

History of gate accidents in the United Kingdom



Nick Perkins



The powered gate industry is the newest and fastest growing sector of the Door and Hardware Federation (DHF), that has seen considerable improvements in safety and practice since their involvement began in 2010.

There have been many deaths, injuries and near misses in the industry's past, resulting in a string of United Kingdom prosecutions, the most recent of which is a gate owner who has been fined 500,000 British Pounds for failing to maintain a gate in a safe condition following the death of a delivery driver who was accessing a site when a gate fell on him.

Nick Perkins is chairman of the Door and Hardware Federation. The DHF is a British non-profit trade federation that can trace its roots back as far as 1897. Today it represents a wide range of access-based industry sectors that include:

- building hardware, door fitting and lock manufacturers
- door set, timber and metal pedestrian door manufacturers
- industrial doors, from shop front shutters to aircraft hangar door manufacturers and installers
- garage door, manual and powered domestic door manufacturers and installers
- powered gate and traffic barrier manufacturers and installers

The DHF has a long history of working with the British Standards Institution on a wide range of British and European standards and, where necessary, have developed industry-specific technical specifications. Their stated aim is to promote best practice and raise industry standards for users and the trade alike.

2005 - 2016

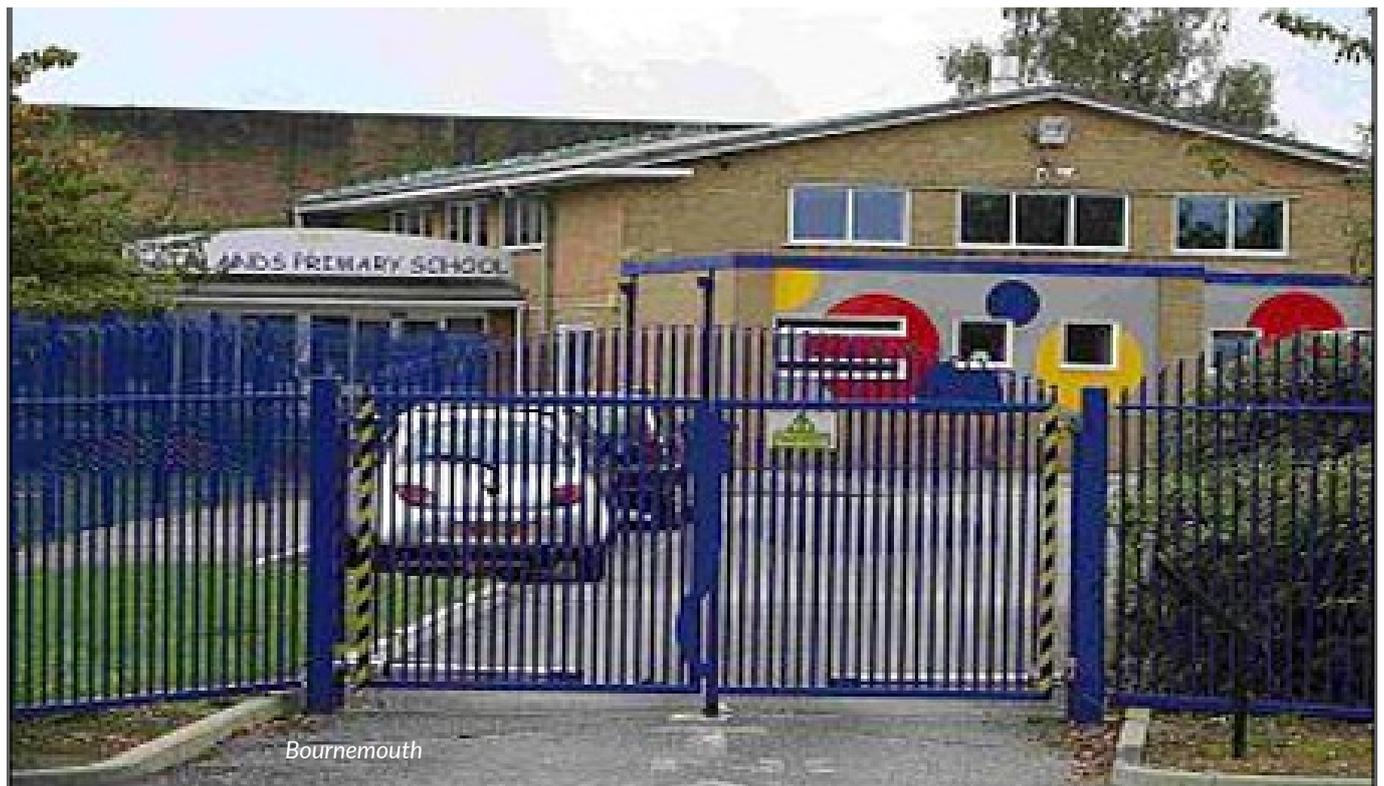
The catalogue of gate related incidents in the United Kingdom and Ireland since 2005 is set out below:

