



Guide for the Application of Manitoba's Construction Code Regulations

Publication Date: August 13, 2013

Updated on: August 12, 2013

Disclaimer: The information in this document is considered correct as of its publication date. This document will be updated as more information becomes available.

Table of Contents

	Page Number
Table of Contents	3
Section 1 - Manitoba Building Code Amendments (Division A)	7
3.2.4.1.(5) - Determination of Requirement for a Fire Alarm System	7
3.2.4.11.(2) – Fire Detectors	7
3.2.4.20. (1) - Visual Signals	7
3.3.1.7. (1) (d) and (e) - Protection on Floor Areas with a Barrier-Free Path of Travel	8
3.3.1.9 – Corridors	9
3.4.3.3.(4) - Exit Width Reduction	9
3.4.6.1 - Slip Resistance of Ramps and Stairs	9
3.4.6.5 – Handrails	10
3.4.6.7- Ramp Slope	10
3.4.6.9 - Curved Stairs	10
3.4.6.11 – Doors	10
3.8.1.2 – Entrances	11
3.8.1.3 - Barrier-Free Path of Travel	11
3.8.1.3 - Access to Storeys Served by Escalators and Moving Walks	12
3.8.2.1(1) - Areas Requiring a Barrier-Free Path of Travel	12
3.8.2.1(2) – Areas Not Requiring a Barrier-Free Path of Travel	12
3.8.2.1(4) – Areas in Assembly occupancies for people using mobility devices	13
3.8.2.2 - Access to Parking Areas	13
3.8.2.3 - Washrooms Required to be Barrier-Free	13

3.8.3.1 - Accessibility Signs	14
3.8.3.2 - Exterior Walks	15
3.8.3.3 - Doorways and Doors	16
3.8.3.4 - Ramps	17
3.8.3.7 - Assistive Listening Devices	18
3.8.3.8 - Water Closet Stalls	20
3.8.3.9 – Water Closets	20
3.8.3.10 – Urinals	20
3.8.3.11 – Lavatories	20
3.8.3.12 - Universal Toilet Rooms	21
3.8.3.13 - Showers	22
3.8.3.14 – Counters	22
3.8.3.15 - Shelves or Counters for Telephones	22
4.1.5.14. (1) – Loads on Guards	23
4.1.8.7. (7) – Site Properties	23
4.2.2.3. (1) – Field Review	23
4.2.5.4. (1) – Unsupported Evacuations	23
5.1.4.1. (5) – Structural and Environmental Loads	23
5.2.2.1. (2) – Determination of Structural Loads and Effects	23
6.2.4.1. (2) (e) – Carbon Monoxide Alarms	23
6.2.4.2. (1) – Carbon Monoxide Alarms – Other occupancies	23
9.3.1.3 – Concrete in Contact with Sulphate Soil	24
9.7.2.3 – Window Energy Efficiency Properties	24
9.10.9.16. (3) – Separation of Storage Garages	24

9.10.15.4.(3) – Glazed Openings in Exposing Building Face	25
9.10.18.5. (5) – Fire Alarm System Required	25
9.10.19.8 – Required Carbon Monoxide Detectors	25
9.10.19A – Heat Sensors in Garages	25
9.12.2.2.(7)(c) Deck Foundations	26
9.14.7.1 – Exterior of Foundation Walls	26
9.14.7.2 – Drainage	26
9.14.7.3 - Connections	26
9.14.7.4 – Perforated Pipe	26
9.15.1.1 – Footings and Foundation General	26
9.15.2.5 – Design Requirements	26
9.25.6.1 – Areas to be Insulated, General	26
9.25.6.2 – Thermal Resistance Value	27
9.25.6.3 – Building Assemblies in Contact with the Ground	27
9.25.6.4 – Building Assemblies Above Ground	27
9.25.6.5 – Equipment Efficiency for Buildings – Residential Occupancy	27
9.25.6.6 – Gas Fuelled Fireplaces	27
9.28.7 – Stucco Application for Single Family, Two Family and Row Housing	27
9.32.1.2 - Heat Recovery Ventilators (HRV)	27
9.32.3.9. (2) – Carbon Monoxide Alarms	28
10.1.1 – Private Pools, Scope	29
10.1.2. – Fences and Access	29
10.1.2.3 – Hot Tub Covers	29
10.1.3 – Electrical Wiring	29

10.1.4 – Plumbing Requirements	29
10.1.5 – Structural Requirements	29
Section 2 – Manitoba Building Code Amendments (Division C)	30
2.2.2.3 - Designers Required, plus Table – Professional Designers Required	30
2.2.4.2 – Seal and Signature of Professional Engineer	30
2.2.7.2. (1) – Review of Construction	30
2.2.7.3 – Review of Shop Drawings	30
2.2.7.4 – Review of Workmanship and Materials	30
Section 3 - Manitoba Plumbing Code Amendments	31
Table 2.2.11.1 - Maximum flow Rates for Water Supply Fittings	31
2.2.11.2 – Plumbing Fixture Efficiency	31
2.3.3.9. (2) – Expansion or Contraction	31
2.4.4.3.(5) – Interceptors	31
2.4.9.4. (1) – Size of Building Drain and Building Sewer	32
2.7.5.1.(1) and (2) - Design, Fabrication, Installation and Certification of Non-Potable Systems	32
2.7.6.1 - Composting Toilets	32
2.7.6.2 - Installation	32
Section 4 – Manitoba Farm Building Code Amendment	33

Section 1 - Manitoba Building Code Amendments (Division A)

3.2.4.1.(5) - Determination of Requirement for a Fire Alarm System

The code amendment was placed in the 1987 Manitoba Building Code (MBC) because under normal circumstances a building with 4 apartments would have less than 10 persons so a fire alarm would not be required. The change was made to ensure that if the occupancy below the apartments requires a fire alarm, (i.e., a restaurant with more than 150) then the fire alarm must be extended to the apartments above the restaurant or store.

3.2.4.11.(2) – Fire Detectors

This code amendment was placed in the MBC in 1987 as a result of a serious fire at the Fairlane Apartment Complex in Winnipeg which was built with direct exits to the exterior, but no fire alarm. As a result of this fire there was a Provincial Inquiry.

