

## CHAPTER 10 NOISE

### C10.1 OVERVIEW

This Chapter primarily deals with the control of noise generated by a DoD Component on a DoD-controlled installation that affects a location outside the installation. This noise may come from any source: equipment, training, official or nonofficial activities, etc. The source of the noise (equipment, training, activities, etc.) is not material. Regardless of source, the noise is considered generated by the installation. No criteria in this section should be applied to any location within an installation's boundaries when the noise generated does not affect a location outside the installation. Control of noise generated off an installation, including that from training, maneuvers, and operating aircraft or ships, is not addressed in this document.

### C10.2 DEFINITIONS

A-weighted sound level. A calculation of noise exposure that emphasizes sound in the frequency range where most speech information occurs, and thus closely resembles the frequency response of the human ear. Sound measures that are measured on the A-scale are abbreviated dB(A).

dB. See decibel.

dB(A). See A-weighted sound level.

Decibel. The unit of sound pressure is the decibel and is symbolically represented as dB. Sound pressure is the amplitude or measure of the difference between atmospheric pressure (with no sound present) and total pressure (with sound present). The decibel scale is a logarithmic scale.

Installation. A base, camp, post, station, yard, center, or other activity under the jurisdiction of the Secretary of a Military Department that is located outside the United States and outside any territory, Commonwealth, or possession of the United States.

### C10.3 LIMITING NOISE IN GENERAL

Installations will identify noise sources that could create noise impacts, investigate possible mitigation measures, and program resources to reduce noise impacts if practical. Such considerations are part of the environmental review required when planning projects or actions. The U.S. Forces may be granted authorization by the German Minister of Defense to emit noise that would normally be contrary to German customs and standards. Such authorization must be based on compelling reasons regarding the accomplishment of the U.S. Forces military mission.

C10.3.1 Land use types defined for noise management purposes are listed in Table C10.T1. Noise guide values based on these land use types are listed in Table C10.T2. Activities that result in noise levels at off-installation locations exceeding the listed noise guide values are prohibited.

C10.3.2 Noise guide values are referred to as noise limiting values for areas that are affected by construction sites, sports facilities, or public roads and railways. Noise limiting values for areas affected by construction sites are listed in Table C10.T3, by sports facilities are listed in Table C10.T4, and by public roads and railways are listed in Table C10.T5. Activities that result in noise levels at off-installation locations exceeding the listed noise limit values are prohibited.

#### **C10.4 NOISE MEASUREMENT**

C10.4.1 Measurement of noise levels is to be conducted when specifically required by a responsible authority or required in an administrative prescription or permit. Noise measurements are to be performed by permitted experts.

C10.4.2 An assessment of noise levels in a particular area is generally required during licensing procedures for new facilities or substantially modified facilities. Noise assessments are to be performed by permitted experts.

#### **C10.5 PERMITS, NOTIFICATIONS, AND ADMINISTRATIVE PRESCRIPTIONS**

C10.5.1 Facilities must comply with noise levels or noise controls that are specified in facility permits or other administrative prescriptions. Procedures associated with permits from host nation authorities are addressed in Chapter 1, Overview.

C10.5.2 A written notification of modification is required to be submitted to the permitting authority a minimum of 1 month prior to modification of a permitted facility. Procedures for providing notifications to host nation authorities are addressed in Chapter 1, Overview.

C10.5.3 A written notification of closure is required to be submitted to the permitting authority a minimum of 1 month prior to closure of a permitted facility. Procedures for providing notifications to host nation authorities are addressed in Chapter 1, Overview.

#### **C10.6 LIMITING NOISE FROM SPECIFIC FACILITIES, EQUIPMENT, OR ACTIVITIES**

C10.6.1 Sports Facilities.

C10.6.1.1 Sports facilities must be operated in such a manner that the applicable noise limiting values in Table C10.T4 are not exceeded at off-installation locations.

C10.6.2 Vehicle Traffic and Railway Operations.

