

federal civil defense guide

PART D, CHAPTER 2, APPENDIX 7

July 1967

FALLOUT SHELTER SANITATION KITS



DEPARTMENT OF DEFENSE
OFFICE OF CIVIL DEFENSE



FALLOUT SHELTER SANITATION KITS

This appendix describes the federally procured sanitation kits provided for use in public fallout shelters; and includes a reference list of comparable items that might be available as substitutes or supplements for those in the kits. (Part D, Chap. 2, App. 1, presents information pertinent to storage.)

GENERAL

The public fallout shelter provisioning program is intended to furnish only those materials considered essential for survival. The contents of the sanitation kit reflect this austere concept, both in selection and quantities of the items furnished. In emergency, therefore, the items must be carefully allocated and used to provide adequately for the required period of confinement.

SANITATION KIT CONTENTS

The kits contain essential sanitation items and certain additional items for shelter use, packed in 17½ gallon fiber drums. Two sizes of kits are furnished: Kit III with supplies for 25 shelter spaces, and Kit IV for 50 shelter spaces. The components of each kit are identical, differing only in quantity.

A plastic seat, a polyethylene liner, and a germicidal chemical, all provided in the kit, permit conversion of the fiber drum into a chemical commode.

The steel water drums and polyethylene liners furnished by OCD for the storage of potable water can be converted to chemical commodes when required after the water is consumed. This is accomplished by reusing the seat provided in the sanitation kit and adding the prescribed quantity of the germicidal chemical.

Instructions for setting up the chemical toilet are contained in the sanitation kit. Instructions pertaining to the steel drum are printed on

the outside of the drum. When filled to the sanitary fill line, the drums may weigh more than 100 pounds and should be handled carefully. The filled liners are not designed to be, and should not be, lifted from the drums. The liner should be tied off in the drum and the cover replaced. The liquid iodine base or granular chemicals intended for use in the chemical toilets act against bacterial growth and gas formation.

Existing sewerage and water supply systems may, in many cases, continue in operation. Nonpotable water trapped in building systems, or potable water in excess of personal requirements, may be used as flushing water for the sewerage system. The availability of nonpotable water in shelter facilities, as well as potable water, is presently being determined as part of the continuing National Fallout Shelter Survey. See part D, chapter 2, appendix 4, for a discussion of the need for steel drums for sanitation purposes, various alternatives to the use of drums, and guidance for determining drum requirements.

Further information on selected items, based on tests and other experience, is as follows:

Chemical Commode

Use of empty food cans as a step or platform can overcome the problem of height of the commode. Two empty cans inserted in an empty food case, with the box flaps closed and the box turned upside down, can serve the purpose. Other uses of the empty food cans include adaption as trash containers or urinals.

Odors in the shelter may become noticeable, especially by persons entering an occupied shelter from the outside. This is not, however, considered a serious problem. Persons exposed to a gradual buildup of odors become progressively unaware of them. The developing gases require a considerable concentration before toxicity becomes a problem. Either commode

chemical, the liquid iodine base, or granular material, will check gas formation and bacterial growth, which might distend the plastic bag. The chemicals are designed to remain effective throughout the time in shelter, although high temperatures can make them less effective.

The maximum period of shelter occupancy is assumed as 2 weeks, but actually could be only a few days. A container used as a chemical commode in a shelter for 50 persons might be filled in 2 days or less. As soon as radiological conditions permit, filled containers should be removed from the shelter area.

Cups

Two types of cups have been furnished for dispensing drinking water in shelter. Originally issued kits contained plastic cups. Later, somewhat more durable plastic-lined paper cups were furnished instead of the plastic cups. Although extra cups are provided in the kits, care must be taken to avoid contamination and damage, since they are intended for use during the entire period of occupancy. The plastic cup tends to crack if squeezed too hard. It is recommended that either type of cup be handled as little as possible. A tray fashioned from a fiberboard container may be used for holding cups during filling, and for storing them when not in use.

Can Opener

The can opener is provided for opening the food cans, and may also be used for prying off the lids of several cans in the medical kit. Be careful when opening the food cans, because a jagged edge is formed.

Soap and Gloves

Cakes of soap for cleaning the hands are contained in the medical kit. By placing the soap in a bowl or other container with a small amount of water, a solution is formed which may be used several times—to save water.

Waterless hand cleaner originally contained in the sanitation kits is no longer being furnished because of instability in storage, which tended to cause separation into liquid and solid components. The liquid tended to penetrate the

can seal. Any stocks of waterless cleaner remaining in shelter should be removed from the sanitation kits. Suitable use for the cleaner found to be in good condition should be made in accordance with local regulations for locally owned materials.

Polyethylene gloves are furnished for use by personnel handling or cleaning the commodes.

STORAGE LIFE

If the fiber drum is kept dry, the sanitation kit will last more than 5 years. The components are not expected to deteriorate during that time in normal storage. However, the fiber layers of the drum tend to come apart if the fiber becomes saturated with water. Dampness also is favorable to formation of mildew.

For planning purposes, Table 1 provides an estimate of the probable storage life of the sanitation kit components under various conditions.

SUBSTITUTION OF LOCALLY AVAILABLE ITEMS

The full OCD-recommended quantity of sanitation kits need not be stored in specific public fallout shelters where equivalent items are available in or accessible to the shelter.

Table 2 lists the items provided in the sanitation kits, with substitute items suggested in column "A."

Drum Requirements

For some shelters, potable water may reasonably be expected to be available to shelter occupants from sources other than the federally furnished steel drums. In this case, the local government may wish to request only a limited number of the drums, or none at all.