This code amendment was made to ensure that fire alarms were installed in all Part 3 MBC residential occupancies, including those with exterior exit doors, to make sure that all persons are made aware of a fire condition.

The requirement for a heat detector in each apartment, not in each room, will ensure there is fire detection (fire alarm system) installed in this type of residential occupancy.

3.2.4.20. (1) - Visual Signals

This requirement was initially placed in 3.2.4.18(4). This error has been corrected in Manitoba Building Code Regulation 175/2012.

Visual signal devices provide vital emergency information to people with hearing loss. Hearing loss is the fastest growing and most prevalent chronic condition in the country (Hearing Loss Foundation of Canada). Over one million Canadian adults report some form of hearing loss. Besides age-related causes, noise induced hearing loss is affecting an increasing number of children.

Previously, the MBC required visual alarms in segregated environments "intended for use primarily by people with hearing impairments." This amendment was made to ensure that all new buildings in Manitoba were safe for individuals with hearing loss.

All buildings covered by Part 3 now require visual, as well as audible signal devices. In most instances, there will need to be more visible signal devices than audible ones. While the sound of audible signal devices can be heard through walls, the light of visual signal devices must be directly observed. When planning the locations of visual signal devices, the key issue is to ensure all occupants, no matter their orientation in the

space, can view the strobe light or its reflection off adjacent walls and ceilings. CAN/ULC S524-06 Installation of Fire Alarm Systems provides guidelines for visibility of the signals.

How the spaces are designed will determine how many visual signal devices are required. Some examples include:

- Individual offices without glass walls, or side panels and hotel sleeping rooms require separate devices.
- Dressing change rooms is an area that may require devices in each room if the partitions go to the ceiling, but if the partitions are not full height, one device may be sufficient for all dressing rooms.
- In residential design, an open plan entry, living room, dining room, and kitchen will use fewer devices to get the same amount of coverage as a suite with walled off rooms.
- Corridors need visible signal devices at each end so that a pedestrian walking in either direction would see the visible signal. If a corridor has obstructions or curves that do not permit a clear view of the visual signal, additional visible signal devices will need to be installed in that corridor as if each area were separate rooms.
- Full (3 or 4 piece) washrooms require a separate strobe light since occupants use this room with a closed door. Two piece washrooms or powder rooms do not require a separate strobe.
- Storage areas or laundry rooms that are of sufficient size that an occupant may remain in the room for a considerable amount of time, it should have a strobe. If the room is of a type where the occupant would be in and out quickly, then the room would not require a strobe.

3.3.1.7. (1) (d) and (e) - Protection on Floor Areas with a Barrier-Free Path of Travel

Before this amendment, exits were not required to be barrier free. People with disabilities had to find the entrance that they used to enter the building or rely on help from others to exit a building in case of an emergency. All people should be assured that once they follow an exit sign, the door it directs them to will have a safe and accessible way out. Having to look for special exits, could put an occupant in danger in an emergency situation.

These amendments will require a new approach to designing exits. Landscaping can play a major role in reducing costs.

The original intent of this amendment was that all exterior exits from the main floor of a building would have their exits at grade or lead directly to a ramp. It was not the intent to have ramp exits from upper or lower floors.

3.3.1.9 – Corridors

A clear path means there are no obstructions in the area from the floor to the ceiling. This design is particularly important for people with little or no vision. Anything that protrudes from the wall can become a dangerous obstacle for people who use a cane or trail the walls with their hand. Some of the typical obstacles include telephones, fire suppression hoses, fire extinguishers, water fountains, and display cases. Recessing or enclosing these obstacles with safety features down to the floor surface will create safer environments

Water fountains create a serious hazard for people with low vision, however enclosing a water fountain to the floor would mean that individuals using mobility devices would not be able to access the water fountain. In this case it would be expected that other cues would be provided for individuals with low vision to advise that they are approaching a hazard.

Sentence (7)

Dead end corridors raise the issue of personal safety and security. A dead end corridor is potentially a dangerous place for people using mobility devices because there is no secondary way to exit the corridor in case of a fire, or if a person is being pursued.

Dead end corridors should be limited to 6 m and provide sufficient space for a person using a wheelchair or scooter to turn around and exit the area. The minimum space allotment is 1.5 m. Scooters and larger power wheelchairs, as well as people who cannot make tight turns require up to a 2.25 m diameter to complete a 360° turn, however that would require a significant increase in space. As such, the 1.5 m allotment was adopted as it will allow for the turnaround of larger devices, though not in one continuous motion.

3.4.3.3.(4) - Exit width Reduction—Article deleted

A Manitoba amendment repeals this article. There is a need for more useable clear space in stairwells. The intent of this change is to keep consistent with other recommendations on corridor widths and to not reduce the required space within stairwells.

3.4.6.1 - Slip Resistance of Ramps and Stairs

Having a distinctive slip resistant carborundum strip on the nosing will delineate each step for those with visual impairments. The riser face should have the same distinctive

strip as the tread nosing in order to delineate each step from the top or bottom of the flight of stairs.

Stairs are inherently dangerous. It is safer to mark the nosing and face so the pedestrian can delineate the edge of each step from the top and bottom of the stairs. In order to do so, they must be marked with color and texture contrasting from the surrounding surfaces.

3.4.6.5 – Handrails

The intent is to accommodate individuals who will have to use handrails on both sides of stairs such as individuals with less muscular strength or dexterity on one side than on the other and people navigating with a guide dog (who always travel to the same side of the individual). Further, when there is medium to high traffic, as in an emergency, the occupant may have to stay to one side of the stairwell or the other therefore both must have a handrail as a safety feature.

3.4.6.7- Ramp Slope

Previously ramps were allowed to have slopes between 1 in 6 and 1 in 12. While not meant for a building built under MBC Section 3.8 Barrier-Free Design, people, such as those with balance or breathing problems, or who use crutches temporarily with a broken bone have found themselves in situations where they were unable to manage such a ramp. As a result 1 in 12 has been used as the maximum slope.

Despite this change, best practice design for those individuals requiring assistance on ramps is a slope of 1 in 16 and should be used whenever possible as many individuals using mobility devices continue to struggle when using ramps at a slope of 1 in 12.

3.4.6.9 - Curved Stairs

Curved stairs can be dangerous in an emergency situation for all individuals; as such this amendment was adopted so that other stairs are designed in the building so that curved stairs do not need to be used to exit a building.

