



# Toronto Accessibility Design Guidelines



TADG  
v. 2021



## 3.3.2. Card Access and Building Security Systems

### Rationale

Card access and building security systems should be usable by all persons. The type and location of card access and building security systems should add to the comfort, protection and safety of a building. The usability and accessibility of applicable building controls should be designed for persons with limited dexterity and fine finger control.



### Related Sections

- “2.1.1. Interior Accessible Paths of Travel”
- “3.3.3. Controls and Operating Mechanisms”

### Related References

- [Strategy and Standards for Office Space and Ergonomics - Building Services](#)
- [City of Toronto Corporate Security Access Control System Installation Standards](#)

### Key Considerations

#### Accessible Path of Travel

An interior *accessible path of travel* should be connected to card access and building security systems to allow for a continuous, unobstructed route providing interior access to elements and spaces.

#### Controls and Operating Mechanisms

Controls and operating mechanisms should be designed to be *accessible* in design and placement. They should be designed to have *accessible* space and reach ranges over obstructions. Controls should have *operable portions or controls* that can be used with a closed fist without requiring tight grasping, pinching or twisting of the wrist. They should have *colour/brightness contrast* from adjacent surfaces so that persons with low vision can easily find and operate them. Where proximity scanning devices, or proximity sensors, are provided to control access cards, they should be capable of detecting an access card when tapped or placed closely and without any physical contact.

## Requirements

### (1) Accessible Path of Travel:

Card access and building security systems should provide interior *accessible paths of travel* that:

- (a) Meet the criteria in section “2.1.1. Interior Accessible Paths of Travel”.

### (2) Controls and Operating Mechanisms:

Card access and building security systems should provide controls and operating mechanisms that:

- (a) Have access cards that:
  - (i) Have *colour/brightness contrast*, or a distinct colour; and
  - (ii) Have a distinct texture on one side, or by using *tactile* characters and *Braille* to ensure easy orientation;
- (b) Are installed on wall surface that:
  - (i) Are between 600 mm to 1500 mm beyond the door swing when the door opens toward the control, or from any inside corner, “[Figure 3.3.2-A Card Access and Building Security Systems - Plan View](#)”; and
  - (ii) Are between 900 mm to 1050 mm *A.F.F.*, to the centreline of the control;
- (c) Include a proximity scanning device or proximity sensors that control card access;
- (d) Where a *tactile* keyboard, “[Figure 3.3.2-B Card Access and Building Security Systems - Elevation View](#)”, or other encoded entry or exit system is provided, it should have buttons that:
  - (i) Are raised;
  - (ii) Where numeric, have a telephone style key pad;

- (iii) Are equipped with a raised dot on the five key; and

- (iv) Have *tactile* characters for function keys; and

- (e) Have *accessible operable portions or controls* that meet the criteria in section “3.3.3. Controls and Operating Mechanisms”.

