

**Ind 64.34 Duct construction. (1) METAL DUCTS.** All sheet metal ducts and fittings shall be constructed in compliance with standards approved by the department.

**Note:** The department will accept the standards for ducts in the ASHRAE Handbook of Fundamentals, published by the American Society of Heating, Refrigerating and Air Conditioning Engineers, or as illustrated in the Low Pressure or High Pressure Duct Construction Standards published by the Sheet Metal and Air Conditioning Contractors National Association, Inc.

(2) **COMBUSTIBLE DUCTS.** All ducts or airways of wood or other combustible material shall be lined with sheet metal or other approved noncombustible material unless specifically exempted by this code.

(3) **NONMETALLIC DUCTS.** Coated metal ducts or ducts constructed of other than metal shall conform to the following:

(a) The method for fabricating, installing and supporting ducts shall be approved by the department.

**Note:** The department accepts Class 1 air ducts tested (Standards for Safety, UL 181) and listed by Underwriters' Laboratories, Inc., and constructed in accordance with fibrous glass duct construction standards published by the Sheet Metal and Air Conditioning Contractors National Association, Inc.

(b) The ducts shall resist puncture, deformation or collapse.

(c) The ducts shall not be used where the air temperature exceeds 250° F, for kitchen or fume exhaust ducts, or to convey solids or corrosive gases.

(d) The ducts shall not pass through required fire-resistive construction.

(e) The ducts shall not be connected to a furnace, duct heater or similar heat-producing appliance unless a connecting duct of steel, having a length of not less than 6 feet, is used to separate them from the appliance.

(4) **SPIRALLY WOUND METAL DUCTS.** Spirally wound metal ducts shall be constructed to provide structural strength equal to rectangular ducts. The metal may be one standard gauge lighter than required for round ducts.

**History:** Cr. Register, December, 1975, No. 240, eff. 1-1-76; am. (3) (Intro.), Register, January, 1980, No. 289, eff. 2-1-80; reprinted to correct error in (3), Register, May, 1980, No. 293.

**Ind 64.35 Duct connectors. (1) FLEXIBLE DUCT CONNECTORS.** Flexible duct connectors between duct systems and air outlets or air outlet units shall conform to the following:

(a) The duct material shall be approved for such use.

**Note:** Flame-retarded fabric or metal or mineral listed in the Building Materials List, published by Underwriters' Laboratories, Inc., are acceptable.

(b) The construction shall be approved by the department.

(c) The connector shall not be subject to deterioration from mildew or moisture.

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(d) The connector shall not pass through required fire-resistive construction.

(2) **VIBRATION CONTROL.** Vibration isolation connectors at the joint between the duct and fan or heat-producing equipment shall conform to the following:

(a) Connectors shall be a type approved for such use.

**Note:** Flame-retarded fabric or metal or mineral listed in the Building Materials List, published by Underwriters' Laboratories, Inc., are acceptable.

(b) Connectors shall be not more than 10 inches wide.

(c) Connectors shall not be used where the air temperature is in excess of 250° F.

**History:** Cr. Register, December, 1975, No. 240, eff. 1-1-76.

**Ind 64.36 Vertical shafts.** Every vertical shaft shall be enclosed with noncombustible material which is fire-resistive rated in accordance with Table 51.03-A.

**History:** Cr. Register, December, 1975, No. 240, eff. 1-1-76.

**Ind 64.37 Insulation.** Heating supply ducts shall be covered with insulation unless an allowance is made for temperature drop in the system.

**History:** Cr. Register, December, 1975, No. 240, eff. 1-1-76.

**Ind 64.38 Gravity ventilation ducts.** (1) **DESIGN.** Horizontal runs in gravity ventilation ducts connected to siphon-type roof ventilators shall be avoided wherever possible and the maximum practicable inclination shall be provided in all cases. In no case shall the horizontal run exceed 30% of the vertical run unless the room has a mechanical supply of air or the ventilation duct is connected to an exhaust fan.

(2) **SEPARATE DUCTS.** Separate gravity ventilation ducts, from each area of similar occupancy, shall extend to a plenum at the base of a siphon ventilator.