3.4.6.11 – Doors

Where the distance between a stair riser and the leading edge of a door is only 300 mm of space, falling off a landing is a real possibility. Walking out a door directly onto a step is a situation that could lead to falls for individuals with or without vision impairments. People need to have space between the door and stair edge, outside the swing of the door, and space that provides time for the individual to see the stairs and get their balance and reach for a handrail.

Sentence (1)

Increasing the dimension from 300mm to 600mm from the riser to edge of the door anywhere in its swing provides an increased level of safety for occupants on the stairs who may not be aware the door will be opening.

Sentence (3)

Since it is possible for one leaf of double doors to be locked, it is important to ensure that there is sufficient space to maneuver through the unlocked portion, hence the amendment's increased dimension to 850mm wide. This increased width will accommodate wider mobility devices, strollers, guide dogs, and a population that increasingly needs larger spaces.

3.8.1.2 – Entrances

The former MBC Article required that 50% of entrances were barrier-free is no longer considered to be acceptable. As such, the amendment was made to change the requirement to include "all pedestrian entrances". This was clarified in Manitoba Regulation 175/2012

Everyone should be able to use any entrance. A pedestrian entrance means all entrances that are designated for pedestrians (people with or without mobility devices) must be barrier-free. Pedestrians include the general public, employees, visitors, and owners, but it would not include such areas as a loading area or loading dock.

Sentence (1)

All entrances for pedestrians shall be barrier-free from the outdoors sidewalk, with or without a ramp through and into the building.

Sentence (2)

This sentence provides for an allowance for existing buildings.

Sentence (4)

If an entrance is composed of multiple doors at least the end doors must be accessible. This applies to every pedestrian entrance. This includes employee entrances, and visitor doors.

3.8.1.3 - Barrier-Free Path of Travel

The old requirement for 920 mm was not considered to be wide enough for two people in mobility devices to pass one another or have one person using a wheelchair or scooter to execute a 180° or 360° turn to exit the area. Thus the decision was made to widen the barrier free path of travel to 1100mm.

Sentence (1)(b)

Any change in elevation is a potential for injury but it is a particular hazard for people with low or no vision, or people with difficulty maintaining their balance. As a result, a detectable warning surface is required which provides important cues.

A detectable warning surface always includes colour, texture, and resiliency contrast from the surrounding surfaces. It begins one tread depth back from the edge of the top stair and at the top of the ramps. This surface must extend the full width of the stairs or ramp and a minimum of 900mm deep. Within a building or campus, it is preferred that the same cues should be used for all detectable warning surfaces.

3.8.1.3 (4.)- Access to Storeys Served by Escalators and Moving Walks

People with lower body strength may climb stairs but still require many other aspects of barrier –free design, such as washrooms and wider doorways. Examples of who may need barrier –free design features are those with sensory disabilities, limited upper body strength and those who may be below the average height or strength.

3.8.2.1.(1) - Areas Requiring a Barrier-Free Path of Travel

This amendment outlines those areas where a barrier –free path of travel is required, with exceptions listed in Article 3.8.2.1(2).

3.8.2.1.(2) – Areas NOT Requiring a Barrier-Free Path of Travel

The primary concern was that entrances and exits are barrier-free and are available from all habitable spaces. There were concerns that the list provided would limit access for people who need a barrier-free path of travel resulting in fewer accessible living, working, social and educational environments.

It is difficult to maneuver through spaces when there are limits to the number of barrier free entrances and no barrier free exits provided. This restricts the environments in which people can work, live, and in general participate in community life.

The previous exemption (g) for the barrier-free path - storeys not served by elevators was deleted. The barrier-free path now required on floors, not served by elevators, is to enable people who need barrier free requirements but who can use the stairs, such as people who use crutches, canes, have limited upper body strength, or have little or no vision. It is not essential that an elevator be provided in a building, but if an elevator is provided, the elevator should be accessible.

The requirement for access to janitor's rooms is to accommodate a wider people with a range of design requirements to ensure equal access to employment.

3.8.2.1.(4) – Areas in assembly occupancies required for people using mobility devices

The number of spaces that were listed in the code was insufficient to meet the demand.

The increased spaces for mobility devices reflect factors which include:

- approximately 12% of Manitobans who have physical limitations;
- the number is expected to rise in the future as the Canadian population ages, creating a need for more fixed seats in a seating area;

The Table for the number of accessible spaces was updated, as the number of people with disabilities has increased over time.

3.8.2.2. (3) - Access to Parking Areas

The existing aisle dimensions are not sufficient for many accessible vans. The lift on a van can be up to 1.5 m wide. Mini-bus vans that have wheelchair lifts or ramps can require an area of up to 2.4 m wide, 7.4 m long and 3.6 m high. This exceeds the requirements listed in the MBC.

The MBC must account for the vehicle ramp/lift and manoeuvring space. Mini-buses and mini-vans also have rear-loading lifts that require extra room that are not allowed for in the current MBC requirements. In our climate, loading zones are particularly important as many wheelchairs and scooters cannot manage snow or ice.

3.8.2.3 - Washrooms Required to be Barrier-Free

The requirements listed in MBC Article 3.8.2.3.(2)(c) were not sufficient for those with disabilities when attending business and personal services, mercantile or industrial occupancies. All service and commercial occupancies must have washrooms useable by everyone.

Universal toilet rooms (UTR) are in demand. They fill a need for parents who accompany children, for spouses providing assistance, and for caregivers who may be of a different gender. The spatial requirements for a UTR include room for two adults and mobility equipment.

People who require a barrier-free washroom should not be penalized and travel further than other occupants.

The purpose of the accessible stall in the public washroom is to accommodate individuals who use wheelchairs, but do not need an attendant or whose attendant is of the same gender.

The following is a list of possible solutions:

- If only one washroom is needed (i.e. 10 people or less) then one universal toilet room will suffice.
- If one (and only one) washroom is needed for each gender, then one universal toilet room, plus one smaller single-stall washroom, will suffice. (The universal toilet room should be signed as an accessible universal washroom, and the single stall washroom can be signed for either gender.
- If only one washroom is needed for one gender, but more than one washroom is needed for the other gender, then:
 - a universal toilet room can be provided, for the gender needing only one washroom plus those who need universal access, and
 - a public washroom with at least one accessible stall can be provided for the other gender.
- If more than one washroom is needed for each gender, then three rooms are needed:
 - a universal toilet room,
 - a male washroom with at least one accessible stall, and
 - a female washroom with at least one accessible stall.

