# Article XXII-B.
# Performance Standards*

***Editor's note:** Ord. No. 474-A, § 1, adopted April 4, 1966, as an emergency measure, amended the zoning ordinance by adding art. XXII-B, consisting of §§ 1 and 2. Section 4 of Ord. No. 474-A provided an additional penalty to that set forth in art. XXVIII of the zoning ordinance, which has been included by the editors as art. XXII-B, § 3.*

**Sec. 1. Applicability.**

The following performance standards shall be applicable to all zoning districts in the City of Richardson, and to all areas zoned under special permit under the zoning ordinance of the City of Richardson, and no use shall be permitted in the City of Richardson which does not conform to these performance standards.

(Ord. No. 474-A, § 1, 4-4-66)

**Sec. 2. Performance standards.**

All uses in all districts shall conform in operation, location and construction to the performance standards herein specified for noise, odorous matter, toxic and noxious matter, and glare.

All uses established in the O-M, TO-M, I-M(1), I-M(2), I-FP(1) and I-FP(2) Districts shall conform in operation, location and construction to the performance standards herein specified for noise, odorous matter, toxic and noxious matter, glare, smoke, particulate matter and other air contaminants, fire and explosive or hazardous matter, and vibration.

(A) *General provisions.*

(1) Any use established after the effective date of this ordinance shall comply with all of the performance standards applicable to the district in which it is located.

(2) All regulations of the City of Richardson or the State of Texas applicable to such matters as the emission of toxic, noxious or odorous matter, particulate material, radiation or the storage, manufacture, handling or transportation or use of explosive, inflammable or radioactive material shall be observed and nothing specified in this section shall be interpreted as authorizing any practice or operation which would constitute a violation of a statute, ordinance, rule or regulation of the City of Richardson or State of Texas.

(B) *Noise.*

(1) Measurement. Measurement of noise shall be made with a sound level meter and octave band analyzer meeting the standards prescribed by the American Standards Association. The instruments shall be maintained in calibration and good working order. Octave band corrections may be employed in meeting the response specification. A calibration check shall be made of the system at the time of any noise measurement. Measurements recorded shall be taken so as to provide a proper representation of the noise source. The microphone during measurement shall be positioned so as not to create any unnatural enhancement or diminution of the measured noise. A windscreen for the microphone shall be used when required. Traffic and transportation noise sources and other background noises shall not be

considered in taking measurements except where such background noise interferes with the primary noise being measured. Times when the level of the primary noise being measured does not exceed that of the background noise in all octave bands shall be considered as "off times" of the primary noise in determining the corrections from table 5, (B)(6)(b).

(2) Permissible noise level, O-M and TO-M districts.

(a) At no point at the bounding property line of any use in the O-M and TO-M Districts shall the sound pressure level of any operation or plant exceed the decibel limits specified in the octave bands designated in table 1, nor shall the sound pressure level at any O-M or TO-M District boundary line adjacent to a residential, retail or commercial district exceed the decibel limits specified in the octave bands designated by table 3 for residential districts and table 4 for retail and commercial districts.

(b) Maximum noise levels are as follows:

*Table 1. Maximum Permissible Daytime Octave Band Decibel Limits at the Bounding Property Line of a Use in the O-M and TO-M Districts*

| *Octave Band (cps)* | *37-75* | *75-150* | *150-300* | *300-600* | *600-1200* | *1200-2400* | *2400-4800* | *4800-9600* | *A-Scale* |
|---|---|---|---|---|---|---|---|---|---|
| Decibel band limit (db re 0.0002 microbar) | 86 | 76 | 70 | 65 | 63 | 58 | 55 | 53 | 65 |

Note: A-scale levels are provided for monitoring purposes only.

(3) Permissible noise level, I-M(1), I-M(2), I-FP(1), and I-FP(2) Districts.

(a) At no point at the bounding property line of any use in the I-M(1), I-M(2), I-FP(1) or I-FP(2) Districts shall the sound pressure level of any operation or plant exceed the decibel limits specified in the octave bands designated in table 2, nor shall the sound pressure level at any I-M(1), I-M(2), I-FP(1) or I-FP(2) District boundary line adjacent to a residential, retail or commercial district exceed the decibel limits specified in the octave bands designated by table 3 for residential districts and table 4 for retail and commercial districts.

