

NOTICES OF FINAL SUMMARY RULEMAKING

The Administrative Procedure Act allows an agency to use the summary rulemaking procedure instead of the regular rulemaking procedure for repeals of rules made obsolete by repeal or supersession of an agency's statutory authority or the adoption, amendment, or repeal of rules that repeat verbatim existing statutory authority granted to the agency. An agency initiating summary rulemaking shall file the proposed summary rulemaking with the Governor's Regulatory Review Council and the Secretary of State's Office for publication in the next available issue of the *Register*. The proposed summary rule takes interim effect on the date of publication in the *Register*.

NOTICE OF FINAL SUMMARY RULEMAKING

TITLE 8. EMERGENCY AND MILITARY AFFAIRS

CHAPTER 2. DEPARTMENT OF EMERGENCY AND MILITARY AFFAIRS

DIVISION OF EMERGENCY MANAGEMENT

PREAMBLE

1. Sections Affected

Article 2
R8-2-18
R8-2-19
R8-2-20
R8-2-21
Figure 1
Figure 2
Example No. 1
Example No. 2
Example No. 3
Example No. 4
Example No. 5
Example No. 6A
Example No. 6B
Example No. 7
R8-2-22

Rulemaking Action

Repeal
Repeal

2. The specific authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):

Authorizing statute: 8 A.A.C. 2, Article 2 authorized by Executive Order 69-4 and A.R.S. § 34-441 et seq., which was enacted by Laws 1969, Chapter 85, Section 1. Laws 1995, Chapter 240, Section 15 repealed the authority for these rules.

Implementing statute: There is no implementing statute because the authorizing statute has been abolished.

3. The effective date of the summary rules:

December 21, 2001

4. The name and address of agency personnel with whom persons may communicate regarding the rule:

Name: David Ervine or Louis B. Trammell
Address: Arizona Department of Emergency and Military Affairs
Division of Emergency Management
5636 E. McDowell Road, Building 101
Phoenix, AZ 85008
Telephone: (602) 231-6240
Fax: (602) 231-6231
E-mail: ervined@dem.state.az.us

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5. **The concise explanatory statement, including an explanation of the rule and the agency's reasons for initiating it:**
The rule was designed to establish minimum standards for fallout protection in public buildings, and establish criteria for exemption or waivers from the requirement. The purpose of this rulemaking is to repeal the rules, as the state statute that established them has been abolished.
6. **A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of the state:**
Not applicable
7. **The economic, small business, and consumer impact:**
None required under A.R.S. § 41-1055(D)
8. **The name and address of agency personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement:**
Not applicable
9. **The time, place, and nature of the proceedings for the adoption, amendment, or repeal of the rules:**
No oral proceeding for this rulemaking was conducted, and the agency received no written comments.
10. **An explanation of why summary proceedings are justified:**
The state statute authorizing the rules has been repealed as answered in item #5.
11. **Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:**
None
12. **Incorporations by reference and their location in the rules:**
None
13. **The full text of the rules follows:**

TITLE 8. EMERGENCY AND MILITARY AFFAIRS

CHAPTER 2. DEPARTMENT OF EMERGENCY AND MILITARY AFFAIRS

DIVISION OF EMERGENCY MANAGEMENT

ARTICLE 2. FALLOUT SHELTER REPEALED

Section

- R8-2-18. Authority Repealed
- R8-2-19. General provisions Repealed
- R8-2-20. Definitions and abbreviations Repealed
- R8-2-21. Minimum standards for shelter design Repealed
 - Figure 1. Shelter Ventilation Estimator (Base Portion) Repealed
 - Figure 2. Repealed
 - Example No. 1. Repealed
 - Example No. 2. Repealed
 - Example No. 3. Repealed
 - Example No. 4. Repealed
 - Example No. 5. Repealed
 - Example No. 6A. Repealed
 - Example No. 6B. Repealed
 - Example No. 7. Repealed
- R8-2-22. Exemption or waiver Repealed

ARTICLE 2. FALLOUT SHELTER REPEALED

- R8-2-18. Authority Repealed

EXECUTIVE ORDER

69-4

RELATING TO ESTABLISHMENT OF STANDARDS
FOR PROTECTION AGAINST FALLOUT HAZARDS
IN PUBLIC BUILDINGS

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WHEREAS, under the provisions of Title 34, Chapter 4, Article 2 Arizona Revised Statutes, the Governor is responsible for establishing minimum standards for protection against fallout gamma radiation hazards in buildings constructed by the use of public funds, and for prescribing rules and regulations governing exemption or waiver from the requirements of this law; and WHEREAS, under the provisions of this law, the Governor may delegate any of the authority, powers or duties granted therein;

NOW, THEREFORE, by virtue of the authority vested in me as Governor of the State of Arizona, it is ordered as follows:

- Part I. ~~The Director of the Arizona State Department of Civil Defense and Emergency Planning is hereby delegated the authority and the responsibility for the following:~~
- a. ~~Establishing minimum standards consistent with those established by the Federal Government for the protection against fallout gamma radiation hazards in public buildings.~~
 - b. ~~Prescribing rules and regulations governing exemption or waiver from the requirements of the law.~~
 - e. ~~Revising standards and rules and regulations from time to time, as required.~~
 - d. ~~Filing such standards, rules and regulations, and revisions with the Secretary of State.~~
 - e. ~~Administering the law and administering and interpreting these minimum standards, and rules and regulations.~~
- Part II. ~~The agencies specified in A.R.S. § 34-410, shall be responsible for making application for exemption or waiver whenever appropriate or necessary, in accordance with the rules and regulations governing exemption or waiver as may be hereafter prescribed.~~
- Part III. ~~The Arizona Department of Civil Defense and Emergency Planning shall provide other State agencies and political subdivisions of the State with technical and procedural guidance and assistance in carrying out the provisions of this Executive Order.~~

IN WITNESS WHEREOF, I have hereunto set my hand and caused to be affixed the Great Seal of the State of Arizona.