For the toilet count, the universal toilet room can count as one of the required toilets, for either gender.

Sentence (5)

A universal toilet room on each floor does not apply to buildings where public washrooms are not already provided. *Follow 3.8.3.12. for the design requirements of a Universal Toilet Room.*

3.8.3.1 - Accessibility Signs

Sentence (1)

The phrase "for persons with physical disabilities" was removed as it limited who benefited from these requirements.

Sentences (2) and (3)

These Sentences were changed to provide detailed information on where and how room identification and directional signage should be installed to provide consistency from site to site. Furthermore, clear space is required to allow people to approach the sign without obstructions.

Signage is provided to identify what barrier-free facilities and paths of travel are available. Too often signage is placed in the wrong location making it either useless or

dangerous. Room identification signage should be placed on the wall, on the latch side of the door. Occupants who need to approach the sign to read will now be protected - out of the swing of the door.

For room identification when there is no door or 2 or more doors, the signage should be placed on the nearest adjacent wall.

3.8.3.2 - Exterior Walks

This amendment has many benefits. All guides on universal design propose wider exterior walks than required by code, with 1 200 mm being the narrowest. Additional width for walkways that are immediately adjacent to the roadway provides an increased level of safety, particularly for people with little or no vision.

Sentence (1)(b)

Exterior paths width has been increased by 100mm make the space more useable for people with and without mobility and other aides (such as guide dogs). To create an integrated environment the paths need to accommodate all people. Where the walk is adjacent to and at the same level as vehicles, the required additional space provides an increased margin of safety.

Sentence (1)(c)

Obstacles protruding into the path of travel pose a risk of injury, as such clear spaces were specified in the amended article.

Sentence (1)(d)

Turning spaces have been added to paths of egress greater than 9 m in length. After travelling such distances some individuals require areas to turn or rest. These increased dimensions allow people using a scooter or wheelchair to turn around or stop where previously this was difficult even with light pedestrian traffic.

Sentence (1)(e)

Using at least two forms of cues provides information for more people. People with little or no vision and do not get the information they need when colour contrast is the only cue, as such texture cues are also required.

The path of travel needs to be a contrasting colour and texture from the surrounding surfaces, such as an asphalt or concrete path with grass on either side. Examples of common dangerous problems are crosswalks and a path of travel through a parking lot both using only painted lines to mark the boundaries. People with little or no vision may not be able to stay within the path and unknowingly move into vehicle areas. As an example: pavers lining the edge in a contrasting colour would work as a solution.

3.8.3.3 - Doorways and Doors

Note: The wording in Regulation 31/2012 stating “a” pedestrian entrance was corrected in Manitoba Regulation 175/2012 to read “all pedestrian entrances”. The minimum clear width at doorways was also corrected to 825mm to make a 900mm door commonplace.

The intent of the increased doorway width was to allow more people to doors without damaging the surface or frame. A standard 900mm door addresses the increasing sizes of mobility devices and accommodates differing abilities to manage wheelchairs and scooters through spaces.

Sentences (1), (2) and (13) (MB Regulation 175/2012)

The increased width is meant for a standard 900mm or 36" wide door. Given the space for the doorjamb and hardware, 825 mm of clear space is to be provided.

Sentence (3) (MB Regulation 175/2012)

Door hardware needs to be mounted at a reachable location whether the person is standing or seated. The height has been lowered to 1100mm to allow this to occur

Sentence (4)

There is no need to include the wording “to facilitate the passage of wheelchairs” as there are other people that use aids that are affected by this Article.

Sentence (5)

Door operating devices are required at all entrances to a building. There are occupants who have limited upper body strength or who have only one hand available that make doors that are heavy, located in windy environments or effected by the stack effect (lower interior air pressure) unusable.

As such, the amendment was made to provide:

- At least one power door operator is needed at every residential building entrance, not at every suite entrance.
- Any public washroom with more than one stall must either have no door or have a power operator for the door.
- Entrances with a bank of doors, can at a minimum have only 1 door operating device (at the outermost location). Each separate entrance needs a power door opener.

When the operator works by push button it is preferred that it is installed at 2 heights so the people can use their hand or foot. It is also preferred that the button itself be at least 4" wide.

Sentence (5.2) (b)

All power operated swing doors require guards to protect individuals who may approach from the side into which the door swings. Sliding doors eliminate this requirement.

Note: Clause (5.2) (c) was deleted in Regulation 175/2012.

Sentence (11)

The clearance needed at vestibules, between successive doors, was increased from door swing-plus-1200mm to door swing-plus-1500mm. The vestibule requirement applies to weather vestibules at entrances, and where the vestibule is an area of refuge.

Sentence (12) (MB Regulation 175/2012)

This sentence was added to allow a smaller vestibule where the vestibule leads only to a set of stairs unless they are used as an area of refuge.

3.8.3.4 - Ramps

Sentence (1)(a)

The increased clear width requirement was necessary due to the increasing sizes of mobility devices.

Sentence (1)(b)

Choosing a maximum slope of 1 in 12 was a way of harmonizing all ramp slopes, but 1 in 16 is preferred, especially on exterior ramps.

Sentence (1)(c)

When doors open onto a ramp, individuals require sufficient level space outside the swing of the door.

When the door opens toward the ramp, this puts the occupant at greater risk of sliding down the ramp unintentionally as they reach for the handle and go backward opening the door.

Sentence (1)(d)

Level areas are very important areas to allow people to rest as they manage the incline and to be able to turn around and go the other way if required.

Sentence (1)(d)(i)

In the case of long ramps, rest areas are required for people to get out of the path of travel to permit others users to continue.

Sentence (1)(e)

Handrails need to run continuously so that individuals can maintain their balance. Guards are important safety devices to stop wheelchair, walker, scooter wheels, crutches or canes from slipping under the handrail and off the ramp surface. At the same time they must be designed to not provide a climbing foothold for children.