Year	City	Gate Type	Accident Type	Victim	Harm
2005	Strabane	sliding gate	crush	adult	death
2005	Braithwell	sliding gate	structural failure	adult	death
2006	Poole	swing gate	hinge gap crush	child	death
2009	Cheltenham	traffic barrier	crush	adult	death
2010	Bournemouth	swing gate	hinge gap crush	child	injury
2010	Manchester	sliding gate	main edge crush	child	death
2010	Bridgend	sliding gate	main edge crush	child	death
2010	Manchester	swing gate	main edge crush	child	injury
2010	Dudley	swing gate	main edge crush	child	injury
2011	Manchester	swing gate	main edge crush	child	injury
2012	Manchester	sliding gate	support frame draw-in	child	injury
2012	Newport	swing gate	structural failure	adult	death
2012	London	sliding gate	structural failure	child	injury
2013	Norfolk	sliding gate	structural failure	adult	death
2014	Caerphilly	telescopic gate	structural failure	adult	injury
2015	Limerick	sliding gate	main edge crush	adult	death
2015	London	swing gate	structural failure	child	injury
2016	Dublin	sliding gate	structural failure	adult	death

Although this is not a complete list, it does highlight some of the major events, many other incidents and near misses have occurred..

Hinge gap

In Poole in 2006, Jason Keate, aged 9, died when his head was crushed in the reducing hinge gap as an automated swing gate opened. The gap reduced from 160 millimetres to 110 millimetres and hence did not reduce to below the often-quoted 'safe' distance of 25 millimetres. The gate company concerned was prosecuted for breach of the United Kingdom Health and Safety at Work Act 1974. Another case related to this one was the 2010 Bournemouth injury incident where a 3-year-old child narrowly avoided a very similar fate, again in a reducing hinge gap that did not reduce to below 25 millimeter. This case resulted in a prosecution under United Kingdom legislation related to the European Machinery Directive for the installation company. The lesson here is that 25 millimetres has no significance, any reducing gap is a crush hazard.





Bridgend



Manchester

Prosecution

The Manchester and Bridgend incidents occurred during the same week in 2010 and involved two young girls being killed in separate and unrelated incidents at different ends of the country. Both girls were crushed at the leading edge of a powered sliding gate as it closed onto the closing post. The Bridgend incident had a very interesting outcome for United Kingdom installers. Various parties were interviewed after the death of 6-year-old Karolina Golabek,

including the various owners of the gate throughout its history, the developer, the system designer, the original installer, an installer who had subsequently modified the gate, the manufacturer of the drive unit, the last company to repair the gate (replaced the drive unit like-for-like) and the company who had latterly been contracted to maintain the gate (two maintenance visits). The 4-year investigation eventually resulted in prosecution of the maintenance

company and the repair company under the United Kingdom Health and Safety at Work Act 1974, primarily because they had put an unsafe system back into service following repair or maintenance works. The gate had been protected by inherent force limitation and photo beam. Sadly no one had measured the closing force, although one party had described a 'hand test' being used to assess the forces generated by powered gates at that time.