(b) Maximum noise levels are as follows:

*Table 2. Maximum Permissible Daytime Octave Band Decibel Limits at the Bounding Property Line of a Use in the I-M(1), I-M(2), I-FP(1) and I-FP(2) Districts*

| *Octave Band (cps)* | *37-75* | *75-150* | *150-300* | *300-600* | *600-1200* | *1200-2400* | *2400-4800* | *4800-9600* | *A-Scale* |
|---|---|---|---|---|---|---|---|---|---|
| Decibel band limit (db re 0.0002 microbar) | 90 | 80 | 74 | 69 | 65 | 62 | 60 | 58 | 70 |

Note: A-scale levels are provided for monitoring purposes only.

(4) Permissible noise level, residential districts.

(a) At no point on the district boundary line of any residential type district nor at any point on the bounding property line of any use within the boundary of such districts shall the sound level pressure from any operation, use or occupancy exceed the decibel limits specified in the octave bands designated in table 3.

(b) Maximum noise levels are as follows:

*Table 3. Maximum Permissible Daytime Octave Band Decibel Limits at or within the Bounding of a Residential District*

| *Octave Band (cps)* | *37-75* | *75-150* | *150-300* | *300-600* | *600-1200* | *1200-2400* | *2400-4800* | *4800-9600* | *A-Scale* |
|---|---|---|---|---|---|---|---|---|---|
| Decibel band limit (db re 0.0002 microbar) | 80 | 68 | 61 | 55 | 51 | 48 | 45 | 43 | 56 |

Note: A-scale levels are provided for monitoring purposes only.

(5) Permissible noise level, retail and commercial districts.

(a) At no point on the district boundary line of any retail or commercial type district, nor at any point on the bounding property line of any use within the boundary of such districts shall the sound pressure level from any operation, use or occupancy exceed the decibel limits specified in the octave band limits designated in table 4.

(b) Maximum noise levels are as follows:

*Table 4. Maximum Permissible Daytime Octave Band Decibel Limits at or Within the Bounding of a Retail or Commercial District*

| *Octave Band (cps)* | *37-75* | *75-150* | *150-300* | *300-600* | *600-1200* | *1200-2400* | *2400-4800* | *4800-9600* | *A-Scale* |
|---|---|---|---|---|---|---|---|---|---|
| Decibel band limit (db re 0.0002 microbar) | 84 | 73 | 67 | 62 | 58 | 55 | 52 | 50 | 63 |

Note: A-scale levels are provided for monitoring purposes only.

(6) Special noise level corrections.

(a) Corrections shall be made to the basic octave band levels specified in tables 1, 2, 3 and 4 for the specific conditions listed in accordance with table 5.

(b) Permitted corrections are as follows:

*Table 5. Corrections Permitted to Basic Octave Band Levels*

Noise is present at nighttime: Subtract 7 db.

Noise contains strong pure-tone components or is impulsive (meter reading changes at a rate greater than ten decibels per second): Subtract 7 db.

| *Noise has an "On Time" of No More Than:* | *And an "Off Time" Between Successive "On Times" of at Least:* | |
|---|---|---|
| 0.5 minutes | 1/2 hour | Add 10 decibels to permitted level |
| 5.0 minutes | 1 hour | |
| 10.0 minutes | 2 hours | |
| 20.0 minutes | 4 hours | |

(C) *Odorous matter.*

(1) *Compliance.* Any use established or operated in the O-M, TO-M, I-M(1), I-M(2), I-FP(1) or I-FP(2) Districts shall comply with the performance standards herein specified for the emission of odorous matter.

(2) *O-M and TO-M districts.*

(a) Emission of odorous matter from a source of operation [sic] in the O-M and TO-M Districts shall not exceed the odor threshold at the boundary line of the tract on which such use or operation is located or beyond.

(3) *I-M(1), I-M(2), I-FP(1), I-FP(2) districts.*

(a) Emission of odorous matter from a source operation in the I-M(1), I-M(2), I-FP(1) and I-FP(2) Districts shall not exceed a concentration at the bounding property line or any point beyond which when diluted with an equal volume of odor free air exceeds the odor threshold (two odor units).

