

CHAPTER 7010

MINNESOTA POLLUTION CONTROL AGENCY

AIR QUALITY DIVISION

NOISE POLLUTION CONTROL

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7010.0010 INCORPORATION BY REFERENCE.

For the purpose of chapter 7010, American National Standards Institute, Specification for Sound Level Meters, S1 4-1983 is incorporated by reference. This publication is available from the American National Standards Institute, 1430 Broadway, New York, N.Y. 10018 and can be found at: the offices of the Minnesota Pollution Control Agency, 1935 West County Road B-2, Roseville, Minnesota 55113; the Government Documents Section, Room 409, Wilson Library, University of Minnesota, 309 19th Avenue South, Minneapolis, Minnesota 55454; and the State of Minnesota Law Library, Ford Building, 117 University Avenue, Saint Paul, Minnesota 55155. This document is not subject to frequent change.

The Federal Highway Administration publication, Sound Procedures for Measuring Highway Noise: Final Report, FHWA-DP-45-1R (August 1981) is incorporated by reference. This publication is available from the United States Department of Transportation, Federal Highway Administration, 1000 North Globe Road, Arlington, Virginia 22201 and can be found at: the offices of the Minnesota Pollution Control Agency, 1935 West County Road B-2, Roseville, Minnesota 55113, the Government Documents Section, Room 409, Wilson Library, University of Minnesota, 309 19th Avenue South, Minneapolis, Minnesota 55454; and the State of Minnesota Law Library, Ford Building, 117 University Avenue, Saint Paul, Minnesota 55155. This document is not subject to frequent change.

Statutory Authority: *MS s 116 07 subds 2,4*

History: *11 SR 43*

7010.0020 DEFINITIONS.

Subpart 1. Application. The terms used in chapter 7010 have the meanings given them in this part.

Subp. 2. A-weighted. "A-weighted" means a specific weighting of the sound pressure level for the purpose of determining the human response to sound. The specific weighting characteristics and tolerances are those given in American National Standards Institute S1.4-1983, section 5.1.

Subp. 3. Daytime. "Daytime" means those hours from 7:00 a.m. to 10:00 p.m.

Subp. 4. dB(A). "dB(A)" means a unit of sound level expressed in decibels (dB) and A-weighted.

Subp. 5. Decibel. "Decibel" means a unit of sound pressure level, abbreviated as dB.

Subp. 6. Impulsive noise. "Impulsive noise" means either a single sound pressure peak (with either a rise time less than 200 milliseconds or total duration less than 200 milliseconds) or multiple sound pressure peaks (with either rise times less than 200 milliseconds or total duration less than 200 milliseconds) spaced at least by 200 millisecond pauses.

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Subp. 7. **L₁₀**. "L₁₀" means the sound level, expressed in dB(A), which is exceeded ten percent of the time for a one hour survey, as measured by test procedures approved by the director.

Subp. 8. **L₅₀**. "L₅₀" means the sound level, expressed in dB(A), which is exceeded 50 percent of the time for a one hour survey, as measured by test procedures approved by the director.

Subp. 9. **Municipality**. "Municipality" means a county; a city; a town; a regional planning and development commission established under Minnesota Statutes, chapter 473; the metropolitan council; or other governmental subdivision of the state responsible by law for controlling or restricting land use within its jurisdiction.

Subp. 10. **Nighttime**. "Nighttime" means those hours from 10:00 p.m. to 7:00 a.m.

Subp. 11. **Person**. "Person" means any human being, any municipality or other governmental or political subdivision or other public department or agency, any public or private corporation, any partnership, firm, association, or other organization, any receiver, trustee, assignee, agency, legal entity, other than a court of law, or any legal representative of any of the foregoing, but does not include the agency.

Subp. 12. **Sound pressure level**. "Sound pressure level", in decibels, means 20 times the logarithm to the base 10 of the ratio of the pressure to the reference pressure. The reference pressure shall be 20 micronewtons per square meter.

Statutory Authority: *MS s 116.07 subds 2,4*

History: *11 SR 43*

7010.0030 NOISE CONTROL REQUIREMENT.

No person may violate the standards established in part 7010.0040, unless exempted by Minnesota Statutes, section 116.07, subdivision 2a. Any municipality having authority to regulate land use shall take all reasonable measures within its jurisdiction to prevent the establishment of land use activities listed in noise area classification (NAC) 1, 2, or 3 in any location where the standards established in part 7010.0040 will be violated immediately upon establishment of the land use.

