

FINISHED BASEMENTS

Basements are portions of the structure below grade and typically come two ways. One is a walk out style, having a stairway to the first floor and a door exiting to grade. The second is a standard basement with only one exit via a stair to the first floor.

HEALTH & SAFETY ISSUES

Exiting requirements. Only when bedrooms are present in a basement are two means of egress needed. The State of Wisconsin requires that exiting be provided as follows: (1) A door to the exterior of the dwelling, (2) Stairway or ramp to first floor (3) An egress window located in each bedroom.

Egress windows shall comply with the following:

(1) Window shall open from the inside. (2) The nominal size shall be at least 20 inches by 24 inches. (3) The lowest point of the clear opening shall be no higher than 46 inches above the floor or a level platform 20 inches wide, 9 inches deep and 24 inches high. An egress window with any point of clear opening below grade shall be provided with an egress area equal to the width of the window and 36 inches deep measured perpendicular from the wall. The bottom of the area shall not be more than 46 inches below adjacent grade, unless the area is provided with a ladder or at least one additional step to aid egress.

Ventilation requirements. When the basement space is utilized for living space as in bedrooms, recreation rooms, or home offices, ventilation becomes an important issue. Basements can trap unwanted gases, such as carbon dioxide, radon and carbon monoxide. The State of Wisconsin addresses this issue by requiring natural or mechanical ventilation as follows:

- (1) Natural ventilation shall be satisfied by having enough net area of openings to the outside air, such as windows and doors. The open area of these items shall equal a minimum of 3.5% of the net finished floor area.
- (2) Mechanical Ventilation. This method of ventilation is utilized if the net area of the openings cannot satisfy the natural ventilation method. The State code requires that the volume of air within the finished area be exchanged once every hour. This may be accomplished by different methods. One method is the use of air-to-air exchanger. The device will exhaust air, bring in fresh air, temper air and disperse it in the habitable space. See your local HVAC contractor for details. Another method is to size an exhaust fan and provide a fresh air intake duct with a self-closing louver on it to balance the room. The fan can be sized by utilizing this formula. Finished area of space (sq. ft) X ceiling height (ft) = Cubic Feet of the space. Take this total and divide by 60 minutes. This equals cubic feet per minute (CFM). This is the required amount of exhaust needed.

COMPARE	
toxic gasses below [by atomic weight] to Oxygen	
ATOMIC	
WEIGHT	
OXYGEN	16
CARBON DIOXIDE	44
CARBON MONOXIDE	28
FORMALDEHYDE	30
RADON	222
VINYL CHLORIDE	63