

Dedicated to People Flow™



A MANUAL FOR OWNERS, FACILITY MANAGERS AND OPERATORS

Safety checks for escalators, ramps and autowalks

Contents

1	Introduction	3
2	Visual safety check before putting the equipment into operation	5
3	Functional safety check when putting the equipment into operation	10
4	Taking the equipment out of operation	12
5	Safety around and on the equipment	13

Appendix: Daily safety check log for escalators, ramps and autowalks

1 Introduction

KONE moves millions of people with elevators, escalators, ramps and autowalks every day. To us, safety is of the utmost importance.

Elevator and escalator 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.

If your equipment has been maintained by a service provider other than KONE or is more than ten years old, please contact your KONE representative to order a KONE Care for Life™ assessment. The assessment is a full evaluation of your equipment on safety, accessibility, aesthetics, performance and eco-efficiency. It serves to enhance safety for end users and helps prevent liability risks while also assisting you in planning your budget for any necessary modernisation.

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

Little things matter in safety. This is a manual for owners, facility managers and operators which explains important visual and functional safety checks that should be completed on a daily basis before putting escalators, ramps or autowalks into use. By taking care to check

your equipment regularly you can maintain safety and facilitate smooth, uninterrupted journeys for everyone.

Only personnel who have familiarised themselves with this manual are allowed to inspect and start up escalators, ramps and autowalks. Do not take escalators, ramps and autowalks into operation or public use before handover by KONE.

KONE Customer Care Center™

For further information, please call the KONE Customer Care Center™ (1 300 362 022 in Australia and 0800 775 663 in New Zealand).

Personal safety of the operator or inspector

There is a risk of injury from being caught or pulled into the machinery. Persons conducting visual and functional safety checks must cover their hair or tie it securely. Loose clothing such as scarves, ties or jewelry, including rings, must not be worn during inspections. Personnel must wear gloves at all times when checking the equipment.

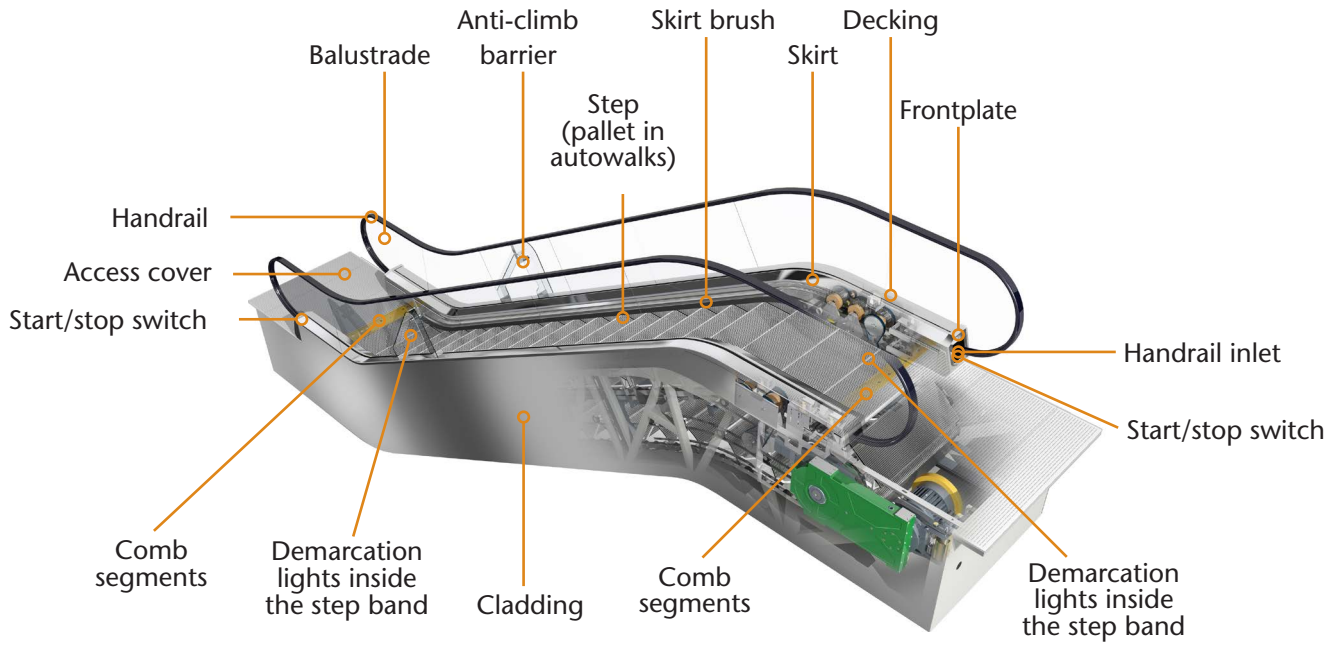
CAUTION: To avoid personal injury, always take the equipment out of operation before checking.



