

The background image shows a modern office interior. In the foreground, a man and a woman are walking towards the left, smiling at each other. The man is wearing a light-colored V-neck sweater and dark trousers. The woman is wearing a light blue sweater and a dark skirt, carrying a brown handbag. To their right is a tall, silver automatic door. In the background, another woman is standing near a desk, looking at her phone. The office has large windows, desks with computers, and a digital display showing the number "174".

SAFETY CHECKS FOR AUTOMATIC BUILDING DOORS

A manual for owners, facility managers and operators

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INTRODUCTION

KONE moves millions of people with elevators, escalators and through automatic building doors every day. To us, safety is of the utmost importance. Automatic building door safety is a joint effort.

Technology producers must manufacture equipment that meets applicable codes and standards. Building owners and maintenance service providers have a responsibility to make sure the equipment is professionally maintained and kept in good condition, and to inform KONE of any concerns.

We constantly strive towards achieving our ultimate goal of zero incidents by paying rigorous attention to our design, manufacturing, installation, and maintenance processes. It is our strong belief that all incidents are preventable.

This manual, intended for owners, facility managers and operators, is designed to explain important visual and functional safety checks that should be completed on a regular basis on all automatic building doors.

By taking the time to check your equipment regularly you can maintain safety and security and facilitate smooth, uninterrupted journeys for everyone.

We recommend that personnel responsible for the daily safety or operation of the automatic doors in your property familiarise themselves with this manual and implement checks on the doors as part of their daily inspection regime.

Only people with appropriate qualifications and training should work on automatic building doors.

KONE CUSTOMER CARE CENTRE™

For further information, please call the KONE Customer Care Centre. We would be delighted to provide you with a more detailed presentation of the safety checks appropriate for your equipment.

DAILY TESTS DURING YOUR PROPERTY INSPECTION

As many people use the equipment daily, it is important to check its condition regularly. Before allowing people to use the door, a visual and functional safety check should be performed.

The building owner, facility manager or operator is strongly advised to keep a record of the daily checks that are performed. Please use the daily safety check log attached (see Appendix). Any irregularities should be reported immediately to your local KONE Service Team via our 24/7 Customer Care Centre.

These records should be saved for three years or for the period of time prescribed by local regulations or authorities.



CAUTION!

There is a risk of injury during the inspection if the door is not functioning properly.

PERSONAL SAFETY OF THE OPERATOR OR INSPECTOR

When conducting visual and functional safety checks, make sure you are not in a position where you may be impacted by a moving door leaf or caught between a door and any nearby structures.

With some door systems or environments, there may be a risk of being caught or pulled into the machinery. Loose clothing such as scarves, ties or jewelry, should not be worn during inspections, and appropriate personal protective equipment, such as gloves, may be required.

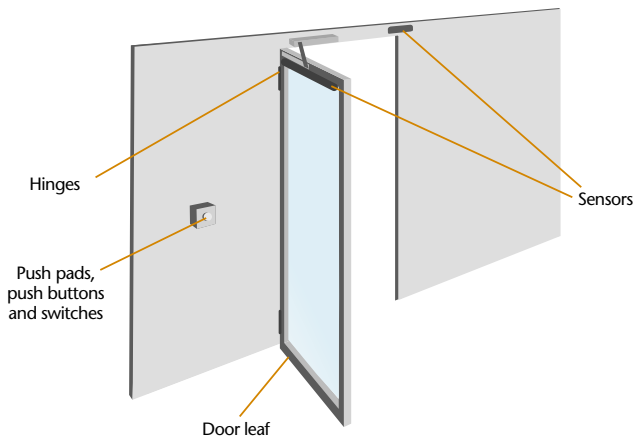
If needed, consult KONE for advice or further information on personal safety during the safety checks highlighted in this manual.