(4) *Determination of odor threshold.* The odor threshold as herein referred to shall be determined by observation by a person or persons. In any case where the operator of an odor-emitting use may disagree with the enforcing officer where specific measurement of odor concentration is required, the method and procedures specified by American Society for Testing Materials ASTMD 1391-57 entitled "Standard Method for Measuring Odors in Atmosphere" shall be used.

(5) *Emission of odorous matter regulated.* No use shall be operated in any zoning district of the City of Richardson in such a manner that the emission of odorous matter occurs in such quantity or volume as to produce a nuisance, source of discomfort or hazard beyond the bounding property lines of such use.

(D) *Toxic and noxious matter.*

(1) No operation or use permitted in any district shall emit a concentration across the bounding property line of such operation or use of toxic or noxious matter which will exceed ten percent of the concentration (exposure) considered as the threshold limit for an industrial worker as such standards are established by the Texas State Department of Health or as they may be amended in "Threshold Limit Values, Occupational Health Regulation No. 3."

(2) The storage, use and transportation of hazardous chemicals, poisonous gases, acids or radioactive material in the O-M, TO-M, I-M(1), I-M(2), I-FP(1) and I-FP(2) Districts shall be subject to approval of the fire marshal and the health officer of the City of Richardson and in accordance with all applicable ordinances and laws.

(E) *Glare.*

(1) No use in any district shall be operated so as to produce intense glare, or direct illumination across the bounding property line from a visible source of illumination of such intensity as to create nuisance or detract from the use or enjoyment of adjacent property. All outside lights shall be made up of a light source and reflector so selected that acting together the light beam is controlled and not directed across any bounding property line. With the exception of parks and recreational fields which are owned, leased, operated or managed by a municipality or independent school

district, the allowable maximum intensity of light measured at the property line shall not exceed one foot candle.

(F) *Smoke, particulate matter and other air contaminants.*

(1) *Compliance.* Any use established or operated in the O-M, TO-M, I-M(1), I-M(2), I-FP(1) or I-FP(2) Districts shall comply with the performance standards herein specified covering the emission of air contaminants.

(2) *Procedure for making observations to determine compliance for visible emissions.*

(a) The following provisions shall govern observations of emissions to determine compliance with subsection (F)(7). These provisions shall be applied to each observation to the extent that they are applicable and to whatever extent time and physical circumstances permit.

(b) Observations shall be made from a position which is at a right angle to the line of travel of the emitted material.

(c) The plume shall be observed against a suitable background.

(d) Observations during daylight hours shall be made with the observer generally facing away from the sun.

(e) Observations during hours of darkness shall be made with the aid of a light source.

(f) Readings shall be noted at approximately 15-second intervals during observation, except that intervals up to one minute shall be permitted where the appearance of the emission does not vary during such intervals.

(g) The general color of the emission during the period of observation shall be noted as part of the record of observation.

(3) *Standard sampling procedures for particulate matter in emissions from vents and stacks.*

(a) All source test procedures shall be designed so as to obtain samples which are truly representative of the emissions of the particulate matter.

(b) Probe size and sampling rate shall be such as to obtain a reasonably representative sample.

(c) The sampling shall be carried out for a period of one hour which shall include the period of maximum emissions.

(d) In measuring emissions from type A and type B emission points the quantity of emission from a test area shall be increased by the proportion which the whole area bears to the test area. Such a test area may be taken as the cross-sectional area of the inlet to a sample probe. Emissions from the test area may be measured at the place and by the procedure which results in the highest measurement of air contaminants. The emission from any test area of a type B emission point shall be deemed to be representative in every respect of the emissions from the whole area of such type B emission point. This provision shall not apply if other sampling and testing facilities which will disclose the

nature, extent, quantity and degree of air contaminants are provided by the person responsible for the emissions.

(e) Currently accepted engineering practice shall be followed in any test procedure employed for the determination of gas flow rate, gas composition, moisture content, density and process weight.

(f) Prior to weighing of the sample, it shall be dried by methods and under conditions which do not permit significant change in the weight of particulate matter and where the requirements permit, the same shall be dried at a temperature not less than 218 degrees Fahrenheit nor more than 224 degrees Fahrenheit for a period of one to two hours after superficial dryness is reached. Samples dried in such manner shall be deemed to be free of uncombined matter.