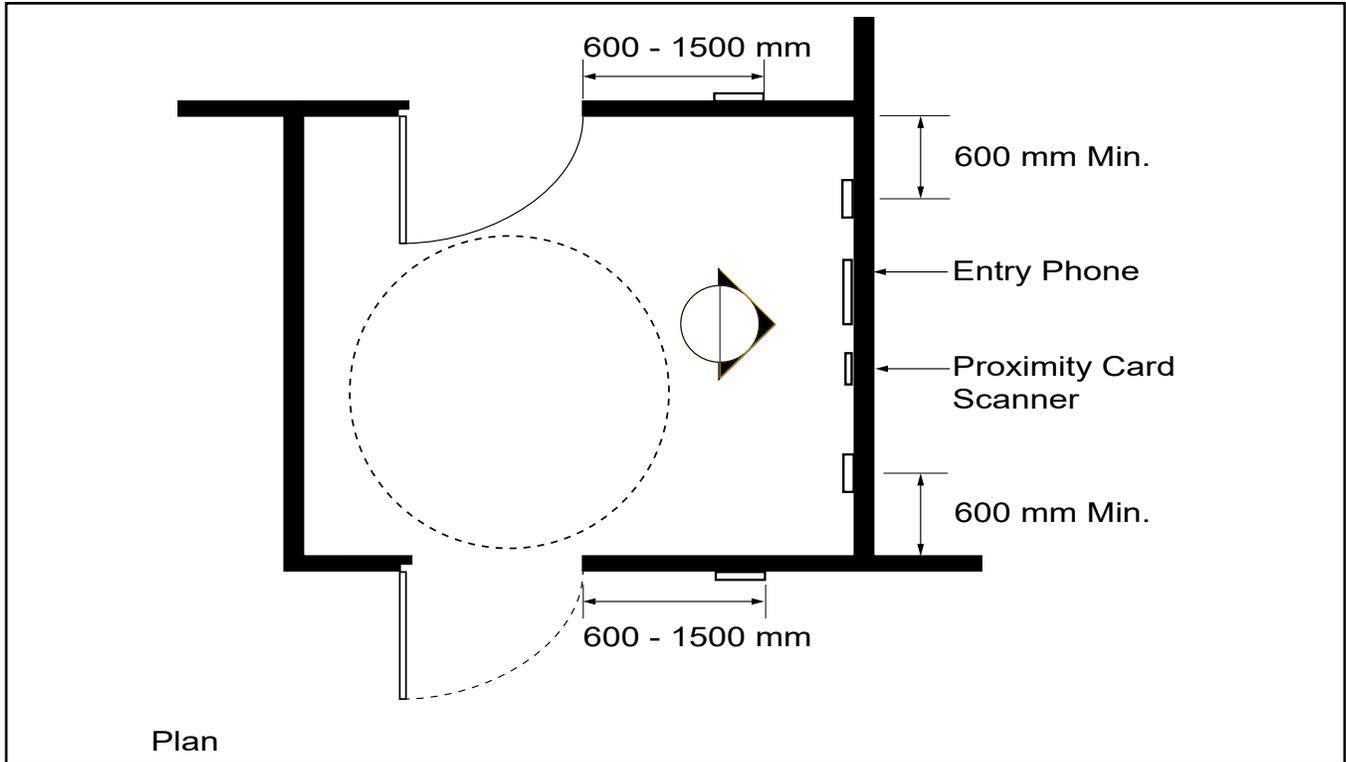


Figure 3.3.2-A Card Access and Building Security Systems - Plan View

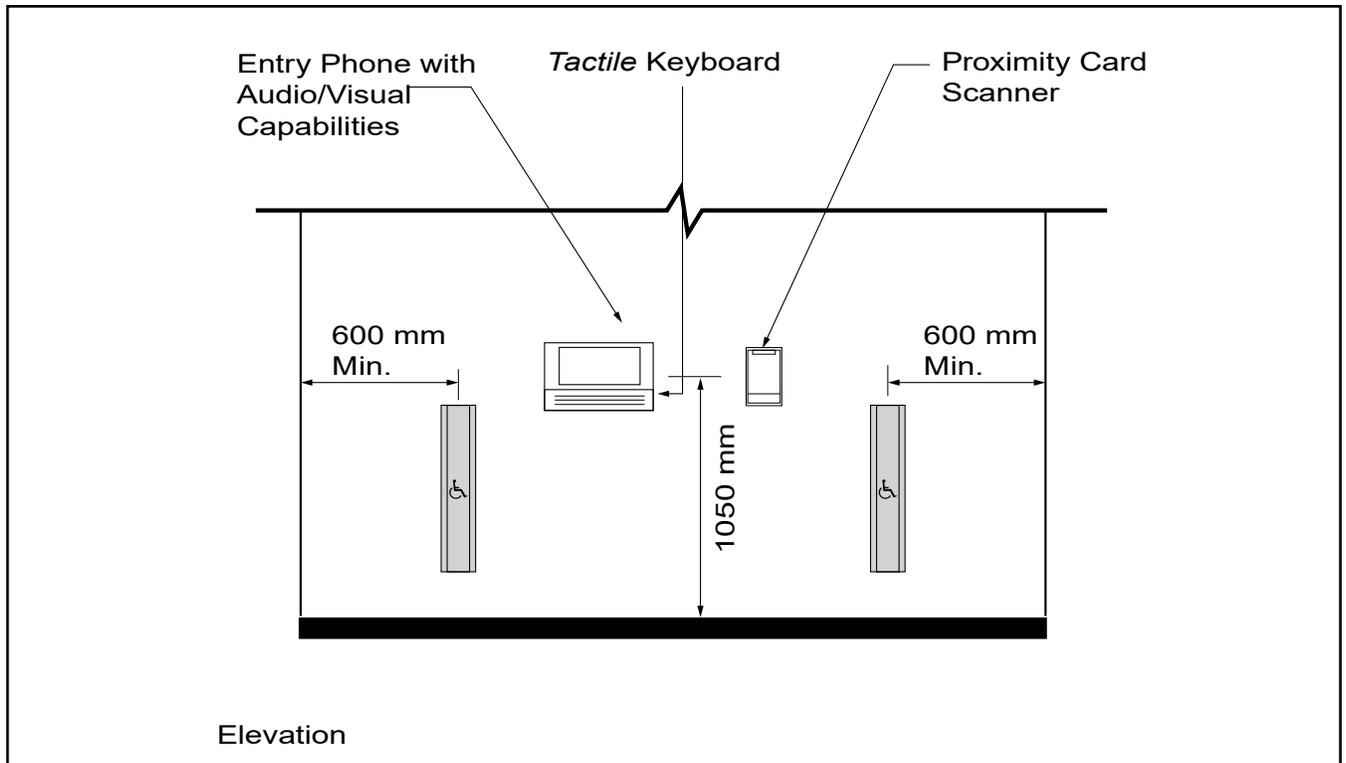


Figure 3.3.2-B Card Access and Building Security Systems - Elevation View

### 3.3.3. Controls and Operating Mechanisms

#### Rationale

Controls and operating mechanisms for the operation of building services or safety devices should be designed to be usable by all individuals where intended to be operated by the end-user.

