

SCOPE & DEFINITIONS

This chapter contains criteria to ensure that solid wastes are identified, classified, collected, transported, stored, treated and disposed of safely and in a manner protective of human health and the environment. These criteria apply to residential and commercial solid waste generated at the installation level. These criteria are part of integrated waste management. Policies concerning the recycling portion of integrated waste management are found in DoDI 4715.4 (Pollution Prevention) and service solid waste management manuals. The criteria in this chapter deal with general solid waste. Criteria for specific types of solid waste that require special precautions are located in Chapter 6 (Hazardous Waste), Chapter 8 (Medical Waste), Chapter 14 (PCBs), and Chapter 11 (Pesticides).

Bulky Waste – Large items of solid waste such as household appliances, furniture, large auto parts, abandoned cars, trees, branches, stumps, and other oversize wastes whose large size precludes or complicates their handling by normal solid wastes collection, processing, or disposal methods.

Carry-Out Collection – Collection of solid waste from a storage area proximate to the dwelling unit(s) or establishment where generated.

Collection – The act of consolidating solid wastes (or materials which have been separated for the purpose of recycling) from various locations.

Collection Frequency – The number of times collection is provided in a given period of time.

Commercial Solid Waste – All types of solid wastes generated by stores, offices, restaurants, warehouses, and other non-manufacturing activities, excluding residential and industrial wastes.

Compactor Collection Vehicle – A vehicle with an enclosed body containing mechanical devices that conveys solid waste into the main compartment of the body and compresses it into a smaller volume of greater density.

Construction and Demolition Waste – The waste building materials, packaging, and rubble resulting from construction, remodeling, repair, and demolition operations on pavements, houses, commercial buildings, and other structures.

Curb Collection – Collection of solid waste placed adjacent to a street.

Cover Material – Material that is used to cover compacted solid wastes in a land disposal site.

Daily Cover – Soil that is spread and compacted or synthetic material that is placed on the top and side slopes of compacted solid waste at least at the end of each operating day in order to control vectors, fire, moisture, and erosion and to assure an aesthetic appearance. Mature compost or other natural material may be substituted for soil if soil is not reasonably available in the vicinity of the landfill and the substituted material will control vectors, fire, moisture, and erosion and will assure an aesthetic appearance.

Final Cover – A layer of soil, mature compost, other natural material (or synthetic material with an equivalent minimum permeability) that is applied to the landfill after completion of a cell or trench, including a layer of material that will sustain native vegetation, if any.

Food Waste – The organic residues generated by the handling, storage, sale, preparation, cooking, and serving of foods, commonly called garbage.

Generation – The act or process of producing solid waste.

Hazardous Wastes – See Chapter 6 (Hazardous Waste).

Industrial Solid Waste – The solid waste generated by industrial processes and manufacturing.

Institutional Solid Waste – Solid waste generated by educational, health care, correctional, and other institutional facilities.

Land Application Unit – An area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for agricultural purposes or for treatment or disposal.

Lower Explosive Limit – The lowest percent by volume of a mixture of explosive gases in air that will propagate a flame at 25°C and atmospheric pressure.

Municipal Solid Waste (also referred to as Urban Waste) – Waste from households as well as other waste that, because of its nature or composition, is similar to waste from households.

Municipal Solid Waste Landfill Unit (MSWLF) – A discrete area of land or an excavation, on or off the installation, that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile. A MSWLF unit also may receive other types of wastes, such as commercial solid waste and industrial waste.

Open Burning – Burning of solid wastes in the open, such as in an open dump.

Open Dump – A land disposal site at which solid wastes are disposed of in a manner that does not protect the environment, is susceptible to open burning, and is exposed to the elements, vectors, and scavengers.

Residential Solid Waste – The wastes generated by the normal activities of households, including (but not limited to) food wastes, rubbish, ashes, and bulky wastes.

Rubbish – A general term for solid waste (excluding food wastes and ashes) taken from residences, commercial establishments, and institutions.

Sanitary Landfill – A land disposal site employing an engineered method of disposing of solid wastes on land in a manner that minimizes environmental hazards by spreading the solid wastes

in thin layers, compacting the solid wastes to the smallest practical volume, and applying and compacting cover material at the end of each operating day.