AUTOMATIC DOORS

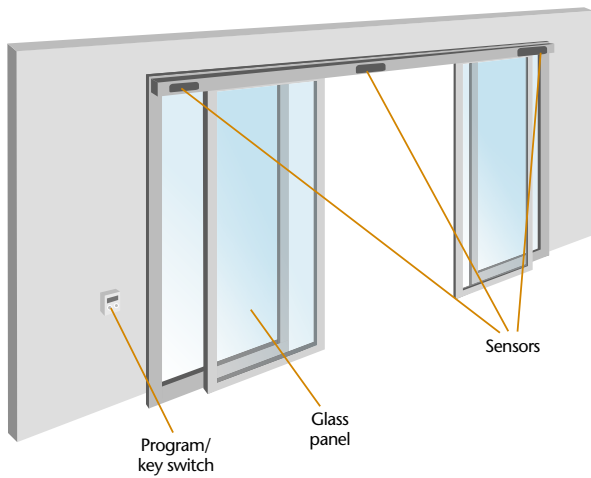
TYPES & MAIN COMPONENTS

PEDESTRIAN DOORS

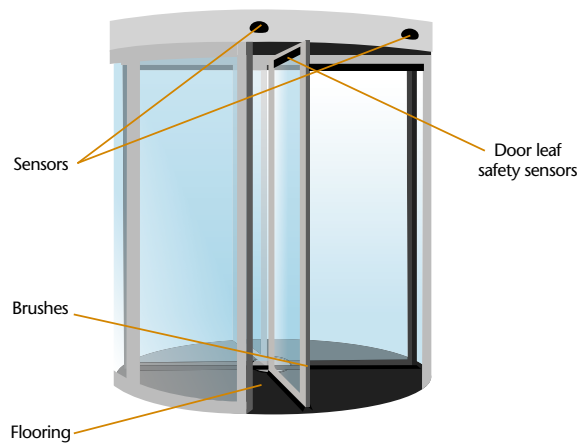
AUTOMATIC SWING DOOR



SLIDING DOOR

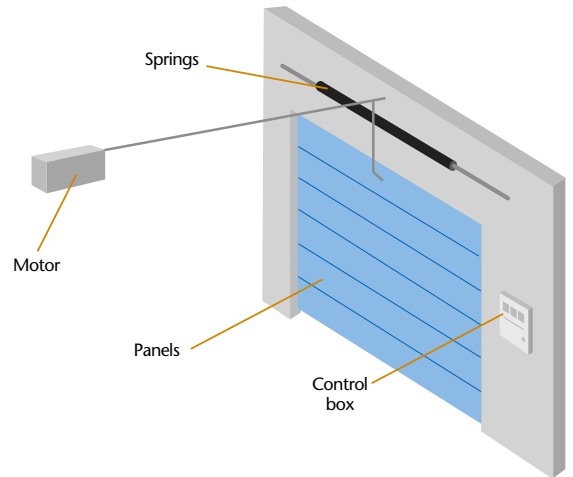


REVOLVING DOOR

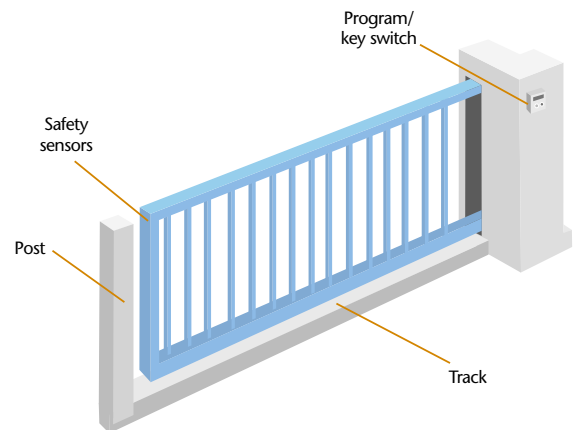


INDUSTRIAL DOORS AND GATES

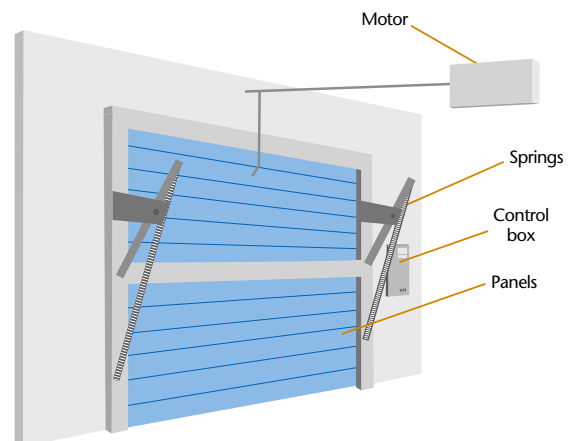
SECTIONAL DOOR



SLIDING GATE



GARAGE DOOR



VISUAL SAFETY CHECK TO BE PERFORMED AROUND THE EQUIPMENT

The following visual inspection items will assist in determining if any recognisable hazards are present, such as:

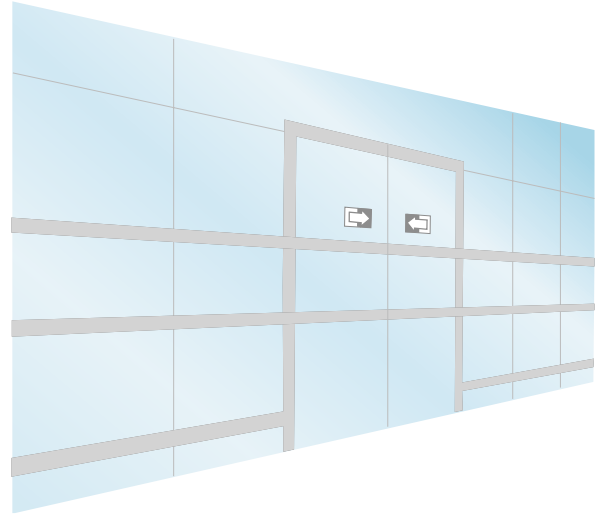
- Damage caused by impact or vandalism
- Broken glass or sharp edges
- Damaged components, such as finger guards, electrical or mechanical covers or signage that could affect the safety of users

PANELS

Panels should be free from damage.

- Glass sections should be visible at all times; if necessary, safety stickers should be used
- There should be no glass-to-glass contact during operation (shatter risk)
- Safety edges and weather seals or brushes should be in good condition with no evidence of damage or deterioration

VISUAL INDICATORS



CAUTION!

Small chips or cracks in glass as well as dents and similar signs of impact on panels can be an indication of structural damage. These may lead to further damage or potential safety risks. Contact KONE for repairs immediately.

SAFETY SIGNS

Pedestrian doors should be equipped with safety signs that are in good condition and in compliance with AS5007:2007 (Fig. A).

On industrial doors and gates, devices containing high-voltage connections, such as motors or control boxes, should be highlighted (Fig. B).

Warning signs for children not to play with or around the equipment should be visible.

EXAMPLES OF SAFETY SIGNS.

FIG. A



FIG. B



VISUAL SAFETY CHECK TO BE PERFORMED AROUND THE EQUIPMENT

LIGHTING

Check that the lights are operating properly. Consider the lighting level at night or on overcast days if necessary, as well as the lighting near operating devices not directly installed on the door. A minimum of 100 lux should be maintained across the threshold and in the vicinity of the door.



MANUAL OPERATION AND EXIT DEVICES

If applicable, check that the manual operating devices, such as hand cranks or chains on industrial doors, or cords or levers on pedestrian doors work properly in case they are needed in an emergency.

SUPPORT STRUCTURES AND GUIDES

Inspect visible fixing points and supports for signs of damage or movement. Take the door out of operation if any changes are noted from the last inspection.

Consider the following:

- Damage to brickwork or concrete around the door, and corrosion to steel structures
- Signs of movement in fixing points (cracks in paintwork or metal filings may also be an indicator)
- Damage to guides
- Abnormal noises during operation (shut down immediately).

Safe distances and clear access or egress

The areas around the door should be free from obstructions to ensure the smooth and safe flow of people and goods. Consider the actions and movement of people in an emergency.

Make sure that objects around the doors do not create a crushing point by observing the following safe distances:

- ≥ 500 mm from the fully open position of a swing door (Fig. C, p. 7)
- ≥ 200 mm from the fully open position of a sliding door (Fig. D, p. 7)

In industrial and retail situations, take into account potential changes in the operating environment, such as the positioning of displays in retail or goods pallets in warehouses. Also consider the potential actions or inactions of the public, especially children or the elderly.

CHANGES IN SITE CONDITIONS AND DOOR USE

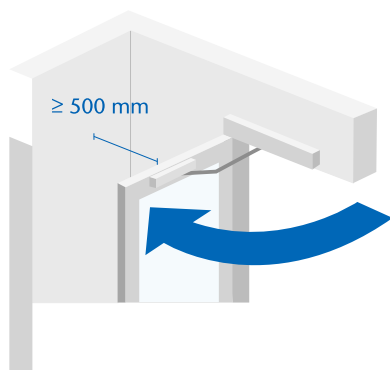
Building works in the vicinity of the doors, changes in the building's population, or changes in the use of the doors may have an impact on their operation and safety. For example, doors may require special safety and operating devices depending on whether they are used by children or the elderly. Building works may also affect safe egress and the safe distances around the doors.