(4) *Standard gas sampling procedures for vents and stacks.*

(a) The following stack sampling procedures shall be adhered to in the determination of gassy emissions.

(b) Proper adjustments shall be made in the sampling procedure to compensate for significant stratification, and nonhomogeneity in the gas stream so that the sample of gas approaches a representative sample.

(c) Where liquid impingers are used for the sampler, any filter preceding the impingers shall be maintained at stack gas temperature.

(d) Where an evacuated flask is used for sample collection, any filter preceding the sampler may be maintained at ambient temperature.

(e) Where impingers on other continuous flow sampling devices are used, a gas measuring device placed in series with and downstream of the samples shall be used to determine the volume of gas sampled. Pressure and temperature indicators shall be installed at appropriate points to indicate sample gas conditions.

(5) *Dust and air contaminants from open storage.* Open storage and open processing operations including on-site transportation movements which are the source of windborne dust or other particulate matter, or which involve dust or other particulate air contaminant generating equipment such as used in paint spraying, grain handling, sand or gravel processing or storage, or sandblasting shall be so conducted that dust and other particulate air contaminants so generated are not transported across the boundary line of the tract on which the use is located in concentrations exceeding four grains per 1,000 cubic feet of air. All other visible emissions of air contaminants shall conform to the provisions of subsection (F)(7).

(6) *Application of standards.* The following standards shall apply to emission of air contaminants from industrial operations in the O-M, TO-M, I-M(1), I-M(2), I-FP(1) and I-FP(2) Districts and to the registration of each plant responsible for emissions of air contaminants whether or not limits are established by these regulations for emission of all such contaminants. All operations which involve the emission of particulate matter or other air contaminants shall register with the health officer before obtaining a certificate of occupancy.

These regulations apply, as herein provided, to:

(a) Visible emissions from all operations.

(b) Sulfur dioxide from all operations.

(c) Particulate matter from all operations.

(d) Hydrocarbons and carbonyl from incineration or salvage operations.

(e) Fumes and gases from all operations.

(f) Air contaminants which can cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such person or to the public, or which cause or have a natural tendency to cause injury or damage to business or property.

(7) *Visible emissions.* No operation shall cause, create or allow the emission of air contaminants for more than three minutes in any one hour which, at the emission point or within a reasonable distance of the emission point, are:

(a) As dark or darker in shade as that designated as No. 2 on the Ringelmann Chart as published by the United States Bureau of Mines Information Circular 7118.

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in (F)(7)(a); and the determination of such opacity shall be according to standard accepted procedures for such observations.

(8) *Applicability of section (F)(7).* Section (F)(7) shall not apply under the following conditions:

(a) Where the presence of uncombined water is the only reason for the failure of an emission to meet the limitations of (F)(7).

(b) To any emission on the basis of any observation of an air contaminant observed while such contaminant is inside a bona fide building.

(c) If the operation responsible for an emission meets all the following requirements:

(1) The emission is from a type A emission point.

(2) The emission does not contain significant amounts of materials which are vapors at stack temperature and particulate matter at ambient temperature.

(3) The emission does not contain more than "n" grains of particulate matter per standard cubic foot (n = 0.12L where L is the significant dimension of the emission point in feet).

(4) The emission does not contain particulate matter determined in (F)(8)(c)(3) or uncombined water or both that contributes significantly to the failure of the emission to meet the limitations of (F)(7).

(d) If the operation responsible for an emission of SO3 (sulfur trioxide) or H2 SO4 (sulfuric acid) or both meet with the following requirements:

(1) From operations using elemental sulfur or pyrites as the principal raw material, such emission shall have a concentration of SO3 or H2 SO4 or both, expressed as 100 percent H2 SO4 , not exceeding 0.02 grain per standard cubic foot of exhaust gas volume.

(2) From operations using as a principal raw material any sulfur containing material other than elemental sulfur or pyrites, such emission shall have a concentration of SO3 or H2 SO4 or both, expressed as 100 percent H2 SO4 , not exceeding 0.2 grain per standard cubic foot of exhaust gas volume.

(3) Such emission shall not contain amounts of any material other than SO3 , H2 SO4 , or uncombined water, which would contribute to the failure of the emission to meet the limitations of (F)(7)(b).

