

# ADA evaluation.



**ThyssenKrupp Elevator**  
Americas Business Unit



ThyssenKrupp

# The Americans with Disabilities Act.

The Americans with Disabilities Act is a law guaranteeing comprehensive civil rights to people with disabilities. The legislation requires “places of public accommodation,” “commercial facilities,” and “transportation facilities” be designed so as to be readily accessible to and usable by people with disabilities.

To make your building accessible under this legislation, you may be required to make some modifications to your elevators. The regulations applying to elevators are outlined in this booklet. Should you find that you are not in compliance, ThyssenKrupp Elevator can accomplish any upgrade that must be made quickly and cost efficiently. You may even be eligible for a Federal tax credit or Federal tax deduction to compensate for the costs associated with ADA upgrades. Contact your tax consultant for details.

Please note that ADA is a Civil Rights legislation. As such, legal remedies include injunctive relief, civil suits, and penalties up to \$100,000.

The enclosed information has been compiled from various sources covering the extensive ADA legislation and as such, ThyssenKrupp Elevator presents this information without warranty and does not assume any liabilities or responsibilities for the accuracy of the included information, comments, opinions, representations or data outlined. This guide only addresses the portion of ADA which relates to elevator equipment and we strongly recommend that the legislation be reviewed for overall compliance in other areas which may affect your business practices and building in general. If you should have specific

questions on how ADA legislation relates to your individual situation, it is recommended that counsel be retained or consulted.

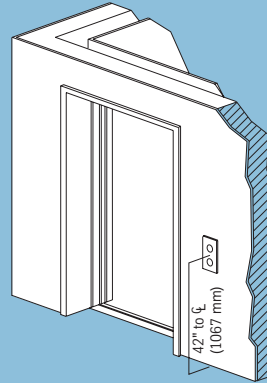
Note: ThyssenKrupp Elevator has a cost-effective way to meet all ADA requirements. ThyssenKrupp Elevator suggests solutions in notes like this one immediately following the explanation of each ADA requirement.

## 4.10.2 Automatic operation.

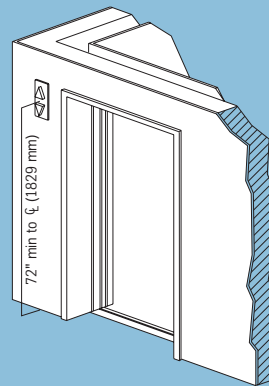
- Elevator operation shall be automatic.
- Each car shall have a self-leveling feature that will automatically bring the car to floor landing within a tolerance of  $\frac{1}{2}$ " (13 mm) underrated loading and zero loading conditions. This self-leveling feature shall be automatic and independent of the operating device and shall correct for undertravel and overtravel.

Note: Leveling is affected in several ways. In the hoistway: leveling cams, switches and brackets, leveling vanes and selector tapes affect leveling. In the machine room: controls, valves, power units, and machines affect leveling. Elevators with AC motors can be brought into compliance with ThyssenKrupp Elevator’s variable voltage variable frequency drive. DC-controlled elevators may simply need to be modernized with a ThyssenKrupp Elevator microprocessor controller. ThyssenKrupp Elevator can examine your existing equipment and determine the modifications that should be made to bring your elevators into compliance with ADA guidelines.

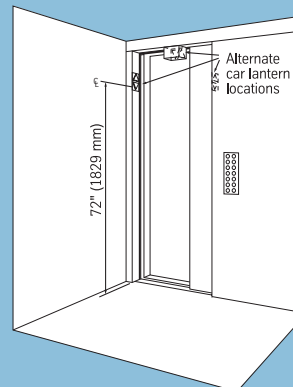
### Hall call button height.



### Hall lantern-minimum height.



### Car lantern locations.



## 4.10.3

### Hall call buttons.

- Shall be centered at 42" (1067 mm) above floor.
- Shall have visual signals to indicate when call is registered and answered.
- Minimum size:  $\frac{3}{4}$ " (19 mm) in smallest dimension.
- “UP” button shall be above “DOWN” button.
- Buttons shall be raised or flush.
- Objects mounted beneath buttons shall not project more than 4" (102 mm) from the wall.