(SEAL) ~~DONE at the Capitol in Phoenix this 14th day of July in the year of Our Lord One Thousand Nine Hundred and Sixty Nine and of the Independence of the United States the One Hundred and Ninety-fourth.~~

ATTEST: s/ JACK WILLIAMS
GOVERNOR

s/ WESLEY BOLIN
Secretary of State

R8-2-19. General provisions Repealed

- ~~**A.** Pursuant to Chapter 4, Title 34, Article 2, Arizona Revised Statutes, and the authority delegated by Executive Order No. 69-4 dated July 14, 1969, the Arizona State Department of Civil Defense and Emergency Planning (redesignated The Division of Emergency Services) prepared this Article establishing the minimum standards for protection in public buildings against fallout gamma radiation hazards, and the rules and regulations governing exemption or waiver from requirements.~~
- ~~**B.** If any term, part, provision, Section, subdivision or paragraph of these regulations shall be held unconstitutional, invalid or ineffective, in whole or in part, such determination shall not be deemed to invalidate the remaining terms, parts, provisions, Sections, subdivisions and paragraphs thereof.~~

R8-2-20. Definitions and abbreviations Repealed

For purposes of this Article, and unless the text requires otherwise:

1. ~~“Accessory structures” means a structure having a use incidental to that of the main building, attached to it or located on the same premises.~~
2. ~~“Addition” means extension or increase in area or height of a public building or structure.~~
3. ~~“Additional cost” means the cost of all protective construction features designed specifically for the purpose of increasing a building’s capability for shielding its occupants against the effects of fallout gamma radiation.~~
4. ~~“Agency, responsible” means the appropriate agency as specified in A.R.S. § 34-410, responsible for the enforcement of these regulations.~~
5. ~~“Alteration” means any change, rearrangement or addition to a public building or structure.~~
6. ~~“Analyst (shelter)” means an architect or engineer who is certified by the Defense Civil Preparedness Agency (formerly Office of Civil Defense) as having successfully completed the course in Fallout Shelter Analysis.~~
7. ~~“Approved” means approved by the Responsible Agency under the provisions of the law.~~
8. ~~“Architect” means an individual or firm registered by the Arizona State Board of Technical Registration and engaged to prepare construction drawings and specifications for a proposed project, including his consultants such as structural, engineering and shelter analyst.~~
9. ~~“Building” means an individual building, structure or facility, or complex of facilities, including accessory structures, whether or not connected.~~
10. ~~“Building cost” means the total cost of the structural project, exclusive of land, architectural fees, equipment and off-site improvements. In cases involving more than one structure (a complex), it will be understood to mean the total cost of all the buildings within the complex.~~

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11. "Core or core area" means the interior portion of a building that may represent specific shelter areas.
12. "Dual purpose fallout shelter" means a building, accessory structure, addition or alteration having a primary use in addition to fallout shelter use.
13. "Emergency Operating Center (EOC)"
 - a. "Primary EOC" means a facility with fallout protection and the necessary communications from which essentially all emergency functions are directed and controlled by the principal heads of government.
 - b. "Support EOC" means a facility with fallout protection and the necessary staff and communications to provide direction and control for one or more emergency functions; for example, police, fire, or public works engineering.
14. "Essential services" means police, fire, public works, communications, health, welfare and other departments required to perform emergency functions in times of disaster.
15. "Facility". See Building.
16. "Fallout" means radioactive debris of a nuclear explosion that falls to earth in particles.
17. "Fallout shelter" means a building, structure or other real property or an area or portion thereof, so constructed, altered or improved as to provide protection against radiation resulting from radioactive fallout, and having the minimum protection factor specified by these regulations.
18. "Fallout shelter analyst". See Analyst.
19. "Fallout shelter criteria" means the standards of protection against fallout gamma radiation hazards established herein.
20. "Law" means Title 34, Chapter 4, Article 2, Arizona Revised Statutes.
21. "Multi-use space" means a space within a building planned for a primary use, but because of protective features inherent in its design, qualifies for the alternate use as a fallout shelter area.
22. "National Fallout Shelter Survey (NFSS)" means a federal program to analyze large buildings and sub-surface enclosures to identify potential public fallout shelter.
23. "Net Available Area (NVA)" means the floor area of a fallout shelter within the walls of the fallout shelter and available for fallout shelter purposes such as sleeping, eating, food preparation, toilets, storage of food, water, bunks, and other supplies and materials. The net available area does not include the following:
 - a. The floor area occupied by materials or equipment not related to shelter requirements and which cannot be removed in the event of an emergency;
 - b. A service area to a fallout shelter;
 - c. The area required for radiation shielding, baffling, and mechanical and electrical equipment.
24. "Passageway" means space used for access, serving as a means of travel to or from fallout shelters.
25. "Potable water" means water suitable for drinking purposes.
26. "Protected space" means an area of a building or other enclosure which meets the fallout shelter criteria.
27. "Protection Factor (PF)" means a number used to express the relationship between the amount of fallout gamma radiation that would be received by an unprotected person and the amount that would be received by a person in a shelter. An occupant of a shelter with a PF of 40 would be exposed to a radiation dose rate 1/40th (2.5%) of the rate to which he would be exposed if his location were unprotected.
28. "Protection factor categories" means those which the National Fallout Shelter Survey places each shelter space with the following minimum and maximum PF limits:

CATEGORY	PF	CATEGORY	PF
0	10-19	5	150-249
1	20-39	6	250-499
2	40-69	7	500-1000
3	70-99	8	Over 1000
4	100-149		
29. "Public building" means any structure built by the state or any county, city, town or school district of the state with the use of public funds.
30. "Public fallout shelter" means a shelter facility which contains fallout shelter meeting the fallout shelter criteria, for 50 or more persons, for public use in an emergency.
31. "Public funds" means monies available to the state or any county, city, town or school district of the state derived from any source.
32. "Regulations" means the standards and procedures established in this document.
33. "Service area" means an area containing equipment serving a fallout shelter but not included in the net available area.
34. "Shall" is mandatory as used in these regulations.
35. "Shelter analyst". See Analyst.
36. "Shelter area" means the portion(s) of a facility which contains shelter meeting the fallout shelter criteria. A shelter area must contain space for at least ten persons.
37. "Shelter space" means the area required of each occupant of a shelter. See R8-2-21(F) and R8-2-21(G).
38. "Shielding" means material or distance necessary to attenuate radiation, resulting in protection to personnel.