Ask KONE to assess the operation of the door whenever there are significant changes in its use or environment.

VISUAL SAFETY CHECK TO BE PERFORMED AROUND THE EQUIPMENT

SAFE DISTANCES AND CLEAR AREAS

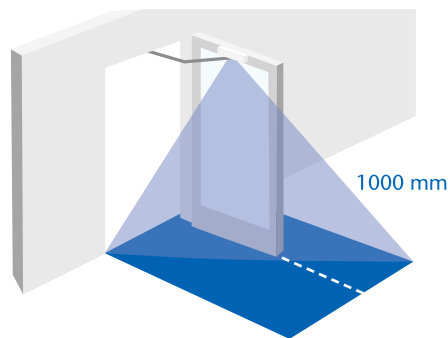
FIG. C



≥ 500 mm to the wall from the fully open position of an automatic swing door.

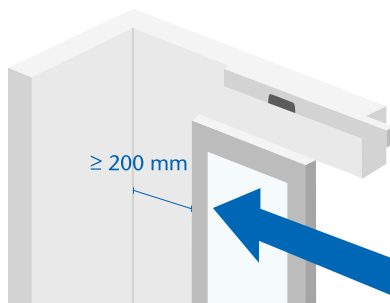
CLEAR ACCESS AND DETECTION AREAS

Blue – detection zone, the door should detect people and objects in this area and commence operating

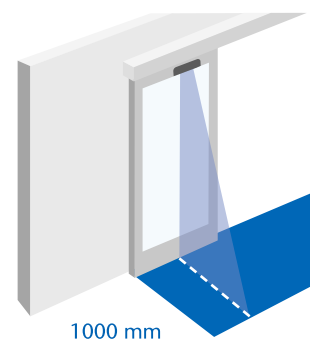


The blue zone depicts the clear access and detection area of an automatic swing door.

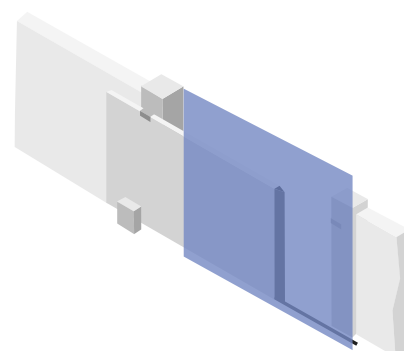
FIG. D



≥ 200 mm to the wall from the fully open position of an automatic sliding door.



The blue zone depicts the clear access and detection area of an automatic sliding door.



The blue zone depicts the clear access and detection area of an automatic sliding gate.

FUNCTIONAL SAFETY CHECK TO BE PERFORMED ON THE EQUIPMENT

After performing the visual safety check and ruling out any recognisable faults, proceed with the functional safety check.

The following should be completed before taking an automatic door into use. Allow the door to open and close a few times, making sure it is not being used by people at this time. Inspect the general operation for unusual noises, vibrations or changes in operating characteristics.

PROCEDURE IN CASE THE DOOR DOES NOT OPERATE

1. Confirm that power is available
2. Check the operating mode
3. Check any accessible safety devices (stop buttons engaged, safety beams obstructed, etc.)
4. Call the KONE Customer Care Centre for assistance

SAFETY AND DETECTION SENSORS

Make sure that the safety sensors prevent the door leaves from impacting people or goods at all times. Consider normal use as well as foreseeable misuse, such as children playing in or around the door, or elderly users.



CAUTION!

Impact against goods or vehicles can damage the door and can cause an unsafe situation that may not be immediately recognisable. If this occurs, contact KONE to complete a safety inspection.

Impact against pedestrians must be prevented in both the opening and closing directions.

Detection sensors should detect a person or goods approaching the door at normal speed with enough time to make sure the door is fully open when they reach the threshold. When checking the sensors and door closing speed, elderly and disabled persons who move slowly should also be taken into consideration.