Do not leave the key in the lock of the key-operated switch at any time. Misuse can result in personal injury.

Main components of escalators

The same components apply to ramps and autowalks.



2 Visual safety check before putting the equipment into operation

Before allowing people to use the equipment, a visual safety check and a functional safety check (see p. 10) must be completed.

The following visual inspection determines the presence of any externally recognisable hazards such as:

- Damage caused by vandalism that may affect the condition of the equipment
- Broken glass or sharp edges
- Missing components such as paneling or covers that can affect the safety of users

Daily tests during the switch-on procedure

The building owner, facility manager or operator is strongly advised to keep a record of the daily checks that are performed during the switch-on procedure. Please use the daily safety check log attached (see Appendix).

These records should be saved for at least seven years. Anything conspicuous should be reported immediately to the KONE Customer Care Center.

Safety guards and anti-slide devices

Make sure that the safety guards cover any gaps between the equipment and the building interfaces and that the guards are solid. Check also that anti-slide devices are solid and securely attached to the escalator. Anti-slide devices are installed in between two parallel escalators or between an escalator and a wall to prevent persons or objects from sliding down. Check that the fall protection barrier is solid and in place.

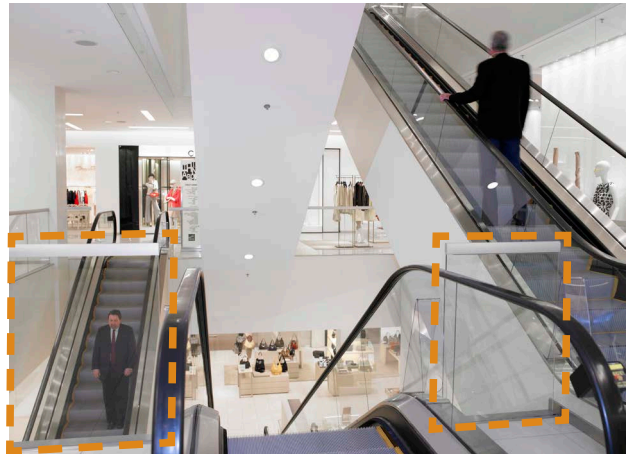
Fall protection barriers are installed outside the handrails to prevent persons from leaning over the handrails and falling.

Check the anti-climb barrier and the head guards to ensure that they are solid.

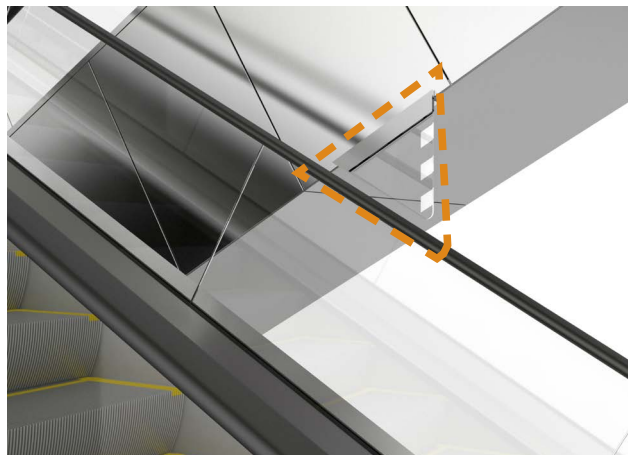
CAUTION: There is a danger of falling if safety guards are not secure. There is also a danger of serious injury if head guards are not in place or are not secure.



