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## Home Front Command

### PROTECTED SPACE /SHELTERS - GUIDELINES

The Doctrine for the Protection of the Civilian Population in Israel, as formulated by the Ministry of Defense, is based on the concept of the Protected Space.

The Protected Space is a handy, easy-to-reach, space capable of providing those staying in it, with protection against both Conventional and Non-conventional Weapons for several hours.

Since 1992, every new building or addition to existing building, has, by law, been equipped by an Apartment Protected Space (APS) or a Floor Protected Space (FPS).

It must be built according to engineering specifications given in the Regulations.

The Protected Space area is not counted in the Construction Percentage (as a Main Area).

**In case of an attack** the HFC recommends acting according to the following guidelines:

Wherever Protected Spaces are available, they should be used.

Wherever a well-maintained *sealed* shelter exists, those living in the lower floors should use it, provided they are able to get into the shelter within two (2) minutes from the end of the siren. Those living in the upper floors (those unable to get to the shelter within the above 2 minutes) should select an inner room within their apartment and convert it into a protected and sealed room.

If the house has no shelter, then every tenant should select an inner room within their apartment and convert it into a protected and sealed room by using protection improvement means to existing construction, as explained hereafter.

**When a siren is heard...** Immediate actions to be taken when the siren is heard:

Shut down all electrical appliances and air-conditioners and close all water and gas taps.

Get into the Protected Space, easy-to-reach shelter, or sealed room already prepared for this event, and take with you the protective kit.

Do not leave your apartment for a shelter unless you can reach it within two minutes.

**Note:** You may bring pets with you into the Protected Spaces to protect them.

When all the members of the family have entered the room, complete the sealing of the room by using tapes between the door and the frame and between the frame and the wall.

The space between the door and the floor should be covered with a wet towel.

If you are not home, put on your protective mask and take cover under any protection as quickly as possible.

If you are in a car, stop the car on the shoulders of the road.

In built-up area, get into sheltered area as soon as possible.

If you are in open area, close the doors, windows and ventilation inlets and put on the protective mask.

When at home, it is recommended to leave the main door unlocked, so as to allow rescue units to get in if needed.

### The All Clear Signal

The All Clear signal will be given by slides on the TV and a verbal message on the radio but without sirens. Do not be put on the protective mask unless you receive a specific order to do so on the radio and TV. If you are wearing a mask with blowers, you must verify that the blowers are on and working before putting masks, and that they are off after removing the mask. You should continue to listen to the radio and TV and act according to instructions issued by the security forces.

### **What is a Floor Protected Space (FPS)**

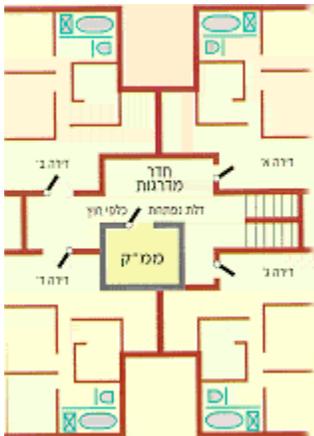
The Floor Protected Space (FPS) is located in the shared area of each floor, adjacent to the staircase. The FPS should serve no more than four (4) apartments and its area is 4-5 square meters per apartment. The Floor Protected Spaces are located one above the other along the full height of the building, and for continuous secured tower.

Each FPS has a blast door which opens outwards, preparations for future installation of the ventilation system and, in addition, lighting and emergency lighting, sockets for electricity, telephone and connection for radio antennae.

Sealed openings, 70X70 cms in cross section, and ladders are located in the intermediate floors between adjacent FPSs. These openings should be used for access and rescue between adjacent FPSs.

The finish of the FPS is with standard tiles (similar to those in ordinary apartments). The finish of the walls is with paint or coating approved by the HFC.

In all cases, regular plaster or similar materials that are not approved by the HFC shall not be used.



### **What is an Apartment Protected Space (APS)**

The Apartment Protected Space (APS) is located in each apartment and is supposed to serve only the tenants of this apartment.

