LEARNING FROM ACCIDENTS

Safety Alert from SEA (India)

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Title : Hazards of Electrically Powered Gates

Incident Description

A serious incident a few years ago, where a person was trapped and fatally injured by an electrically powered gate.

If powered gates have been installed in any workplace, they can present a very real danger of entrapment and crushing of adults or children, which could lead to serious injury or death.

This danger is particularly acute if the gate can be operated remotely from a mobile phone without the operator having sight of the gate opening or closing.

Corrective Actions

Persons in control of workplaces where powered gates are installed must ensure

- that there are effective procedures in place to ensure that the gates are not operated if there is any risk of anybody being injured,
- that all potential crushing, shearing, drawing -in or impact areas are protected,
- that the gates are, so far as is reasonably practicable, safe and that they are maintained regularly to ensure their safety on an ongoing basis
- to limit the forces that can be exerted by the gate where it might contact a person and emergency procedures are in place in the event of someone being trapped or a power failure or breakdown.
- If Gates are not hold-to-run, and especially if they can be remotely operated by fob or by mobile phone, precautions such as those shown in Fig 2 will be required.

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Figure 1 Risk areas associated with powered sliding gates

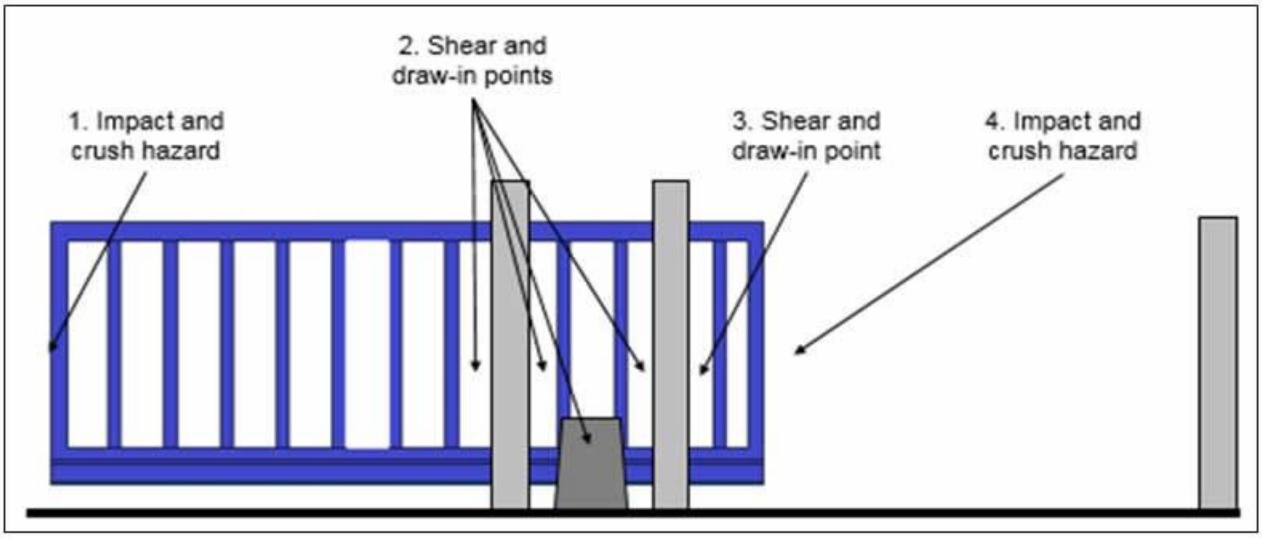
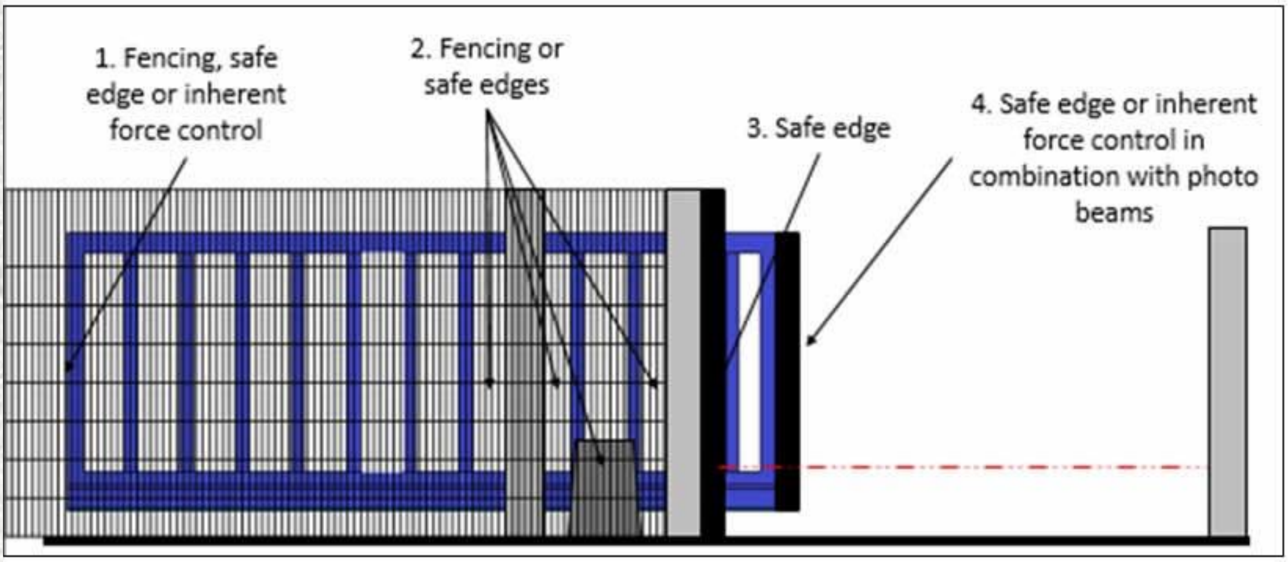


Figure 2 Control Measures to protect users and members of the public



Reference:

- **IS EN 12453:2000:** Industrial, commercial and garage doors and gates - Safety in use of power operated doors - Requirements.
- **IS EN 12635:2002+A1:2008:** Industrial, commercial and garage doors and gates - Installation and use
- **IS EN 12604:2000:** Industrial, commercial and garage doors and gates - Mechanical Aspects- Requirements

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Pl note our New Web site ID : URL: http://www.safetyengineersassociation.org

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Figure 3 Photo beams, if broken while closing, causes the gate to reverse.

Additional Control Measures

- Where force limitation is used, it should cause the gate to retract when it encounters an object such as a person. Force limitation can be achieved by inherent force control or safe edges.
- **Inherent force control** can be provided by intelligent drive units that cause the gate to reverse when an obstruction is sensed.
- **Safe edges** are sensitive rubber switching strips which, when contact is detected, send a signal to the gate controller to reverse the movement of the gate.
- Either Inherent force control or safe edges will need to be verified at safe limits by testing.
- Force limitation must be backed up by the use of photo beams across the entrance both inside and outside the gate. The use of photo beams should never be the sole means for providing safety as they are too easy to defeat by standing astride or leaning over the beam.
- Caution (red and blinking) lights may be installed on the moving gates.