

Guidelines for Modernising Existing Escalators

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Various kinds of escalators bring us convenience

An escalator is after all a machine in motion

How can we make it safer and more reliable?

In this video, we are going to introduce eight safety guidelines on modernising escalators

Drama

Auntie Li

Good morning, Uncle Ming

Why don't you use the escalator?

It's tiring to climb the stairs

Uncle Ming, the escalator shakes when I stand on it

It seems not quite stable

Our escalator has just undergone maintenance

And officers at our management office always keep an eye on the use of the escalators

You can rest assured

Is it really safe?

Certainly

With us (registered workers) being the "Safety Duo"

regular maintenance for lifts and escalators here is carried out on a monthly basis

We have never missed a single service

Are you working so hard that

you conduct maintenance works every month?

Of course

According to the Lifts and Escalators Ordinance (Cap. 618)

responsible persons for escalators shall ensure that

the escalators are kept in a proper state of repair and in safe working order

If maintenance works are to be carried out

the responsible persons shall employ a registered escalator contractor

to carry out regular maintenance for the escalators at intervals not exceeding one month

and arrange a registered escalator engineer

to examine the escalators thoroughly at intervals not exceeding six months

Apart from regular maintenance and examination

are there any other ways

to make this escalator safer

more reliable and more comfortable?

We, the "Safety Duo", are here today

to carry out modernisation works for this escalator

and to implement the eight enhancement measures proposed by the EMSD in order to further enhance the safety of escalators

Wow! As many as eight measures?

Yeah! Let's take a look at the latest information on the upgrade of escalators

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Escalators in Hong Kong were installed in different decades

While they met the technology standards then at the time of installation with rapid technology development in recent years there is room for improvement for the then-installed escalators so that they can be safer, more reliable and more comfortable

It must however be emphasised that with proper maintenance and periodic examination the existing escalators are safe for use

There are eight newly designed enhancement measures in total, which are elaborated as follows

Solution 1: Install Skirt Panel Safety Devices

To prevent serious injury due to trapping between skirting and steps, skirt panel safety devices can be installed to detect any objects being trapped between skirting and steps and stop the escalator automatically. Apart from installing skirt panel safety devices at the points of upper and lower transition from incline to horizontal skirt panel safety device shall also be installed along the inclined section.

Solution 2: Install Skirt Panel Deflector Devices (Plastic Brush Bristles)

To reduce the risk of trapping between skirting and steps deflector devices in the form of brush bristles suitably fixed along the skirting can be installed to guard passengers' feet loose clothing and foreign objects from possible trapping in the gap between steps and skirt panel

Solution 3: Install Obstruction Guards

To reduce the risk of trapping passenger's head or upper limb obstruction guards can be installed at floor intersections criss-cross escalators and building obstacles. In particular, at floor intersections and on criss-cross escalators a set of fixed guard and suspended guard shall be placed. For vertical building obstacles fixed guards shall be installed. The position of the obstruction guards shall effectively prevent injuries to the passengers

Solution 4: Install Emergency Stop Switches

To stop the escalator in case of emergency push button type emergency stop switches can be installed

Apart from placing emergency stop switches in conspicuous and easily accessible positions at or near to the upper and lower landings of the escalator additional emergency stop switches shall also be installed for escalator with rise above 12m

Solution 5: Install Landing Floor Plate Safety Devices

To reduce the risk of injury if passenger falls into the machinery space under the landing floor plate due to the dislocation of the plate a safety device can be installed under the landing floor plate to stop the escalator if there is dislocation of any landing floor plate detected

Solution 6: Install an Auxiliary Brake

To prevent passenger from losing balance due to sudden acceleration or reversal movement of the escalator an auxiliary brake can be installed to stop the escalator when the following abnormal situations are detected:
before the speed exceeds a value of 1.4 times of the rated speed;
by the time the steps change from the preset direction of motion; or
failure of the coupling of the operational brake and the driving wheels of the steps
For detecting such abnormalities mentioned above
unintended reversal monitoring switch
overspeed governor
broken step chain safety device
and broken drive chain safety device shall also be installed

Solution 7: Install Step Sagging Safety Devices

To reduce the risk of trapping due to step sagging a monitoring device can be installed underneath the running steps to stop the escalator if any sagging of the step is detected

Solution 8: Install Missing Step Safety Devices

To prevent missing step which could be a serious trapping hazard to passengers a monitoring device can be installed at each driving and return station to detect any missing step and prevent missing step emerges from the comb plate

Drama

With these enhancement measures everyone can use the escalators in a more comfortable manner and at ease

Auntie Li, now you can rest assured in using the escalator

Thank you for your efforts!

Not at all! We're professional, aren't we?

Safe use of escalators depends on all of us

Remember to stand firm and hold the handrail when using the escalator

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Responsible persons for escalators are recommended to study and discuss with engineering consultants or registered escalator contractors regarding the technical problem and feasibility of installing the above-mentioned devices and implement the improvement measures

Before carrying out the improvement works the responsible persons should consider whether there is enough space in the escalator for such works
the technical feasibility of the project and whether there is sufficient budget, etc.
to determine whether they should replace the main components of the existing escalator or install new safety devices

The responsible persons may also consider replacing the entire escalator to meet the latest safety standards today

Besides, the responsible persons for escalators should take note that when major alterations are made to an escalator the registered contractors should be required to ensure that all replaced devices including components or parts must be in compliance with the requirements under the Lifts and Escalators Ordinance and the Code of Practice on the Design and Construction of Lifts and Escalators

If you have any enquiries on the above escalator enhancement items please dial 1823 or e-mail to the EMSD at info@emsd.gov.hk