Sentence (1)(f)

Detectable warning surfaces are required at the top, landing, and bottom of ramps. It is an important safety feature that is designed to let people know that a change in elevation is coming. By impacting as many senses as possible, the cue becomes more effective. Useful cues are as follows:

- vision with colour contrast,
- touch from texture change
- sound from different materials, and/or
- resiliency differences with a material that has more or less spring.

3.8.3.7 - Assistive Listening Devices

Assistive Listening Systems require the use of an Assistive Listening Device (ALD), an accessory which an individual can use from any seat in an assembly area.

Assemblies, classrooms, meetings rooms, auditoria, and theatres greater than 100 m² require assistive listening systems that provide complete coverage so people with hearing loss have an opportunity to sit wherever they like similar to other patrons.

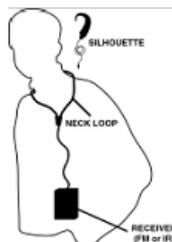
To ensure that all persons with hearing loss can be accommodated by the Assistive Listening Systems, accessories such as induction neck-loops or silhouette couplings for use in hearing aids and cochlear implant processors equipped with telecoils must be made available in addition to headsets and ear buds.

Although Closed Captioning Systems are helpful to some individuals with hearing loss they do not work for everyone, so both systems should be used rather than just one.

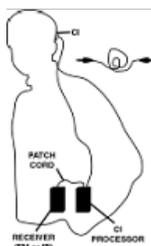
EXAMPLES OF ACCESSORIES FOR USE WITH ALDs



**Top: ear-buds; Bottom left: a headset;
Bottom right: specialized ear-buds with electronics built-in for infrared reception**



Coupling a hearing aid to an ALS receiver using a neck loop or silhouette



Coupling a cochlear implant to an ALS receiver using a patch cord

From: <http://www.access-board.gov/adaag/about/bulletins/als-a.htm>

The ALD and accessories required to accommodate the needs of a person with hearing loss will be determined by whether the person has a mild hearing loss or a more severe hearing loss and uses hearing aids or has had a cochlear implant.

Persons with mild hearing loss who do not use hearing aids or a cochlear implant processor are able to use ALDs with headsets and/or ear buds as part of the Assistive Listening System. However, persons with severe hearing loss must be provided with ALDs with accessories appropriate for use with their hearing aids or cochlear implant processors as part of the Assistive Listening System.

Induction neck-loops or silhouette coil couplings for use with hearing aids equipped with a telecoil must be made available with the ALDs. Also, ALDs must be able to accommodate direct audio input (DAI) and patch cords for use with some hearing aids and/or cochlear implant processors.

3.8.3.8 - Water Closet Stalls

Sentence (1)(a)

The 1.5 m diameter is often used as the space necessary to perform a 360° turn in a wheelchair. While it is theoretically possible, this dimension does not take into account differing driving abilities, larger wheelchairs, and the increased popularity of scooters. Also in a stall the plumbing fixtures located along one wall makes turning more difficult. The extra 100 mm from the amendment will help relieve these issues.

Sentence (1)(b)

The increased width is meant for a standard 900mm or 36" wide door. Given the space for the doorjamb and hardware, 850 mm of clear space is to be provided.

3.8.3.9 - Water Closets

The portions of (1) and (1)(b) that uses the phrases “for a person with physical disabilities” and “to a wheelchair user” were removed. There are many people who would not label themselves as having a physical disability. There are many types of disabilities that may include mobility concerns, not just those in a wheelchair, so the wording was corrected.

3.8.3.10 – Urinals

Floor mounted urinals are not preferred and are no longer installed. Therefore, Sentence (1)(b) can be removed. All washrooms are now required to be barrier-free.

Bars to the side of urinals on enclosures or walls conflict with the space required when people with disabilities approach the urinal. Therefore, the bars should be on the back wall. The grab bar heights and dimensions in the existing code are not adequate for those with disabilities and are amended. Colour contrast makes them easier to identify when people have limited vision.

A 300 mm grab bar is too short and the centerline at 1 000 mm is too high for a person in a mobility device to grab. The City of Winnipeg Accessibility Design Standards has the same requirements that were adopted.

3.8.3.11 – Lavatories

Sentence (1)(e)

The changes provide more information to make the soap dispensers easier to use. If the occupant is seated and may have limited flexibility to reach forward over the counter to the wall, the lower the soap dispenser the easier it will be to use. The hand movements required to use the soap dispenser should pass the fist test (useable by one hand and without finger dexterity, grasping, or twisting).

Sentence (1)(f)

Similar comments to (1)(e) cover the paper towel dispenser. If the occupant has a wheelchair they may not wish to push their wheelchair with wet hands so paper towel dispensers need to be located as close to the lavatory as possible.

Paper towel dispensers also need to have a clear path of travel and space for individuals to dry their hands and turn to exit the washroom.

People with no or limited vision do not want to have to touch the walls to find the towel dispenser so as well as being placed adjacent to the lavatory, the towel dispenser should be located in a logical location easily found without vision. The dimension of 1.2m is the maximum reach height for a seated person. The operating part should be located lower than 1.2 m and meet the fist test.

Sentence (2)

All individuals want designs that meet their needs, but do not single them out, particularly if they look less attractive. If a mirror is set at 1.0m, more people can use the mirror, including children.

3.8.3.12 - Universal Toilet Rooms

See also Article 3.8.2.3. Washrooms Required to be Barrier-Free

Sentence (1)(i)

The dimensional increase is to accommodate the second person assisting the person in a wheelchair (1700mm is now used for one person with a mobility device) and for turning around and for parents using a change table.

Sentence (2)

Accessible washrooms have important design features that are necessary for more people than those who use wheelchairs. They include, but are not limited to occupants:

- with guide dogs,
- with missing limbs,
- who have limited upper body strength,
- using canes or crutches,
- with low vision,
- with small children of the other gender, and/or
- those who require help with their toileting.

Further, individuals may be capable of using the stairs but still require the use of accessible requirements during toileting, but are not using a wheelchair.

Limitations: The requirement for a UTR or barrier-free washroom in any storey of a building not serviced by an elevator or inclined moving walk, does not apply to floors of a residential occupancy that consists of private rooms or suites (such as an apartment building or hotel), nor to floors where no public washrooms are required (such as parking garages). If there are public washrooms provided on a level of a hotel, then a UTR is required in that location as well.