Section 3 of the United Kingdom Health and Safety at Work Act 1974 says:

General duties of employers and self-employed to persons other than their employees.

1 It shall be the duty of every employer to conduct his undertaking in such a way as to ensure, so far as is reasonably practicable, that persons not in his employment who may be affected thereby are not thereby exposed to risks to their health or safety.

2 It shall be the duty of every self-employed person to conduct his undertaking in such a way as to ensure, so far as is reasonably practicable, that he and other persons (not being his employees) who may be affected thereby are not thereby exposed to risks to their health or safety.

3 In such cases as may be prescribed, it shall be the duty of every employer and every self-employed person, in the prescribed circumstances and in the prescribed manner, to give to persons (not being his employees) who may be affected by the way in which he conducts his undertaking the prescribed information about such aspects of the way in which he conducts his undertaking as might affect their health or safety.

Essentially, this means that whatever work is done (installation, repair, maintenance, managing a workplace, being a landlord etc.) must be safe on completion. This is the most commonly used legislation in gate incidents, usually against the installer and/or maintainer.



Crushed twice

In 2013 a young child was seriously injured when they were carried into the gap between an opening sliding gate and an adjacent support post. The gap between the safety edge and the moving leaf measured 144 millimetres, the safety edge had been installed just prior to the incident as part of a package of measures to improve the safety of the gate. Although the safety edge was fully functional and capable of reducing force to below the required 400 Newton, 0.75 seconds to below 150 Newton, 5 seconds to below 25 Newton, it was not triggered until the child's hips went through the gap, whereupon the resulting retraction of the gate simply repeated the action that had already caused serious internal injuries in the reverse direction. Although no criminal charges were made, the installation company who had fitted the safety edge as part of a general upgrade, ended up paying for the United Kingdom Health and Safety Executive (HSE) investigation. The HSE also reinforced their existing formal objection to the 2001 package of standards affecting powered gates, and issued a warning about this issue to United Kingdom and European industry at that time.

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In response to the HSE formal objection to the existing standards in July 2015, the European Commission announced in its Official Journal that the Harmonised Standard EN 13241-1, could no longer be relied upon to confer compliance with the 2006/42/EC Machinery Directive in regard to two pivotal Essential Health and Safety Requirements set out in Annex 1 of the directive; 1.3.7 (hazards related to moving parts) and 1.4.3 (special requirements for safety devices).

Powered Gate Group

It was the two 2010 child deaths that triggered the involvement of the DHF in the United Kingdom powered gate industry with encouragement from the HSE. Since then the DHF has formed a specialist Powered Gate Group, issued an initial guidance document in 2011 and rolled out a very detailed and concise two day powered gate safety diploma course for installation companies in 2013. The course runs most weeks throughout the United Kingdom and has, to date, trained and qualified over 1,000 delegates.

NSI

In 2015 the group began working in partnership with NSI, a United Kingdom fire and security certification body, to develop a Code of Practice for Powered Gate and Traffic Barrier installation, repair and maintenance. The code, TS 011:2016 was published earlier this year and is gaining considerable traction with installation companies and owner groups alike. The first four installation companies to achieve approval were awarded their certificates in October of last year at the United Kingdom Fencex exhibition.

DHF TS 011:2016 is the 11th in a series of technical specifications developed by the DHF for various of our industry sectors. You can download a copy of TS 011:2016 for free at <http://www.dhfonline.org.uk/publications.aspx>.

The code offers guidance and clarification on the multitude of applicable legislation and standards, whilst also addressing some of the apparent shortfalls in existing guidance and now sets the benchmark for powered gate and traffic barrier safety. ■