Note: ThyssenKrupp Elevator can adjust the configuration of your hall call buttons to meet ADA requirements. An oversized face plate can be installed to minimize structural changes that result from new or repositioned buttons. We offer a complete line of hall call buttons in traditional, Impulse® and vandal resistant styles.

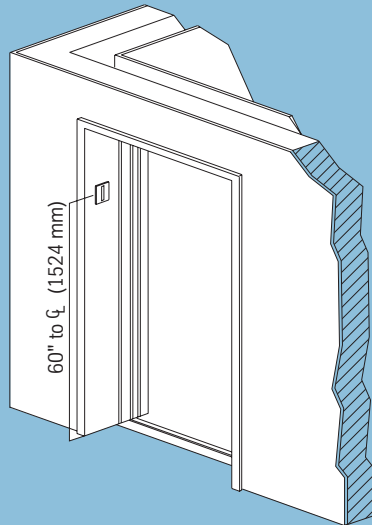
## 4.10.4

### Hall lanterns and car riding lanterns.

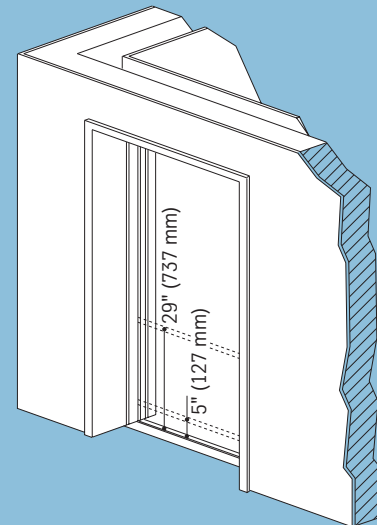
- A visible and audible signal shall be provided at each hoistway entrance to indicate which car is answering a call.
- Audible signals shall sound once for UP, twice for DOWN, or shall have verbal annunciators that say “UP” or “DOWN.”
- Visible fixtures shall be mounted with centerline at least 72" (1829 mm) above the lobby floor.
- Visual elements shall be at least  $2\frac{1}{2}$ " (64 mm) in the smallest dimension.
- Signals shall be visible from the vicinity of the hall call button.
- In-car lanterns conforming with the above requirements shall be acceptable.

Note: Some elevators already meet the requirements for visible signals. We can install a solid-state board in the controller to produce the necessary audible signals.

### Door jamb designation height.



### Door reopening device locations.



#### 4.10.5 Characters on hoistway entrances.

- All elevator hoistway entrances shall have raised and Braille floor designations provided on both jambs.
- Characters shall be centered 60" (1524 mm) above finish floor.
- Characters shall be 2" (51 mm) high, raised  $\frac{1}{32}$ " (0.8 mm), upper case, sans serif or simple serif type, and shall be accompanied by Grade 2 Braille.

Note: ThyssenKrupp Elevator carries an attractive line of Braille jamb pads in stainless steel, bronze or injection molded Noryl® plastic that can be installed quickly and easily.

#### 4.10.6 Door protective and reopening device.

- Elevator doors shall open and close automatically.
- Doors shall have a reopening device that will stop and reopen a car door if the door becomes obstructed by an object or person.
- The device shall be capable of completing these operations without requiring contact for an obstruction passing through the opening at heights of 5" (127 mm) and 29" (737 mm) above finish floor.
- Door reopening device shall remain effective for at least 20 seconds. After such interval, doors may close in accordance with ASME A17.1.
- If safety door edges are provided in existing automatic elevators, automatic door reopening devices may be omitted.

Note: ThyssenKrupp Elevator's MicroLight®, a curtain of infrared light beams from top to bottom of the elevator opening, complies with ADA requirements for a reopening device. Photoelectric eyes and safety edges can be installed or replaced as needed.

#### 4.10.7, 8 Door and signal timing for hall calls and car calls.

- The minimum acceptable time from notification that a car is answering a call until doors begin to close shall be calculated as follows:

$$T = D / (1.5 \text{ ft/s}) \text{ or } T = D / (445 \text{ mm/s})$$

T = time in seconds

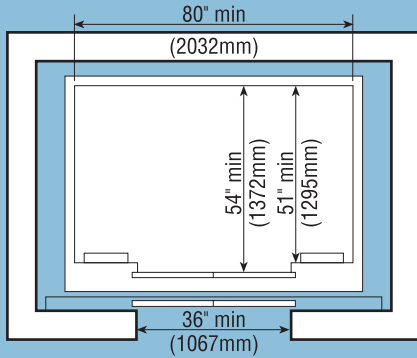
D = distance from point 60" (1524 mm) directly in front of furthest call button to centerline of hoistway door.