OPERATING DEVICES AND INDICATORS

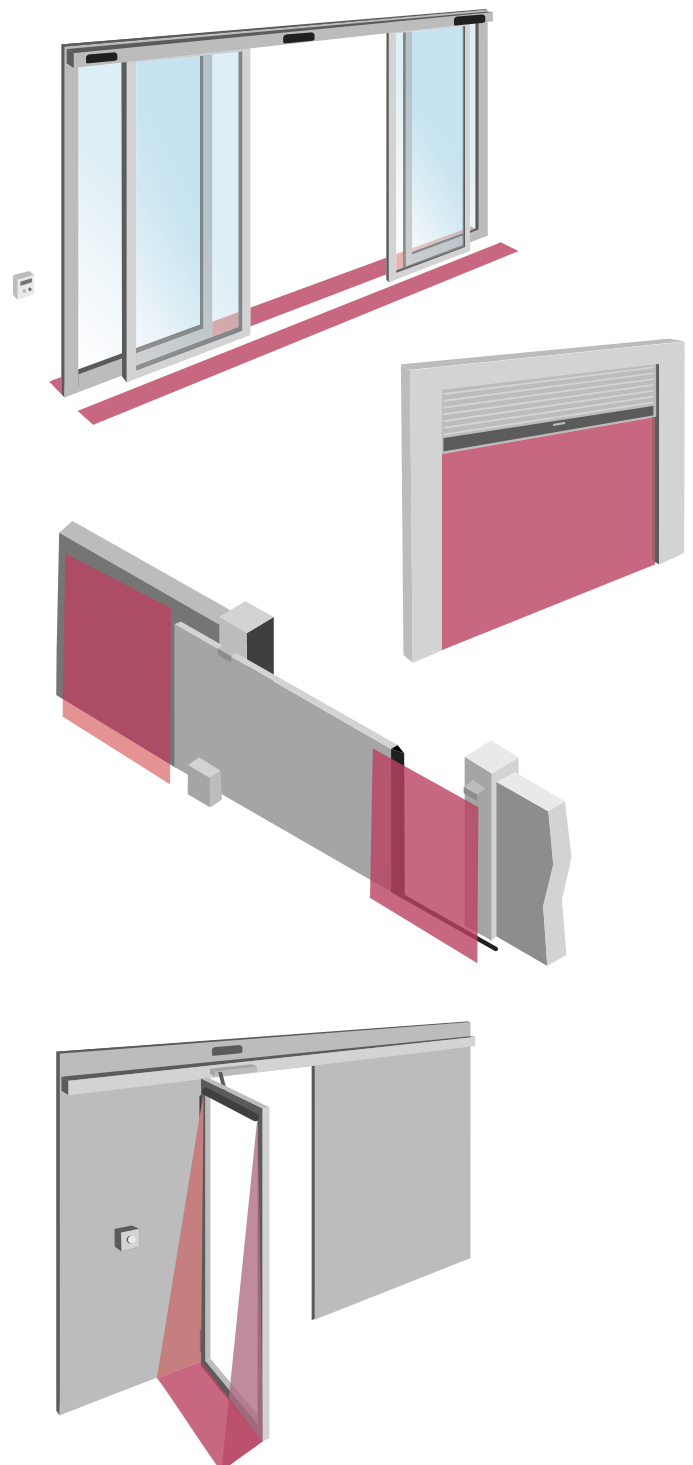
Verify that operating devices and indicators work correctly. Consider the following when applicable:

- Traffic lights
- Key switches, intercoms or call buttons
- Access devices for people with disabilities
- Remotely located devices, such as counter or concierge controls

If an industrial door or gate is activated remotely or from an operating device that is outside the line of sight of people in the vicinity or on the other side of the door, then it should be equipped with an audible alarm and/or warning lights.

SAFETY AND DETECTION SENSORS

Red – safety zone, the door must detect and prevent impact against people or objects in this area



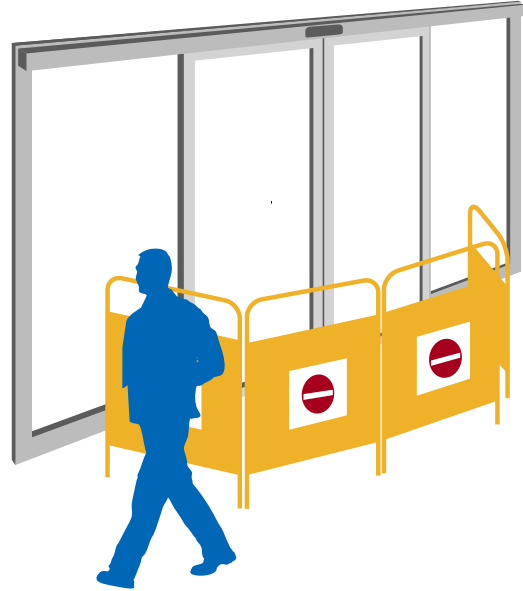
TAKING AN AUTOMATIC DOOR OUT OF OPERATION

If any of the potential safety issues described in sections 2 and 3 are identified, the door should be taken out of service.