C10.6.2.1 New or substantially modified roads and railway tracks must be constructed in such a manner that the noise levels within interior rooms of buildings at off-installation locations do not exceed those listed on Table C10.T5.

**C10.6.3 Military Helicopter Airfields.**

- C10.6.3.1 Helicopter engine testing is only allowed from 0700 to 2300 hours (during the summertime from 0700 to 2400 hours).
- C10.6.3.2 A maximum of 40% of yearly flight hours are allowed during the period from 2200 to 2300 hours (during the summertime from 2200 to 2400 hours).
- C10.6.3.3 Hot refueling (refueling while the aircraft engine is running) must be carried out with a minimum of noise generated.
- C10.6.3.4 Special Requirements for the Military Helicopter Airfields of Ansbach-Katterbach, Erlensee, Illesheim, and Wiesbaden-Erbenheim.
  - C10.6.3.4.1 Helicopter engine testing on Mondays, Tuesdays, and Wednesdays is only allowed from 0700 to 2400 hours and on Thursdays and Fridays from 0700 to 2200 hours.
  - C10.6.3.4.2 Hot refueling at Ansbach-Katterbach, Erlensee, and Wiesbaden-Erbenheim is only allowed in cases of emergency and extraordinary military necessity.

**C10.6.4 Construction Sites.**

- C10.6.4.1 Construction equipment and machinery at a construction sites must be operated in a manner that the applicable noise limiting values in Table C10.T3 are not exceeded at off-installation locations.
- C10.6.4.2 Construction equipment and machinery such as excavators, crushers, or compressors brought into circulation after 18 November 1986 must have a certificate that testifies agreement with European guidelines concerning maximum noise levels.

**C10.6.5 Lawn Mowing Equipment.**

- C10.6.5.1 Engine-operated lawn mowing equipment audible at off-installation locations may only be operated Monday to Saturday from 0700 to 1900 hours (0700 to 2200 hours if the acoustic power level of the lawn mowing equipment is less than 88 dB(A) related to 1 pW or the acoustic power level is less than 60 dB(A) for equipment brought into circulation before 1 August 1987).

**C10.7 REGIONAL ENVIRONMENTAL NOISE REQUIREMENTS****C10.7.1 Bayern**

- C10.7.1.1 It is prohibited to operate facilities of any kind in such a way that sleep is disturbed at off-installation locations between 2200 to 0700 hours. Exceptions to this requirement include facilities in industrial areas (symbol GI

and GE, see Table C10.T1), facilities normally operated during night-time hours, and activities necessary to prevent damages on facilities raw materials and products.

- C10.7.1.2 Facility signals must not be audible at off-installation locations in a disturbing manner, except for warning signals.
- C10.7.1.3 It is prohibited to operate noise-generating engines that are audible at off-installation locations unnecessarily.
- C10.7.1.4 It is prohibited to operate combustion engines of motorcycles near off-installation housing or in nature unnecessarily.
- C10.7.1.5 Construction work is prohibited at night (2200 to 0700 hours) if the noise generated may disturb sleep at off-installation locations. Construction work at sites located in industrial and predominantly commercial areas (symbols GI and GE, see Table C10.T1), facilities normally operated at night, and activities necessary to prevent damages to facilities, raw materials and products are excluded.
- C10.7.1.6 Local administrations may impose additional, more stringent requirements regarding noise from lawn mowing equipment audible at off-installation locations.

#### C10.7.2 Rheinland-Pfalz

- C10.7.2.1 It is prohibited to operate facilities of any kind in such a way that sleep is disturbed at off-installation locations. Exceptions to this requirement include facilities in industrial areas (symbol GI and GE, see Table C10.T1) and facilities normally operated during night-time hours as long as no hazards, negative impacts, or nuisance are imposed.
- C10.7.2.2 Facility signals must not be audible at off-installation locations in a disturbing manner, except for warning signals.
- C10.7.2.3 Lawn mowing equipment audible at off-installation locations may only be operated Monday to Saturday from 0700 to 1300 hours and from 1500 to 1900 hours. Lawn mowing equipment with noise-protected electric motors are excluded.