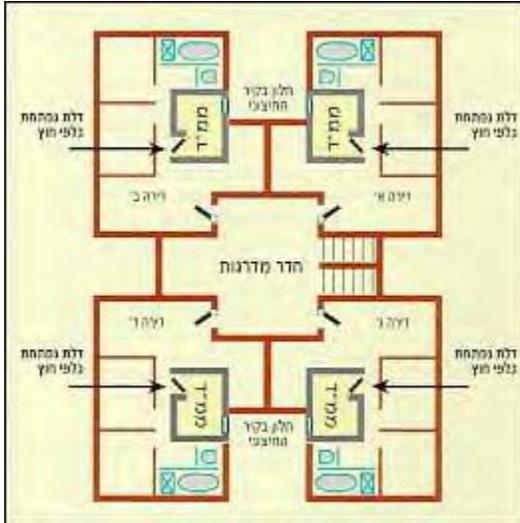
The minimal area of an APS is 5 square meters net per apartment and should not include more than two rooms. The APSs are located one above the other along the full height of the building, forming a continuous series. Each APS has a blast door which opens outwards. The door is located in an inner wall which is at least 1.5 meters from the external wall line parallel to the door.

The APS may have a blast window with maximum area of 1.20 square meters. The lower sill of the window shall be not less than 1.05 meter above the floor. The window opening shall have internal sealed security with an external steel leaf aimed at absorbing the blast loads caused by the detonation.

Each APS has a telephone and connection for TV and radio antennae.

The finish of the APS is with standard tiles (similar to those in ordinary apartments). Finish of the walls is with paint or coating approved by the HFC.

In all cases, regular plaster or similar materials that are not approved by the HFC shall not be used.



## The Shelter

In order to stay in a shelter, you should know the following facts:

Old shelters may be without standard blast doors or blast windows. They must be installed by a proper person. **The shelter must be sealed tight.** Check that the rubber (neoprene) seal in the doors and windows are adequately glued along entire the perimeter of the door or window.

It is recommended to replace those rubber seals after several years.

In addition, cracks in the walls and roofs must be sealed.

## Verifying the sealing of doors and windows

Paint the rubber seal with water-based light color. While the paint is still wet, close tight the door or window. Check the continuity of the paint on the frame. A continuous, uninterrupted and full print of the paint should be seen along the entire perimeter.

If the print is not continuous, it is proof that the sealing is inadequate and the sealing must be replaced.

Clean off the paint after you completed the test.

## Maintenance of the shelter

The shelter shall be kept clean and shall not be used for storage of unused equipment, except equipment removed in a short time.

The Apartment House Committee (AHC) is entitled, by law, to order each tenant to remove his (or her) equipment from the shelter.

The AHC may ask the Security Department or Local Inspection Department of the Municipality (or Regional Council) to force a disobedient tenant to comply with the above law.

Article 14A of the Civil Defense Law, orders the tenants of an apartment house to remove from the shelter equipment that is not being used for the shelter, to keep the shelter clean and to maintain it in good condition, allowing its use at all time as a protection against attack.

The local authority is allowed to remove equipment that is not necessary for use in the shelter, within five days after submitting a written notice to the tenants, or to order the tenants to do all required maintenance within a given time-frame.

Article 24B specifies that offenders are liable to fine and/or arrest.

All access passages to the shelters must be easy to use, and all obstacles should be removed from the entrances.

All combustible materials must be removed from the shelter.

Signs in the shelter and signs directing to its entrances should be periodically renewed.

The water and sewage systems should be checked.

A key for the shelter should be kept by every family in the building.

### Use of the shelter during peacetime

Use of shelters during peacetime is highly recommended. The dual-use of the shelter assures daily use of the shelter by tenants, which improves tenants' adaptation to the shelter during emergency. It is clear that the dual use of the shelter requires approval of all tenants as is standard procedure in all areas and property in apartment houses.

### What can be done in a shelter?

The shelter can be used as play room for the tenants, exercise room, youth club, office for the apartment committee, meeting room for the tenants, temporary synagogue etc.

In order to maintain the shelter and allow an agreeable stay, the shelter should be cleaned, its walls painted, and adequate lighting should be added (fluorescent lighting is recommended) and adequate furniture installed, which may be done during emergency.