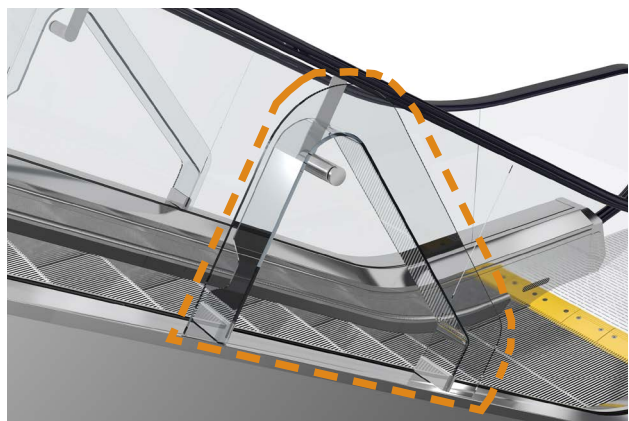
Safety guards



Head guard



Anti-climb barrier



Steps and pallets

Make sure that the steps (in escalators) and pallets (in ramps and autowalks) are dry, clean, and are not damaged, broken or missing.

If there is oil, water or any other substance which may cause slips and falls on the steps or pallets, take the following actions:

- A. Take the equipment out of operation and install safety barricades to prevent anyone from entering the equipment.
- B. While wearing gloves, use a cloth to wipe all traces of the substance off the equipment. If it cannot be wiped away easily, call the KONE Customer Care Center.



CAUTION: There is a danger of slipping, falling or entrapment when there are substances on steps.

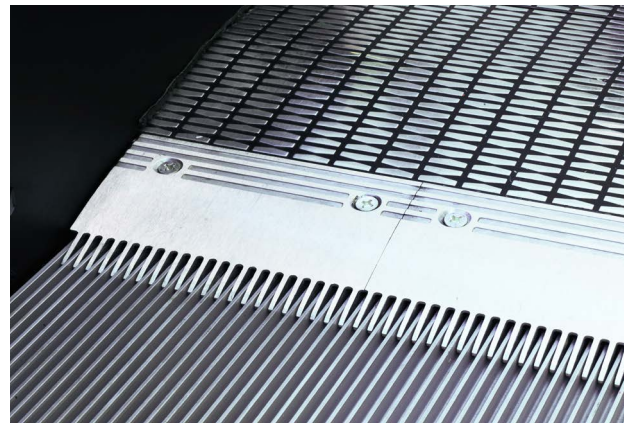


Comb segments

Check that the combplate is parallel to the steps and that the two fit closely together. Check the comb segments for missing or broken teeth.

Comb segments must not have two or more adjacent teeth missing. If this occurs, the equipment must not be put into operation. Call the KONE Customer Care Center immediately.

Check for objects between the combs and steps or pallets. Should you find any trapped objects, please call the KONE Customer Care Center immediately.



CAUTION: There is a danger of entrapment if a shoelace or other personal item is exposed to comb segment.

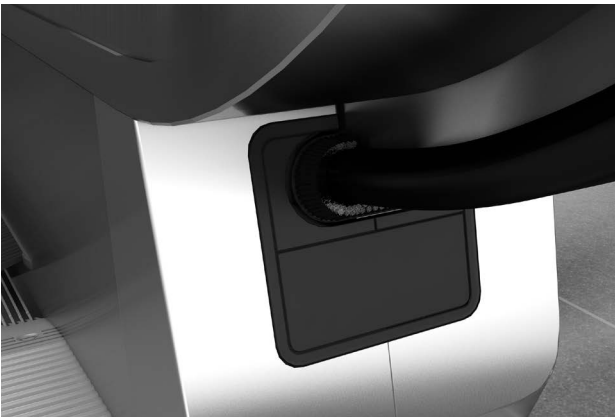


Handrail inlets

Check for damage at the handrail inlets. If any is found, the equipment must not be put into operation.

There must always be a gap between the handrail and the inlet. If there is contact between the handrail and the inlet, call the KONE Customer Care Center.

The inlet should be clean as debris may cause the equipment to stop suddenly.



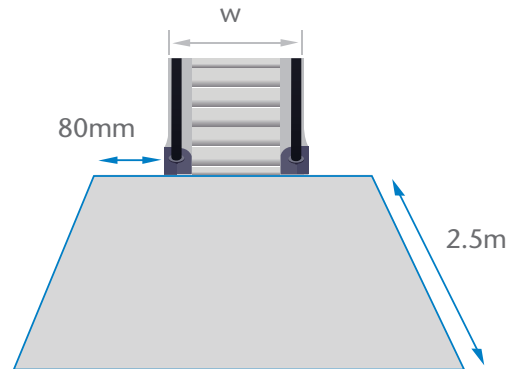
Entry and exit areas

Make sure that the entry and exit areas are dry, not slippery and are free of obstacles; for example, advertisement racks or shopping carts.