3.8.3.13 - Showers

Sentence (1)(a)

The amendment was made to ensure that no fixtures impede the access and use of a shower.

Sentence (1)(b)

This change added vertical grab bars to assist in raising or lowering oneself and to step into and out of the shower. Vertical grab bars make a shower safer for users.

Sentence (1)(i)

Generally individuals no longer use bars of soap in public showers due to sanitary issues. As such a shelf is now required which can hold body wash and other toiletry items. This shelf must not limit the clear space and ability to reach the faucets, handheld shower head or grab bars.

3.8.3.14 – Counters

Counters for the public should be useable by everyone, including people who are standing and those who are seated. People who are seated require knee-space if they need to sit under the counter, such as for writing, eating, or examining an item to purchase. They also require the counter to be a height that fits their hand rests.

3.8.3.15 - Shelves or Counters for Telephones

Shelves at telephones are necessary for holding a TTY, and their current dimensions were insufficient. TTYs come in a variety of sizes and as such the shelf was increased in size.

The counter height has been amended to harmonize with Article 3.8.3.14. - Counters.

4.1.5.14. (1) – Loads on Guards

This amendment will ensure that the horizontal load for the design of the guard and its supporting elements will take into account the maximum expected horizontal forces applied to the guarded area.

4.1.8.7. (7) – Site Properties

Manitoba is deemed to have such a low risk with respect to seismic activity that this amendment was created to ensure that the building industry was not adversely affected by the additional building costs associated with seismic design.

4.2.2.3.(1)- Field Review

This amendment was created to ensure the person designated by the designer to inspect, is responsible to the designer for his field review.

4.2.3.6 – Protection Against Chemical Attack

This issue is a concern in the Red River Valley.

4.2.5.4. (1) – Unsupported Excavations

This amendment was made to ensure that professional engineers are involved in the use of an unsupported excavation to ensure stability. The failure to follow this requirement could lead to the collapse of the excavation and/or harm to the workers.

5.1.4.1. (5) – Structural and Environmental Loads

This amendment was made to keep the MBC consistent with the amendment for site properties in MBC Article 4.1.8.4.(7).

5.2.2.1. (2) – Determination of Structural Loads and Effects

This amendment was made to keep the MBC consistent with the amendment for site properties in MBC Article 4.1.8.4.(7).

6.2.4.1.(2) (e) Carbon Monoxide (CO) alarms

This requirement was created to ensure the CO detectors were interconnected to smoke alarms in residential occupancies.

6.2.4.2.(1)- Carbon Monoxide (CO) alarms- Other occupancies

This requirement was to ensure that CO alarms be installed in other heated Part 3 buildings, where there is a potential risk of CO.

9.3.1.3(2) – Concrete in Contact with Sulphate Soil

Sentence (1)

The intent of this amendment is to protect life and property by reducing and / or eliminating premature structural decomposition of a building's concrete foundation, superstructure or environmental separations in contact with *Sulphate Soils*, which could lead to collapse of the building.

Sentence (2)

The Designer of Record (P. Engineer or Architect) can specify designs or equivalencies which they are responsible for; through on site inspections confirming compliance to their intent and by providing a final certificate of assurance submitted to the authority having jurisdiction.

9.7.2.3 – Window Energy Efficiency Properties

There are energy savings to be had from adding more efficient windows to the building envelope. A non-insulated spacer acts a thermal bridge which means the cold or heat from outdoors can enter into the building envelope.

Low emissivity coatings and double pane windows are generally the industry baseline for new home construction in Manitoba. This requirement ensures that all builders meet that minimum requirement.

Another factor in this change was made because research shows that insulated spacers are the largest key factor in the performance of windows to reduce the amount of condensation.

9.10.9.16. (3) – Separation of Storage Garages

This requirement was implemented after the events of the Gabrielle Roy Fire. It provides direction on increased requirements for fire resistance ratings between the attached garage and the dwelling unit.

The intent of this Code amendment was to limit the probability that fire will spread from a storage garage to other parts of the dwelling unit, which could harm individuals in other parts of the dwelling unit.

An example of an acceptable solution is as follows

Notes:

- 1) See Appendix D – Div “B” for fire ratings of walls and ceiling assemblies.*
- 2) Taping and finishing of the joints in the drywall ceiling and wall assemblies as described below is not required.*

1. Wall assembly between garage and dwelling (45-min FRR): one layer of 5/8” type X gypsum board, on the garage side of wall, fastened to a minimum 2x4 wood studs

spaced at a maximum 16 inches on centre. This wall rating extends to underside of roof deck. However, if a person wishes to terminate the wall rating at the rated ceiling assembly, please see # 2.

2. Ceiling assembly (Note: applies only if the wall assembly is terminated at rated ceiling membrane) (45-min FRR);, and there is not an occupancy above the garage, then this rating can be achieved by 1 layer of 5/8" type X gypsum board on the underside of a wood roof truss.
3. Assembly between garage and upper floor occupancy (1-hr FRR): Two layers of 5/8" type X gypsum board fastened to underside of I-joists or wood trusses spaced at a maximum 24 inches on centre.
4. Attic hatch construction in a fire rated ceiling assembly (1-hr FRR): Minimum 2x4 framing spaced at a maximum 24 inches on centre with two layers of 5/8" type X gypsum board fastened to the garage side of the hatch. Hatch edges to be continuously supported on 2x4 stops.

9.10.15.4. (3) – Glazed Openings in Exposing Building Face

The change to this code article was made to allow 60% of glazed openings in an exposed building face which is the most common construction practices in Manitoba. This was permitted as long as the exposed building face has non-combustible cladding. The exception for the first meter of the exposed building face is to allow for wrapping the front cladding around the side of the building for architectural reasons.

However the intent of the change was meant to be for limiting distance of 1.2 m not 2 m. This was corrected in MB Amendment 175/2012.

9.10.18.2. (5) – Fire Alarm System Required

This change was made to remain consistent with Part 3 Amendment on this subject.

9.10.19.8- Required Carbon Monoxide Detectors

The new requirement for CO alarms mean that CO alarms must be installed in all new heated Part 9 buildings where there is a potential for CO. It was not the intent to have CO alarms installed in unheated buildings.