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- 39. "Slanting" means the architectural design technique to incorporate additional shielding without adverse effect on the appearance, function or cost.
- 40. "Standards" means the minimum standards established herein for protection against fallout gamma radiation hazards in public buildings.
- 41. "State" means the state of Arizona.
- 42. "State Department of Civil Defense or the Arizona State Department of Civil Defense and Emergency Planning" means the Arizona State Division of Emergency Services.
- 43. "Waiver" means exemption from the requirements of the law and the standards established herein.

R8-2-21. Minimum standards for shelter design Repealed

A. General. The law requires that fallout shelters shall be provided for at least the anticipated normal occupant load of the proposed facility unless the facility is intended to be used for an EOC or essential services support functions during emergency conditions. However, building design should provide the maximum number of fallout shelter spaces possible commensurate with the size, function and cost of the structure. The standards established in this rule are basic to the development of shelters in public buildings, and are in consonance with recognized architectural and engineering techniques and practices.

B. Responsibility of agencies

- 1. Enforcement of the law is required by public officials specified in A.R.S. § 34-410. Practical compliance with the law is dependent primarily on architectural design. Therefore, responsible agencies should include specific terms in their contracts with their architects that will assure the following:
 - a. Consideration of shelter requirements from the beginning of the conceptual design phase.
 - b. The use of these standards in the design of buildings affected by the provisions of the law.
 - c. That all fallout shelters in buildings governed by these regulations be analyzed by a certified fallout shelter analyst after the preliminary design has been completed, with all pertinent parameters for protection established.
 - d. That similar analysis be made after the final design has been completed if the final design differs materially from the preliminary design in its shelter capability.
- 2. Unless a waiver from the requirements of the law has been granted for a specific building project as provided for in R8-2-22 of these regulations, the responsible agency shall certify to the State Division of Emergency Services that the design of the building complies with the law and these standards. Such certification shall be provided prior to inviting bids for the construction of the building project and may be worded as follows:

"The architectural design of

(Name of building project)

which the

(Name of responsible agency)

intends to

(Construct, enlarge or revise)

to be located at

(Address of building or description of location)

in

(City and/or county)

meets the current requirements established by the Arizona State Fallout Shelter Law and implementing Regulations".

- 3. The certification described above shall be accompanied by a certification of fallout shelter analysis of the proposed building project. The shelter analysis certification shall be provided on a separate drawing or drawings and shall contain, but not be limited to the following information:
 - a. A drawing of each floor of the building which contains shelter space. Each designated shelter area shall be clearly defined. The drawing(s) shall show individual rooms but need be only a single line type at small scale (i.e. 30 or 50 feet to the inch as appropriate).
 - b. The following tabulation:

SHELTER AREA NO.PF CAPACITY

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e. The shelter analyst's certification which shall include his name (printed), certificate serial number, signature and the date signed.

C. Analysis procedures

1. Approved methods of analysis as described in Defense Civil Preparedness Agency Volumes of TR-20 will be used.
2. If computer analysis is desired, input forms may be obtained from the State Division of Emergency Services. The forms will be computer processed by the State Division of Emergency Services without charge. Any number of submittals or resubmittals may be made.
3. Guidance, instructions, and advisory service for design and analysis assistance is available from the State Division of Emergency Services upon request.

D. Protection

1. All public fallout shelter areas shall have a minimum protection factor of 40.
2. All shelter areas intended for emergency operating centers or sub-emergency operating centers shall have a minimum protection factor of 100.

E. Shelter space shall be provided for at least the anticipated normal occupant load of each building or facility but in no case less than a combination totaling 50 spaces. This will be interpreted to mean:

1. Shelter areas that are not large enough to accommodate 50 persons will be used as shelter provided they are connected by shielded passageways.
2. The shelter capacity of the structure will be determined by totaling the various shelter area capacities.
3. The minimum size shelter area within a building meeting the above criteria will have a capacity of not less than 10 persons.

F. Space requirements

1. The minimum net available areas to be provided for each shelter occupant shall be in accordance with the following standards:
 - a. Hospital patients -- 35 square feet per patient.
 - b. Hospital patient care personnel -- 15 square feet per staff member (based on one staff member for 10 patients).
 - c. Emergency Operating Center personnel -- 50 square feet per person.
 - d. All other shelter spaces -- 10 square feet per person.
2. A minimum of 6.5 feet head room shall be provided for all shelter areas.

G. Ventilation

1. General

- a. Space requirements can be considered acceptable only if adequate ventilation exists in the shelter area. The shelter shall have a ventilation rate sufficient to maintain a daily average effective temperature (ET) of not more than 82°F (28°C) for at least 90 percent of the days of the year. ET is an empirical index which combines in a single number the effect of temperature, humidity, and air movement on the sensation of warmth or cold felt by the human body (definition is by the American Society of Heating, Refrigeration and Air Conditioning Engineers). To prevent air vitiation the minimum rate of fresh air supply shall be a minimum of 3 cubic feet per minute per shelter occupant except that the maximum daily average effective temperature requirement of 82°ET for 90 percent of the days is an overriding requirement. The minimum recommended shelter temperature to be maintained during the occupancy period is 50°F (10°C).
- b. The National Shelter Survey Program assumes that all commercial power will be off during the time of a major emergency. Therefore, all below ground or first floor windowless areas must be analyzed to determine the amount of natural ventilation available in a shelter area to sustain life. The natural ventilation analysis will be performed for all basement areas, irrespective of apertures.
- c. This is not to imply that when a ventilation analysis is performed for a basement, the lesser number of spaces will result from the ventilation analysis as compared to spaces based on area, i.e., 10 sq. ft. per space. The basement might have sufficient windows, doors, etc., to provide enough air to support all the spaces the area will hold. If the natural ventilation indicates that there is enough air to support all the people that the area can house, based on 10 sq. ft. per person, the shelter capacity will be based on usable area. If the natural ventilation analysis indicates that the available air can support only a portion of the people who could otherwise be housed based on area, then the capacity will be as limited by the available air, since it will be the lesser value.
- d. If the building has auxiliary power and sufficient fuel in storage to operate the power equipment for seven days, the shelter capacity can be based on area, i.e., 10 sq. ft. per space. It is essential that the power be sufficient to operate the ventilation equipment in the below ground or above ground windowless area. The use of air conditioning to maintain the ET within accepted tolerances may be considered only if adequate auxiliary power is available for sustained operation.
- e. An analysis procedure has been developed for providing a uniform method of estimating ventilation.

