Safety of Existing Escalators

ELA Conference

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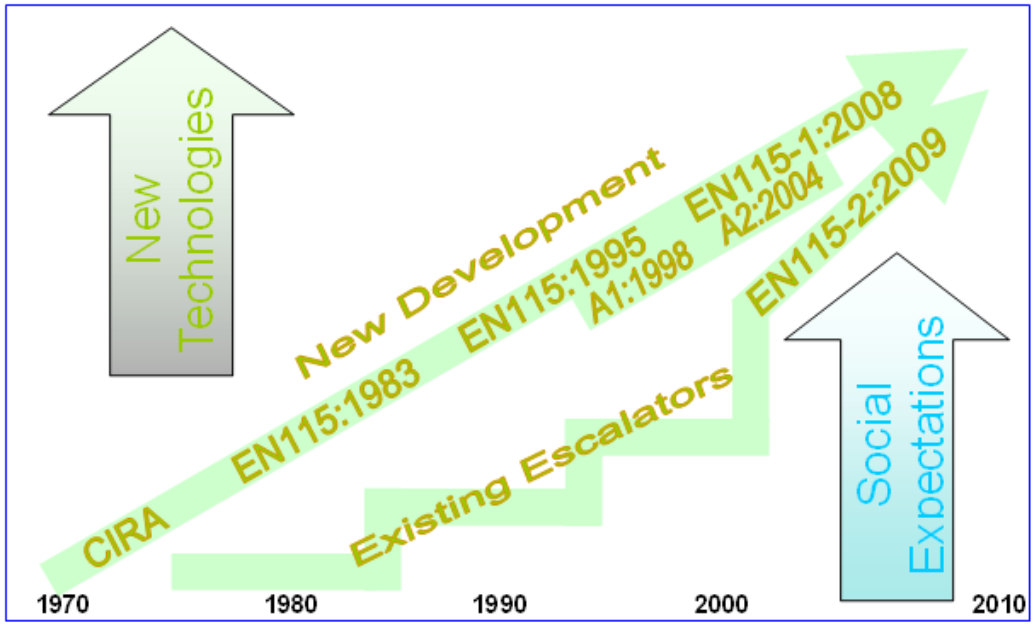
Introduction

- In 2008 the escalator code EN115-1 (Safety of escalators and moving walks - Part 1: Construction and installation) was revised in order to increase the safety for both users and maintenance workers and to reduce the hazards, based on plenty of detailed risk analysis.
- This safety enhancements shall be implemented into already installed escalators and moving walks, too. EN115-2 (Safety Norm for Existing Escalators and Moving Walks - SNEE), which is effective since 2010, has the principle intention to align existing escalators and moving walks with the state of the art safety requirements.

