This is reprinted from Vol. 1 of the Wisconsin State Electrical Code (PSC 114.317) (Dates back to 1965).

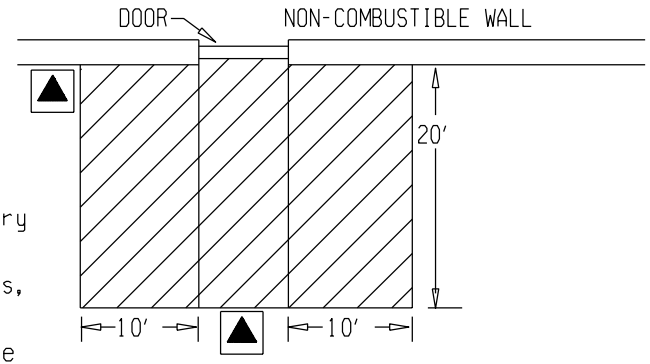
This is not required by code in Michigan but is a design standard for WPSC/UPPCo.

I NON-COMBUSTIBLE WALLS

Padmounted oil insulated transformers may be located directly next to non-combustible walls, but not closer than 3 ft. (Company policy), if all of the following clearances are maintained from doors, windows and other building openings.

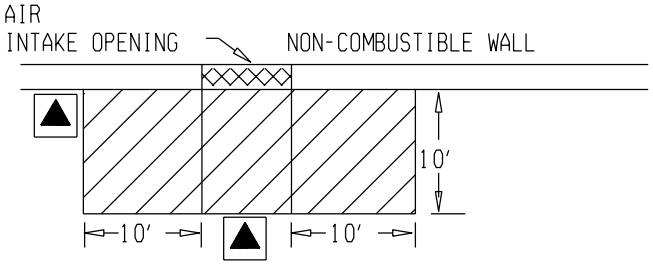
Definition

For the purposes of this section, combustible walls are walls of Type No. V buildings as determined by Construction Classification IBC Chapter 6 (WI Bldg. Code). All other walls are considered to be non-combustible. Non-combustible cases involve substantial masonry and certain heavy timber type of structures. Brick and wood stud wall combination, pole sheds, sheet metal buildings, conventional 2 x 4 style wood construction, and styrofoam formed concrete wall construction are considered to be combustible.



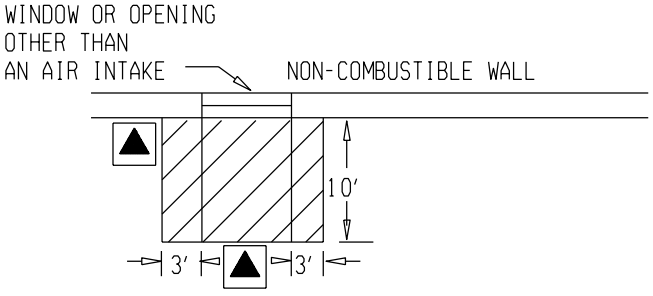
A. DOORS

Padmounted oil insulated transformers shall not be located within a zone extending 20 ft. outward and 10 ft. to either side of a building door.



B. AIR INTAKE OPENINGS

Padmounted oil insulated transformers shall not be located within a zone extending 10 ft. outward and 10 ft. to either side of an air intake opening. Such transformers may be located within said zone beneath an air intake opening provided there is not less than 25 ft. diagonal between the transformer and said opening.



C. WINDOWS OR OPENINGS OTHER THAN AIR INTAKE

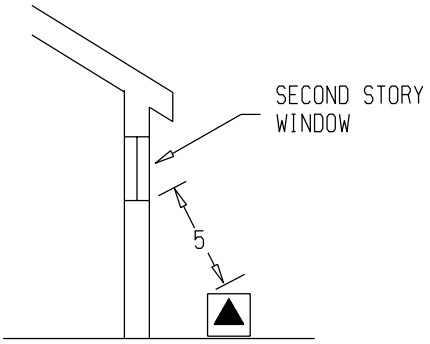
EXCEPTION. These window clearances do not apply to glass block or fire windows meeting the requirements of the WI Commercial Building Code (Fire Window, IBC Chapter 7, section 714.3).

1. First Story

Padmounted oil insulated transformers shall not be located within a zone extending 10 ft. outward and 3 ft. to either side of a building window or opening other than an air intake.

2. Second Story

Padmounted oil insulated transformers shall not be located less than 5 ft. from any part of a second story window or opening other than an air intake.



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II. COMBUSTIBLE WALLS

A. Padmounted oil insulated transformers in sizes up to and including 100 KVA shall be located according to the provisions set forth for non-combustible walls.

Note: Installations with 75KVA three phase padmounts should be designed with upgrades to 150KVA in mind.

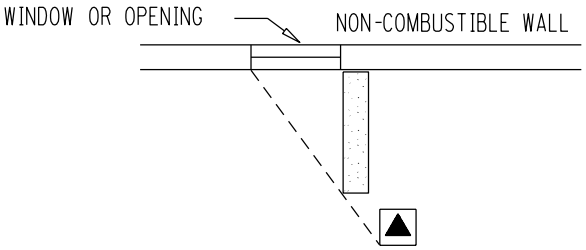
B. Padmounted oil insulated transformers in sizes above 100 KVA shall be located a minimum of 10′ from the building wall, in addition to the clearances from building doors, windows and other openings set forth for non-combustible walls. Also, a sump shall be installed for transformers in sizes exceeding 500 KVA if the immediate terrain is pitched toward the building. Contact Electric Distribution Engineering Department for sump specifications.

