "Pickling Tank, Semi-lateral, End Take-off"
- (61) "Design Data"
- (62) "Small Paint Booth"
- (63) "Large Paint Booth"
- (64) "Portable Chipping and Grinding Table"
- (65) "Portable Hand Grinding"
- (66) "Pouring Station"
- (67) "Shell Core Molding"
- (68) "Disc Sanders"
- (69) "Horizontal Belt Sanders"
- (70) "Multiple Drum Sander"
- (71) "Single Drum Sander"
- (72) "Abrasive Cut-off Saw Ventilation"

- (73) "Fluidized Beds"
- (74) "Band Saws"
- (75) "Swing Saws"
- (76) "Table Saw"
- (77) "Radial Saw"
- (78) "Screens"
- (79) "Soldering and Arc Welding"
- (80) "Solvent Degreasing Tanks"
- (81) "Swing Grinder"
- (82) "Table Slot"
- (83) "Trailer Interior Spray Painting"
- (84) "Tumbling Mills"
- (85) "Arc Welding"
- (86) "Torch Cutting Ventilation"
- (87) "Extractor Head for Cone Wheels and Mounted Points"
- (88) "Hood for Cup Type Surface Grinders and Wire Brushes"
- (89) "Pneumatic Chisel Sleeve"
- (90) "Extractor Head for Small Radial Grinders"
- (91) "Extractor Hood for Disc Sander"

(92) "Extractor Tool for Vibratory Sander"

(93) "Typical System Low Volume High Velocity"

(C) Design data - open surface tanks.

(1) Duct velocity = two thousand fpm minimum.

(2) Entry loss = 1.78 slot VP plus duct entry loss.

(3) Maximum plenum velocity = one-half slot velocity.

(4) Slot velocity = two thousand fpm unless distribution provided by well-designed fish-tail.

(5) Provide ample excess area at small end of plenum.

(6) If L exceeds six to ten feet, multiple take-offs are advisable.

(7) If W = twenty inches, slot on one side suitable. If W = twenty to thirty-six inches, slots on both sides desirable.

If W is much greater than thirty-six inches, slots on both sides are necessary unless all other conditions are optimum.

(8) Liquid level to be at least six inches below bottom of slot.

(9) Hood types A, C, D and E, are preferred--Plenum acts as baffle to room air currents.

(10) Provide enclosures or removable covers on tank if possible.

(11) Provide ductwork with clean-outs and drains, and corrosion resistant coating if necessary.

MINIMUM* EXHAUST VOLUME OPEN SURFACE TANKS

Operation	CFM/sq. ft. of tank	Collector Recommended
Plating (Chrome, Cyanide solutions if needed)	150	X

Anodizing	120	X
Pickling:		
Cold Acid	120	
Hot Acid	250	X
Nitric and Sulfuric Acids	250	X
Nitric and Hydrofluoric Acids	250	X
Cleaning:		
Caustic or Electrolytic - not boiling	200	
Caustic or Electrolytic - boiling	250	X
Bright Dip-strong Nitric Acid	250	X
Stripping:		
Concentrated Nitric Acid	250	X
Concentrated Nitric and Sulfuric Acids	250	X
Salt Baths (molten salt)	120	X
Salt Solution (Parkerize, Bonderize, etc.):		
Not boiling	120	
Boiling	250	
Hot Water (if ventilation desired):		
Not boiling	120	
Boiling	250	

*Values listed are the minimum satisfactory values under good plant conditions.

Effective:

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Certification

Date

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