Satellite Vehicle – A small collection vehicle that transfers its load into a larger vehicle operating in conjunction with it.

Scavenging – The uncontrolled and unauthorized removal of materials at any point in the solid waste management system.

Service Solid Waste Management Manual – Navy NAVFAC MO-213 and Army TM 5-634 or their successor documents, and the applicable Air Force Policy.

Sludge – The accumulated semi-liquid suspension of settled solids deposited from wastewaters or other fluids in tanks or basins. It does not include solids or dissolved material in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial wastewater effluent, dissolved materials in irrigation return flows, or other common water pollutants.

Solid Waste – Any substance or object that falls within the waste categories of the European Waste Catalog (FGS Appendix B1) that is not designated as hazardous waste. It does not include solids or dissolved material in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial wastewater effluent, dissolved materials in irrigation return flows, or other common water pollutants.

Solid Waste Storage Container – A receptacle used for the temporary storage of solid waste while awaiting collection.

Stationary Compactor – A powered machine which is designed to compact solid waste or recyclable materials, and which remains stationary when in operation.

Storage (of Solid Waste) – The interim containment of solid waste after generation and prior to collection for ultimate recovery or disposal.

Street Wastes – Material picked up by manual or mechanical sweepings of alleys, streets, and sidewalks; wastes from public waste receptacles; and material removed from catch basins.

Transfer Station – A site at which solid wastes are concentrated for transport to a processing facility or land disposal site. A transfer station may be fixed or mobile.

Vector – A carrier that is capable of transmitting a pathogen from one organism to another.

Waste – Any substance or object in the categories listed in the European Waste Catalog (FGS Appendix B1) which the holder discards, intends to discard, or is required to discard.

Yard Waste – Grass and shrubbery clippings, tree limbs, leaves, and similar organic materials commonly generated in residential yard maintenance (also known as green waste).

CRITERIA

C7.1 DOD SOLID WASTES

DoD solid wastes will be treated, stored, and disposed of in permitted facilities that have been evaluated against C7.12, C7.14, and C7.15. These evaluated facilities will be used to the maximum extent practical.

C7.2 COOPERATION DURING PLANNING

Installations will cooperate with Greek Representative and municipal officials, to the extent possible, in the solid waste management planning process.

C7.3 SOLID WASTE MANAGEMENT PLAN

Installations will develop and implement a solid waste management strategy to reduce solid waste disposal. This strategy could include recycling, composting, and waste minimization efforts. The local and regional Greek solid waste management program should be taken into consideration when developing the DoD installation strategy.

C7.4 STORAGE OF SEPARATED RECYLCABLES

All solid wastes or materials which have been separated for the purpose of recycling will be stored in such a manner that they do not constitute a fire, health, or safety hazard or provide food or harborage for vectors, and will be contained or bundled so as not to result in spillage.

C7.5 STORAGE OF BULKY WASTES

Storage of bulky wastes will include (but will not be limited to) removing all doors from large household appliances and covering the items to reduce both the problems of an attractive nuisance, and the accumulation of solid waste and water in and around the bulky items. Bulky wastes will be screened for the presence of ozone depleting substances as defined in Chapter 2 or hazardous constituents as defined in Chapter 6. Readily detachable or removable hazardous waste will be segregated and disposed of in accordance with Chapters 6, 14, and 15.

C7.6 DESIGN OF STORAGE AREAS

In the design of all buildings or other facilities that are constructed, modified, or leased after the effective date of these guidelines, there will be provisions for storage in accordance with these guidelines that will accommodate the volume of solid waste anticipated. Storage areas will be easily cleaned and maintained, and will allow for safe, efficient collection.

C7.7 STORAGE CONTAINERS

Storage containers should be leak-proof, waterproof, and vermin-proof, including sides, seams, and bottoms and be durable enough to withstand anticipated usage and environmental conditions without rusting, cracking, or deforming in a manner that would impair serviceability. Storage containers should have functional lids.

C7.8 CONTAINER STORAGE SITES

Containers should be stored on a firm, level, well-drained surface which is large enough to accommodate all of the containers and which is maintained in a clean, spillage-free condition.