Statutory Authority: *MS s 116.07 subds 2,4*

History: *11 SR 43*

7010.0040 NOISE STANDARDS.

Subpart 1. **Scope**. These standards describe the limiting levels of sound established on the basis of present knowledge for the preservation of public health and welfare. These standards are consistent with speech, sleep, annoyance, and hearing conservation requirements for receivers within areas grouped according to land activities by the noise area classification (NAC) system established in part 7010.0050. However, these standards do not, by themselves, identify the limiting levels of impulsive noise needed for the preservation of public health and welfare. Noise standards in subpart 2 apply to all sources.

Subp. 2. **Noise standards.**

Noise Area Classification	Daytime		Nighttime	
	L ₅₀	L ₁₀	L ₅₀	L ₁₀
1	60	65	50	55
2	65	70	65	70
3	75	80	75	80

Statutory Authority: *MS s 116.07 subds 2,4*

History: *11 SR 43*

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NOISE POLLUTION CONTROL 7010.0050

7010.0050 NOISE AREA CLASSIFICATION.

Subpart 1. **Applicability.** The noise area classification is based on the land use activity at the location of the receiver and determines the noise standards applicable to that land use activity unless an exception is applied under subpart 3.

Subp. 2. **Noise area classifications.** The noise area classifications and the activities included in each classification are listed below:

Noise Area Classification

Land Use Activities

1

Household Units
(includes farm houses)
Group quarters
Residential hotels
Mobile home parks or courts
Transient lodging
Other residential
Motion picture production
Medical and other health services
Correctional institutions
Educational services
Religious activities
Cultural activities and nature
exhibitions
Entertainment assembly
Camping and picnicking areas
(designated)
Resorts and group camps
Other cultural, entertainment, and
recreational activities.

2

Railroad terminals (passenger)
Railroad terminals (passenger and
freight)
Rapid rail transit and street railway
passenger terminals
Bus passenger terminals (intercity)
Bus passenger terminals (local)
Bus passenger terminals (intercity
and local)
Other motor vehicle transportation
Airport and flying field terminals
(passenger)
Airport and flying field terminals
(passenger and freight)
Marine terminals (passenger)
Marine terminals (passenger and
freight)
Automobile parking
Telegraph message centers
Transportation services and
arrangements
Wholesale trade
Retail trade — building materials,
hardware, and farm equipment
Retail trade — general merchandise
Retail trade — food
Retail trade — automotive, marine

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- craft, aircraft, and accessories
- Retail trade — apparel and accessories
- Retail trade — furniture, home furnishings, and equipment
- Retail trade — eating and drinking
- Other retail trade
- Finance, insurance, and real estate services
- Personal services
- Business services
- Repair services
- Legal services
- Other professional services
- Contract construction services
- Governmental services (except correctional institutions)
- Miscellaneous services (except religious activities)
- Public assembly (except entertainment assembly and race tracks)
- Amusements (except fairgrounds and amusement parks)
- Recreational activities (except designated camping and picnicking areas)
- Parks.
- 3 Food and kindred products
 - manufacturing
 - Textile mill products — manufacturing
 - Apparel and other finished products made from fabrics, leather, and similar materials — manufacturing
 - Lumber and wood products (except furniture) — manufacturing
 - Furniture and fixtures — manufacturing
 - Paper and allied products — manufacturing
 - Printing, publishing, and allied industries
 - Chemicals and allied products — manufacturing
 - Petroleum refining and related industries
 - Rubber and miscellaneous plastic products — manufacturing
 - Stone, clay, and glass products — manufacturing
 - Primary metal industries
 - Fabricated metal products — manufacturing
 - Professional, scientific, and controlling instruments; photographic and optical goods; watches and clocks — manufacturing
 - Miscellaneous manufacturing (except motion picture production)
 - Railroad, rapid transit, and street railway transportation (except

- passenger terminals)
- Motor vehicle transportation (except passenger terminals)
- Aircraft transportation (except passenger terminals)
- Marine craft transportation (except passenger and freight terminals)
- Highway and street right-of-way
- Communication (except telegraph message centers)
- Utilities
- Other transportation, communication, and utilities (except transportation services and arrangements)
- Race tracks
- Fairgrounds and amusement parks
- Agricultural
- Agricultural and related activities
- Forestry activities and related services (including commercial forest land, timber production, and other related activities)
- Fishing activities and related services
- Mining activities and related services
- Other resource production and extraction
- All other activities not otherwise listed.
- 4 Undeveloped and unused land area (excluding noncommercial forest development)
- Noncommercial forest development
- Water areas
- Vacant floor area
- Under construction
- Other undeveloped land and water areas.

Subp. 3. Exceptions. The noise area classification for a land use may be changed in the following ways if the applicable conditions are met.

A. The daytime standards for noise area classification 1 shall be applied to noise area classification 1 during the nighttime if the land use activity does not include overnight lodging.