- The minimum acceptable notification time shall be five seconds for hall calls.
- The minimum time for elevator doors to remain fully open in response to a car call shall be three seconds.

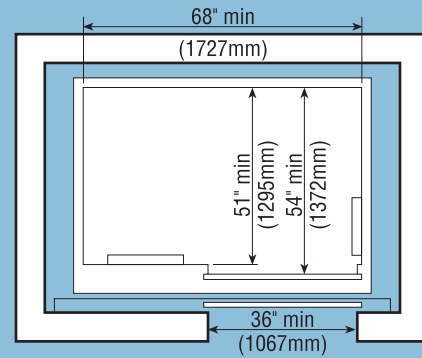
Note: ThyssenKrupp Elevator can modify wire contact relay controls by adding additional relays and timers. Or, if needed, a new chip or card can be installed in your existing microprocessor controller.

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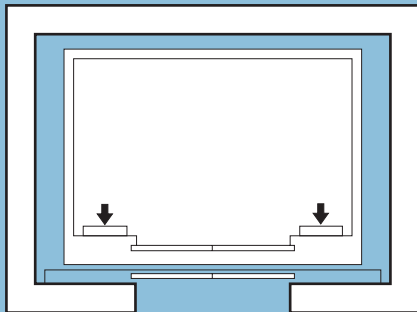
**Center-opening door floor plan.**



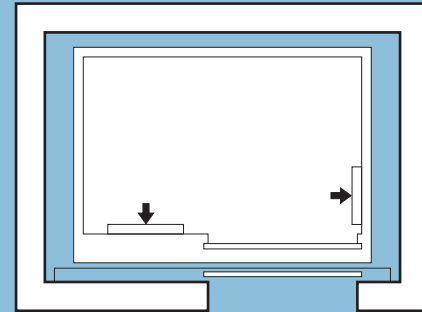
**Single-speed door floor plan.**



**Alternate control panel locations center-opening door.**



**Alternate control panel locations single-speed door.**



## 4.10.9 Floor plan of elevator cars.

- Shall provide space for wheelchair users to enter the car, maneuver within reach of controls, and exit the car.
- Doors shall provide 36" (914 mm) clear minimum.
- Cab depth: 51" (1295 mm) minimum, with 54" (1372 mm) minimum from rear of cab to inside face of door.
- Cab width: single-speed door – 68" (1727 mm) minimum; center-opening door – 80" (2032 mm) minimum.
- Clearance between car platform sill and edge of hoistway landing shall be 1¼" (32 mm) maximum.

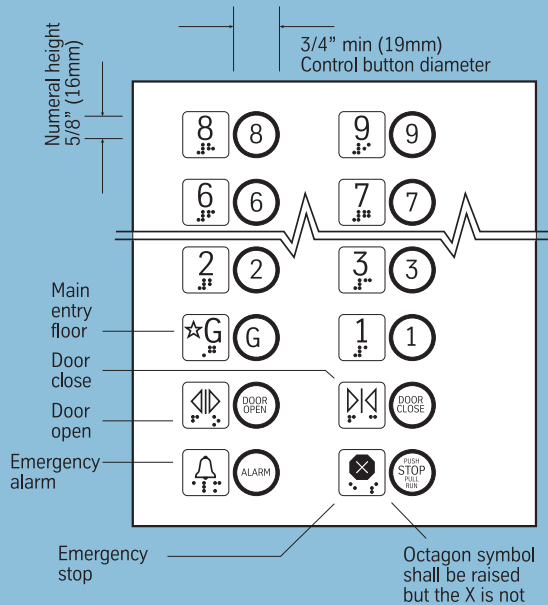
Note: ADA calls for the elimination of architectural and certain communication barriers in existing buildings where such removal is "readily achievable" and "easily accomplished and able to be carried out without much difficulty or expense." If your elevator cab does not meet the minimum requirements, ThyssenKrupp Elevator recommends that you consult legal counsel to determine the actions you can take.