(3) **PLENUMS.** Gravity ventilation ducts, used with mechanical ventilation supply systems, shall not terminate in an attic plenum unless the plenum is airtight, of noncombustible construction, and the attic floor is smooth. All collecting plenums shall be connected to an approved siphon-type roof ventilator or to an exhaust fan discharging outside the building.

(4) **DAMPERS.** Dampers are prohibited in gravity ventilation ducts, except atmospheric back-draft dampers are permitted.

**History:** Cr. Register, December, 1975, No. 240, eff. 1-1-76.

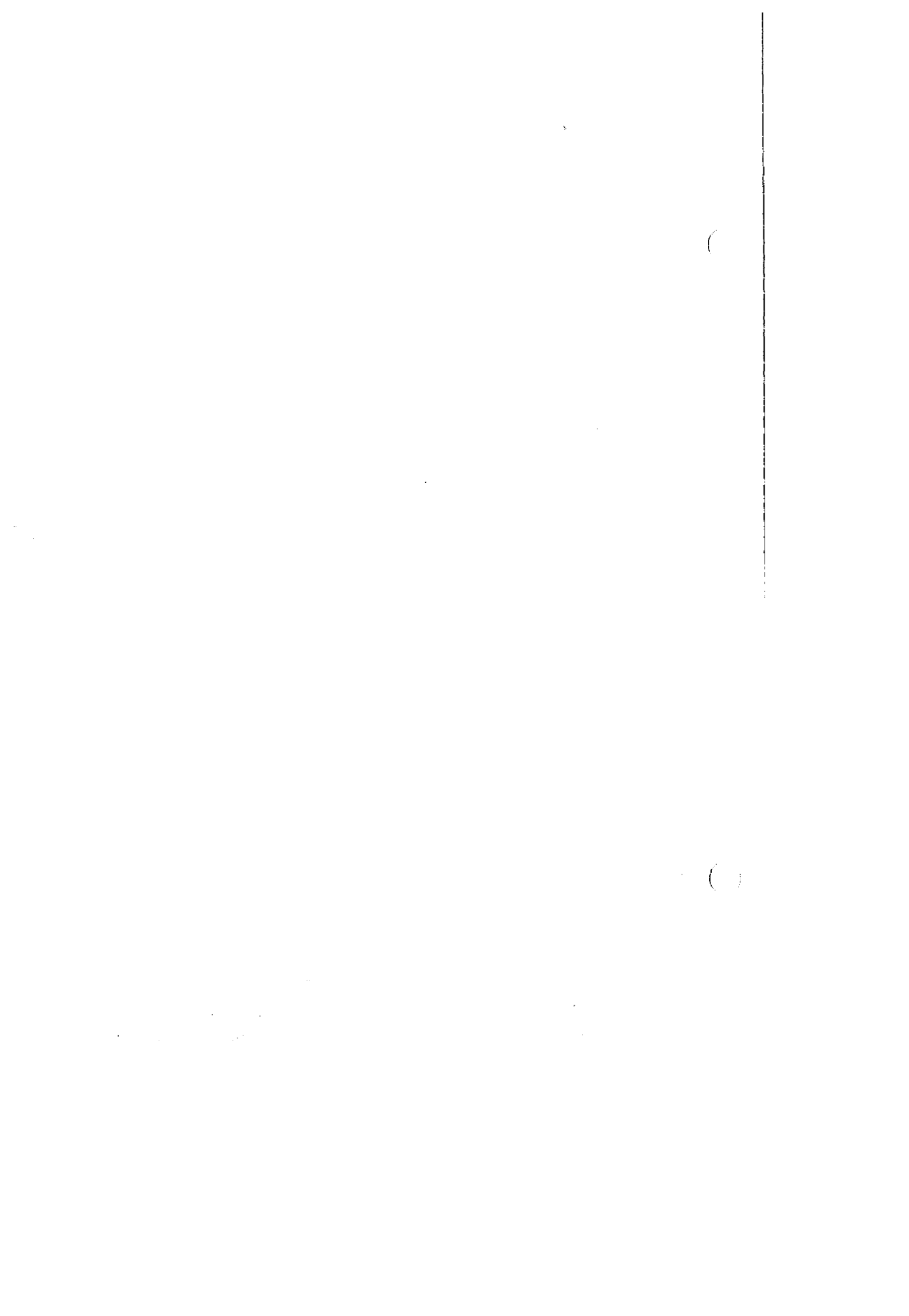
**Ind 64.39 Ventilation discharge.** All gravity and mechanical ventilation ducts shall be protected from the weather and shall be so located and constructed as to prevent contamination of an outside air supply. Gravity ventilation ducts shall extend not less than 2 feet above the highest portion of the roof or parapet wall and shall be surmounted with an approved type of siphon roof ventilator.