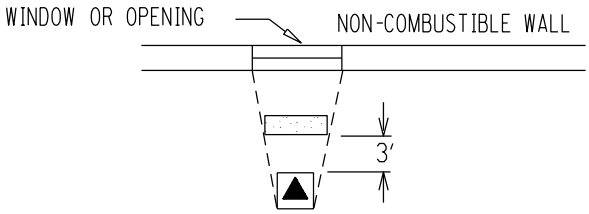
III. BARRIERS

If the clearances specified above cannot be obtained, a fire resistant barrier may be constructed in lieu of the separation. The following methods of construction are acceptable:

A. NON-COMBUSTIBLE WALLS

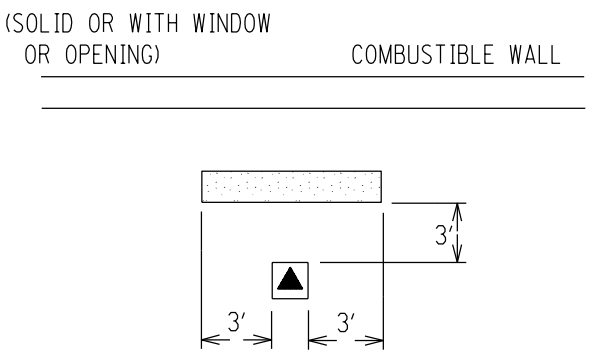
The barrier shall extend to a projection line from the corner of the padmount to the farthest corner of the window, door or opening in question. The height of the barrier shall be 1′ above the top of the padmount transformer.





B COMBUSTIBLE WALLS

The barrier shall extend 3′ beyond each side of the padmount transformer. The height of the barrier shall be 1′ above the top of the padmount transformer.



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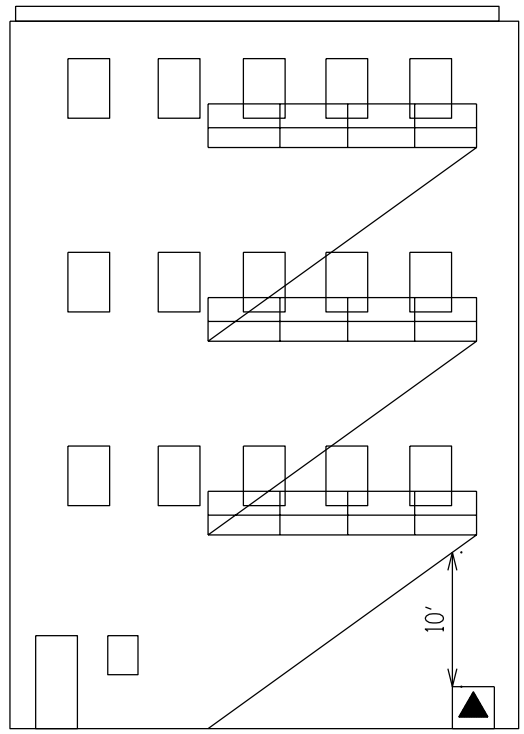
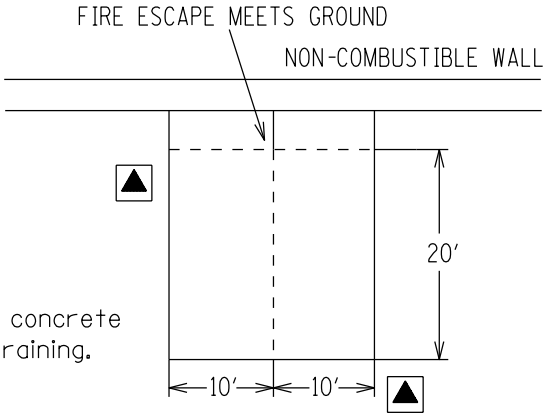
IV. FIRE ESCAPES

Padmounted oil insulated transformers shall not be located within a zone extending 20 feet outward and 10' on either side of the point where a fire escape meets the ground.

Padmounted oil-insulated transformers located beneath fire escapes shall have a vertical clearance of not less than 10 feet from the top of the transformer to the bottom of the fire escape.





V. See page 3-8 on how to reference the window in the concrete pad. This is critical for access, switching and conduit training.

VI. Generators WI COMM 16.700 & 16.701 (NEC 701.11)

In Wisconsin, there is an additional requirement which reads as follows: "The enclosure of the alternate source of power located outdoors for emergency systems and legally required standby systems shall be located at least 10 feet horizontally from any combustible portion of a combustible building (Type III, IV, or V) and at least 20 feet from an outdoor electrical transformer, electrical metering, service equipment, or normal power distribution equipment. These dimensions may be reduced where a noncombustible barrier is installed that extends at least 3 feet beyond each side of the alternate power source and transformer. The height of the barrier shall be at least one foot above the top of the transformer, electrical metering, service equipment, or alternate power source, whichever is higher." "Emergency Systems" are usually systems in places of assembly that supply emergency exit lighting and serve essential ventilation, alarm systems, fire pumps, elevators, etc. "Legally Required Standby" generators are systems that provide power for heating, refrigeration, communications, ventilation, smoke removal systems, sewage disposal, lighting, and other industrial processes, that if stopped, would create hazards or hamper rescue or fire-fighting operations. In some cases, this may include emergency exit lighting. This does not include "Optional Standby" generator systems that are only needed to avoid discomfort, inconvenience, or process interruptions.

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