Follow these steps to remove the door from service:

1. If possible, stop the door in the fully open or closed position using the program mode switch or key switch. If this is not possible, proceed directly to step 2.
2. Press the stop button and/or switch the door off at the power source.
3. Install a sign or tag on or near the door to inform other authorised personnel of the reason it was removed from service and to ensure that they do not inadvertently put it back in operation.
4. Use clear signs or barricade the door so that potential users know it is out of service. Provide information on alternate entry or exit points that may be available, noting alternatives for designated fire or emergency exits.

PEDESTRIAN DOORS



INDUSTRIAL DOORS

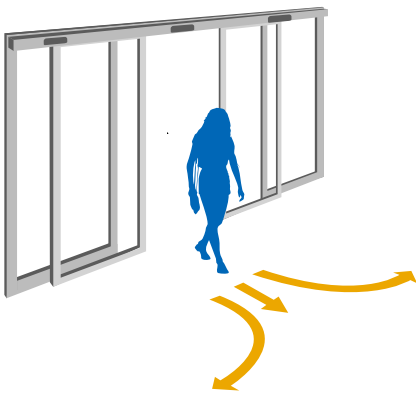


SAFETY IN AND AROUND AUTOMATIC DOORS

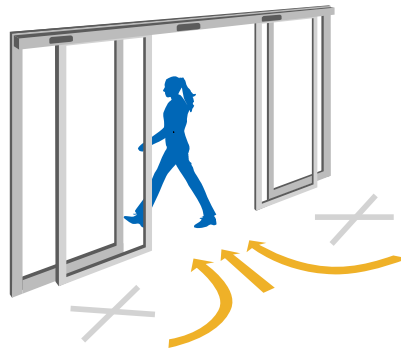
Being observant and acting sensibly can prevent injuries. Following these simple guidelines can help enhance your safety and the safety of those around you. Building owners and managers should observe end-user behavior and instruct them when necessary.

DO'S

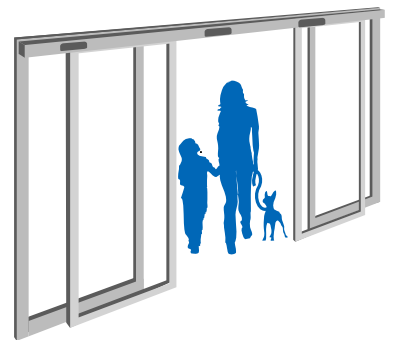
Guidelines for pedestrian door users



Move swiftly through the doorways. Do not stay in the door area longer than necessary, as the sensors may not detect your presence.

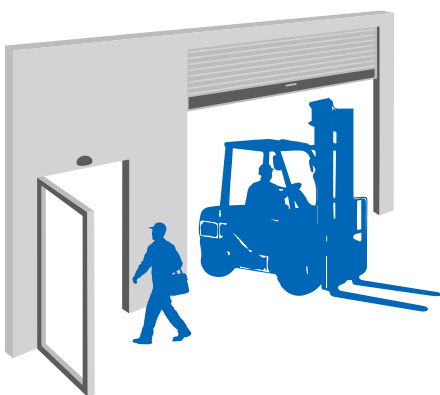


Wait until the door is fully open before passing through. Enter the door from directly in front, not from the sides.

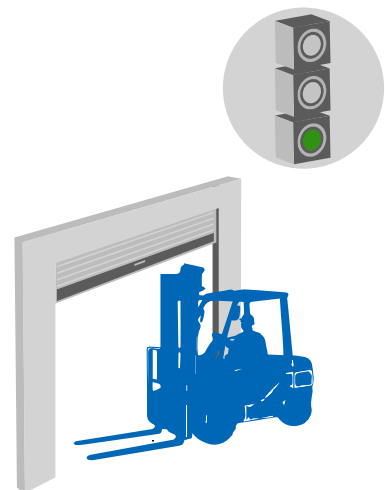


Children and pets should always be accompanied by an adult when in the door area.

Guidelines for industrial door users



Use the door for its designed purpose only. In industrial areas, use the pedestrian doors for safe access on foot.



Check that there is no traffic coming from the opposite direction.

