

# Uplifting experience

As the guidelines for lifts and escalators are once again reviewed, serious defects continue to be reported.

Brian Tinham looks at what's around the corner and new energy-saving technologies

## Pointers

- SAFed's amended Lift Guidelines are now in line with ISO 4344 on wire rope rejection criteria
- New escalator guidance is due shortly from SAFed to fill the void left by HSE's PM35 and 45
- SAFed recommends thorough examinations on escalators, even though LOLER does not apply
- SAFed is working with London Underground, BAA and the British Retail Consortium on its escalator installation and maintenance guidelines

Koni lifts, based on permanent magnet, synchronous motor technology (inset), with frequency control and gearless construction

SAFed (the Safety Assessment Federation) is still reporting 4.5% immediate defects to HSE after thorough examinations by its members. That's around 14,000 problems with lifts alone that are serious enough to warrant instant withdrawal from service. In other words, 14,000 potentially fatal accidents avoided.

Richard Hulmes, CEO of SAFed, says typical problems concern safety-related components, such as the arrestor gear, worn wire ropes, faulty door interlocks and levelling discrepancies. Which is partly why SAFed is publicising its amendment to the Lift Guidelines, originally published in 2006 as a revision to the LG1s. In fact, the new release is mainly to get SAFed's guidelines up to speed with ISO 4344 on rejection criteria for steel wire ropes. "Rejection used to be mandated on 6% diameter reduction, unless the lift rope went through pulleys with vee grooves, in which case 15% was allowed. Now the standard is 6% throughout," he explains.

Interestingly, SAFed is also getting close to publishing new guidance on escalators to fill the void left by HSE's withdrawal of the now obsolete PM35 and 45 documents – relating to escalator safe use and thorough examination respectively. Escalators are not specified under LOLER (Lifting Operations and Lifting Equipment Regulations 1998), so are not subject to R9 examinations. However, they do require inspections to ensure safe use under PUWER (Provision and Use of Work Equipment Regulations) and to conform with the Health and Safety at Work Act's definition of 'duty of

care' – which is why SAFed does recommend periodic thorough examinations.

"Our best practice document will provide advice to owners, examiners, designers, manufacturers and installers, as well as those in maintenance. We're working with London Underground, BAA and the British Retail Corporation, which between them manage the vast majority of escalators in public use. It's about bringing our advice up to date with legislation that has come into force since 2006 that puts additional duties on everyone," says Hulmes.

## Energy efficiency

So much for guidelines: on technology, much of the action is around efforts to reduce energy. Finnish lifts giant Kone, for example, since developing the machine room-less MonoSpace elevator more than a decade ago, with its EcoDisc drive, has been focusing on regenerative drives, as well as more efficient lighting, advanced lift programming and lighter, more eco-friendly, materials.

Jussi Oijala, Kone's technology vice president, explains: "Our regenerative drives can now provide big energy savings, even for low-rise buildings, and we've built a solar-powered elevator to assist with power reduction. But we've also developed intelligent power management, with an energy-saving mode that adjusts the brightness of lighting. And we're moving away from halogen and fluorescent lighting towards efficient LED lights."

However, the piece de resistance is Kone's new computer, which tackles the big energy user – lift traction – via intelligent destination control. "In an office building, for example, we can now optimise lift movement by allowing the system to allocate elevators to certain floors in real time in order to handle the traffic most efficiently. The user interface then tells passengers which car to travel in. By 2010 we will have cut energy use by 50% since 2006."

What about installation, commissioning and maintenance? Oijala says there is nothing to worry about, making the point that the lighting, for example, will be even more reliable. As for the regenerative drives, he says these have been reliability tested and show improved availability, while Eco disc motors are oil-free. His only observation: "From the building point of view, engineers sometimes need to be careful around power networks. They need to be checked, in terms of feedback into the mains." **PE**