B. The standards for a building in a noise area classification 2 shall be applied to a building in a noise area classification 1 if the following conditions are met.

(1) the building is constructed in such a way that the exterior to interior sound level attenuation is at least 30 dB(A);

(2) the building has year-round climate control; and

(3) the building has no areas or accommodations that are intended for outdoor activities.

C. The standards for a building in a noise area classification 3 shall be applied to a building in a noise area classification 1 if the following conditions are met:

(1) the building is constructed in such a way that the exterior to interior sound level attenuation is at least 40 dB(A);

(2) the building has year-round climate control; and

(3) the building has no areas or accommodations that are intended for outdoor activities.

D. The standards for a building in a noise area classification 3 shall be applied to a building in a noise area classification 2 if the following conditions are met:

(1) the building is constructed in such a way that the exterior to interior sound level attenuation is at least 30 dB(A);

(2) the building has year-round climate control; and

(3) the building has no areas or accommodations that are intended for outdoor activities.

Statutory Authority: *MS s 116 07 subds 2,4*

History: *11 SR 43*

7010.0060 MEASUREMENT METHODOLOGY.

Subpart 1. **Measurement location.** Measurement of sound must be made at or within the applicable NAC at the point of human activity which is nearest to the noise source. All measurements shall be made outdoors.

Subp. 2. **Equipment specifications.** All sound level measuring devices must meet Type O, I, II, or S specifications under American National Standards Institute S1.4-1983.

Subp. 3. **Calibration.** All sound level measuring devices must, at a minimum, be externally field calibrated before and after monitoring using a calibration device of known frequency and sound pressure level.

Subp. 4. **Measurement procedures.** The following procedures must be used to obtain representative sound level measurements:

A. Measurements must be made at least three feet off the ground or surface and away from natural or manmade structures which would prevent an accurate measurement.

B. Measurements must be made using the A-weighting and fast response characteristics of the sound measuring device as specified in American National Standards Institute S1.4-1983.

C. Measurements must not be made in sustained winds or in precipitation which results in a difference of less than ten decibels between the background noise level and the noise source being measured.

D. Measurements must be made using a microphone which is protected from ambient conditions which would prevent an accurate measurement.

Subp. 5. **Data documentation.** A summary sheet for all sound level measurements shall be completed and signed by the person making the measurements. At a minimum, the summary sheet shall include:

A. date,

B. time;

C. location;

D. noise source;

E. wind speed and direction;

F. temperature;

G. humidity;

H. make, model, and serial number of measuring equipment;

I. field calibration results,

J. monitored levels; and

K. site sketch indicating noise source, measurement location, directions, distances, and obstructions.

Statutory Authority: *MS s 116 07 subds 2,4*

History: *11 SR 43*

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NOISE POLLUTION CONTROL 7010.0080

7010.0070 SOUND ATTENUATION MEASUREMENT METHODOLOGY.

Subpart 1. **Purpose.** Sound level measurements made for assessing sound attenuation as specified in part 7010.0050, subpart 3, item B, C, or D, shall be made according to the requirements of this part.

Subp. 2. **Equipment.** The equipment shall meet the requirements specified in part 7010.0060, subpart 2.

Subp. 3. **Calibration.** The equipment must meet the calibration requirements specified in part 7010.0060, subpart 3.

Subp. 4. **Measurement procedure.** The measurement procedure described in FHWA-DP-45-1R, section 8 must be used for determination of the sound attenuation.

Subp. 5. **Equivalent methods.** Methods equivalent to those described in subpart 4 may be used provided they are approved by the director of the Minnesota Pollution Control Agency. The director shall approve an alternative method if the director finds that the method will produce representative data and results which are as reliable as the methods specified in subpart 4.

Statutory Authority: *MS s 116.07 subds 2,4*

History: *11 SR 43*

7010.0080 VARIANCE.

If, upon written application of the responsible person, the agency finds that by reason of exceptional circumstances strict conformity with any provisions of any noise rule would cause undue hardship, would be unreasonable, impractical, or not feasible under the circumstances, the agency may permit a variance upon the conditions and within the time limitations as it may prescribe for the prevention, control, or abatement of noise pollution in harmony with the intent of the state and any applicable federal laws.

Statutory Authority: *MS s 116 07 subds 2,4*

History: *11 SR 43*

7010.0100 [Repealed, 11 SR 43]

7010.0200 [Repealed, 11 SR 43]

7010.0300 [Repealed, 11 SR 43]

7010.0400 [Repealed, 11 SR 43]

7010.0500 [Repealed, 11 SR 43]

7010.0600 [Repealed, 11 SR 43]

7010.0700 [Repealed, 11 SR 43]