DAILY SAFETY CHECK LOG FOR AUTOMATIC BUILDING DOORS

Building:	Address:
Unit ID:	
Person responsible:	KONE Customer Care Centre:
Starting date:	

Complete this form for each unit when conducting safety checks. If any of the items listed in this document are not functioning properly, the equipment must not be put into use. Call the KONE Customer Care Centre immediately for further instructions.

Only personnel who have familiarised themselves with the Safety checks for automatic building doors manual are allowed to inspect automatic building doors. Loose clothing such as scarves, ties or jewelry, should not be worn during inspections, and appropriate personal protective equipment, such as gloves, may be required.

Please see a more detailed description of each checklist item in the Safety checks for automatic building doors manual (OM-81.01.001).

Initials of person conducting safety checks:									
REF	CHECK LIST ITEM	PAGE	MON	TUE	WED	THU	FRI	SAT	SUN
1	Panels	5							
2	Safety signs	5							
3	Lighting	6							
4	Manual operation and exit devices	6							
5	Support structures and guides	6							
6	Safe distances and clear areas	6-7							
7	Safety and detection sensors	8							
8	Operating devices and indicators	9							

You may copy this safety check log for your own use, or order more copies by calling the KONE Customer Care Centre.

AUTHORISATION NOTICE

This publication is for informational purposes and is meant to advise the property owner, property manager or operator on how and when a building door should be checked to provide for the maximum safety of users.

Please note that local or regional codes may specify additional or more restrictive requirements.

ILLUSTRATION NOTICE

The illustrations in this manual are generic and may differ in some cases from the material used for the actual unit.

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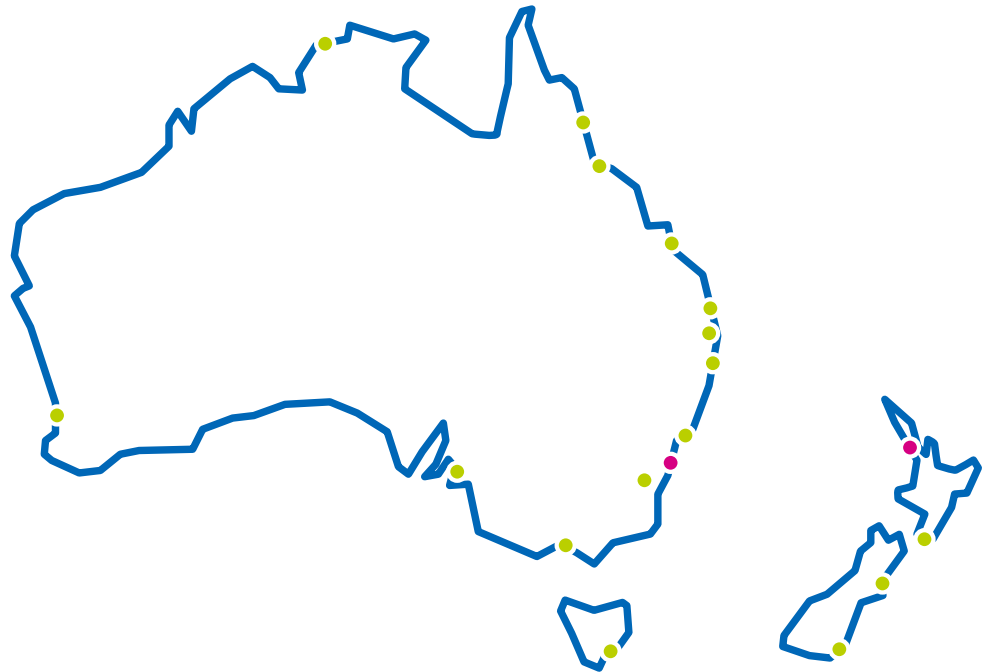
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KONE provides innovative and energy efficient solutions for elevators, escalators, automatic building doors and the systems that integrate them with today's intelligent buildings. We support our customers every step of the way; from design, manufacturing and installation to maintenance and modernisation.

KONE is a global leader in helping our customers manage the smooth flow of people and goods throughout their buildings. Our commitment to customers is present in all KONE solutions. This makes us a reliable partner throughout the life cycle of the building. We challenge the conventional wisdom of the industry.

We are fast, flexible, and we have a well-deserved reputation as a technology leader, with such innovations as KONE MonoSpace® and KONE UltraRope®.

KONE employs over to 55,000 dedicated experts to serve you globally and locally. We have a team of over 1,500 staff around Australia and New Zealand.



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