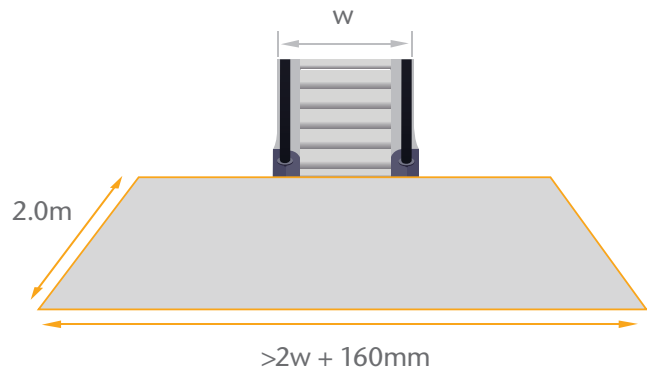


Check also that the exit area fulfills either of the following requirements:

- A. There must be at least 80mm of free space on each side when measured from the outer edge of the handrail. Also, there should be free space with a depth of 2.5m from the end of the balustrade.



- B. If the depth of the free space from the end of the balustrade is less than 2.5m, it must be a minimum of 2.0m. Also, the amount of free space from the outer edge of the handrail on each side should be at least as wide as the distance between the outer edges of the two handrails plus 80mm.



CAUTION: There is a danger of injuries or falls due to congestion if there are obstacles at the entry and exit areas.



Balustrades

The steel balustrades must not have sharp edges or corners. If there are any, please call the KONE Customer Care Center.

If a glass panel is broken or missing, the equipment must not be put into operation. Barricade the equipment and call the KONE Customer Care Center.



Skirts and skirt deflector brushes

Visually check that no corners or edges are sticking out on the skirts and that they are free from excessive wear or scratches, which can occur suddenly. Check for sharp edges, damaged, loose or missing parts. If any of these issues are found, call the KONE Customer Care Center.

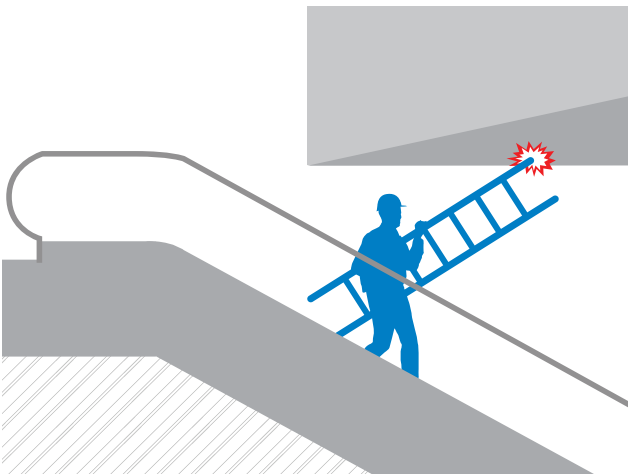
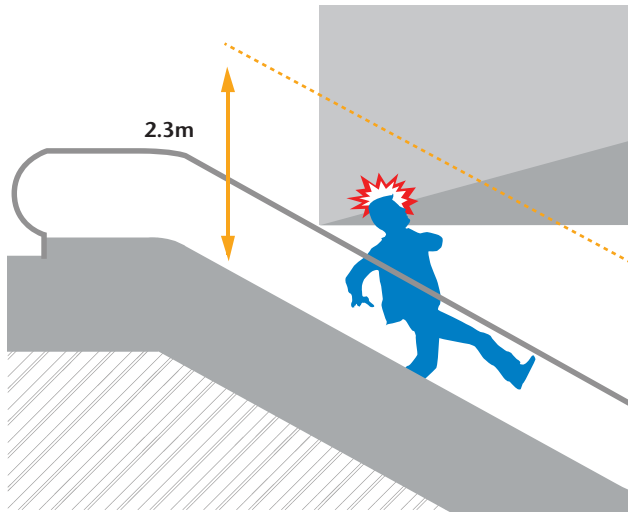


CAUTION: There is a danger of injury, falling or entrapment when glass panels are broken or pieces are missing.