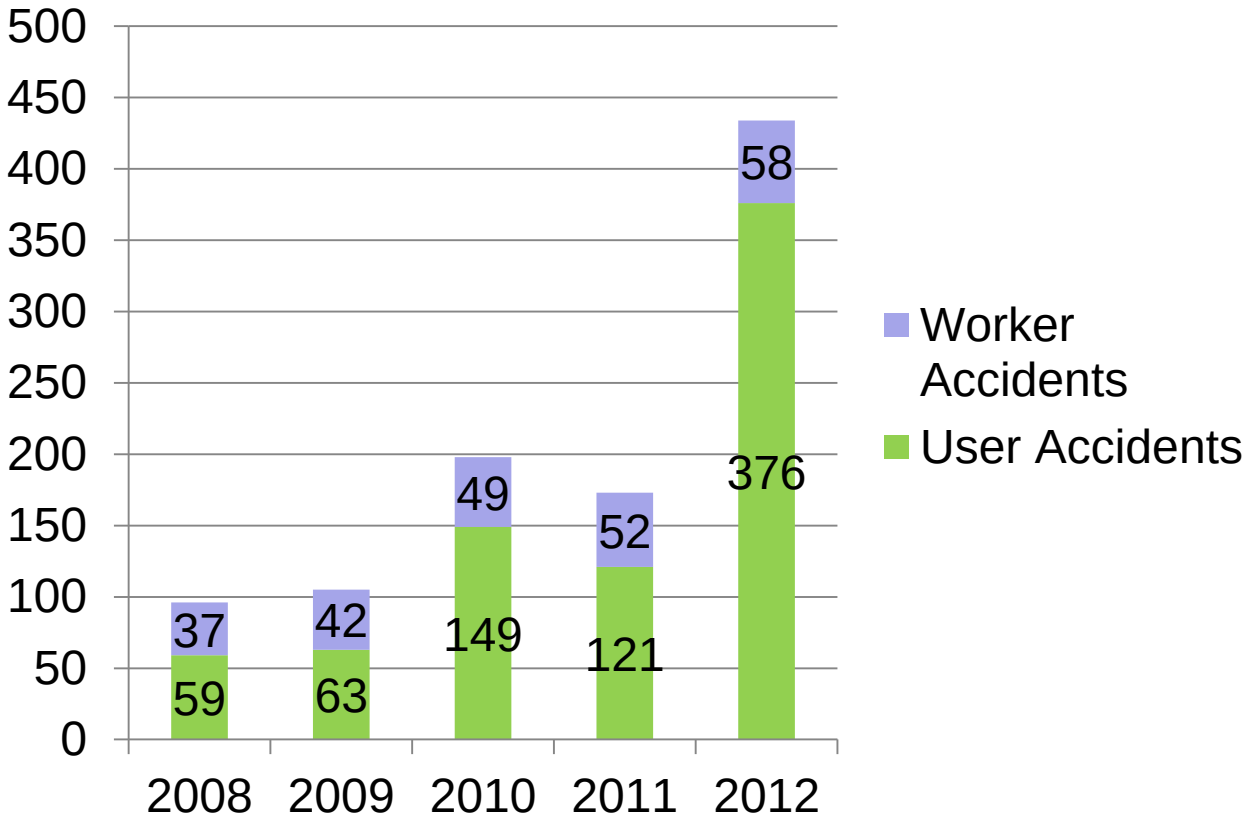
Introduction

The following presentation gives an overview of accidents and highlights measures which shall be implemented according to the SNEE requirements to increase the level