#### Application

The scope of this section applies to controls and operating mechanisms including millwork hardware, controls, electrical switches and intercom switches intended to be operated by individuals, electrical power, thermostats and manual fire pull stations, *power door operators*, video conferencing systems, and all other controls.



#### Related Sections

- “2.1.1. Interior Accessible Paths of Travel”
- 2.2.3. Door Controls and Devices
- “3.2.1. Signage and Wayfinding Systems”

#### Related References

- [Reserved]

#### Key Considerations

##### Accessible Path of Travel

An interior *accessible path of travel* should be connected to controls and operating mechanisms to allow for a continuous, unobstructed route providing interior access to elements and spaces.

##### Clear Floor Spaces

*Clear floor spaces* should be provided at controls and operating mechanisms to create unobstructed, level floor areas that are sized to provide the space for persons using *mobility devices* to use the mechanisms independently without creating an obstacle. The size of the *clear floor space* should be adjusted depending on the intended approach (front, side).

##### Installation

Controls and operating mechanisms should be installed and mounted at a height that is operable by all individuals including persons using *mobility devices*, and persons of short stature. The mounting height should be *accessible* and have *accessible* space and reach ranges over obstructions, where provided. Where a mounting height range is permitted, install controls at the lowest possible height.

### Operable Portions or Controls

*Operable portions or controls* should be provided at controls and operating mechanisms. They should be usable with a closed fist without requiring tight grasping, pinching or twisting of the wrist. They should have *colour/brightness contrast* from adjacent surfaces so that persons with low vision can easily find and operate them.

### Requirements

#### (1) Accessible Path of Travel:

Controls and operating mechanisms should provide interior *accessible paths of travel* that:

- (a) Meet the criteria in section “2.1.1. Interior Accessible Paths of Travel”.

#### (2) Clear Floor Spaces:

Controls and operating mechanisms should provide *clear floor spaces* that:

- (a) Are 900 mm by 1500 mm for front approach, or 900 mm by 2200 mm for side approach.

#### (3) Installation:

Controls and operating mechanisms should be installed, “[Figure 3.3.3-A Installation - Mounting Heights](#)”, to:

- (a) Where millwork hardware is provided, be mounted between 860 mm to 1050 mm *A.F.F.*;
- (b) Where controls, electrical switches and intercom switches intended to be operated by individuals are provided, be mounted between 900 mm to 1050 mm *A.F.F.*;
- (c) Where electrical power, such as duplex receptacles are provided:

- (i) Be mounted between 460 mm to 1050 mm *A.F.F.*; and

- (ii) Be located on the front edge of work surfaces, or on a side wall 500 mm maximum from the front edge of the *accessible* portion of work surfaces;

- (d) Where thermostats and manual fire pull stations are provided, be mounted at 1200 mm *A.F.F.*;

- (e) Where *power door operators* are provided, meet the criteria in section [2.2.3. Door Controls and Devices](#);

- (f) Where video conferencing systems, meet the criteria in this section;

- (g) Where all other controls are provided, be mounted between 900 mm to 1050 mm *A.F.F.*; and

- (h) Where an obstruction is provided in front of a control, have *accessible* space and reach ranges, “[Figure 3.3.3-B Installation - Reach Range over an Obstruction](#)”, over obstructions, that:

- (i) Are 860 mm maximum high; and
- (ii) Are 500 mm maximum deep.

#### (4) Operable Portions or Controls:

Controls and operating mechanisms should provide *operable portions or controls* that:

- (a) Have *colour/brightness contrast* from adjacent surfaces;
- (b) Are operable:
  - (i) Using one hand, without requiring tight grasping, pinching with fingers or twisting of the wrist, and with a force of 22.2 N maximum, in the case of a manual pull station; and
  - (ii) Using a closed fist and with a force of 22.2 N, in the case of all other controls;

- (c) Where possible, have sensory feedback such as audible and visual signals, and *tactile* characters;
- (d) Where instruction information is provided, such as those found at parking machines or at exercise equipment, detailing the use of key *operable portions or controls*, they should:
  - (i) Be clearly visible and in large print text;
  - (ii) Have *colour/brightness contrast* from adjacent surfaces;
  - (iii) Be mounted in close proximity to key *operable portions or controls*; and
  - (iv) Have *signage* that meets the criteria in section “3.2.1. Signage and Wayfinding Systems”.