**History:** Cr. Register, December, 1975, No. 240, eff. 1-1-76.

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**Ind 64.40 Relief vents. (1) BAROMETRIC RELIEF VENTS PERMITTED.**  
The use of barometric relief vents is permitted for type (a) and (b)



(a) *Exception.* For motel or hotel sleeping rooms without openable outside windows and facing naturally lighted pool or recreation areas, see ss. Ind 52.02 (1) (b) and 57.19 (1) (a).

(3) **RETURN AIR DUCTS.** Unlined wood joists and stud spaces will be permitted to be used as return air ducts in individual living units provided with individual heating and ventilating systems.

*History:* Cr. Register, December, 1975, No. 240, eff. 1-1-76; am. (3), Register, December, 1976, No. 252, eff. 1-1-77; cr. (2) (a), Register, May, 1980, No. 293, eff. 6-1-80.

**Ind 64.60 Day care facilities.** (1) **SCOPE.** This classification shall include all public and private day care centers accommodating more than 4 children, including all buildings or parts of buildings used as child day care facilities.

(2) **VENTILATION.** The air movement, supply and distribution for all areas of this class shall conform to the requirements of s. Ind 64.05, Table 1.

*History:* Cr. Register, December, 1975, No. 240, eff. 1-1-76.

**Ind 64.61 Repair areas.** (1) **SCOPE.** This classification includes all areas where motor-driven vehicles are repaired.

(2) **VENTILATION.** The air movement, supply and distribution shall be provided in accordance with the requirements of s. Ind 64.05, Table 1. The exhaust air shall be drawn from not more than 18 inches above the floor.

(3) **TAIL PIPE EXHAUST.** (a) *Mechanical exhaust system.* A mechanical exhaust system shall be provided in the repair area to remove the exhaust fumes from internal combustion engines. The duct system shall be designed with sufficient outlets to accommodate the total number of vehicles in the repair area. A flexible hose, equipped with a device for connecting it to the exhaust pipe of the vehicle and to the exhaust system, shall be provided. Each outlet shall be provided with a shut-off valve that can be closed when not in use. The blower capacity shall be sufficient to exhaust a volume of air not less than 100 cubic feet per minute for each opening.

(b) *Nonmechanical exhaust.* A noncombustible flexible tube or hose not more than 10 feet long, connected to the engine exhaust (tail pipe) and terminating outside the building, may be used in lieu of the requirements stated in (a) above.

*Note:* The requirements stated in (2) need not be increased when satisfying requirements of either (3) (a) or (b). Also see Wis. Adm. Code Ch. Ind 1000-2000—Wis. Safety and Health Code.

(4) **MISCELLANEOUS REPAIR AREAS.** Areas involved in the servicing of small internal combustion engines such as lawnmowers, snowmobiles, chainsaws, cycles, boat engines, and similiar types of engines, and battery charging areas, shall be provided with at least 3/4 cubic foot per minute of outside air per square foot of enclosed service floor area and an equivalent exhaust. Exhaust from battery charging areas shall be from the top of the area.

(5) **CONTAMINANTS.** If the provisions of this section do not provide sufficient ventilation to meet the standards for threshold limit values

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covered in Wis. Adm. Code Ch. Ind 1000-2000—Wis. Safety and Health Code, the additional exhaust requirements with an equivalent volume of outside air shall be provided to satisfy the requirements found in Ch. Ind 1000-2000.