(9) *Sulfur dioxide.* No operation shall cause, create or allow any emission of sulfur compounds calculated as sulfur dioxide from any emission point in excess of 2,000 ppm (vol.).

(10) *Particulate matter.*

(a) No operation shall cause, create or allow the emission of particulate matter from any emission point in a concentration in excess of 0.04 grains per cubic foot of exhaust gas volume calculated to 12 percent carbon dioxide at standard conditions.

(b) No operation shall cause, create or allow the emission of particulate matter from any emission point, at a rate in excess of that specified in table 6 for the process weight rate allocated to such emission point.

(c) Allowable rate of emission is as follows:

*Table 6. Allowable Rate of Emission Based on Process Weight Rate*

| *Process Weight Rate* | | *Rate of Emission* |
|---|---|---|
| *(lb/hr)* | *(tons/hr)* | *(lb/hr)* |
| 100 | 0.05 | 0.551 |
| 200 | 0.10 | 0.877 |
| 400 | 0.20 | 1.40 |
| 600 | 0.30 | 1.83 |
| 800 | 0.40 | 2.22 |
| 1,000 | 0.50 | 2.58 |
| 1,500 | 0.75 | 3.38 |
| 2,000 | 1.00 | 4.10 |
| 2,500 | 1.25 | 4.76 |
| 3,000 | 1.50 | 5.38 |
| 3,500 | 1.75 | 5.96 |
| 4,000 | 2.00 | 6.52 |

| *Process Weight Rate* | | *Rate of Emission* |
|---|---|---|
| 5,000 | 2.50 | 7.58 |
| 6,000 | 3.00 | 8.56 |
| 7,000 | 3.50 | 9.49 |
| 8,000 | 4.00 | 10.4 |
| 9,000 | 4.50 | 11.2 |
| 10,000 | 5.00 | 12.0 |
| 12,000 | 6.00 | 13.6 |
| 16,000 | 8.00 | 16.5 |
| 18,000 | 9.00 | 17.9 |
| 20,000 | 10.00 | 19.2 |
| 30,000 | 15.00 | 25.2 |
| 40,000 | 20.00 | 30.5 |
| 50,000 | 25.00 | 35.4 |
| 60,000 | 30.00 | 40.0 |
| 70,000 | 35.00 | 41.3 |
| 80,000 | 40.00 | 42.5 |
| 90,000 | 45.00 | 43.6 |
| 100,000 | 50.00 | 44.6 |
| 120,000 | 60.00 | 46.3 |
| 140,000 | 70.00 | 47.8 |
| 160,000 | 80.00 | 49.0 |
| 200,000 | 100.00 | 51.2 |
| 1,000,000 | 500.00 | 69.0 |
| 2,000,000 | 1,000.00 | 77.6 |
| 6,000,000 | 3,000.00 | 92.7 |

(11) *Hydrocarbons and carbonyls.* No operation shall cause, create or allow the emission from any incineration operation or salvage operation of an exhaust gas containing a concentration of more than 50 ppm (vol.) of total hydrocarbons or a concentration of more than 50 ppm (vol.) of total carbonyls. For purposes of this section, total hydrocarbons shall be the sum of the concentrations of C 2 and higher saturated and unsaturated hydrocarbons as measured by gas chromatography. Total carbonyls shall include aldehydes and ketones calculated as formaldehyde. Each carbonyl group is deemed equivalent to one molecule of formaldehyde.

(G) *Fire and explosive or hazardous matter.*

(1) *Compliance.* Any use established or operated in the O-M, TO-M, I-M(1), I-M(2), I-FP(1) or I-FP(2) districts shall comply with the performance standards herein specified for the storage, manufacture and use of flammable, explosive or hazardous matter.

(2) *O-M and TO-M districts.*

(a) No use involving the manufacture or storage of compounds or products which decompose by detonation shall be permitted in the O-M or TO-M districts

except that chlorates, nitrates, perchlorates, phosphorous and similar substances and compounds in small quantities for use by industry, schools, laboratories, druggists or wholesalers may be permitted in accordance with the provisions of the fire protection code of the City of Richardson.