It is also recommended to add ventilation, tiles and acoustic ceiling.

### Equipment for protected Space / Shelter

The shelter in an apartment house should be according to the following regulations and one of the tenants is responsible for it. A list of the equipment is here given:

Item	House with 4 apartments or shelter up to 8 sq.m.	House with 16 apartments or shelter up to 32 sq.m.	House with 32 apartments or shelter up to 64 sq.m.	Details
a	b	c	d	f
Small first aid package	1			Personal emergency kit: 10 gauze triangles, 3 gauze bandage rolls, 3 bandages, 1 bag.
First aid package for paramedic		1	1	8 Personal bandages, 8 sticking burn dressings, 8 gauze triangles for stabilizing and slings, 20 dressings, 2 splints, 1 tourniquet, 10 plasters, 10 security pins
Stretcher		1	2	
Drinking water container	40 liters	160 liters	320 liters	PVC or fiberglass
Garbage bags	20	80	160	
Sand bags	15	60	120	For protection of entrances and oil containers
Fire fighting post	1	1	2	

Hand torch for area lighting	1			7 hours, 6 volt battery
Portable torch		1	2	7 hours, 6 volt battery
Chemical toilette		1	2	Plastic container with material and 5 units c powder

A larger shelter shall be equipped with additional equipment as detailed in column C for every 16 apart. Every apartment beyond nine in a building be accorded an additional square meter in the shelter. Water container should be kept in ready-to-use condition. Chemical toilet shall be installed in shelters w standard toilets.

**In the Protected Space, the following items should be included:**

A First Aid Kit containing: bandages, dressings, Iodine, cotton, triangles, scissors, block arteries. In add personal medicines should be kept.

Fire-fighting equipment for protected space / shelters: Extinguisher, Sand bucket, Water bucket, Carpet-Emergency lighting. It is recommended to use lighting fixtures powered by batteries.

Battery-powered radio. This is needed to receive messages during attacks. TV and telephone may be he Portable fan to ease the heat load

Comfortable seating for all people in the shelter (cushions, mattresses, blankets, etc).

Food and drinks: Ready-to-eat food such as canned foods, snacks etc.

Chemical toilets.

List of Important telephone numbers: First Aid (Magen David Adom), Police, Fire Fighters, Information

Cleaning tools: Broom, bucket, rag, garbage bags.

Toys, games and books. It is recommended to prepare a bag with personal belongings and papers for us emergency.

**How to improve protection if your house does not have shelter or protected space.**

You may improve the protection level of the sealed room in the apartment in two ways:

**Permanent solutions:**

Improvements in construction to increase the protection level of the sealed room envelope (walls, ceiling against chemical and conventional weapons.

The construction should be executed by professional, approved contractors, and should be based on specifications issued by the Homefront Command.

**Emergency solutions:**

The execution of such improvements may be done on a Do-It-Yourself basis with simple and available materials. This provides a lower level of protection than the one offered by permanent solutions.

**Important!** The selected room must have a minimal number of openings and external walls.

**Permanent solutions**

Windows: Window frames should be replaced by steel or aluminum frames while anchoring the window to the existing wall.

The glass should be replaced by polycarbonate (plastic material) or multi-layer glass.

Doors: Doors should be replaced with blast doors opening outwards.

Installation should be done based on guidelines published by the HFC.

Strengthening of walls and ceilings: The walls may be strengthened by various methods:

Casting of concrete wall, Maya Durisol blocks or Simca blocks.

Coating the inner side of the wall with ballistic cloth.

Adding an internal protective partition adjacent to the wall (partition may be of laminated wood, steel sl blocks etc).

Coating the external side of the wall with steel sheet, silicate blocks or cut stone.

"Ravitz" ceiling (ceiling made of tensioned light mesh and plaster) may be strengthened with ballistic cl additional sheet metal or laminated wood.

### **Emergency Solutions to be executed during emergency**

If permanent improvements were not carried out during peace time, emergency solutions can still be ma prepare and seal a single room in an apartment, during the emergency period.

Windows: Prevention of fragments in one of the two ways:

Strengthening the glass by coating or gluing sticky plastic materials.

