



LEIA Safety Information Sheet

Shorting Wires

Prepared by the LEIA Safety and Environment Committee

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PREAMBLE

This Information Sheet is one of a series produced by the LEIA Safety and Environment Committee on topics relevant to the Lift and Escalator Industry. Whilst every effort has been taken in the production of these sheets, it must be acknowledged that they should be read in conjunction with the relevant legislation, codes of practice etc. They should not be taken as an authoritative interpretation of the law but guidance to it.

INTRODUCTION

There have been serious accidents due to shorting out safety locks and switches by the uncontrolled use of shorting wires. These accidents have not been confined to lift employees, there have been accidents involving users of lift and escalator equipment. Shorting wires are used primarily for fault diagnosis, isolation or for simulating an operation through by-passing of part of the electrical circuit.

SAFE USE AND CONTROL OF SHORTING WIRES

Control of Shorting Wires

It is strongly recommended that shorting wires are manufactured specifically for the purpose and are provided by the company and used as a controlled tool. The lead should be made highly visible indicating its intended use - for example yellow or yellow/black. A warning label should be attached and the lead should be no longer than necessary, but sufficiently long enough for it to be noticed e.g. 1 metre. Some companies issue shorting wires individually and mark the operative's name on the label to ensure accountability.

Operatives must not make or use homemade shorting wires.

Some companies recommend that the shorting wire be looped through vehicle keys (provided they are clear of live parts) as an extra safeguard against leaving site with shorting wire still fitted. Such systems of work are no substitute for vigilance and extreme care by the user.

Some companies will use a log card displayed on the controller for the purpose of warning other persons working on the installation of the condition of the equipment whilst the shorts are fitted.



Courtesy of PEW Electrical Distributors Ltd

Safe Use of Shorting Wires

Shorting wires should only be used when there is no alternative method. If it is assessed that work cannot be carried out without the use of a shorting wire, precautions must be taken to ensure their safe use and control. They must only be used by authorised personnel deemed competent to assess the risks involved and with sufficient technical knowledge to ensure that no danger arises.

Shorting wires should only be used when there is no alternative method

A safe system of work must be adopted, not only for shorting out equipment, but also the safe connection/ disconnection to the electrical equipment.

Before using a shorting wire, the following should be considered: -

- It is essential that the lifts affected by the shorts are confirmed as vacant prior to being taken out of service and being placed on inspection control.

- all concerned should be informed what equipment is not to be used and ensure barriers are erected and notices displayed at relevant locations advising that the lift/ escalator is under service and must not be used.
- car top control must be switched to inspection and landing call buttons out of circuit until the operation is complete.
- electrical power to the equipment must be isolated and tested for dead whilst the short is being fitted.
- a means of stopping the equipment must be available in the work area and be checked for correct operation before work commences after the shorting wires have been connected.
- the short must be removed at the earliest possible moment after completion of the work. It must be removed when leaving the vicinity of the equipment for any period of time. If there are other persons working on the installation they must be warned of the condition of the equipment whilst the shorts are fitted. Some companies use a log card displayed on the controller for this purpose

landing locks and car door contacts must never be shorted out at the same time and only as the very last resort should landing door lock contacts or car door contacts be shorted out.

It is vitally important when leaving a job that checks are carried out to ensure that all shorting wires have been removed from the equipment and that the operative can account for all the shorting wires issued as part of his tool kit

If it is not reasonable to remove shorting wires at meal breaks and overnight, then at these times the main isolator must be locked off and a warning must be prominently posted on the controller stating that shorting wires are fitted.

Refurbishment and Installation

At times when an installation is incomplete it is possible that more than the issued shorting wires may be required. In such cases some companies allow extra wires to be made up on site and tied (physically attached) to the controlled shorting wires so that on completion it is possible to be sure that all wires are removed. The maintenance of a log card detailing where each shorting wire is fitted can be equally effective so long as it is readily available.

Other systems offering a similar level of safety may be employed where these have been specifically designed for a particular piece of equipment but are to be subject to risk assessment and approval by individual companies.

It must be stressed that whatever system is used within the company, clear instructions must be issued and understood. Whatever procedure is adopted it must be assessed in terms of risk and a safe system of work developed and understood by all concerned.

SUMMARY

- Shorting wires should only be used when there is no alternative method.
- Shorting wires should be manufactured specifically for the purpose and provided by the company and used as a controlled tool.
- When leaving a job checks must be carried out to ensure that all shorting wires have been removed from the equipment.
- The operative should be able to account for all the shorting wires issued as part of his tool kit.

For any clarification of this information sheet contact your company Safety Advisor or the LEIA Safety and Training Manager.

References:

The Lift and Escalator Site Safety Handbook published by LEIA
www.leia.co.uk