Vertical clearance

Make sure that there is a minimum of 2.3m of clearance between the steps and the ceiling and remove any obstacles such as monitors, advertising or decoration over the entire travel length of the equipment. If there is less than 2.3m of clearance the equipment should not be put into operation.



CAUTION: Do not carry very long or tall objects like ladders or poles on the equipment. There is a danger of the object getting trapped between the ceiling and escalator step or pallet, causing damage or personal injury.



Safety labels or pictograms

Verify that the safety labels are in place. If the safety notices are missing, the equipment must not be put into operation.

If the safety labels are damaged, contact the KONE Customer Care Center to order new stickers immediately.



3 Functional safety check when putting the equipment into operation

After performing the visual safety check and ruling out any externally recognisable faults, proceed with the functional safety check. Use the attached daily safety check log for escalators, ramps and autowalks. The following should be completed before putting the equipment into use.

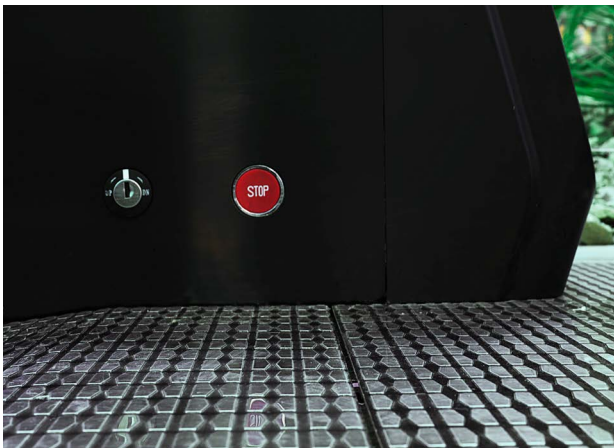
CAUTION: Never start the equipment when any persons or objects are on it.



To switch the equipment on, insert the key into the key-operated switch on the control panel. Start the equipment in the operational direction required by turning the key.

- **Key switch at lower right side:**
Turn the key clockwise to run the unit downwards and counter-clockwise to run the unit upwards.
- **Key switch at upper left side:**
Turn the key clockwise to run the unit upwards and counter-clockwise to run the unit downwards.

NOTE: If the equipment has run in a single direction for a long term period it is recommended to continue to run the equipment in that direction.



After switching the equipment on and before allowing people to use it, **allow the equipment to revolve at least twice during the functional safety check.**

Inspect the step or pallet band and make sure that the equipment is running faultlessly (see p. 6 Steps and pallets). Check the handrail condition and make sure the handrail is running at the same speed with the step band. Be alert for any damaged or missing steps or pallets, unusual noises or vibrations.

Check that the demarcation lights as well as the ambient lighting (optional) are working correctly.

Procedure in case the equipment does not start

If the equipment does not start, check the information display for fault messages. For further instructions call the KONE Customer Care Center. The information display is located on the inner deck, on the inner balustrade, or on the column.

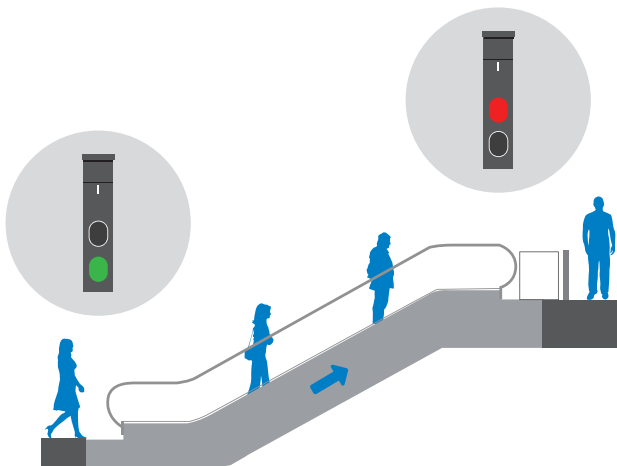
CAUTION: To avoid injury, always switch the equipment off before checking it.