of safety according to new technologies and social expectations within the development of codes.



Statistics

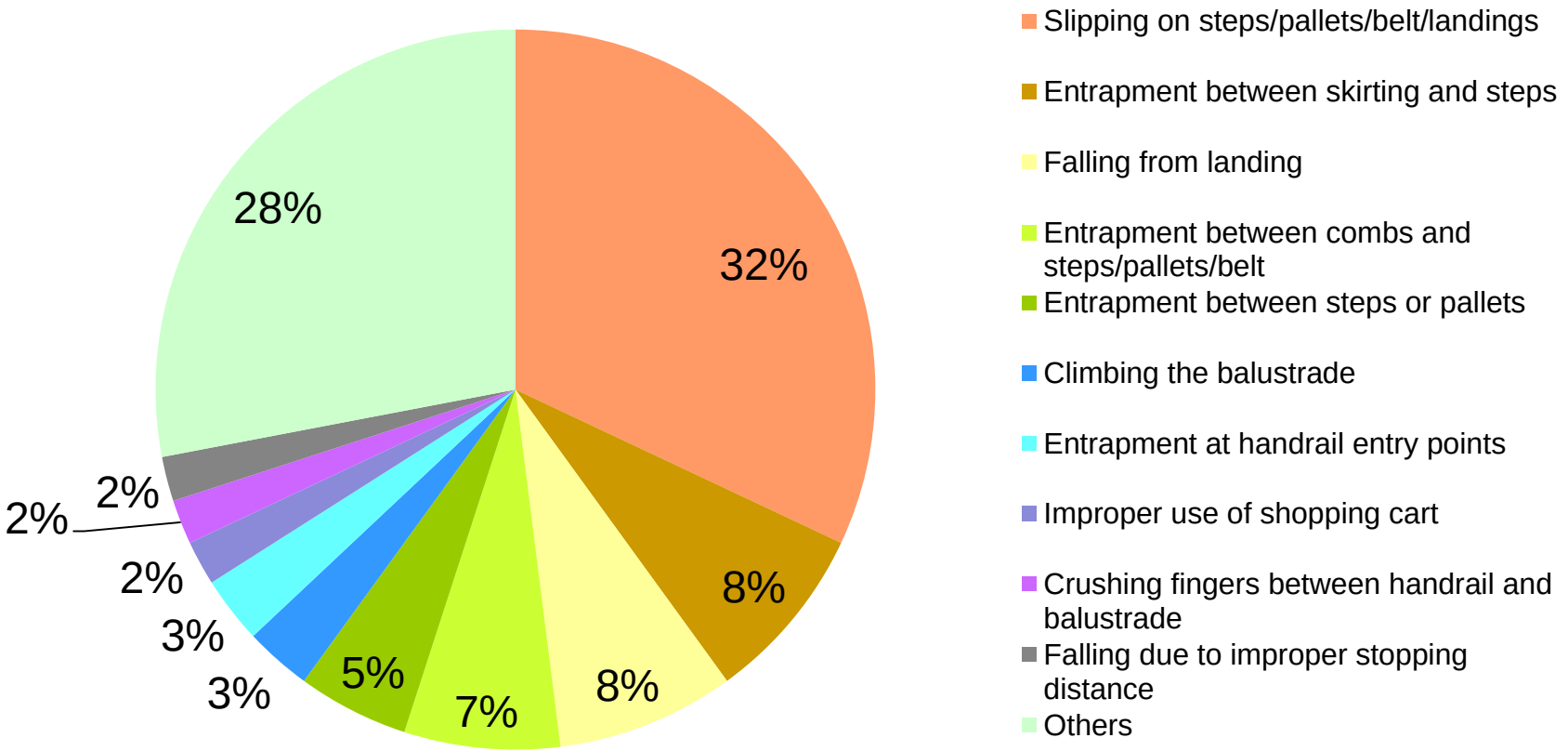
Accidents on escalators and moving walks between 2008 and 2012:



The increasing number of accidents in 2012 was the result of a new accident report collection system.

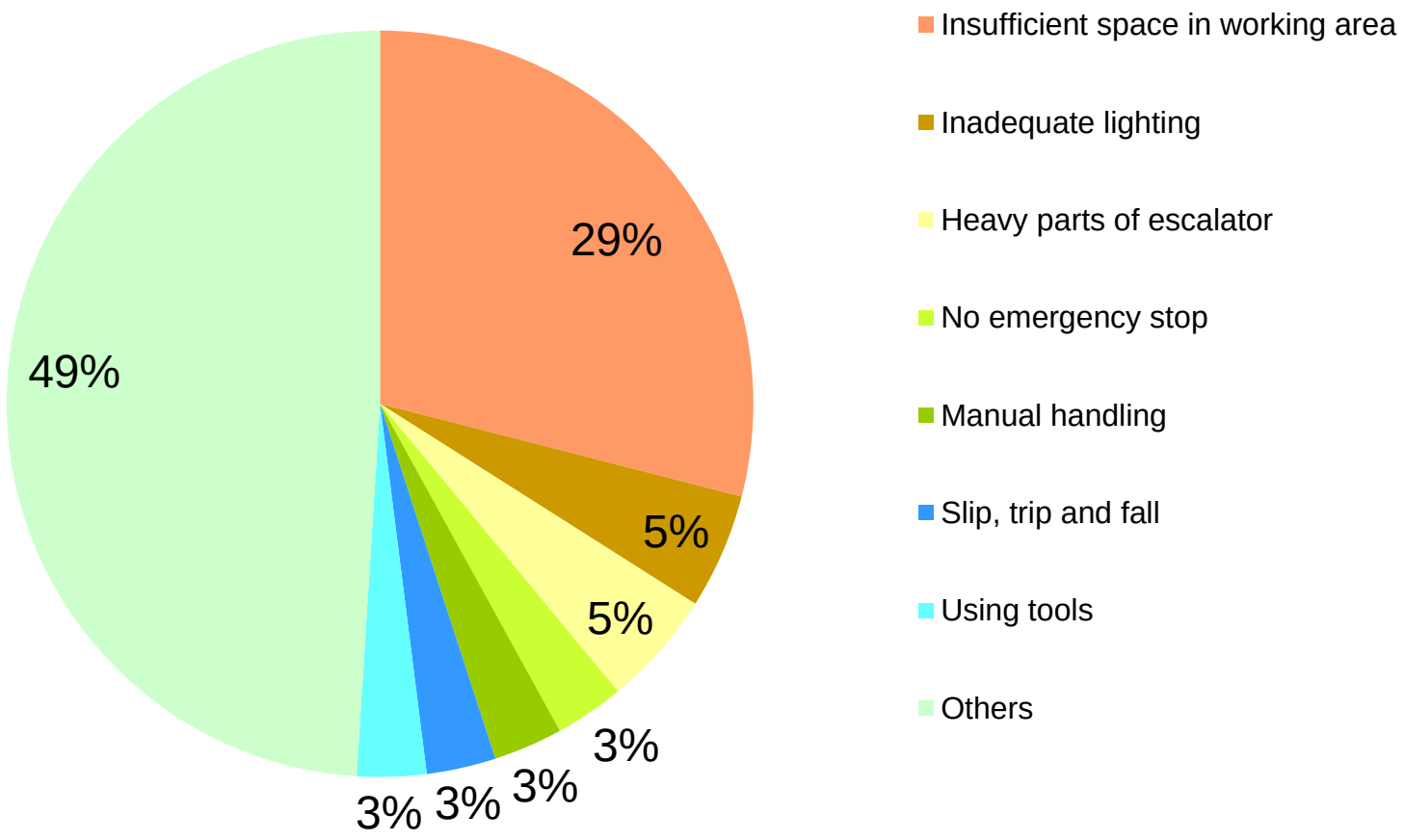
Statistics

Categories of user accidents between 2008 and 2012:



Statistics

Categories of worker accidents between 2008 and 2012:



Slipping on steps/pallets/belt/landings: 32%

User Accident

Hazard

Surfaces do not provide secure foothold

SNEE Measure

Provide secure foothold on tread surfaces and landing areas

Entrapment between skirting and step: 8%

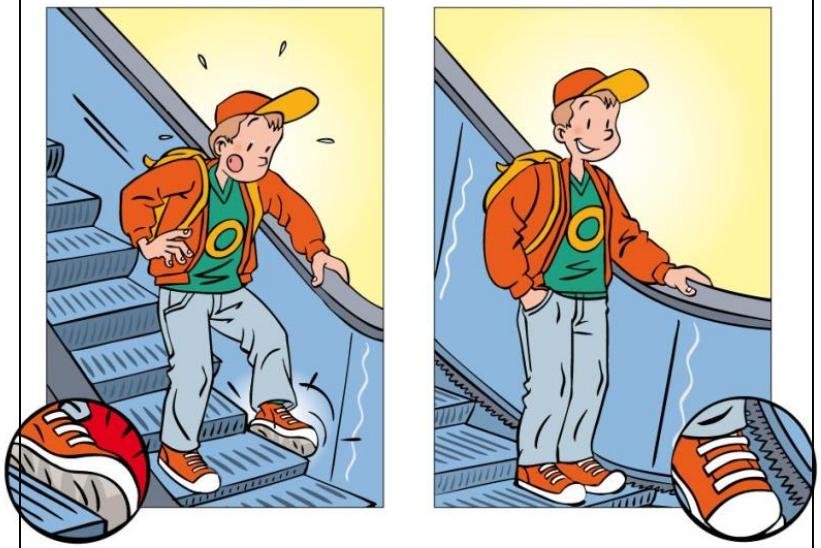
User Accident

Hazard

Gap between step and skirting

SNEE Measure

Install skirt deflectors



Falling from landing: 8%

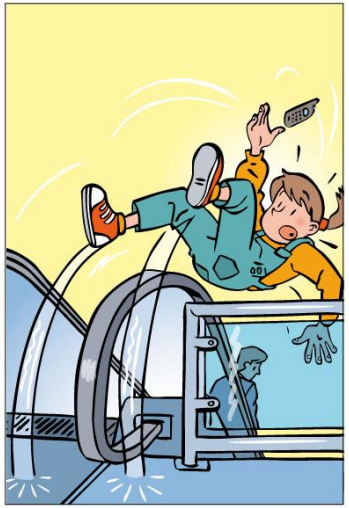
User Accident

Hazard

Contact with outer edge of the handrail

SNEE Measure

Increase the height of building structure



Entrapment between comb and step/pallet/belt: 7%

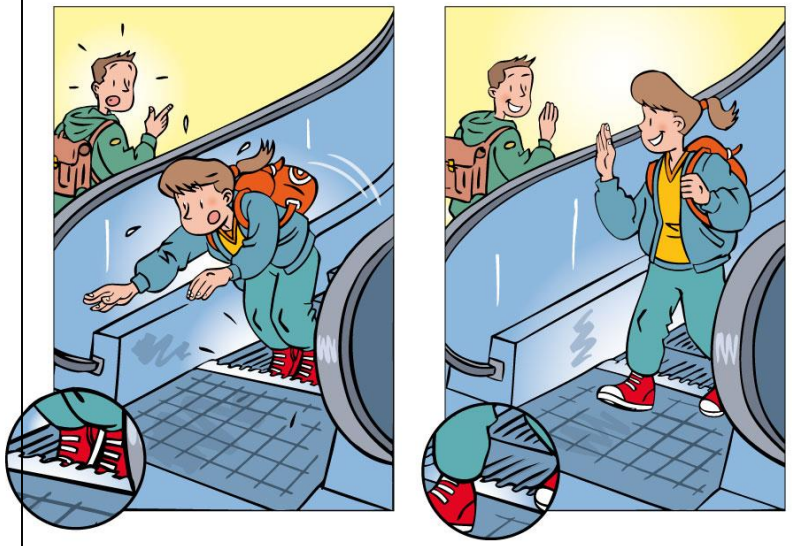
User Accident

Hazard

Insufficient meshing between the combs and the tread of steps

SNEE Measure

Provide an electrical contact to stop the escalator



Entrapment between steps or pallets: 5%

User Accident

Hazard

Risk of getting trapped due to excessive gaps between steps

SNEE Measure