C7.9 RECYCLING PROGRAMS / POLLUTION PREVENTION

Recycling programs will be instituted on DoD installations in accordance with the policies in DoDI 4715.4 (Pollution Prevention). Recycling should be implemented to the greatest extent feasible, including:

- Recycling or recovery of metals or metal components
- Recycling or recovery of other inorganic substances
- Composting

C7.10 APPROVAL FOR NEW OR EXPANDED MSWLFS

Installations will not initiate new or expand existing waste landfill units without approval of the Combatant Commander and the Greek Representative with responsibility for the area where the landfill would be located, and only after justification that unique circumstances mandate a new unit. If the approval for the new unit is granted, the installation will submit a permit request and Environmental Impact Assessment to the Greek Representative to seek an operating permit for the proposed facility.

C7.11 DESIGN & OPERATION OF NEW MSWLFS

New DoD MSWLF units will be designed and operated in a manner that incorporates the following broad factors:

- C7.11.1 Location restrictions in regard to airport safety (i.e., bird hazards), floodplains, wetlands, aquifers, seismic zones, and unstable areas
- C7.11.2 Procedures for excluding hazardous waste
- C7.11.3 Cover material criteria (e.g., daily cover), disease vector control, explosive gas control, air quality criteria (e.g., no open burning), access requirements, liquids restrictions, and record-keeping requirements

- C7.11.4 Inspection program
- C7.11.5 Liner and leachate collection system designed consistent with location to prevent groundwater contamination that would adversely affect human health
- C7.11.6 A groundwater monitoring system unless the installation operating the landfill, after consultation with the Environmental Executive Agent, determines that there is no reasonable potential for migration of hazardous constituents from the MSWLF to the uppermost aquifer during the active life of the facility and the post-closure care period.

C7.12 OPERATION OF MSWLF

Installations operating MSWLF units will:

- C7.12.1 Use standard sanitary landfill techniques of spreading and compacting solid wastes and placing daily cover over disposed solid waste at the end of each operating day.
- C7.12.2 Establish criteria for unacceptable wastes based on site-specific factors such as hydrology, chemical and biological characteristics of the waste, available alternative disposal methods, environmental and health effects, and the safety of personnel.
- C7.12.3 Implement a program to detect and prevent the disposal of hazardous wastes, infectious wastes, polychlorinated biphenyl (PCB) wastes, and wastes determined unsuitable for the specific MSWLF.
- C7.12.4 Investigate options for composting of MSW as an alternative to landfilling or treatment prior to landfilling.
- C7.12.5 Prohibit open burning, except for infrequent burning of agricultural wastes, silvicultural wastes, land-clearing debris, diseased trees, or debris from emergency clean-up operations.
- C7.12.6 Develop procedures for dealing with yard waste and construction debris that keeps it out of MSWLF units to the maximum extent possible (e.g., composting, recycling).
- C7.12.7 Operate in a manner to protect the health and safety of personnel associated with the operation.
- C7.12.8 Maintain conditions that are unfavorable for the harboring, feeding, and breeding of disease vectors.
- C7.12.9 Ensure that methane gas generated by the MSWLF unit does not exceed 25% of the lower explosive limit for methane in structures on or near the MSWLF.
- C7.12.10 Operate in an aesthetically acceptable manner.

- C7.12.11 Operate in a manner to protect aquifers.
- C7.12.12 Control public access to landfill facilities.
- C7.12.13 Prohibit the disposal of bulk or non-containerized liquids if possible.
- C7.12.14 Maintain records on the preceding criteria.

C7.13 CLOSURE & POST-CLOSURE

During closure and post-closure operations, installations will comply with the following criteria unless more protective closure/post-closure requirements are established in their site-specific operating permit:

- C7.13.1 Install a final cover system that is designed to minimize infiltration and erosion.
- C7.13.2 Ensure that the infiltration layer is comprised of a minimum of 46 cm (18 inches) of earthen material, geotextiles, or combination thereof, that have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 0.00005 cm/sec, whichever is less.
- C7.13.3 Ensure that the final layer consists of a minimum of 21 cm (8 inches) of earthen material that is capable of sustaining native plant growth.
- C7.13.4 If possible, revegetate the final cap with native plants that are compatible with the landfill design, including the liner.
- C7.13.5 Prepare a written closure plan that includes, at a minimum, a description of the monitoring and maintenance activities required to ensure the integrity of the final cover, a description of the planned uses of the site during the post-closure period, plans for continuing (during the post-closure period) leachate collection, ground-water monitoring, and methane monitoring, and a survey plot showing the exact site location. The plan will be kept as part of the installation's permanent records. Post-closure period will be a minimum of 5 years.

