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# Lift safety in the modern built environment

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**Our modern built environment is almost inconceivable without lifts and escalators. At the “top end” of high speed lifts, there’s continual research into solutions to move more people faster using less building space. This innovation heavily influences the world of standards where the primary focus is safety. The development of British and European standards has been important in lowering accident rates – both to those using lifts and escalators and those working on them. The latest step in creating relevant up to date standards has been the publication of BS EN 81-20, the main safety standard for lifts.**

## **Building design for new lift standard**

One area where the new lift design standard is improving safety is the minimum refuge space required in the lift headroom, which has been increased following research work. While on many lifts, this is unlikely to significantly increase the headroom required, it will have an impact on small lifts (typically less than 6 person/ 450kg rated load) and on new lifts in new buildings with so-called “low headroom” designs.

Designers of new buildings should take the new refuge space requirements into consideration, which can be done in one of two key ways. One, and the most preferred solution, is for the building design to

allow the new lift to fully comply with the space requirements in BS EN 81-20. Then there is no further need for further approvals.

However, if the first option isn’t possible, the next option is for the pit depth and headroom to allow the new lift to comply with the spaces requirements in BS EN 81-20, 5.2.5.7.1 and 5.2.5.8.1. Approval would then be required from a Notified Bodies under the Lifts Regulations.

Where the new building design does not allow either of these options, then derogation from the Department for Business, Energy and Industrial Strategy (BEIS) will be required. Since only prior approval can be granted and derogation is primarily

intended for existing buildings, our guidance is to avoid this route and use one of the options above.

Whatever stage you are in for your building design, it is worth exploring all the options with your lift provider to ensure your lifts are safe and meet the latest standards.

For new lifts in existing buildings which fully comply with the new BS EN 81-21:2017, when published, there will be no further need for approval from a Notified Body or derogation from BEIS.

NOTE! The use of BS EN 81-21 on new lifts in new buildings is prohibited except where a derogation has been obtained by BEIS (see the National foreword to BS EN 81-21).



### Accessibility to the built environment

In addition to the main safety standards, there are also standards such as BS EN 81-70 for lifts to access buildings for those with disabilities. This standard is under revision and should be published later this year. It's likely to include details of new car sizes which allow turning by passengers in wheelchairs, new requirements for the light reflectance values (LRVs) at lift controls, and requirements for lifts with destination control using new technology such as touch screens. BS 8300, the standard for design of buildings to meet the needs of disabled people will be revised and will be consistent with BS EN 81-70.

### Firefighting and evacuation lifts

As far back as the 1939, the use lifts with dedicated control features for firefighters was recognized in the UK and has been essential in high rise buildings. We have had a British Standard for fire-fighting lifts since the 1980s and when a European

standard for firefighters' lifts was published in 2003, it was based on the British Standard.

This long legacy of lifts with some form of provision for firefighters has resulted in a need to give building designers and lift modernisers guidance on how they can modernise lifts intended for use by firefighters to improve their safety. This work was recognised by both

the fire services and the lift industry and, eventually, by BSI resulting in work to develop a standard. BS 8899 was published in October 2016.

### Modernisation and sustainability

To support growing demands for sustainability, work at the international standard organisation ISO has produced the BS EN ISO 25745 family of standards for the measurement and classification of the energy performance of lifts and escalators.

These are referenced from the latest Building Research Establishment's Environmental Assessment Method (BREEAM) UK New Construction technical manual. This provides a much-needed performance based approach to the previous prescriptive basis. Whilst concentrating on energy usage is important, the sector is increasingly waking up to the need for life cycle assessment (LCA) to support decisions on both new product and modernisation scheme although there are currently no standards to support this.