Reduce gap

Climbing the balustrade: 3%

User Accident

Hazard

Climbing outside the balustrade

SNEE Measure

Provide anti climbing devices on outer deckings

Entrapment at handrail entry points: 3%

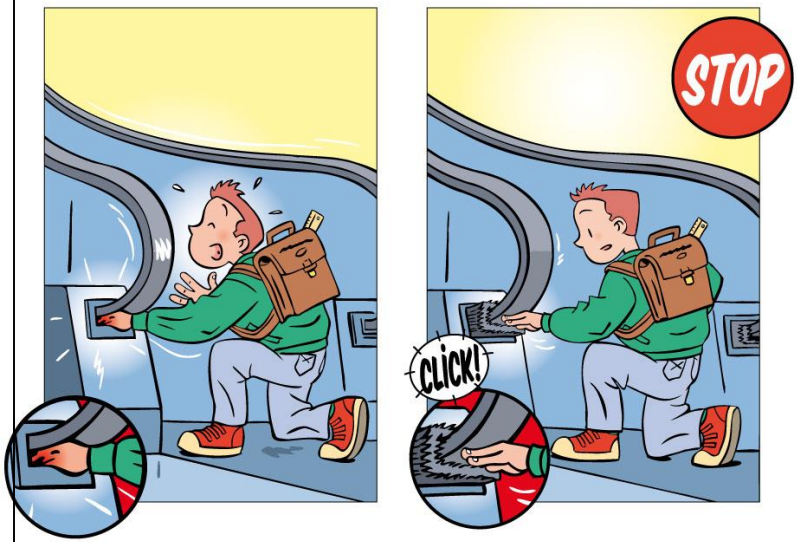
User Accident

Hazard

Getting trapped by the handrail at the handrail entry area

SNEE Measure

Install adequate guards and electrical safety devices



Improper use of shopping carts: 2%

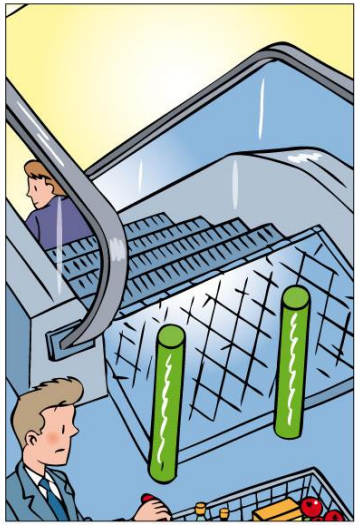
User Accident

Hazard

Unsuitable carts available in the vicinity

SNEE Measure

Provide barriers to prevent access

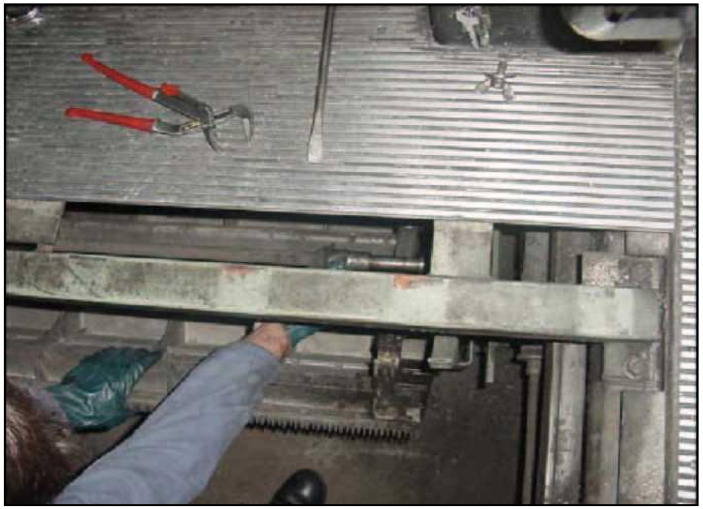


Insufficient space in working area: 29%

Worker Accident

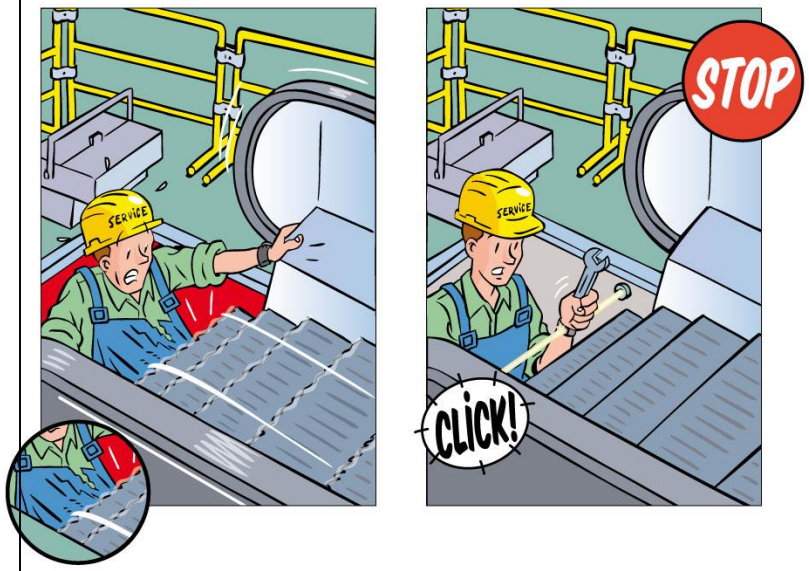
Hazard

Maintenance work close to moving parts



SNEE Measure

Provide a device to detect persons approaching the hazardous area



Inadequate lighting: 5%

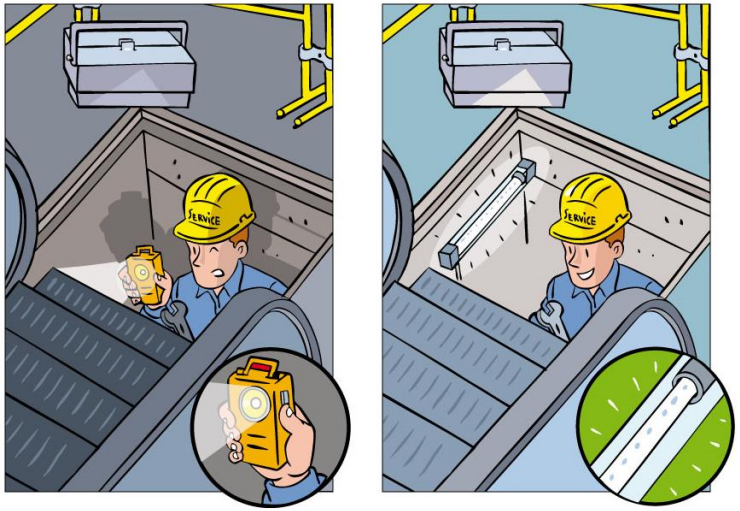
Worker Accident

