

Fallout Shelter Living Notes

shelter oxygen

The average human body needs about 0.25 CFM, (cubic feet per minute), of oxygen to support life. In the process of breathing people consume oxygen and produce carbon dioxide proportionate to their level of activity. The U.S. Department of Defense recommended minimum shelter ventilation rate per person is 4 CFM.

.67 CFH (cubic feet per hour) CO₂
800 CF for 6 people for 6 hours
5 CF for mass of 1 adult

fans:

white portable fan
Item Number: 65010 (Campmor)
Runs on 4 'D' batteries for 300 hrs
728 CFM / 1022 CFM
Lo-Hi speed

12 volt muffin fan (Backwoods)
These are 4-5/8 inch square, larger than usual computer cooling fans. Quiet brush-less motors use little power.
Rated 40 to 90 CFM.
0.2 to 0.5 amps.

battery box vent fan (Backwoods)
Ready made 12 volt fan in pipe sections with back draft damper for easy installation in your battery vent pipe.
12 volt model goes in 2 inch PVC pipe.
Rated 40 to 90 CFM.
0.2 to 0.5 amps.

12v circulating 2- speed large fan (CET)
Super High Output 12-Volt Motor Produces Maximum Air Circulation with Minimal Current Draw
High 1.3 amps/Low .6 amps
Rated 5000 - 10,000 CFM.

12 volt electricity and accessories

Power Output

a 12V 15 watt solar panel is equal to:
1 amp of current / ideal conditions
15 W @ 15 V = 1 amp

Daily Output

A typical day a 15 watt solar panel
will generate: 105 watts (7 amps)
= 15 W x 7 hours/day

Weekly Output

A typical week a 15 watt solar panel
will generate: 735 watts (49 amps)
= 15W x 7hours/day x 7days/week

12 V Power Consumption Chart

(typical wattage/hour req.)

sump pump	100
CB/Ham radio	5
clock radio	5
laptop computer	50
cooler 12V (3amp)	36
lights (compact 40W)	10
TV 12"	20

Sample Solar Calculation of Power Output and Consumption

In a typical week 2-15 W solar panels can run the following:

Item	Wattage	Hours	Total
lights (10W)	10	63	630w
fan	5	168	840w
total			1470w

168 hours = 24 hours/day = 1 week

63 hours = 9 hours/day

Amps

Watts = Volts x Amps

100 W = 12 V x 8.3 A
2700 W = 12 V x 225 A
16200 W = 12 V x 1350 A

225 A battery = 27 hours @ 100 W
225 A battery = 225 hours @ 1Amp
1- 225 Amp battery = 225 Amp hours
336 hours = 14 days = 2 weeks

6 batteries x 225 amps = 1350 amps
5 batteries x 225 amps = 1125 amps
4 batteries x 225 amps = 900 amps
3 batteries x 225 amps = 675 amps
2 batteries x 225 amps = 450 amps

1350 amps/336 hrs. = 4.0 amp/hrs.
1125 amps/336 hrs. = 3.3 amp/hrs.
900 amps/336 hrs. = 2.6 amp/hrs.
675 amps/336 hrs. = 2.0 amp/hrs.
450 amps/336 hrs. = 1.3 amp/hrs.
225 amps/336 hrs. = .7 amp/hrs.

Battery Discharge

lead acid 15% per month
gel cell 1% per month
alkaline 2% per year
NiMH 1% per day

Combating Radiation Sickness

medical needs:

bone marrow transplant

blood transfusion

home remedies that help: *(not cure)*

(taken 3 to 5 times per day)

sprouts

antioxidants

Vitamin C (1000mg doses)

vitamin A

vitamin E

fructose

selenium

zinc

cysteine (500 mg doses for 7 days)

thyroid block (once a day)

- starting 1 hour before it happens

rehydration formula:

1 quart water

¼ t. table salt

½ t. Morton Lite salt

2 T. Karo syrup

radiation sickness

is the term for a variety of symptoms that follow a person's exposure to damaging amounts of certain types of radiation. The radiation may come from nuclear explosions and the resulting fallout, from medical and industrial uses of radioisotopes, or from particle accelerators or X-ray machines. Ionization from the radiation causes a series of reactions in tissue that results in damage to the body's cells. Exposures to high levels of radiation may cause lasting injury or even death.

Some types of cells are more easily injured by radiation than others. The most sensitive cells are those of the blood-forming bone marrow and lymphoid tissues and those of a human embryo. Adult muscle and brain cells are the least sensitive to radiation.

Scientists use a unit called the rem as a measure of radiation exposure. Over a lifetime, a person typically receives 7 to 14 rems from natural sources of radiation, such as cosmic rays. A single exposure of 5 to 75 rems produces few observable symptoms. Vomiting, fatigue, and loss of appetite accompany exposures of 75 to 200 rems, and recovery takes a few weeks. Severe changes in blood cells and hemorrhage occur with exposures of more than 300 rems. Above 600 rems, additional symptoms include loss of hair and loss of the body's ability to fight infection, usually resulting in death.

Doctors can treat only the symptoms of radiation sickness. Blood transfusions and the use of antibiotics to fight infection are the most common treatments.

human waste

Of every gallon of fluid consumed the body will retain about ½ of a gallon for energy production and perspiration. Most of us store about 1 gallon per person per day, which is a good minimum. In fallout shelter living you will need to consume as much water as possible to combat radiation sickness. All depending on how much radiation you have acquired will depend on how sick you will get. Although you are storing 1 gallon per person per day you will not consume that much. The rest will be for cooking and cleaning. Try to keep your daily consumption to your stored capacity. If you have storage room in your shelter - storing extra water will always be a good idea. Just remember input - output.

Therefore in calculating the amount of storage you need for human waste: multiply the occupants by 1 gallon per person per day then cut it in half and that should be your intended waste disposal.

Half-Value Layer Thickness (HVL)

material 1HVL - gamma - *only*

lead 0.8 inches

steel 1.2 inches

concrete 3.9 inches

dirt /sand 5.5 inches

wood 11.8 inches

Tetracycline and Doxycycline have an average storage life of 2.5 to 3 years if kept in a consistently cool, dry and dark environment. The tetracycline family of antibiotics have one drawback however, they become toxic. Most antibiotics just tend to decrease in potency until they are worthless. However outdated tetracycline antibiotic get toxic and should NOT be used after their expiration dates. WATCH your expiration dates.