**History:** Cr. Register, December, 1976, No. 240, eff. 1-1-76; am. (4), Register, December, 1978, No. 276, eff. 1-1-79.

**Ind 64.62 Vehicle service buildings.** (1) **SCOPE.** Buildings of this classification shall include liquid fuel dispensing stations and/or where vehicles can be driven into the building for washing, greasing, oil change, motor tune-up or repair, tire replacement, body repair, and similar operations.

(2) **VENTILATION.** The air movement, supply and distribution shall be provided in accordance with the requirements of s. Ind 64.05, Table 1. The exhaust air shall be drawn from not more than 18 inches above the floor.

(a) *Repair area ventilation.* All service and/or workroom areas involving engine tune-up or repair requiring the operation of internal combustion engines shall be provided with ventilation to satisfy the requirements of section Ind 64.61 above.

(b) *Vehicle washing facilities.* Buildings or portions of buildings having a capacity of and used exclusively for washing 2 or more vehicles simultaneously shall be exhausted at not less than 1/2 cubic foot per minute per square foot of floor area. A supply of makeup air is not required for this exhaust.

1. The minimum floor area calculated for wash areas provided with vehicle conveyor systems shall be based on that portion of the floor located between the termination of the conveyor system and the vehicle exit door.

(3) **CONTAMINANTS.** If the provisions of this section do not provide sufficient ventilation to meet the standards for threshold limit values covered in Wis. Adm. Code Ch. Ind 1000-2000—Wis. Safety and Health Code, the additional exhaust requirements with an equivalent volume of outside air shall be provided to satisfy the requirements found in Ch. Ind 1000-2000.

**History:** Cr. Register, December, 1976, No. 240, eff. 1-1-76; am. (2) (b) (intro.), Register, January, 1980, No. 289, eff. 2-1-80.

**Ind 64.63 Garages.** (1) **SCOPE.** This classification includes all buildings, or parts of buildings, where motor-driven vehicles are stored.

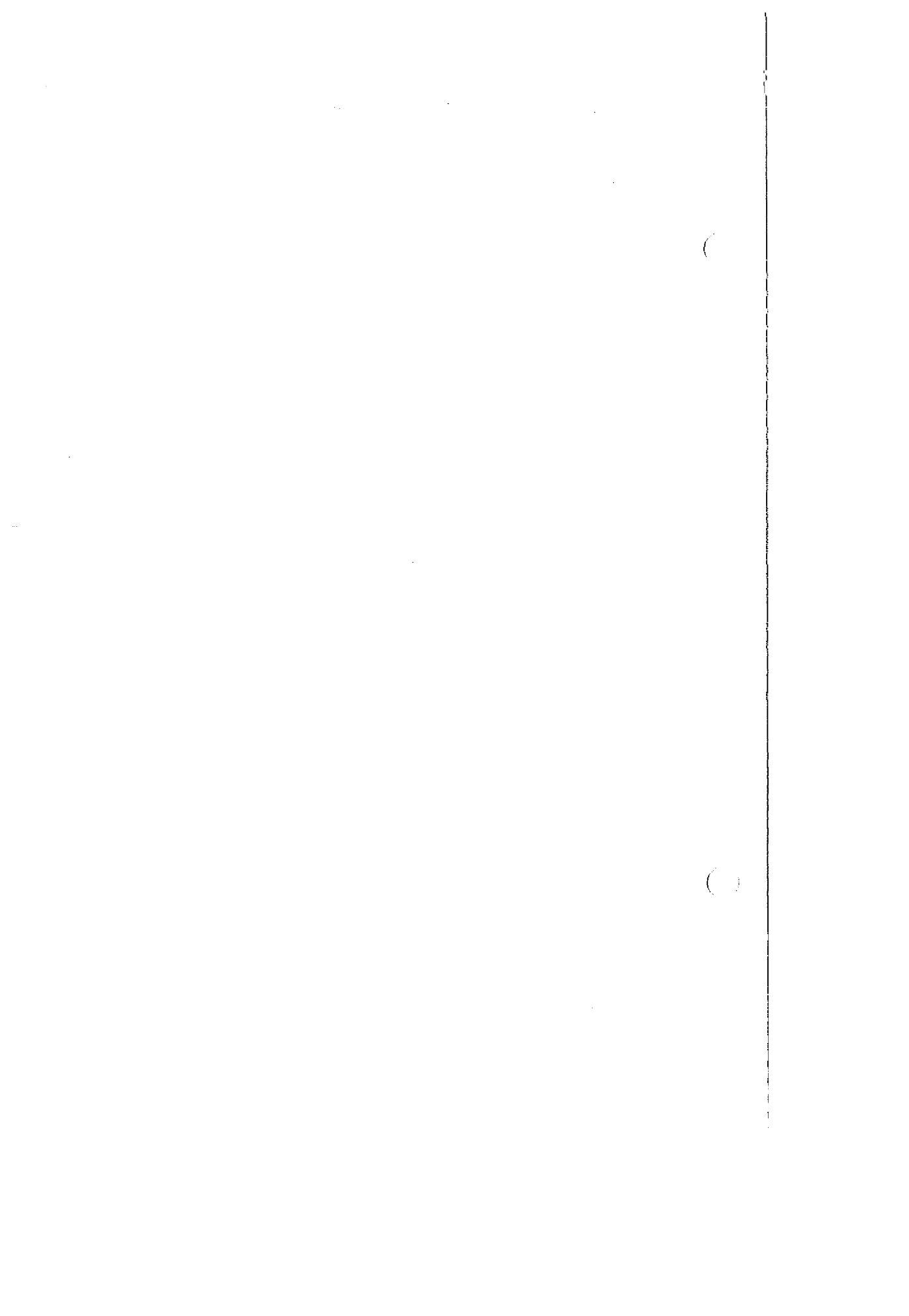
(2) **VENTILATION.** The air movement, supply and distribution shall be provided in accordance with the requirements of section Ind 64.05, Table 1. Live storage areas shall be provided with exhaust air drawn from a height not more than 18 inches above the floor unless the following requirements are satisfied:

(a) The floor is located at or above grade.

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(b) A permanent open-wall area of at least 30% of the total wall area is provided. The openings shall be distributed to permit circulation of air throughout the storage area.

Note # 1: A live storage area is any area used for storage of fire trucks, tractors, automobiles, trucks, and similar self-propelled vehicles which are driven in and out of the





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(i) Industrial exhaust systems for dusts, fumes, vapors and gases (government owned only) ..... \$25.00 per plan.

(j) Spray booth plans (government owned only) ..... \$25.00 per plan.

(2) APPROVAL NUMBERS. The fee for approval numbers issued by the department for the approval of materials, equipment and devices ..... \$200.00 per approval.

(3) INSPECTION FEES. Field inspection fees shall be remitted for each building or structure in accordance with the following:

(a) *General building, heating and ventilating inspection fees.* When plans for the building and the heating and ventilating system are submitted together, inspection fees shall be determined in accordance with the following:

<u>New building construction (cubic feet)</u>	<u>Fee</u>
Up to 25,000 cubic feet.....	\$50.00
25,001 - 100,000 cubic feet .....	75.00
100,001 - 500,000 cubic feet .....	100.00
500,001 - 1,000,000 cubic feet .....	125.00
1,000,001 cubic feet and over.....	150.00

(b) *Heating and ventilating inspection fees.* Heating and ventilating inspection fee, when plans are submitted separately from building plans.....\$44.00.

(c) *Inspection fees for alterations to existing buildings.* Inspection fees for alterations to existing buildings shall be determined in accordance with (3) (a) or the following:

<u>Alteration or repair (dollar amount)</u>	<u>Fee</u>
Up to \$25,000.....	\$50.00
\$25,001 - \$100,000 .....	75.00
\$100,001 - \$500,000 .....	100.00
\$500,001 - \$1,000,000 .....	125.00
\$1,000,001 and over.....	150.00

(d) *Miscellaneous inspection fees.* Miscellaneous inspection fees include fire escapes, stadia and grandstands, exhaust systems, spray booths and other structures for which plan submission is required.....\$25.00.