2. Ventilation concepts

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- a. Warmed air rises — is forced upward by cooler air.
- b. There must be an upward escape route — above the point where the air is heated.
- e. Shelter occupants are the heat source, and air flows to them.

3. Parameters

- a. Zonal cubic feet per minute (C.F.M.) requirements. Zonal requirements in C.F.M. of ambient air have been established for every area in the United States. These fresh air zonal requirements are adequate to control the effective temperature in shelters for the acceptable percentage of time.

County	CFM	County	CFM
Apache	10	Mohave	15
Cochise	15	Navajo	10
Cocoonino	10	Pima	15
Gila	15	Pinal	15
Graham	15	Santa Cruz	15
Greenlee	10	Yavapai	15
Maricopa	20	Yuma	20

Interpreted, the above listings for the state of Arizona indicates that in Apache County, there must be at least 10 C.F.M. of fresh air per person, if an effective temperature is to be maintained in the shelter for the acceptable percentage of time.

- b. Area. The net clear openings that function together as inlets and outlets. Inlet and outlet areas must be equal and the sum of the two is used in ventilation analysis. These are limited to the area remaining after deducting any unusable or ineffective portions, e.g., as in windows, the gross area minus all area obstructed by the frame and sash, or the open area if only all glass is removed.
- e. "D" distance. The average distance along the path air must travel from an aperture to the midpoint of a shelter area, and back to the aperture.
- d. Height difference (ΔH). The difference in the heights of the highest effective head and the lowest effective sill heights in an analysis or computation of a single path. The head is measured where the air reaches outside of the structure, and is the top or highest point in an opening, e.g., the top of a window or door opening. Sill heights are the bottom or lowest point in an opening, e.g., the bottom of a window or door opening.

4. Basic air flow patterns

- a. Single opening. When a shelter area is served by only a single opening, or more than one identical opening, each opening functions as both inlet and outlet. See Example 1. While the inlet portion may be below the shelter floor, the outlet area must be entirely above the shelter floor. As the inlet and outlet are equal, the maximum effective area (inlet plus outlet) cannot be more than twice the area above the shelter floor.
- b. Two or more openings. When two dissimilar openings with equal effective areas (Example 2) serve a shelter area, the one with the highest head height is considered the outlet and the one with the lowest sill height is considered the inlet. When two or more openings with unequal effective areas serve a shelter area (Example 3 and Example 4), the lower opening functions as inlet with the highest as outlet. If ΔH is less than 10 feet, one half of the total net openings function as inlets and the other half as outlets. If ΔH is 10 feet or greater, those areas with ΔH of 10 feet or more must be analyzed separately from those with ΔH of less than 10 feet. In such as Example 3, where the smaller of two openings is the higher, one computation is made with the area of the window considered to function with an equal area in the lowest portion of the doorway, and in this particular example, ΔH is 11 feet. The remaining portion of the doorway is analyzed separately with a ΔH of less than 10 feet. Note that no correction is made for values of ΔH which are less than 10 feet, and in such cases, the specific value of ΔH is unimportant. Example 4 is similar to Example 3, except that it shows the lower opening to be the smaller.

5. Parameter limitations

- a. Example 5. The effective height of inlets is determined by the openings at the outside of the structure when the opening is above the shelter floor. The shelter floor is the effective height of any inlet below the shelter floor.
- b. Examples 6A and 6B. When an area is served by an outlet above the shelter story, the outlet height is limited by the closest opening(s) having area at least equal to the lesser of (1) the limiting effective area in the inlet or (2) the limiting effective area in the outlet. Example 6A shows window B in the stairway with a net area equal to or greater than the door area which serves as an inlet. Example 6B shows a situation where window B in the stairway is not as large as the inlet doorway. In this case the window B in the story above the shelter also functions with the inlet doorway in the shelter, as it is the next closest available outlet. Due to the difference in ΔH , two computations are required.
- e. Example 7. Do not use a value of ΔH established by 10% or less of the openings, either inlet or outlets, as the value of ΔH in a single computation. When such a condition exists, more than one computation is required to assure that representative values of ΔH are used with corresponding areas.
- d. Limitations on "D" distance. Distances may be averaged if
 - i. All distances in the computation are less than 50 feet, or
 - ii. The shortest distance is at least one half of the largest distance.