## 4.10.10 Floor surfaces.

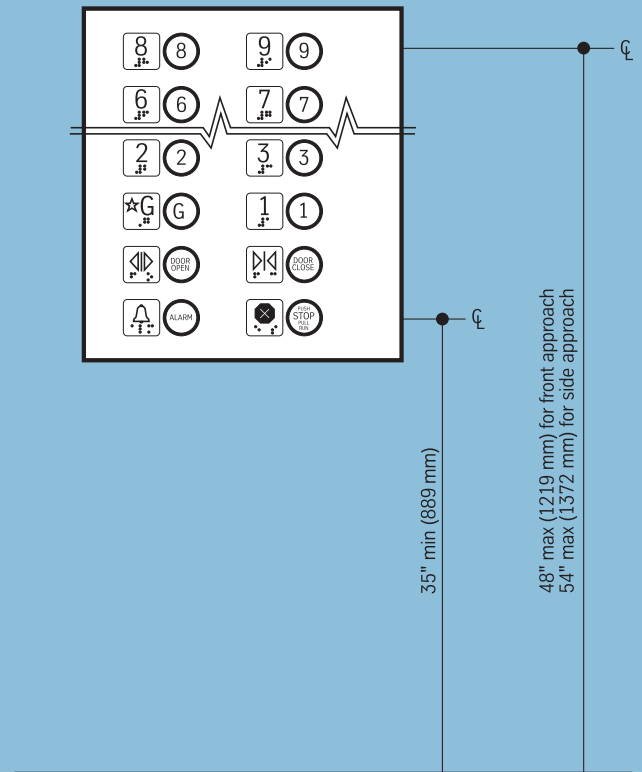
- Shall be firm, stable, and slip resistant.
- If carpet is used, it shall have the following features:
  1. Shall be securely attached.
  2. A firm cushion, pad, or backing (or none).
  3. A level loop, textured loop, level cut pile, or level cut/uncut pile texture.
  4. Maximum pile thickness: ½" (13 mm).
  5. Exposed edges fastened to floor surfaces with carpet edge trim.

Note: If you require new flooring, ThyssenKrupp Elevator has a variety of flooring options that meet ADA guidelines. While upgrading your flooring, you may want to consider modernizing the complete look of your elevator's interior. ThyssenKrupp Elevator offers a variety of cab options that will improve the look of your elevator's interior.

### Control panel detail.



### Control panel height.



#### 4.10.11 Illumination levels.

Illumination level at controls, platform, threshold and landing shall be a minimum of 5 footcandles.

Note: Several ceiling designs are available from ThyssenKrupp Elevator. Our suspended lighting, coved lighting, disc lighting and down lighting all comply with ADA standards.

#### 4.10.12, 13 Car controls and car position indicator buttons.

- Size:  $\frac{3}{4}$ " (19 mm) minimum in least dimension.
- Buttons shall be raised or flush.

#### Control indicators.

- All control buttons shall be designated by Braille and by raised standard alphabet characters for letters, arabic symbols for numerals, or standard symbols as required in ASME A17.1.

- Characters shall be  $\frac{5}{8}$ " (16 mm) to 2" (51 mm) high, raised  $\frac{1}{32}$ " (0.8 mm), upper case, sans serif or simple serif type, and shall be accompanied by Grade 2 Braille.
- All raised designations shall be immediately left of the button to which they apply.
- Floor buttons shall be provided with visual signals which light when each call is registered and extinguish when each call is answered.

#### Height.

- All floor buttons shall be maximum 54" (1372 mm) above floor where side approach is provided, 48" (1219 mm) maximum where forward approach is required.
- Emergency controls, including alarm and stop, shall be grouped at bottom of panel, with centerlines 35" (889 mm) minimum above floor.

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## Location.

- Controls shall be located on a front wall if cars have center opening doors, and at either a side wall or the front wall if cars have side opening doors.

## Car position indicators.

- A visual car position indicator shall be provided above the car control panel or above the door.
- As the car passes or stops at a floor, the corresponding numbers shall illuminate and an audible signal shall sound.
- Numerals shall be a minimum 1/2" (13 mm) high.
- Audible signal shall be no less than 20 decibels with frequency no higher than 1500 Hz.
- An automatic verbal announcement of the floor number may be substituted for the audible signal.

