

# Basement Guidelines

[Initiated June 6, 2003]



## APPLICABILITY –

These guidelines were developed to assist municipalities in applying uniform standards with regards to basement installations. These guidelines and interpretations, herein, may be changed, updated, or corrected at any time at the discretion of the authority having jurisdiction (AHJ) without correcting or republishing this handout. The AHJ is the local building enforcement agency. These guidelines are not intended to be exhaustive in scope, nor should they be deemed to supercede requirements of the AHJ. Codes referenced are the California Building, Electrical, Plumbing, and Mechanical Codes (CBC, CEC, CPC, and CMC).

## DEFINITIONS –

- Basement** – Basement is any floor level below the first story in a building, except that a floor level in a building having only one floor level shall be classified as a basement unless such floor level qualifies as a first story. *“Basement” is differentiated from “under-floor area (UFA).”*
- Under-floor area** – Under-floor area (a.k.a. *“crawl space”*) is the space below the first story in a dwelling that has a ceiling height less than 7’ 0”, measured from the floor surface to the bottom of the floor joists above.
  - Exception 1:** A space below the first story in a dwelling having a ceiling height greater than 7’ 0” may be considered an UFA when the natural grade in the under-floor space slopes more than two percent due to hillside topography. In these cases, the area may be considered an UFA due to its non-usability features of not having a level floor surface.
  - Note 1:** Once a sloped UFA (*or portion of such area*) is excavated to achieve a ceiling height of 7’ 0” minimum and the space contains a relatively level floor surface (< 2%), then the space will be considered a basement.

## ALLOWED USES –

- Basements** may be used for habitable or non-habitable use and must comply with **all** applicable CBC code requirements. For example: headroom clearances - per sec. 310.6.1; light & ventilation requirements - per sec. 1203; exiting - per Chapter 10; emergency escape and rescue - per sec. 310.4
- Under-floor areas** are considered restricted-use areas and such areas **may only** be used for the placement of permanently installed equipment that services the dwelling (i.e. HVAC). **Note** - Equipment areas must have access for servicing as required by code. Plumbing fixtures are not allowed in an UFA except for fixtures that specifically relate to permanently installed equipment serving the dwelling. UFAs may not be used for any living purposes, including sleeping rooms, offices, cooking, bathrooms, laundry rooms, workshops, entertainment rooms, and other similar uses. The UFA is not allowed to be conditioned space. UFAs shall have outside ventilation per CBC sec. 2306.7 (1 sq. ft./150 sq. ft. of floor area).

### General Note:

When a basement or UFA is not intended to be habitable space per CBC definition, then the space cannot be finished to look as if it were going to be used as habitable space. Therefore, in other than habitable space areas, electrical receptacles and lighting outlets will be limited in such areas at the discretion of the AHJ. For example, lighting in such non-habitable spaces could be limited to minor general lighting for the space and for service lighting at permanently installed HVAC equipment.

## ACCESS –

- Basement Access** – Stairways and ramps providing access to a basement shall be in compliance with the CBC.
  - Note 1:** Some jurisdictions require basements to have integral access through the house per local zoning regulations.
- Under-floor Access** – is required by CBC sec. 2306.3. The under-floor access opening shall be 18" x 24" minimum. However, if there is equipment in the UFA, then the opening shall be sized to allow removal of the largest piece of equipment, but in no case shall the access opening be less than 22" x 30".
  - Note 1:** If desired, the UFA may have access by a ladder, stairway, or ramp.
  - Note 2:** Stairways and ramps providing access and egress to basements and UFAs shall be in compliance with the CBC.

## EXITS –

- Basement Exits** – Basements shall have at least one code complying **exit**. The exit shall be either through the house or directly to the outside by way of a door.
  - Two exits are required in basements as follows:**
    1. In basements 3,000 square feet or larger per CBC Table 10-A (*based on an occupant load factor of 300 for dwellings*) **OR**
    2. Where there is fixed seating of 10 or more (i.e. - *home theaters*) **OR**
    3. On every basement level below the first basement level (in *multi-level basements*)
  - Note 1:** When two exits are required, at least one of the two exits on each level shall communicate directly to the outside.
- Under-floor area Exits** – UFAs are not required to have code-complying exits. Exiting from these spaces can be through the access opening.

## EMERGENCY ESCAPE or RESCUE –

- Basements** - CBC sec. 310.4 stipulates that **all basements and every sleeping room below the fourth story** shall be provided with a means of emergency escape or rescue.
  - Exception 1:** Emergency escape or rescue is not required when there is a code complying exit directly to the outside **and** there are no sleeping rooms in the basement.
  - Exception 2:** Emergency escape or rescue is not required in a basement when the *“usable space”* in the basement is less than 70 square feet.
  - Note 1:** The space required for stairways, landings, and permanent equipment servicing the dwelling (*including the working space required to service said equipment*) shall not be considered as usable space.
  - Note 2:** The code does not specifically address the scenario regarding distance separation of a single exit from an emergency escape in a basement, however, it is advisable to separate the means of escape in a basement as much as is **practicable**.
- Under-floor areas** - emergency escape or rescue is not required from an UFA.