Table 2 shows, under columns "B," "C," and "D," items for which substitute materials must be made available locally under conditions where the steel water drums are to be (1) furnished only for storage of potable water, (2) furnished for sanitation purposes only, or (3) not furnished at all.

Where steel drums are furnished for their designed dual functions of water supply and

TABLE 1.—Estimated storage life of sanitation kits

Component	Estimated Storage Life (Years)		
	Normal Storage	Adverse ¹ Storage	Poor ² Storage
Shipping drum -----	Indefinite	5-10	2-3
Inner fiber boxes -----	"	"	2-4
CONTENTS			
Paper, toilet tissue -----	"	10	2-3
Seat commode, plastic -----	"	Indefinite	Indefinite
Opener, can, hand -----	10+	5-10	2-4
Pads, sanitary—heavy -----	"	"	2-5
Pads, sanitary—commercial grade -----	"	"	"
Gloves, polyethylene -----	"	"	5+
Spout, dispensing water -----	5-10	5+	"
Tie-wires, bag closures -----	Indefinite	5-10	"
Cups and lids -----	"	"	"
Commode chemical -----	5-10	5+	"
Bag-liners, polyethylene, commode -----	"	"	"
Instruction sheet -----	Indefinite	Indefinite	2-3

¹ Indicates materials stored in basements, underpasses, igloos, and similar locations, generally below ground, where temperature, humidity, and housekeeping may be less desirable than expected for normal storage.

² Indicates materials stored in locations such as mines, caves, and railroad tunnels exposed to saturated air, condensate, dripping water and dust, on a seasonal basis. Considerable variation in these estimates is possible, depending upon the degree of protection afforded the supplies.

sanitation, all items in the sanitation kits are necessary, and substitute items must be available for each item if the sanitation kit is not to be furnished.

The standard sanitation kits furnished by OCD will not be modified to suit the particular shelter situation prior to issue from warehouses. When supplies already available to the shelter area are to be used, only those items shown in Table 2 for the several conditions of drum availability need be inventoried.

Column "B" of Table 2 indicates required items where the steel drums are needed for potable water only. Such a situation might occur where adequate potable water from other sources is not available, but sufficiently large

quantities of *non-potable* water are available for flushing. An example of the situation covered in column "C", where steel drums are needed for sanitation only, might be a shelter served by a well or other source of potable water, but not having sanitation facilities available. Column "D" is the condition where both water and sanitation facilities are available and drums are unnecessary for either purpose.

Requisitioning

1. Details on acquisition and distribution of all federally furnished public fallout shelter stocks are given in Federal CD Guide, part D, chapter 2, appendix 2.

TABLE 2.—Substitution of locally available items for those in federally furnished sanitation kits

Items	Quantity		(A) Substitute item	Conditions of steel drum availability		
	Kit III 25-person	Kit IV 50-person		(B) For potable water only	(C) For sanitation only	(D) Not furnished
Paper, toilet tissue ----	5 rolls	10 rolls	1,000-sheet rolls, tissues, or sheets	X	X	X
Seat, commode, plastic (for use on drums)	1 ea.	1 ea.	Cut out of plywood or plastic		X	
Opener, can; lever-type hand-operated (for opening 5-gal. and 2½-gal. food cans)	1 ea.	1 ea.	Cutting tools or imple- ments (e.g., tin snips or heavy-duty restaurant can openers. Small hand-operated wheel types may not function on these cans because of thickness of metal and height of chime.)	X	X	X
Pads, sanitary, heavy --	1 doz.	2 doz.	Commercial item -----	X	X	X
Pads, sanitary, regular	2 doz.	3 doz.	Commercial item -----	X	X	X
Gloves, polyethylene (for handling filled commodes)	1 pair	1 pair	Water-resistant rubber or other gloves		X	
Spout, dispensing water (½" diam. × 5'-0" rubber tubing)	1 ea.	1 ea.	Plastic tubing, other di- ameters; syphon tubes	X		
Tie-wires, bag closures	1 ea.	1 ea.	Wire, twine, or heavy rubber bands		X	
Cups and lids ¹ -----	35 ea.	70 ea.	Cups, glasses, jars, small food containers, or other utensils	X	X	X
Commode chemical (Liquid iodine base or granular material) ²	1 pt. or 6 pkts.	1 qt. or 12 pkts.	Commercial liquid or granular germicides for chemical toilets, or dis- infectants		X	
Bag-liners, poly- ethylene commode	1 ea.	1 ea.	Plastic bag of about same size		X	
Instruction sheet ³ -----	1 ea.	1 ea.	Similar container			
Fiberboard boxes ⁴ -----	2 ea.	2 ea.	Steel drum or shipping containers of same size		X	
Fiber drum ⁵ -----	1 ea.	1 ea.				

¹ Plastic cups only were furnished in early procurement in quantities of 40 and 80 in the two kits. Plastic-lined paper cups of more durable design are now furnished in the quantities indicated.

² Liquid chemical was furnished in earlier procurement; granular later. Future procurement will be of granular only.

³ Provides information on setting up the chemical commode.

⁴ Used primarily for packaging. Can be used later in shelter as trash containers for storage, cup holders, etc.

⁵ Used initially as shipping container for sanitation kit. Convertible—with polyethylene bag-liner, plastic seat, and chemical—to a commode. If not needed for this purpose, the drum may be used as a trash container, table, or seat.

Distribution:

OCD Regions and Staff College, State and local CD directors, 4A, 4B, 6C, 7D, 8, 8A, 8B, 9, 21; and to military activities and installations as determined by the Departments of the Army, Navy, and Air Force.