#### C10.7.3 Hessen

- C10.7.3.1 It is prohibited to generate noise that is audible at off-installation locations during the following periods: from 1 May to 31 August, 2100 to 0700 hours; from 1 September to 30 April, 2000 to 0700 hours; if housing is nearby, from 1300 to 1500 hours; and in general, on Sundays and public holidays. Facilities in industrial areas (symbols GI and GE, see Table C10.T1) are excluded.

- C10.7.3.2 Facility signals, including warning signals, must not be audible at off-installation locations in a disturbing manner, except for warning signals. Fire alarms and warning signals are excluded if optic signs are not sufficient. Military, police, and fire brigade signals are excluded.
- C10.7.3.3 It is prohibited to operate noise-generating engines that are audible at off-installation locations unnecessarily.
- C10.7.3.4 It is prohibited to operate combustion engines of motorcycles near off-installation housing or in nature unnecessarily.
- C10.7.3.5 Engine-operated lawn mowing equipment audible at off-installation locations may only be operated Monday to Saturday from 0700 to 1300 hours and from 1500 to 1900 hours.

**Table C10.T1**      **Types of Land Use for Noise Management Purposes**

<b>Area</b>	<b>Symbol<sup>1</sup></b>	<b>Description</b>
<i>Kleinsiedlungsgebiete /</i> small housing areas	WS	contains only small housing areas and small supply facilities
<i>Reine Wohngebiete /</i> plain housing areas	WR	contains only housing
<i>Allgemeine Wohngebiete /</i> general housing areas	WA	contains predominantly - housing, - cultural and social facilities - supply facilities
<i>Besondere Wohngebiete /</i> special housing areas	WB	contains predominantly - housing, - cultural, social and sport facilities - office buildings
<i>Dorfgebiete /</i> village areas	MD	contains predominantly - agricultural and arboricultural facilities - housing - supply facilities
<i>Mischgebiete /</i> mixed areas	MI	contains - housing - commercial facilities, which do not disturb housing considerably
<i>Kerngebiete /</i> center areas	MK	contains non disturbing - commercial facilities - business and office buildings - housing for owners, managers, supervisory and standby personnel - other housing under certain restrictions
<i>Gewerbegebiete /</i> commercial areas	GE	contains only - commercial or industrial facilities - filling stations - business and office buildings without a higher menacing potential - housing for owners, managers, supervisory and standby personnel exceptionally allowable
<i>Industriegebiete /</i> industrial areas	GI	contains only: - commercial or industrial facilities - filling stations - housing for owners, managers, supervisory and standby personnel exceptionally
<i>Sondergebiete /</i> special areas	SO	any use different from described above.

<sup>1</sup> The type of land use is determined by a city or community. If no type of land use is determined for a particular area, the actual type of land use should be used as the type of land use for these purposes.



Sunday and Public Holidays	0600 to 0900 hours
	1300 to 1500 hours
	2000 to 2200 hours

The applicable noise guide values refer to a noise assessment period of 16 hours during day. At night the assessment refers to one hour with the highest assessed noise levels.

The noise guide value refers to the determined type of land use (as released by a city or community). If no type of land use is determined, the noise guide value will be based on the actual type of land use.

- <sup>1</sup> Mixed areas are such areas, where areas GI or GE border directly to housing areas. In that case the applicable noise guide values for housing areas can be higher.
- <sup>2</sup> The responsible administration may allow exceptional occurrences during licensing procedures for new or modified facilities under the following conditions: less than 10 times a year at day or night; not more than two following weekends; and the state of the art concerning noise emission control is observed. The responsible administration does not need to release administrative prescriptions for existing facilities in that case.