9.10.19A – Heat Sensors in Garages

The intent of this Code requirement is as follows:

- 1) To limit the probability that fire will not be quickly detected in a storage garage attached to the dwelling. This could lead to persons not being promptly notified of the fire, further leading to delays in evacuation.
- 2) To limit the probability that electrical connections and circuits for heat sensors will be disconnected.

Notes:

- 1) *Location of a fixed temperature heat sensor, located as centrally as practical on the ceiling, in a storage garage attached to a dwelling unit.*
- 2) *Actuation of a fixed temperature heat sensor on a storage garage attached to dwelling units, which cause sounding of all smoke alarms installed in a dwelling unit.*
- 3) *For a large attached garage, more than one heat sensor may be required.*
- 4) *With respect to the door between the attached garage/dwelling, Article 9.10.13.15 is applicable to this door installation.*

9.12.2.2.(7)(c) – Deck Foundations

This clarifies the minimum foundation requirements for a deck.

9.14.7.1 – Exterior of Foundation Walls

The NBC does not address this. The requirement of a solid pipe is to move the water to the sump pit and not distribute it under the floor slab.

9.14.7.2 – Drainage

The NBC does not address this. Requirements for an adequate number of connections to a drain are required.

9.14.7.3 - Connections

The NBC does not address this. The requirements for adequate slope for drain pipes are required.

9.15.1.1 – Footings and Foundation General

This amendment was made to clarify the application of this Section.

9.15.2.5 – Design Requirements

This amendment was created to place accepted Manitoba-specific foundation and footing building techniques into code.

9.25.6.1 – Areas to be Insulated, General

Occupancies other than dwelling units are excluded from the requirements of Subsection 9.25.6.

The requirements of Subsection 9.25.6 are based on cost/benefit analysis using costs relevant to new construction. Since additions are essentially new construction, the economic parameters used to establish the requirements of this subsection can apply to additions as well as new buildings. However, as the cost of renovating existing buildings are significantly different from the costs of new construction, this Subsection should generally not applied to the renovation of existing buildings.

9.25.6.2 – Thermal Resistance Value

The rationale for the inclusion of insulation values in 1989 was due to the varied climate in Manitoba. Further segregations were made above the 53rd parallel due to the extreme cold in the winter months, the rationale was that a higher insulation value would reduce the amount of energy required to heat and cool these homes.

9.25.6.3 – Building Assemblies in Contact with the Ground

The ground level in a crawl space is deemed to be the floor of the space. The exterior vertical edge of any floor on ground less than 0.6 below grade is deemed to be a foundation wall.

Where it is intended not to reduce the heat flow to the soil beneath a floor on ground, the perimeter insulation may alternatively be placed on the adjoining exterior ground.

9.25.6.4 – Building Assemblies Above Ground

Further to the requirements of this subsection, clarification is provided for how to insulate portions of the foundations are above ground, attic roofs and access hatches.

9.25.6.5 – Equipment Efficiency for Buildings – Residential Occupancy

As an energy efficiency measure the province of Manitoba adopted the requirement for all new homes to have a 94% AFUE furnace installed for either Natural Gas or Propane. Electric furnaces are considered to be 100% efficient and as such are not listed in the Amendments.

9.25.6.6 – Gas Fuelled Fireplaces

The change was initially recommended by the 2009/2010 Part 9 Subcommittee on Energy Efficiency, as a means to increase the energy efficiency of homes. It was adopted in 2010. MB Amendment 175/2012 deleted Clause (c) from Regulation 31/2012.

9.28.7 – Stucco Application for Single Family, Two Family and Row Housing Sentences (1) through (5)

These code changes were made to update the code to current stucco techniques / applications which have been a practice throughout Winnipeg and surrounding areas for 35 years. This current practice has apparently resulted in superior performance with less callbacks and service problems than the present 3 coat system.

9.32.1.2 - Heat Recovery Ventilators (HRV)

The CFM rate of 60 CFM was chosen to ensure it would work in this climate. However if the authority having jurisdiction is provided with evidence that an HRV which does not meet these requirements can function properly in this climate the AHJ may allow the

HRV to be installed in their area. To find a list of acceptable HRV's and ERV's in Manitoba you can go to the HVI Certified Products Directory at <http://www.hvi.org>. As an example of how to read the Certified Products Directory see below:

The required minimum efficiency and airflow rating point are found in the listings or in the manufacturer's literature as shown in the sample below. The required factors from the test results, of Supply Temperature at -25°C, Net Air Flow – L/s no less than 30 L/s, and Sensible Recovery Efficiency of greater than 55% on the -25°C line are shown in the boxes on a typical reported test result from the HVI Certified Products Directory.

In the example below, at -25°C the L/s are listed at 35 and the Sensible Recovery Efficiency is 66, thus HRV "X" would be considered acceptable for use in Manitoba.

HRV "X"
 Electrical Requirements: Volts: 120 Amps:1.4
 Exhaust Air Transfer Ratio: 0.04 @100 Pa/0.4 in. wg.0.03@50 Pa/0.2 in. wg.
 Low Temp. Vent Reduction Factor: 3.7% Supply 13.8% Exhaust Low Temp. Factor:1.04

Ventilation Performance

Pa	EXT. STATIC PRESSURE		NET SUPPLY AIR FLOW		GROSS AIR FLOW		
	In. wg.	L/s	Cfm	L/s	cfm	L/s	cfm
25	0.1	68	144	70	149	80	171
50	0.2	63	134	65	139	78	165
75	0.3	59	125	61	129	75	160
100	0.4	53	113	55	117	74	157
125	0.5	43	92	45	95	70	149
150	0.6	34	73	36	76	64	137
175	0.7	28	59	29	61	57	122

ENERGY PERFORMANCE

	SUPPLY TEMPERATURE		NET AIR FLOW		POWER CONSUMED	SENSIBLE RECOVERY EFFICIENCY	APPARENT SENSIBLE EFFECTIVENESS	LATENT RECOVERY/MOISTURE TRANSFER
	°C	°F	L/S	CFM	WATTS			
HEATING	0	+32	30	64	78	64	73	0.00
	0	+32	45	96	104	63	71	0.01
	0	+32	55	117	119	61	69	0.01
	-25	-13	35	74	96	66	78	0.00
COOLING	+35	+95	29	62	77		TOTAL RECOVERY EFFICIENCY	
							17	

9.32.3.9. (2) – Carbon Monoxide Alarms

This requirement was made to ensure that CO alarms were interconnected to smoke alarms in Part 9 Buildings.