(b) The storage and use of all flammable liquids and materials such as pyroxylin plastics, nitrocellulose film, solvents and petroleum products in the O-M and TO-M districts shall be in accordance with the provisions of the fire protection code of the City of Richardson for the storage and handling of such materials and liquids, except that no high-hazard flammable liquid having a flash point below 100 degrees Fahrenheit shall be stored aboveground in the O-M or TO-M districts except by special approval of the fire marshal and when the use and storage of such liquid is located a safe distance from adjacent uses and buildings.

(3) *I-M(1), I-M(2), I-FP(1) and I-FP(2) districts.*

(a) Operations or uses involving the manufacture, storage or use of compounds which decompose by detonation except those specifically prohibited by the fire protection code of the City of Richardson are permitted in the I-M(1), I-M(2), I-FP(1) and I-FP(2) districts, but only when such operations and uses are approved and a permit for same is issued by the fire marshal.

(b) The storage in bulk or use of flammable liquids or materials and of liquefied petroleum gas are permitted in the I-M(1), I-M(2), I-FP(1) and I-FP(2) districts subject to the requirements and safeguards concerning the location, use and special precautions specified by the fire marshal for such storage or use.

(4) *Compliance with fire protection code.* All uses and operation involving the use, storage or handling of explosive or flammable and hazardous matter shall be in compliance with the fire protection code of the City of Richardson as it exists or as it may hereafter be amended and shall be subject to approval by the fire marshal and nothing herein specified shall mitigate, interfere with or alter any provision of the fire protection code of the City of Richardson as it may apply to the use, storage or handling of explosives or flammable and hazardous material.

(H) *Vibration.*

(1) No operation or use in the O-M or TO-M districts shall at any time create earthborne vibrations which when measured at the bounding property line of the source operation exceed the limits of displacement set forth in the following table:

*Table 7. Allowable Displacement Earthborne Vibrations, O-M and TO-M Districts*

| *Frequency (cycles per second)* | *Displacement (inches)* |
|---|---|
| 0 to 10 | 0.0010 |
| 10 to 20 | 0.0008 |
| 20 to 30 | 0.0005 |
| 30 to 40 | 0.0004 |
| 40 and over | 0.0003 |

(2) No operation or use in the I-M(1), I-M(2), I-FP(1) and I-FP(2) districts shall at any time create earthborne vibrations which when measured at the bounding property line of the source operation exceed the limits of displacement set forth in the following table:

*Table 8. Allowable Displacement Earthborne Vibrations, I-M(1), I-M(2), I-FP(1) and I-FP(2) Districts*

| *Frequency (cycles per second)* | *Displacement (inches)* |
|---|---|
| 0 to 10 | 0.0020 |
| 10 to 20 | 0.0016 |
| 20 to 30 | 0.0010 |
| 30 to 40 | 0.0006 |
| 40 and over | 0.0005 |

(I) *Definitions and standards applicable to (F)(1) through (H)(2).*

(1) The following definitions and explanatory notes supplement, restrict and define the meaning and intent of words and terms used in the performance standards provisions, (F)(1) through (H)(2) inclusive.

(a) *Background noise.* Noise from all sources other than that under specific consideration including traffic operating on public thoroughfares.

(b) *Frequency.* The number of oscillations per second in a sound wave.

(c) *Octave band.* A term denoting all the frequencies between any given frequency and double that frequency.

(d) *Octave band filter.* An electrical frequency analyzer designed according to the standards formulated by the American Standards Association and used in conjunction with a sound level meter to take measurements in specific octave intervals.

(e) *Daytime.* The hours between sunrise and sunset on any given day.

(f) *Bounding property line.* The far side of any street, alley, stream or other permanently dedicated open space from the noise source when such open space exists between the property line of the noise source and adjacent property. When no such open space exists the common line between two parcels of property shall be interpreted as the bounding property line.

(g) *Residential districts.* Refers to the R-2000-M, R-1800-M, R-1500-M, R-1250-M, R-1100-M, R-1000-M, R-950-M, R-850-F, R-850-M, D-3000-M, D-2400-M, D-1400-M, A-1000-M, A-950-M, and A-850-F districts.

(h) *Retail or commercial districts.* Refers to the LR-M(1), LR-M(2) and C-M districts.