**Table C10.T3 Noise Limiting Values for Areas Affected by Noise from Construction Sites**

Area Affected by Noise	Symbol	Noise Limiting Value			
		[18]		VDI 2058	
		Day	Night	Day	Night
Health resorts, hospitals, nursing homes	-	45 dB(A)	35 dB(A)	-	-
Health resorts, hospitals, nursing homes, if indicated by signs	-	-	-	45 dB(A)	35 dB(A)
Area containing only housing	WR	50 dB(A)	35 dB(A)	50 dB(A)	35 dB(A)
Area containing predominantly housing	WB, WA, WS	55 dB(A)	40 dB(A)	55 dB(A)	40 dB(A)
Area containing commercial facilities and housing, but not predominantly either	MD, MI, MK	60 dB(A)	45 dB(A)	60 dB(A)	45 dB(A)
Industrial area containing industrial and commercial facilities without a higher menacing potential	GE	65 dB(A)	50 dB(A)	65 dB(A)	50 dB(A)
Industrial area containing only industrial and commercial facilities	GI	70 dB(A)	70 dB(A)	70 dB(A)	70 dB(A)

**Notes:**

Day is defined as 0700 to 2000 hours [20] and 0600 to 2200 hours [VDI 2058]

Night is defined as 2000 to 0700 hours [20] and 2200 to 0600 hours [VDI 2058]

Regional regulations concerning day and night must be observed additionally.

The acceptable noise limit value refers to the type of land use as determined by a city or community. If no type of land use is determined, the noise limit value will be based on the actual type of land use.

**Table C10.T4 Noise Limiting Values for Areas Affected by Noise from Sport Facilities**

Area Affected by Noise	Symbol	Noise Limiting Value		
		Day	Daytime Rest Hours	Night
Health resorts, hospitals, nursing homes	-	45 dB(A)	45 dB(A)	35 dB(A)
Area containing only housing	WR	50 dB(A)	45 dB(A)	35 dB(A)
Area containing predominantly housing	WB, WA, WS	55 dB(A)	50 dB(A)	40 dB(A)
Area containing commercial facilities and housing, but not predominantly either	MD, MI, MK	60 dB(A)	55 dB(A)	45 dB(A)
Industrial area containing industrial and commercial facilities without a higher menacing potential	GE	65 dB(A)	60 dB(A)	50 dB(A)
Industrial area containing only industrial and commercial facilities	GI	sport facilities in general not allowed		
Single short-term noise peaks (only valid outside of buildings)	all	+ 30 dB(A)	+ 20 dB(A)	
Rooms inside buildings without belonging to the facility	all	35 dB(A)	25 dB(A)	
Single short-term noise peaks	all	+ 10 dB(A)		

## Notes:

Day time is defined as:	Monday to Saturday	06.00 to 22.00 hours
	Sunday and Public Holidays	07.00 to 22.00 hours
Night time is defined as:	Monday to Saturday	0.00 to 06.00 hours, and 22.00 to 24.00 hours
	Sunday and Public Holidays	0.00 to 07.00 hours, and 22.00 to 24.00 hours
Hours of rest are defined as:	Monday to Saturday	06.00 to 08.00 hours, and 20.00 to 22.00 hours
	Sunday and Public Holidays	07.00 to 09.00 hours, and 13.00 to 15.00 hours, and 20.00 to 22.00 hours

Regional regulations concerning day and night time must be observed additionally.

**Table C10.T5 Noise Limiting Values for Areas Affected by Noise from New or Modified Public Roads or Railway Tracks**

Area Affected by Noise	Symbol	Noise Limiting Value	
		Day	Night
Health resorts, hospitals, nursing homes, schools	-	57 dB(A)	47 dB(A)
Area containing only housing	WR	59 dB(A)	49 dB(A)
Area containing predominantly housing	WB, WA, WS	59 dB(A)	49 dB(A)
Area containing commercial facilities and housing, but not predominantly either	MD, MI, MK	64 dB(A)	54 dB(A)
Industrial area containing industrial and commercial facilities without a higher menacing potential	GE	69 dB(A)	59 dB(A)

Notes:

Day is defined as 0600 to 2200 hours.

Night is defined as 2200 to 0600 hours (minimum of 8 hours)