Hazard

Unsafe working conditions due to improper lighting

SNEE Measure

Provide lights with adequate light intensity



No emergency stop switch: 3%

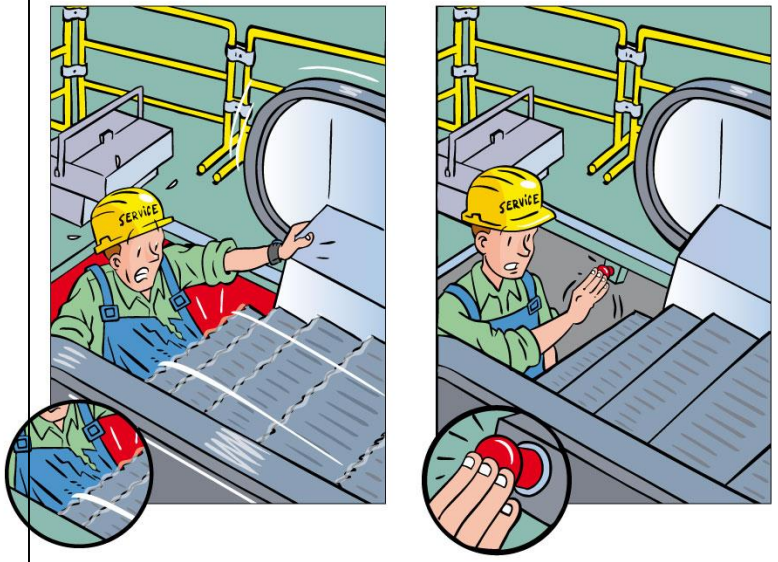
Worker Accident

Hazard

Working in the drive or return station

SNEE Measure

Provide emergency stop switches



Others: e.g. Electric shock

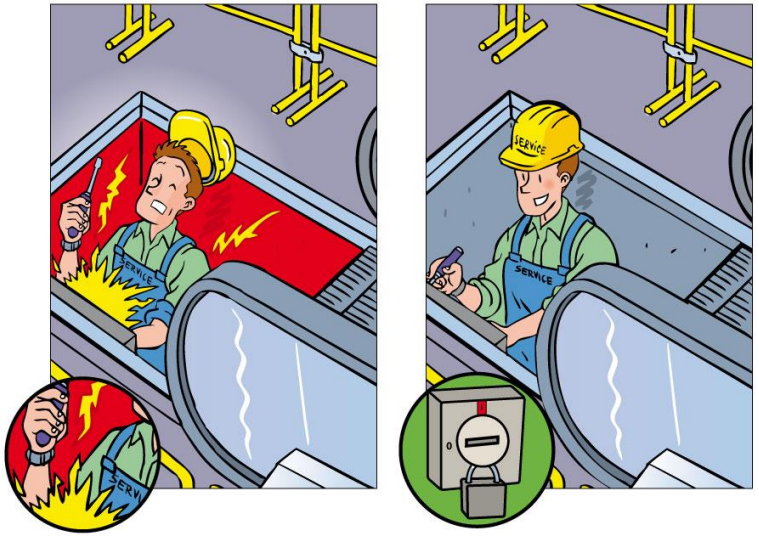
Worker Accident

Hazard

Insufficient insulation causes contact with live current

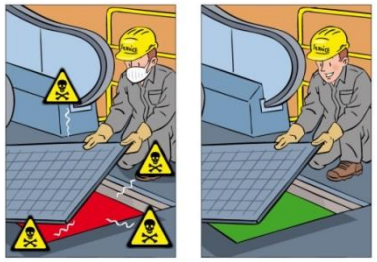
SNEE Measure

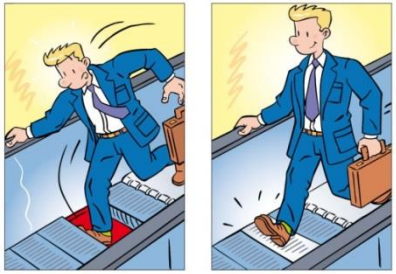
Provide protection against electric shock

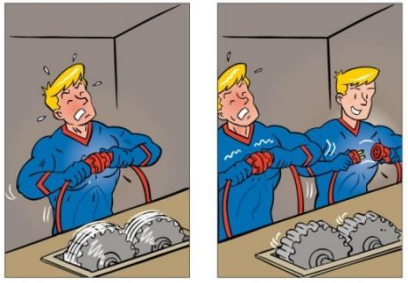


Summary

The investigation of several accidents which have been occurred in the past has resulted in many efforts to prevent them.
It is important to raise the awareness of all responsible involved to ensure that future incidents and harm can be prevented.







Others risks considered by SNEE