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- 6: Shelter ventilation estimator (slide rule)
- a: A circular slide rule has been developed to facilitate computation of the maximum number of ventilated shelter spaces. When the shelter area is subdivided into rooms, the ventilation analysis must be accomplished on a room-by-room basis, starting with a room closet to outside air and having exterior apertures. When more than enough air exists in one room, it can be used in adjacent rooms. Additional calculations would be necessary in order to determine how much of the extra air could pass through the limited area of the door.
 - b: The following step sequence demonstrates the use of the slide rule:
(NOTE: Cut out and assemble the printed circular slide rule which is at the rear of this unit).
 - i: Place pointer marked "area" at the number of net square feet of aperture considered to serve the room being analyzed.
 - ii: Read the maximum vent spaces on the outer ring adjacent to the applicable C.F.M. requirement.
 - iii: When the "D" distance exceeds 100 feet, place the "index" arrow at the number of vent spaces from ii. above, and read the adjusted number opposite the "D" distance. This will reduce the spaces previously computed, acknowledging that increased distance adversely affects ventilation.
 - iv: When " ΔH " exceed 10 feet, place the "index" arrow at the number of spaces computed in ii. or iii. above, and read the corrected value opposite the " ΔH " value on the scale. The adjusted figure should be higher. The shelter ventilation estimator is based on average conditions of " ΔH " equal to 7 feet, and in reality the number of shelter spaces based on ventilation could be increased by adjusting for " ΔH " greater than 7 feet.
 - c: The shielding analyst should determine the number of shelter spaces based on usable area in each room, before a ventilation analysis is completed. The limiting capacity of each room is the smaller of:
 - i: Spaces based on usable area.
 - ii: Spaces based on available ventilation.

SHELTER VENTILATION ESTIMATOR

Instructions:

- 1: Cut along the outer circle including the tab.
- 2: Center this section directly on the base portion (Figure 1-2), and insert a pin through both centers. Area where pin is inserted should be reinforced with tape.
- 3: The upper section should rotate freely above the base portion.

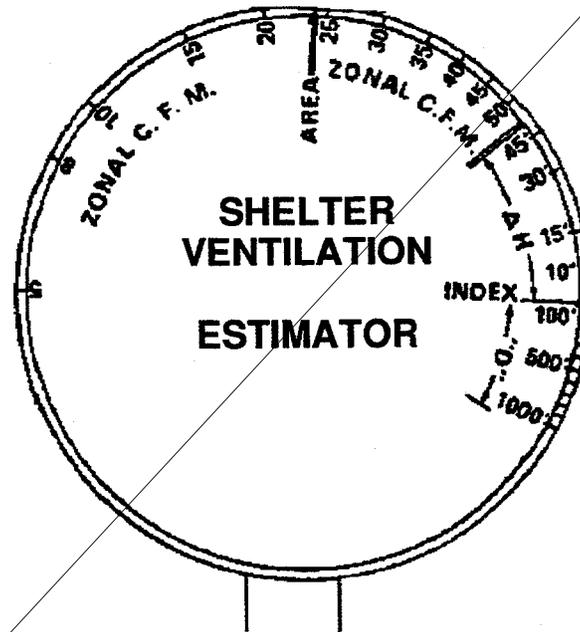


Figure 1

SHELTER VENTILATION ESTIMATOR

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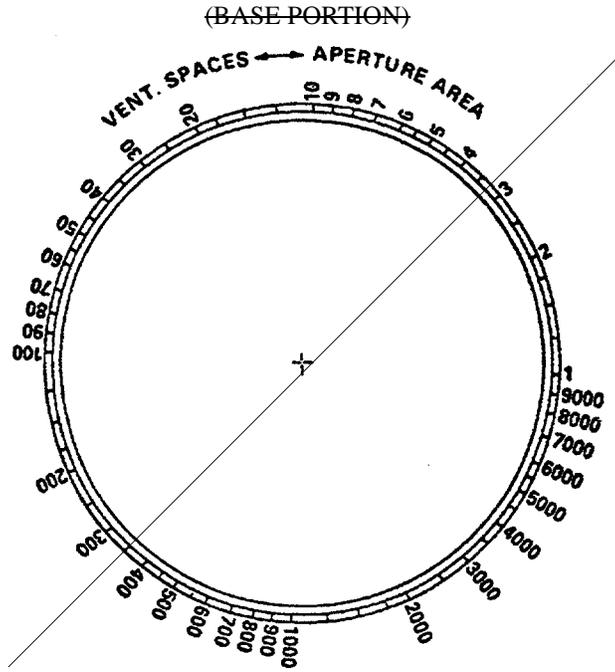
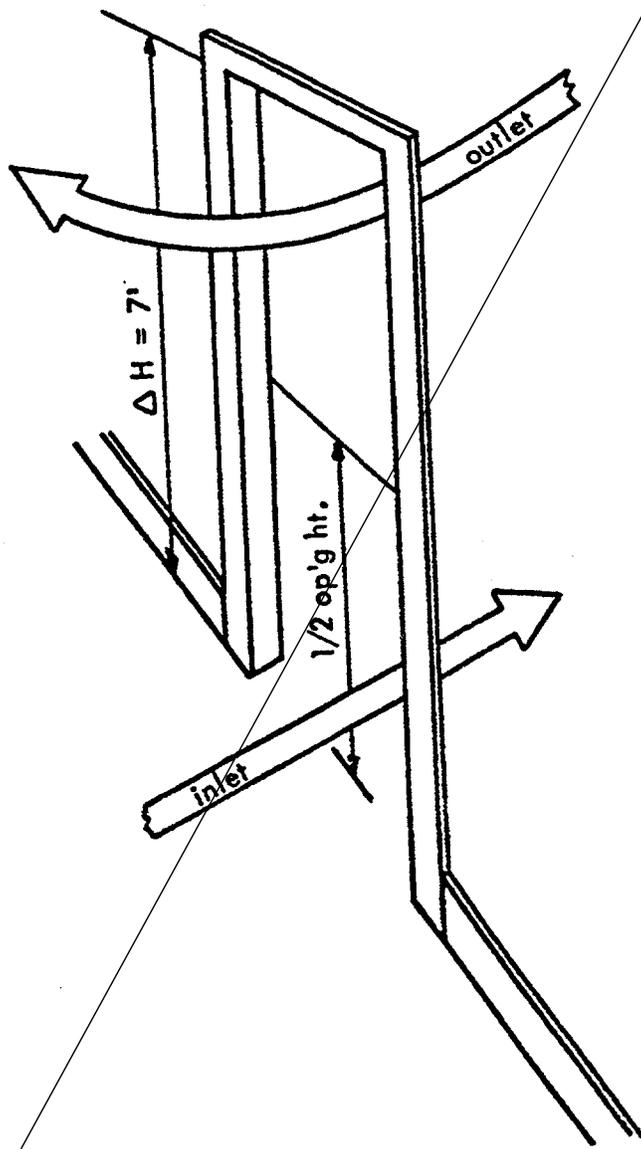
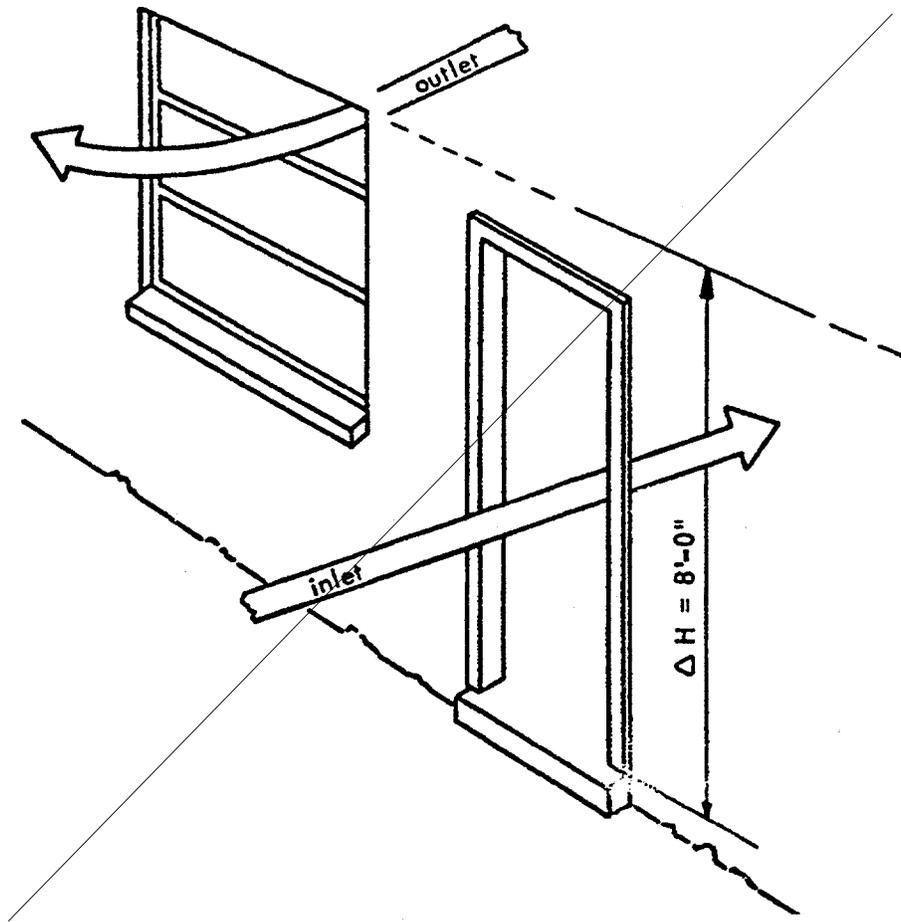