Traffic lights

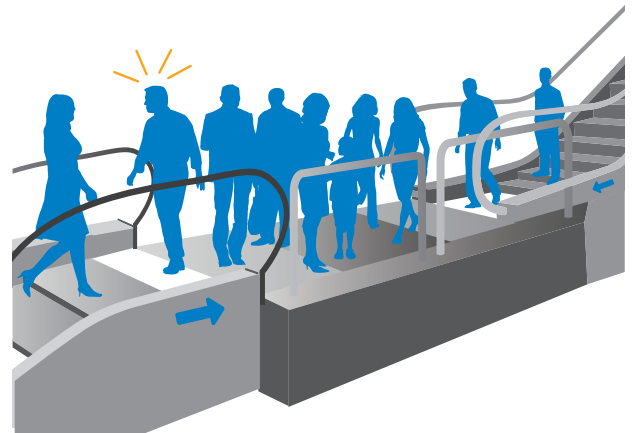
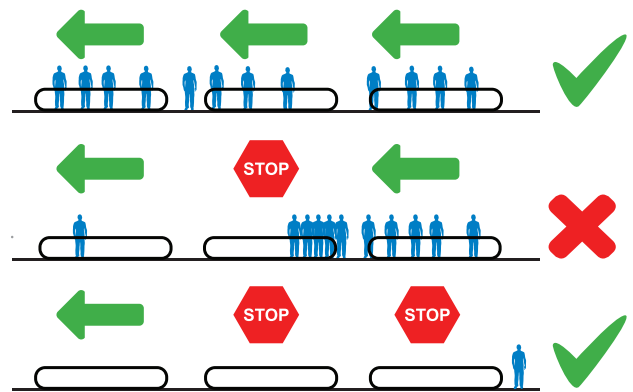
When the equipment starts up, the traffic lights (optional) will simultaneously indicate the operational direction. Check that the display is correct:

- In the correct direction of travel the traffic lights must be green.
- In the opposite direction of travel the traffic lights must be red.



Preventing traffic jams

In the case of two successive units without intermediate exits, make sure that both units are traveling in the same direction. This prevents traffic jams, congestion and possible injuries from falls at the landing between the two units.



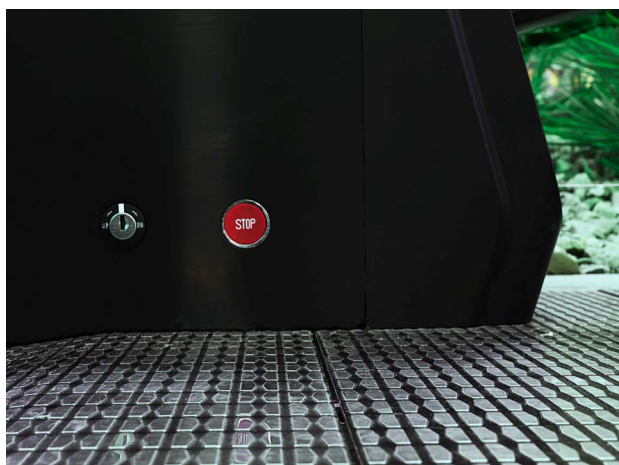
CAUTION: There is danger of injuries from falls due to congestion.



4 Taking the equipment out of operation

Operational stop

Press the stop button to switch the equipment off, or stop the equipment with the key turned to the stop position. The equipment will make a controlled stop. In case the equipment doesn't stop, call the KONE Customer Care Center.



CAUTION: Never start or stop the equipment when any persons or objects are on it.



Emergency stop

If an unforeseen emergency situation occurs while the equipment is in operation, the equipment must be switched off immediately.

The stop button should only be used in the event of an emergency. In this event, press the stop button whether or not any users or objects are on the equipment. The equipment will make a controlled stop. The equipment can be switched on again after the situation is resolved and a visual safety check has been completed.

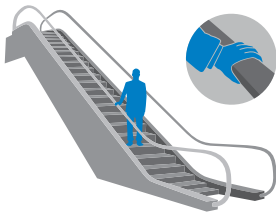
For long escalators, ramps or autowalks, there are also emergency stop switches in the middle of the unit. The number of switches is dependent on the vertical rise or horizontal length of the unit.