C7.14 OPEN BURNING

Open burning of solid waste is prohibited. Where burning is the method, authorized Greek incinerators (i.e. incinerators that hold a valid Greek operating permit) that meet the air quality requirements in Chapter 2 will be used. The incinerators must meet the following minimum operating standards:

O ₂ content in wet flue gas	6% volume
Contact time	2 seconds
Minimum temperature for flue gas and internal combustion chamber	850° C

The incinerator must be equipped with auxiliary burners that are automatically activated when the operating temperature drops below 850°C.

C7.15 COMPOSTING FACILITIES

DoD installations that intend to operate composting facilities to process sludge from their domestic wastewater treatment plant (see Chapter 4) must provide the Greek Representative with sufficient data (including an Environmental Terms Study) to seek an operating permit for their facility. If the facility processes more than 5,000 tons/year of sludge, the facility will comply with the following criteria unless more protective standards are established in their operating permit:

- C7.15.1 Operators must maintain a record of the characteristics of the waste composted, sewage sludge, and other materials (such as nutrient or bulking agents being composted) including the source and volume or weight of the material.
- C7.15.2 Access to the facility must be controlled. All access points must be secured when the facility is not in operation.
- C7.15.3 By-products, including residuals and materials that can be recycled, must be stored to prevent vector intrusion and aesthetic degradation. Materials that are not composted must be removed periodically.
- C7.15.4 Run-off water that has come in contact with composted waste, materials stored for composting, or residual waste must be diverted to a leachate collection and treatment system.
- C7.15.5 The temperature and retention time for the material being composted must be monitored and recorded.
- C7.15.6 Periodic analysis of the compost must be completed for the following parameters: percentage of total solids, volatile solids as a percentage of total solids, pH, ammonia, nitrate nitrogen, total phosphorous, cadmium, chromium, copper, lead, nickel, zinc, mercury, and polychlorinated biphenyls.
- C7.15.7 Compost must be produced by a process to further reduce pathogens. Two such acceptable methods are:
 - Wind-rowing, which consists of an unconfined composting process involving periodic aeration and mixing such that aerobic conditions are maintained during the composting process.
 - The enclosed vessel method, which involves mechanical mixing of compost under controlled environmental conditions. The retention time in the vessel must

be at least 72 hours with the temperature maintained at 55°C. A stabilization period of at least 7 days must follow the decomposition period.

C7.16 CLASSIFICATION & USE OF COMPOST FROM DOD COMPOSTING FACILITIES

Compost produced at a composting facility which is located on a DoD installation and which processes annually more than 5,000 tons of sludge from a domestic wastewater treatment plant (see Chapter 4) must be classified as "Class A" or "Class B" based on the criteria below and, depending on this classification, shall be subject to the restrictions on certain uses.

C7.16.1 Class A compost must be stored until the compost is matured (i.e., 60 percent decomposition has been achieved). Class A compost may contain contaminant levels no greater than the levels indicated below. The compost must be stabilized and contain no greater amounts of inert material than indicated. Allowable average contaminant concentrations in milligrams per kilogram on a dry weight basis are:

PCB	1
Cadmium	10
Chromium	1,000
Copper	500
Lead	500
Mercury	5
Nickel	100
Zinc	1,000

C7.16.2 Class B compost consists of any compost generated which fails to meet Class A standards.

C7.16.3 Compost Distribution & End Use

C7.16.3.1 Class A compost may be distributed for unrestricted use, including agricultural applications.

C7.16.3.2 Class B compost may not be distributed for agricultural applications.

ADMINISTRATIVE ITEMS

1. Installations that intend to conduct the following activities must submit a permit request (accompanied by an Environmental Impact Assessment) to the Greek Representative, who may submit the permit application package to the appropriate Greek authorities.

- Operation of a MSWLF
- Operation of a composting facility