Covering the windows from the inside with an anti-blast and anti-fragment ballistic cloth (blast curtain)

Air-tightness: Gluing bands of adhesive tapes between the glass and frame and between frame and wall.

Gluing adhesive tape at the hinges and handles of the window.

Gluing polyethylene sheet to cover all the window area, and in addition gluing with adhesive tape along perimeter and with two vertical and two horizontal adhesive tapes on the polyethylene sheet.

Doors: Similar to the air-tightness of the windows, the connection between the door's leaf and the frame sealed.

Sealing the opening below the door with a wet rag or towel.

Additional openings (air-conditioner etc): Sealing an ordinary window air-conditioner shall be done wi polyethylene sheets and adhesive tapes along the whole perimeter of the appliance, and in addition with horizontal bands and two vertical bands of adhesive tape on the sheet area.

Sealing all additional openings by gluing adhesive tape or as done to the windows (especially if the ope wide). Protection of glass and glazed material: Protection of glass to prevent glass shards and fragments gluing a security film made from one of the following materials:

Polypropylene, polyester or polyethylene: The recommended thickness of the film is 100 microns.

Five (5) cms-wide adhesive tapes made of propylene.

Method of installation:

The installation must be done on both the inner and outer sides of the glazing.

The window must be cleaned of residues, dust etc.

Gluing of vertical and horizontal bands, with 4 mms overlapping.

The final result is a covering whose thickness is twice that of the thickness of the films and in the area o thickness is four times that of the film.

Materials and quantities: 40 meter of 30 Micron polypropylene adhesive tape of 5 cms width Polypropy whose minimal thickness shall be not less than 100 microns (0.1 mm).

A total of three (3) rolls of adhesive tape and eight (8) square meters of nylon sheet for a sealed room.

Ventilation and filtering system (Collective Protection): The ventilation and filtering system (also know collective protection) provides a solution for the staying of several people in a sealed space for an unlim without the need of donning protective masks.

The ventilation and filtering system is powered by electricity, and during power failure, if there is no ge backup, it can be operated manually.

It is capable of supplying 6 cubic meter of fresh air per hour for each individual in the "filtstate".

The system is based on producing an "over-pressure" (pressure in the Protected Space is higher than the outside Protected Space).

This system must be manufactured and installed as specified according to the standard.



The adequate functioning of the ventilation and filtering system is dependent on the perfect sealing of the Protected Space.

In each standard shelter there are preparations for the installation of the ventilation and filtering system. The ventilation and filtering system operates in two states: Ventilation state / Ventilation and filtering state. The filter in the ventilation and filtering system: The filter's role is to filter out all chemical and biologic agents.

The active carbon in the filter separates the poisonous gas from the air.

A "breakage" in the active carbon layer can create "channels" through which contaminated and poisonous air can pass. Therefore, the filter housing must withstand severe shocks.

Parameters affecting the time for using the filter:

Accumulated amount of air passing through the filter.

Poisonous gas contents in the air.

Relative humidity of the outside air.

Absorption of humidity by the filter reduces its effectiveness and quality.

The contract with the company maintaining the filters states that the company must check the filters once a month.

The size of the system must be so designed that the system shall supply 6 cubic meter of filtered air per hour.

### **Safety Guidelines for Protracted Stay in a protected space, shelter or sealed home:**

Sit adjacent to an inner wall, perpendicular to the outer wall.

Sit as far away as possible from the outer wall and window.

Sit as low as possible, preferably on the floor, and on a mattress or pillow.

Do not sit near an air-conditioner.

It is highly recommended not to heat the room.

Do not use air coolers based on water evaporation, as they cause high increases in the humidity of the air which will reduce the effectiveness of the filters.

Make sure that all members of the family remain awake while they are wearing protective masks.

Do not light a fire or smoke in the room.

It is important to keep the room well-maintained.

Make sure that the adhesive tapes are kept tight.

Renew the food and water supply and verify that the radio batteries are in good condition.

**Remember:** Keeping calm and keeping up morale and obeying all guidelines issued by security forces and members of the family to better cope during their stay in the Protected Space.

**CONTINUE**