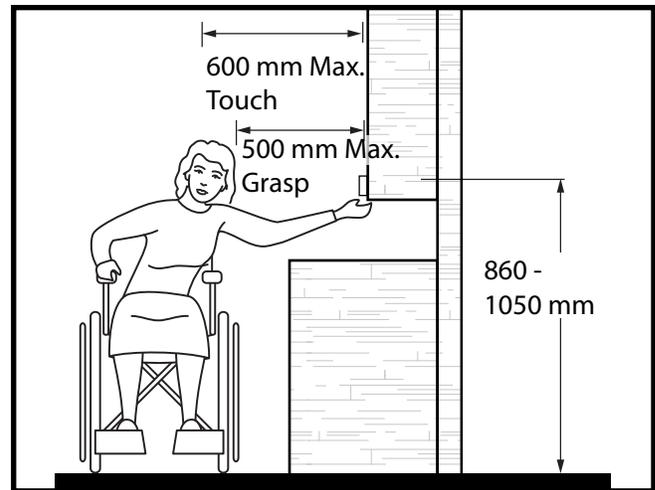


Figure 3.3.3-B Installation - Reach Range over an Obstruction

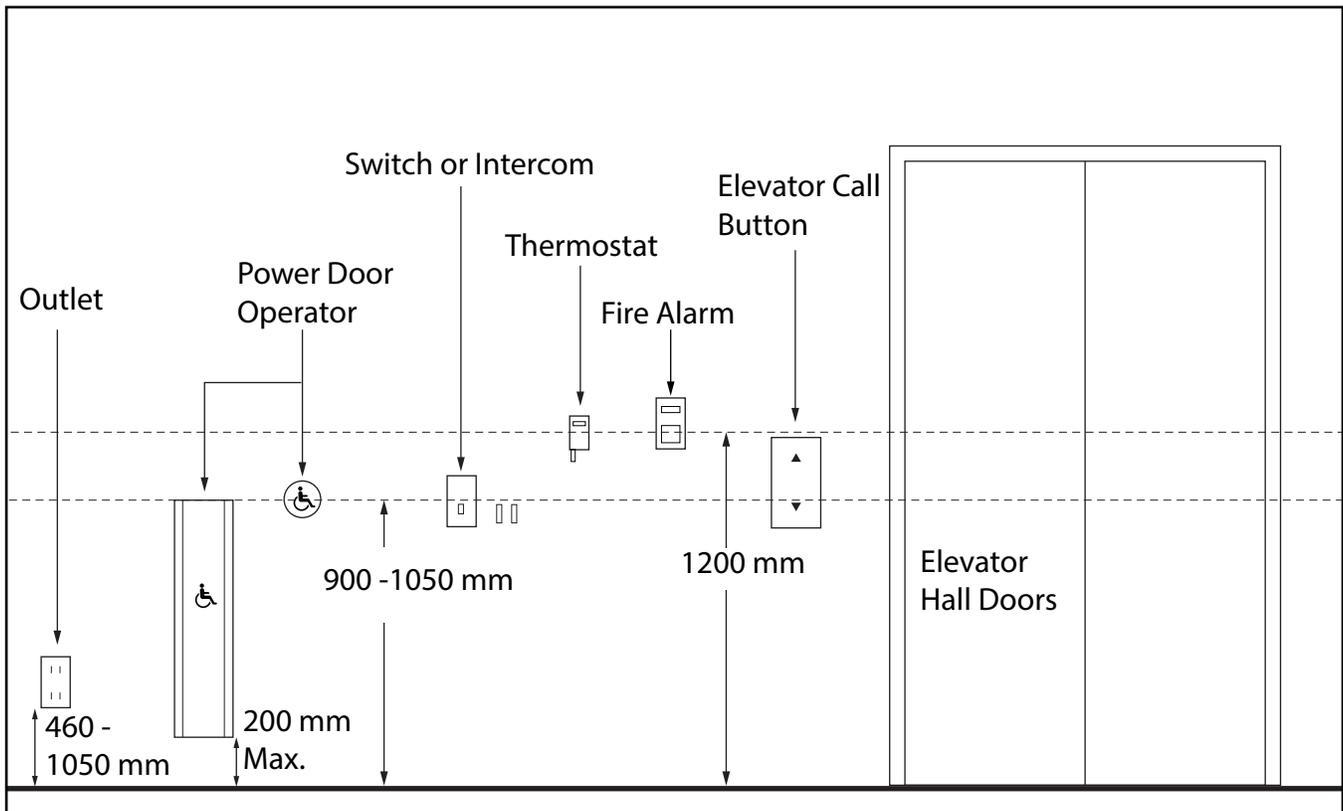


Figure 3.3.3-A Installation - Mounting Heights