**WINDOW WELL REQUIREMENTS – [Dimensions, Guardrails, Ladders, Drainage, Security devices & Covers]**



**Light well/window well Dimensions –**

1. The **width** of a light well shall not be less than 30 inches in width (*the distance out from the house*) per CBC Section 1204.
2. The **length** of a light well shall not be less than the length of the window it serves.
3. **Window well openings must equal or exceed the aggregate window opening size at grade level**, but shall not be less than the minimums specified in the code.  
Example 1 - A 12' x 10' playroom is located in the basement and requires 12 square feet of natural light. In addition to a 12 square foot min. window in the basement wall, the open and unobstructed area of the light well at grade level must equal or exceed 12 square feet (30" wide x 4' 9 1/2" long).  
Example 2 - An 8' x 10' bedroom is located adjacent to the room described in Example 1. The design includes one light well to serve both rooms. The minimum required open area at grade level is 12 square foot (EX. 1) + 8 square foot (EX. 2) for a total of 20 square feet. The minimum size of the light well in this example is 36" wide (*emergency escape/rescue requirement*) x 6' 8" long.
4. **Emergency escape or rescue window well dimensions –**  
CBC sec. 310.4 states, "The clear horizontal dimensions (*of the emergency escape window well*) shall allow the window to be fully opened and provide a minimum accessible net clear opening of 9 square feet, with a minimum dimension of 36 inches."
5. **Projections** in light/window wells are not allowed (*excluding ladders/landings*) where such projections restrict required natural light and/or impede emergency escape or rescue. Projections above the light/window well must provide a minimum overhead clearance of 7'0" measured from grade level.
6. Encroachment of ladders/landings must be considered in the natural light calculation and the window well must be sized accordingly.



**Guardrails –**

Code complying guardrails are required around light wells when the depth of a well exceeds (30) thirty inches at any point.



**Ladders –**

These specifications apply to all emergency escape or rescue window wells where the depth of the window well exceeds 44 inches, measured from the standing surface of the well to the finished grade.

1. Ladders shall be permanently affixed.
2. Ladders shall extend from the floor surface of the window well to the finished grade.
3. Ladders shall be accessible with the window in the fully open position.
4. Ladders shall not encroach into the required dimensions of the window well by more than (6) six inches.
5. Ladders shall be at least (14) fourteen inches in width.
6. The first rung shall not exceed (14) fourteen inches above the standing surface of the window well.
7. The rungs shall be uniformly spaced and shall not exceed (14) fourteen inches on center spacing with a 3/8" maximum tolerance for the entire length of the ladder.
8. The minimum toe space shall be (6) six inches.
9. **Landings** shall be incorporated into the ladder design when a window well exceeds twelve feet in height.
  - 9.1 The first landing shall be no higher than (12) twelve feet from the standing surface of the window well to the top of the landing.
  - 9.2 For window wells deeper than 12' 0" but less than 24' 0", the landing shall be installed at the midway point of the well.
  - 9.3 Landings shall not be more than (12) twelve feet apart.
  - 9.4 Landings shall be (9) nine square feet (min.) with no dimension less than 36 inches.
  - 9.5 Ladders and landings shall be designed to support a minimum of 500 pounds.
10. Ladders and landings shall be constructed of materials that are suitable for exterior use.



**Drainage –**

CPC sec. 306.2 states, "...light wells or similar areas having rain water drain, shall discharge to the outside of the building ..."

1. Light wells subject to rainwater collection shall be designed to discharge by gravity into drywells or leach fields or by mechanical means such as with lift stations or sump pumps.
2. The floors of window wells shall be sloped to an approved drain or sump.
3. When sump pumps are used, piping materials and installation methods shall be in compliance with the California Plumbing Code (CPC).
4. Pumped drainage systems shall discharge to the outside of the building in a manner as approved by the AHJ. Pumped water shall not drain onto adjoining properties.
5. Consideration should be given to removing collected water in such a manner as to keep water away from any structures and to not cause topsoil erosion.



**Security Bars, Grilles, Grates, & Covers –**

These may be used for security purposes and/or for keeping water out of the well and may be used in lieu of guardrails provided:

1. Covers & security devices over emergency escape window wells are easily operable from the inside of the well without the use of special knowledge, tools or keys and, when required by the AHJ, an opening assisting device (*such as spring loading*) shall be employed.
2. The owner maintains efficient and smooth operation of all such removable covers and security devices to insure their reliable operation for the life of the cover or device.
3. Covers & security devices shall be designed to support actual and/or anticipated loads. For example, covers and devices which are accessible to foot traffic and contain "*standing surfaces*", shall be designed to withstand 40 lbs. per sq. ft. (min.).
4. The minimum clear opening at grade level for window wells used for emergency escape or rescue shall be (9) nine square feet with a minimum dimension of 36 inches.
5. When a cover or security device is utilized at an emergency escape or rescue well, a permanent sign, as approved by the AHJ, shall be affixed to the home adjacent to the well stating, "**EMERGENCY ESCAPE & RESCUE WELL – DO NOT BLOCK.**"
6. When a cover or security grille is used at emergency escape and rescue window wells, it may not be apparent to a person looking up at the cover or device that they can readily exit the window well in an emergency. Therefore, a permanent sign, as approved by the AHJ, shall be affixed to the wall adjacent to such windows stating, "**EMERGENCY EXIT.**"

####