5 Safety around and on the equipment

Safe behavior on the equipment and in its vicinity

DOs

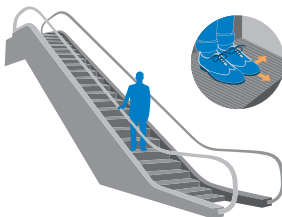
- When entering an escalator, face forward and hold the handrail. Refrain from riding, pulling or leaning over the handrail or balustrade, or placing heavy or bulky objects on it.



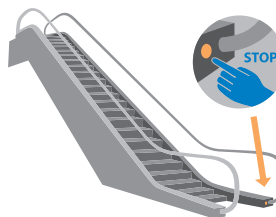
- Children should always be accompanied by adults. Hold young children by the hand during the ride.



- Stand in the middle of the step and keep feet, hands, clothing items, and shoelaces away from the skirts. Never use the equipment while barefoot.



- The emergency stop button should be used only in case of an incident or escalator malfunction.

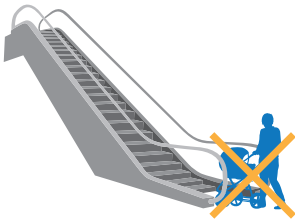


- Step on or off the equipment promptly when entering and exiting so that no congestion occurs.

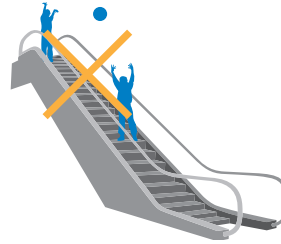


DON'Ts

- Never take wheeled objects like strollers or shopping carts on the equipment. Use the nearest elevator instead.



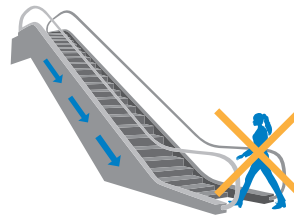
- Do not play or run on the equipment or in its vicinity. Riding on the handrail is strictly prohibited.



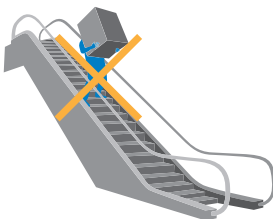
- People in wheelchairs or users with walking aids should not use the equipment. Direct them to the nearest elevator.



- Observe the movement of the steps and do not enter or exit the equipment in the wrong direction.



- Do not transport long, bulky or heavy objects on the escalator.



- Always stand on the escalator and do not sit, kneel, or support yourself with hands on the steps.



Daily safety check log for escalators, ramps and autowalks

Building:	Address:
Unit ID:	Starting date (DD.MM.YYYY):
Person responsible:	KONE Customer Care Center:

Complete this form for each unit when conducting the start-up procedure. 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 Center immediately for further instructions.

Only personnel who have familiarised themselves with the Safety checks for escalators, ramps and autowalks manual are allowed to inspect and start up escalators, ramps and autowalks. Persons conducting visual and functional safety checks must cover their hair or tie it securely. Loose clothing such as scarves, ties or jewelry, including rings, must not be worn during inspections. Personnel must wear gloves at all times when checking the equipment.

Please see a more detailed description of each checklist item in the Safety checks for escalators, ramps and autowalks manual.

Initials of person starting the unit									
Ref	Check list item	Page	Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	Entry / exit area (start end)	7							
2	Comb segments (start end)	6							
3	Handrail inlet (start end)	7							
4	Start switch (start end)	10							
5	Stop switch (start end)	13							
6	Step / pallet clearance (start end)	6							
7	Steps / pallets (damage)	6							
8	Steps / pallets (oil)	6							
9	Balustrades	8							
10	Skirts	8							
11	Skirt brushes	8							
12	Demarcation lights	10							
13	Ambient lighting	10							
14	Head guards	5							
15	Anti-slide devices	5							
16	Anti-climb barrier	5							
17	Safety labels	9							
18	Step / pallet clearance (opposite end)	6							
19	Entry / exit area (opposite end)	7							
20	Handrail inlet (opposite end)	7							
21	Stop switch (opposite end)	13							
22	Comb segments (opposite end)	6							
23	Handrail condition	10							
24	Unusual vibrations or noises	10							
25	Handrail speed	10							

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

Authorisation Notice

This publication is for informational purposes and is meant to advise the property owner, property manager or operator on how and when an escalator or autowalk or ramp 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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Our engineers and sales consultants are always available to answer questions and provide speedy quotations no matter the job.

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