(i) *Atmospheric pollution.* The discharging from stacks, open storage, chimneys, exhausts, vents, ducts, openings, or open fires of such air contaminants as visible emissions, sulfur dioxide, particulate matter, hydrocarbons, fumes or similar material or gases.

(j) *Atmosphere.* The air that envelops or surrounds the earth. Where air contaminants are emitted into a building not designed specifically as air pollution control equipment, such emission into the building shall be considered emission into the atmosphere.

(k) *Combustion.* The rapid exothermic reaction of any material with oxygen.

(l) *Containing device.* Any stack, duct, flue, oven, kettle or other structure or device containing a gas stream which may contain an air contaminant, and which is designed to prevent the gas stream from entering the atmosphere, except through such openings as may be incorporated for that purpose in the containing device; and excluding equipment used for air pollution abatement operations, or any other device which significantly changes the nature, extent, quantity or degree of air contaminants in the gas stream or in which such change does or has a natural tendency to occur.

(m) *Emission.* The act of passing into the atmosphere an air contaminant or a gas stream which contains or may contain an air contaminant or the material so passed to the atmosphere.

(n) *Emission point.* The location (place in horizontal plane and vertical elevation) at which an emission enters the atmosphere.

(o) *Exhaust gas volume.* The total volume of gas emitted from an emission point.

(p) *Odor threshold.* The concentration of odorous matter in the atmosphere necessary to be perceptible to the olfactory nerve of normal persons.

(q) *Operation.* Any physical action resulting in a change in the location, form or physical properties of a material, or any chemical action resulting in a change in the chemical composition or chemical or physical properties of a material. The following are given as examples, without limitation of the generality of the foregoing: heat transfer, calcination, double-decomposition fermentation, pyrolysis, electrolysis, combustion, material handling, evaporation, mixing, absorption, filtration, fluidization, screening, crushing, grinding, demolishing, shoveling, bagging, etc.

(r) *Particulate matter.* Any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions when released into the atmosphere.

(s) *Person or operation.* Any person, firm association, organization, partnership, business, trust, corporation, company, contractor, supplier, installer, user or owner or any state or local governmental agency or public district or any officer or employee thereof. It includes the owner, lessor, lessee, tenant, licensee, manager and operator, or any of such, of an emission point or any source operation which may constitute a source of atmospheric pollution related thereto, or any interest in such emission point or operation source.

(t) *ppm (vol.).* Parts per millon by volume.

(u) *Process weight.* The total weight of all materials introduced into a source operation, including solid fuels, but excluding liquids and gases used solely as fuels and excluding air introduced for the purposes of combustion.

(v) *Process weight rate.* A rate established as follows:

(1) For continuous or long run steady state source operations, the total process weight for the entire period of continuous operation or a typical portion thereof, divided by the number of hours of such period or portion thereof.

(2) For cyclical or batch source operations the total process weight for a period which covers a complete operation or an integral number of cycles, divided by the number of hours of actual process operation during such periods.

(w) *Significant dimension* of an area means the square root of the numerical value of the area.

(x) *Source operation.* The last operation preceding the emission of an air contaminant which operation:

(1) Results in separation of air contaminants from the process materials or in the conversion of the process materials into air contaminants, as in the case of combustion of fuel; and

(2) Is not an air pollution abatement operation.

(y) *Standard conditions.* A pressure of 14.7 pounds per square inch absolute, and a temperature of 60 degrees Fahrenheit.

(z) *Emission point.*

(1) *Type A emission point.* An opening of reasonably regular geometry, preceded by a containing device which has a minimum length six times the significant dimension of the emission point and within such minimum length; has a reasonably straight gas flow channel; has smooth interior surface; has area and geometry essentially constant and equal to the emission point; and does not cause a significant change in the gross direction of gas flow.

(2) *Type B emission point.* Any emission point not qualifying under subsection (1) above.

(Ord. No. 474-A, § 1, 4-4-66; Ord. No. 3214-A, § 1, 2-22-99)

**Sec. 3. Reserved.**

***Editor's note:*** *Section 3 of art. XXII-B, providing the penalty for violation of art. XXII-B, and derived from Ord. No. 474-A, § 4, adopted April 4, 1966, was repealed by Ord. No. 2420-A, § 2, adopted April 23, 1984.*

***End of Article XXII-B***