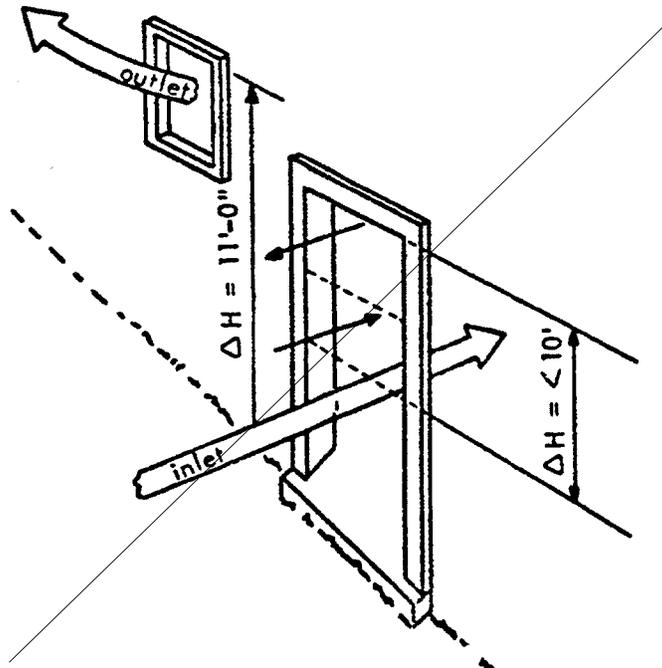
Figure 2



Example No. 1

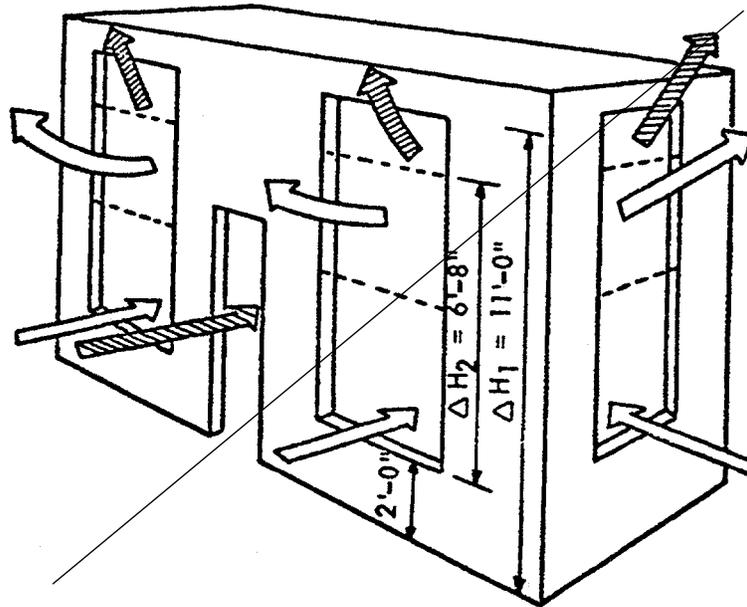


Example No. 2

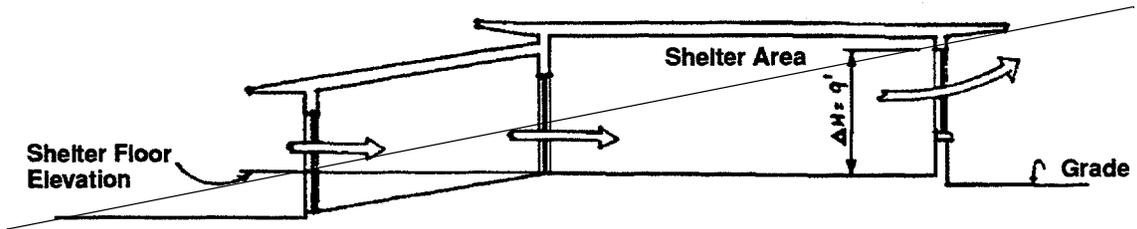


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Example No. 3

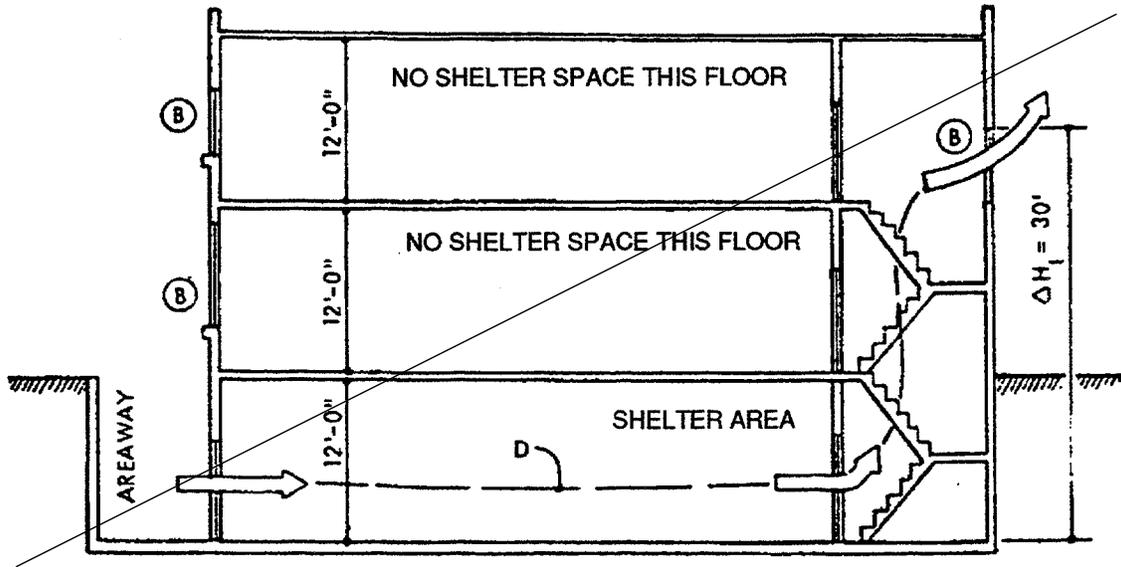


Example No. 4

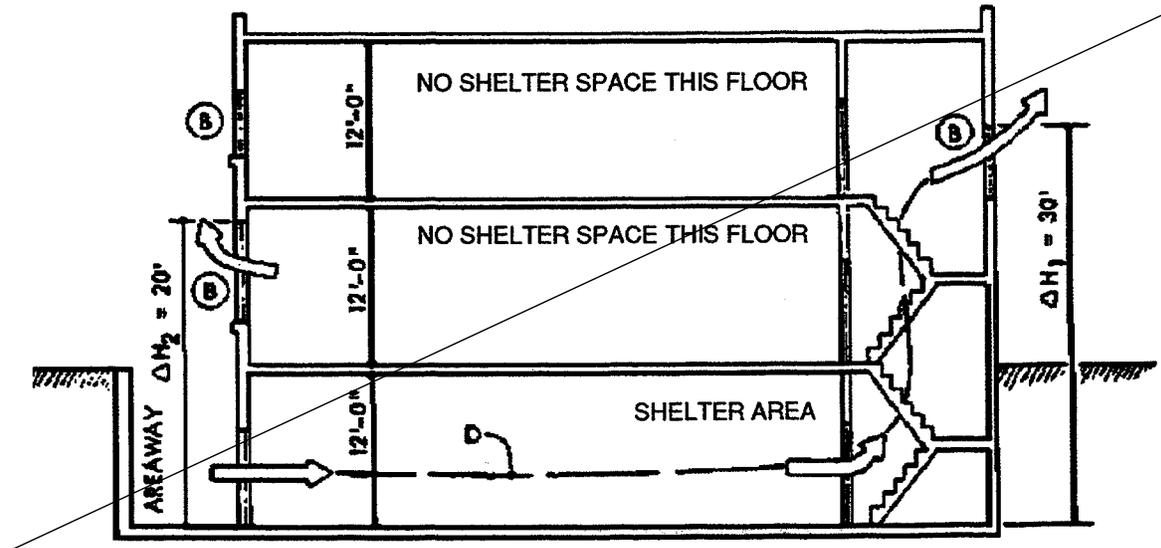


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Example No. 5

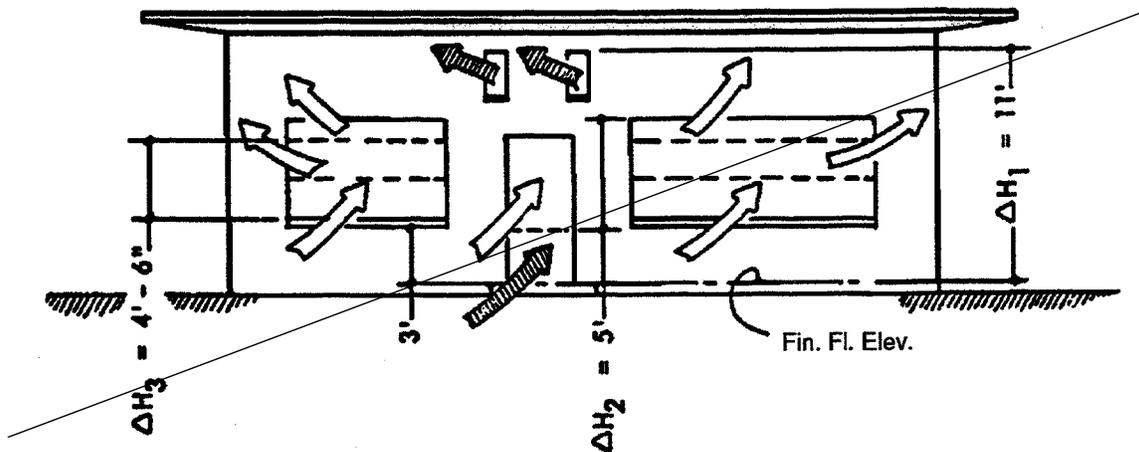


Example No. 6A



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Example No. 6B



Example No. 7

H. Construction standards

1. In general, conventional methods of design and construction for concrete, wood, steel, brick, structural tile and other products shall be followed. Allowable stresses and/or load factors as defined in the applicable codes shall be used.
2. The shelter features shall be designed for the useful life of the facility.
3. Provisions shall be made to assure the shelter interior will remain reasonably dry.
4. To the extent practicable, hazardous utility lines, such as steam, gas and electric power, shall not be located in or near the shelter area unless provision is made to control such hazards before the shelter is occupied.
5. All shelters shall be constructed to minimize the danger of fire from both external and internal sources.
6. Features solely for the purpose of blast protection need not be provided. Measures which increase the blast protection potential of the shelters are not covered by these regulations.
7. Dampers for the ventilation system shall be adjustable, where possible, to provide the maximum amount of fresh air directly to the shelter areas in time of emergency.

- I.** Normal facilities may be utilized for sewage disposal, if provisions have been made to keep the systems operable under attack conditions on the basis of one per 50 occupants and should be available in the shelter or in a nearby area where they can be reached and used.

R8-2-22. Exemption or waiver Repealed

A. Responsibility

1. The specific purpose of the law is to develop fallout shelter protection for the people of Arizona. Those charged with its enforcement (specified in A.R.S. § 34-410) shall consider every feasible means for satisfying this requirement. Many exemptions, if granted, will deprive certain citizens of protection. It is not the intent of the legislature nor the purpose of the law for public officials to contrive means by which exemptions can be justified; rather, it is the intent that gamma radiation shielding be provided in public buildings. Therefore, those charged with enforcement of this law shall require that fallout protection become one of the elements for consideration by their selected architects in the conceptual phase of planning.
2. Those state officials charged with considering exemptions shall be guided by the same basic concept set forth above; that public protection is the objective.
3. The agencies responsible for the enforcement of the provisions of the law shall also be responsible for making application for waiver whenever necessary.

B. General procedure

1. If it becomes necessary to exclude a public building from those new buildings which will have fallout protection, an application for waiver from the required provision shall be submitted at the earliest possible time after impelling reasons become apparent.
2. Applications for waiver shall be in writing:
 - a. On official stationery of the responsible agency.
 - b. Addressed to the Director, Arizona State Division of Emergency Services.