(4) MANUFACTURED MULTI-FAMILY DWELLING FEES. Fees related to plan examination, inplant and field inspections, inspector certification, Wisconsin insignias, and materials approval shall be submitted in accordance with the following:

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- (a) Plan examination and approval .....See s. Ind 69.09 (1) (a) - (g).
- (b) Field inspection.....See s. Ind 69.09 (3).
- (c) Wisconsin insignia .....\$10.00 per living unit.
- (d) In-plant inspections by department ..... \$15.00 per hour plus travel expenses
- (e) Materials approval.....\$200.00 per model
- (f) Certified inspector

	<u>Independent</u>	<u>Municipally Employed</u>
1. Initial examination	\$25.00	--
2. Training course and examination	\$75.00	--
3. Annual recertification	\$75.00	

- (g) Third party certification.....\$100.00 initially  
\$100.00 annually, thereafter.  
No charge, if previously certified by the department.

(5) COLLECTION OF FEES. All fees shall be remitted at the time the plans are submitted. No plan examinations, approvals or inspections will be made until the fees are received.

(6) MICROFILM FEES. Microfilm prints of approved plans for the years 1967-1972 are available at a nominal cost upon approval of the original designer.

(7) PETITIONS FOR MODIFICATION. The department will consider and may grant modification to an administrative rule upon receipt of a fee of \$75.00, a completed petition for modification form from the owner, and a position statement from the fire department having responsibility and an interest in the rule, provided an equivalent degree of safety is established in the petition for modification which meets the intent of the rule being petitioned.

History: Cr. Register, June, 1977, No. 258, eff. 7-1-77; renum. (4) to (6) to be (5) to (7), cr. (4), Register, May, 1980, No. 293, eff. 6-1-80.

**Ind 69.10 Storage tanks: flammable and combustible liquids, liquefied petroleum gas and liquefied natural gas.** (1) PLAN EXAMINATION AND APPROVAL FEES. Fees for the review and approval of plans for tanks used for the storage of flammable and combustible liquids, liquefied petroleum gas and liquefied natural gas will be determined in accordance with the following schedule:

- (a) Flammable and combustible liquids (tank capacity):
  - 1. 100,000 gallons or less .....\$15.00 each
  - 2. Over 100,000 gallons.....\$35.00 each
- (b) Liquefied petroleum gas and liquefied natural gas ....\$25.00 each
- (c) Revisions to previously approved plans..... \$10.00/revised plan

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(2) **INSPECTION FEE.** An inspection fee of \$25.00 for each tank at bulk plants, service stations or other locations shall be remitted at the time the plans are submitted.

**History:** Cr. Register, June, 1977, No. 258, eff. 7-1-77.

**Ind 69.11 Petroleum products.** (1) **OIL INSPECTION FEE.** Beginning August 1, 1975, an oil inspection fee shall be remitted to the department at the rate of 2 cents for each 50 gallons of petroleum product from which a sample is taken. The fee shall remain in effect until the fee is amended on the basis of the department's annual determination of inspection costs.

(2) **CERTIFICATION FEE FOR PETROLEUM PRODUCT USERS.** Persons applying for certification or recertification as a petroleum product user shall submit with the application for certification or recertification an annual fee (determined from the date of certification) of \$200 for each separate storage location.

**History:** Cr. Register, June, 1977, No. 258, eff. 7-1-77; cr. (2), Register, June, 1979, No. 282, eff. 7-1-79.

**Ind 69.12 Self-service stations.** (1) **PLAN EXAMINATION AND APPROVAL FEE.** A fee of \$10.00 shall be remitted for the plan examination and approval of each self-service station, or revision to a previously approved plan.

(2) **INSPECTION FEE.** An inspection fee of \$25.00 for each self-service station shall be remitted at the time the plans are submitted.

**History:** Cr. Register, June, 1977, No. 258, eff. 7-1-77.

**Ind 69.13 Welder qualifications.** All structural welding work shall be done by certified welders.

(1) **OPERATOR QUALIFICATION TEST.** The required qualification test shall be conducted under the supervision of an approved testing laboratory. The weld test report shall be submitted to the department for evaluation. Test specimens shall be submitted when requested by the department.