Note: ThyssenKrupp Elevator can install car controls that meet all ADA requirements and even some additional requirements of your own. Available in traditional, Impulse®, and vandal resistant styles, ThyssenKrupp Elevator's car controls are ideal replacements should yours need upgrading or repositioning.

ThyssenKrupp Elevator offers position indicators in several different styles, from light-up to dot matrix. They can be installed above the door or mounted in the car station

## 4.10.14

### Emergency communications.

- If provided, emergency two-way communication systems between the elevator and a point outside the hoistway shall comply with ASME A17.1.
- Highest operable part of system shall be maximum 48" (1219 mm) from floor.

- System shall be identified by raised symbol and lettering located adjacent to the device. Characters shall be 5/8" (16 mm) to 2" (51 mm) high, raised 1/32" (0.8 mm), upper case, sans serif or simple serif type, and shall be accompanied by Grade 2 Braille.
- If system uses handset, minimum cord length shall be 29" (737 mm).
- If located in a closed compartment, door shall be operable with one hand, shall not require tight grasping, pinching, or twisting of the wrist, and shall require a maximum force of 5 lbf.
- The emergency communication system shall not require voice communication. (Voice-only system is inaccessible to persons with speech or hearing impairments.)

Note: ThyssenKrupp Elevator's emergency communication system provides two-way communication and complies with ADA guidelines.

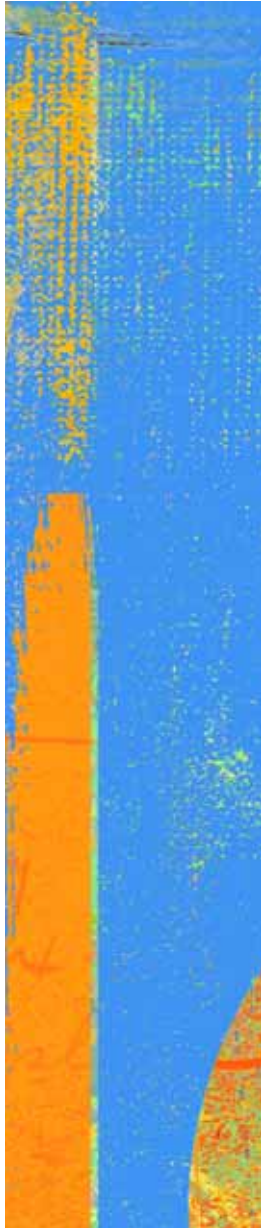
## ADA evaluation.

The following evaluation lets you know if your elevators comply with ADA guidelines. A ThyssenKrupp Elevator representative would be happy to answer any questions you may have about the evaluation. If you are not in compliance, we can readily suggest the appropriate actions that are available to you.

Note: ThyssenKrupp Elevator can upgrade your elevators to comply with any ADA regulations that may affect you. Contact your ThyssenKrupp Elevator representative for a comprehensive evaluation and component upgrade designed to meet your needs and budget.

# ADA evaluation.

<b>ADA evaluation</b>	<b>Elevator 1</b>	<b>Elevator 2</b>	<b>Elevator 3</b>	<b>Elevator 4</b>
<b>Automatic operation</b>	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
<b>Hall call buttons</b>				
Size	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Location	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Visibility	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
<b>Hall lanterns</b>				
Size	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Location	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Visibility	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Audible signal	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
<b>Braille jamb pads</b>	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
<b>Door reopening devices</b>	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
<b>Door/signal timing</b>	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
<b>Door closing time delay</b>	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
<b>Elevator floor plan</b>	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
<b>Inside car illumination</b>	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
<b>Car controls</b>				
Size	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Location	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Accessibility	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Illumination	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
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Location	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Visibility	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Audible signal	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
<b>Emergency communication</b>	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO



## ThyssenKrupp Elevator

ThyssenKrupp Elevator | P.O. Box 2177 | Memphis, TN 38101 | Tel: 877•230•0303 (toll free) | [thyssenkruppelevator.com](http://thyssenkruppelevator.com)

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