10.1.1 – Private Pools, Scope

This section was created to ensure that security measures were provided for private pools and hot tubs.

10.1.2. – Fences and Access, Sentences (1) and (2)

This code amendment was implemented in the 1981 MBC as a result of a child drowning in a private swimming pool in St. Boniface in the late 1970s.

Based on the definition of pool from MBC Article 1.4.1.2, all pools with a water depth greater than 60 cm should comply to MBC Part 10.

This code sentence requires all private pools to have a fence surrounding the pool itself to ensure the safety of children in the yard.

The requirement for the self-closing latch is to ensure that the fence gate cannot be left open by accident.

10.1.2.3 – Hot Tub Covers

This code amendment was adopted in the 2006 MBC as a result of the Keyanna Snowden drowning and subsequent inquest.

A hot tub requires both a fence and gate as described in Article 10.1.2.1 or a hot tub cover that is lockable and walkable (able to support the weight of an adult walking across it) which is in use at all times when an adult is not present.

10.1.3 – Electrical Wiring

This code amendment was adopted to provide direction on where and how to install electrical wiring for a private pool.

10.1.4 – Plumbing Requirements

This code amendment was adopted to provide direction on where and how to install plumbing and describes how waste water can be disposed of from a private pool.

10.1.5 – Structural Requirements

This code amendment requires all private pools to be designed by a professional engineer.

Section 2 - Manitoba Building Code Amendments (Division C)

2.2.2.3 - Designers Required, plus Table – Professional Designers Required

This amendment ensures that the construction drawings are prepared by either an Architect, Engineer, or both, depending on the major occupancy. For example, industrial occupancies only require one designer, normally a Professional Engineer.

2.2.4.2 – Seal and Signature of Professional Engineer

This amendment ensures that only a Professional Engineer registered in the Province of Manitoba prepared structural construction drawings for buildings regulated by Part 4 of the MBC.

2.2.7.2 (1) – Review of Construction

This amendment requires that the designer or other qualified person responsible to the designer reviews the construction to ensure it conforms to the design plans.

2.2.7.3 – Review of Shop Drawings

This amendment requires that the designer or other qualified person responsible to the designer reviews the shop drawings and other documents to ensure the drawings/documents conform to the design.

2.2.7.4 – Review of Workmanship and Materials

This amendment requires that the designer or other qualified person responsible to the designer reviews the materials and materials tests during the construction process to ensure compliance to the construction plans.

Section 3 - Manitoba Plumbing Code Amendments

Table 2.2.11.1 - Maximum flow Rates for Water Supply Fittings

The intent of this amendment was to ensure that lower flow water fixtures are used in the Province of Manitoba in order to conserve our water for future generations.

Exceptions were provided for emergency washing facilities and in historical buildings as water efficient fixtures are not yet available in the marketplace for these types of installations.

The maximum flow rate for showerheads refers to the primary showerhead only, this means that in a multi-showerhead shower only the primary showerhead must meet the specified flow rate.

2.2.11.2 – Plumbing Fixture Efficiency

The intent of this amendment was to ensure that lower flow water fixtures are used in the Province of Manitoba in order to conserve our water for future generations. This was deemed especially important in situations where clean water is being used to transport waste.

Exceptions were provided for historical buildings, and passenger stations as water efficient fixtures are not yet available in the marketplace for these types of installations.

The specific health and justice requirements for fixtures in care or detention occupancies were such that they were exempted at this time. As the market evolves, care and detention occupancies will be included.

2.3.3.9(2) – Expansion or Contraction

Due to Manitoba's temperature variations from season to season, protection of plastic soil-or waste stacks from damage from the forces of expansion and contraction caused by seasonal temperature changes, movement of soil, building shrinkage or structural settlement is required.

2.4.4.3 (5) - Interceptors

Vehicle garages, parking garages, car washes or similar types of buildings are subjected to increased amounts of contaminants and sediment carried into these buildings from vehicle traffic. Increasing the minimum pipe size to 4" will limit the probability of drains becoming plugged with accumulated amounts of sediment or objects blocking the piping system. Further it will allow the piping system to be easily serviced and maintained for peak performance.

2.4.9.4(1) – Size of Building Drain and Building Sewer

This code amendment was created to allow for the maintenance of the building drain, limit the probability of sewer back up due to blockage and to accommodate future adequate pipe sizing of the building drain for any extensions, alterations and additions to the plumbing system.

2.7.5.1.(1) and (2) - Design, Fabrication, Installation and Certification of Non-Potable Systems

The intent of this amendment was to ensure that lower flow water fixtures are used in the Province of Manitoba in order to conserve our water for future generations.

This code amendment was created to allow non-potable (grey water) systems to be installed in the Province of Manitoba with specific requirements that the non-potable water be used only for water closets and urinals.

Many jurisdictions also allow non-potable water to be used for irrigation purposes, however after review it was deemed to be problematic as the water through runoff would eventually seep back into the fresh water of our lakes and rivers.

CSA standard CSA B128.3 - Design and Installation of Non-Potable Water Systems is now available for purchase through <http://shop.csa.ca/en/canada/page/home/> . All systems installed in Manitoba must meet this standard.

2.7.6.1. - Composting Toilets and 2.7.6.2 - Installation

The intent of this amendment was to ensure that designers were not limited to choices of design professionals based on the slowness of code cycle updates. Composting Toilets are a viable option where the authority having jurisdiction permits them to be installed.

Section 4 – Manitoba Farm Building Code Amendment

The intent of the Farm Building Code Regulation is to regulate farm buildings that meet Part 3 size requirements for new buildings over 3 stories or over 600m², or if an addition causes the floor area to exceed 600m².

Any farm building that meets these requirements must be permitted through the OFC regardless of where the building is being built. Under this regulation structural, mechanical and electrical drawings are required to be provided to the OFC.

Examples of FBC - F2 Buildings:

Hog Barns
Chemical Storage Sheds

Examples of FBC - F3 Buildings:

Hatcheries
Dairies
Cattle Barns
Vegetable Storage Sheds
Potato Storage Sheds