 - c. Signed by the head of the responsible agency.
3. All applications for waiver shall, in addition to the other required information, include the following concerning the proposed project:
 - a. Name and/or description.
 - b. Location.

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- e. Estimated construction cost.
- d. Substantiating reasons for the request of waiver.
- ~~C. Waiver from the requirements of these regulations is automatic and no application for waiver is required when the total cost of the proposed building, alteration or modification is less than one \$1000,000.~~
- ~~D. If it is determined that the total cost of the building, alteration or modification will be \$100,000 or more but less than \$450,000, a waiver from the requirements of the law will be granted upon receipt of a letter establishing this fact. In addition to the information required under R8-2-22(B) "General procedure", the request must include a certification of the maximum total construction cost of the proposed project.~~
- ~~E. Additional cost more than 3%
 1. A waiver from the requirements of providing shelter for at least the anticipated normal population of a building will be granted when it can be established that the inclusion of such protected space in the building will create an additional cost of more than 3% of the total building cost, exclusive of land, architectural fees, equipment, and off-site improvement. If shelter spaces are proposed for less than the normal anticipated population such facts should be included in the application for waiver.
 2. In addition to the requirements established under R8-2-22(B) "General procedure", the request for waiver shall clearly state all the conditions peculiar to the proposed project, including substantial evidence that every effort has been made to incorporate fallout shelter features into the proposed building. A detailed description of the various considerations investigated must be furnished together with an analysis of the facility's fallout shelter capacity. Certification by a fallout shelter analyst will be required as well as a certified cost estimate from preliminary plans. Architectural drawings pertinent to shelter analysis, that have been completed at the time the request is made, shall also accompany the application.~~
- ~~F. Shelter impracticable
 1. If shelter in a proposed facility is considered to be impracticable because of peculiar circumstances, a waiver from the requirements of the law may be granted. The application for waiver must clearly state the reasons for which the incorporation of a fallout shelter into the facility is considered impracticable.
 2. Additional information might be required before waiver can be granted or denied.~~
- ~~G. Before proceeding with the preparation of plans for a project, the responsible agency may contact the State Division of Emergency Services to ascertain whether the development of shelter is necessary in the geographical area of the proposed project. If shelter is determined to be unnecessary, the Director of the State Division of Emergency Services may issue a waiver upon receipt of a written application.~~
- ~~H. A waiver from the requirements of the law shall be granted when it can be established that inclusion of protected space in a building will impair the purpose or effectiveness of the building. The application for waiver shall state in detail the basis for conclusion that the purpose or effectiveness of the structure would be impaired.~~