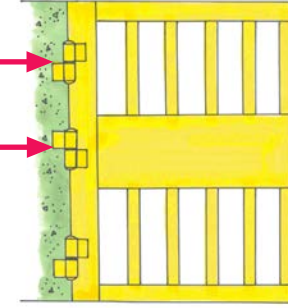
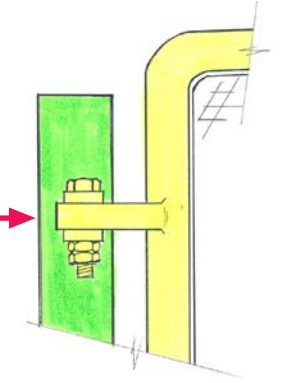


To install a hinge in the reverse direction
(Picture 8)



To affix and secure the hinge with two nuts
(Picture 9)

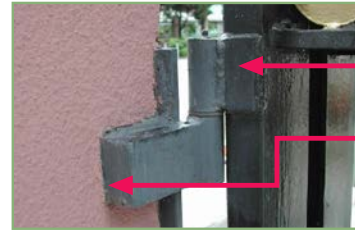


Apart from installing additional safety devices to gate components, other safety measures should also be adopted:

- ❖ to lubricate hinges regularly to minimise their wear and tear;
- ❖ to replace iron axles with stainless steel ones to minimise corrosion by rusting;
- ❖ if a rolling bearing is required for an axle, extend the length of the axle as appropriate to allow adequate depth of insertion so that the axle would not be easily dislodged from the hinge;
- ❖ to check regularly the condition and levelling of the floor track and remove any debris left in it (Picture 10);
- ❖ to inspect regularly the components that secure the hinges onto the concrete structure and check the concrete surface for any sign of loosening (Picture 11); and
- ❖ to check all welding points and hinges regularly (at least once every three months) for wear and tear.



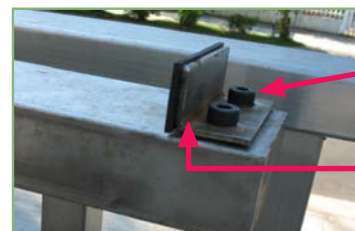
To check the condition and levelling of the floor track and remove any debris left in it
(Picture 10)



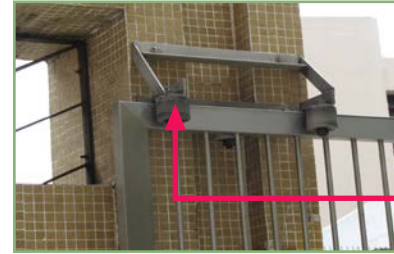
To check the welds and components that secure the hinge in place
To check the concrete surface for any sign of loosening
(Picture 11)

(B) Metal Horizontal Sliding Gate

- ❖ to secure the stopper against excessive pulling of the gate by bolts and welding (Picture 12). The bolts and the stopper should be made of solid and high quality materials that can withstand percussion and vibration. They should also be free of damage or apparent defect in construction;
- ❖ to add a piece of rubber to the slide-stopper to minimize the impact of vibration (Picture 12);
- ❖ to provide an additional slide-stopper (i.e. more than one stopper) at the top of the gate so that in case the original stopper malfunctions, the gate would not collapse for lack of support when it is excessively pulled;
- ❖ to ensure that the number of guiding wheels matches with the width and position of the gate (Picture 13);
- ❖ to check the condition and levelling of the floor track and remove any debris left in it (Picture 14); and
- ❖ to check the guiding wheels and the axle regularly (at least once every three months) for wear and tear (Picture 15).



To secure the slide-stopper against excessive pulling of the gate by bolts and welding
To add a piece of rubber to the slide-stopper to minimise the impact of percussion and vibration
(picture 12)



To ensure that the number of guiding wheels matches with the width and position of the gate
(picture 13)



To check the condition and levelling of the floor track and remove any debris left in it to avoid causing vibration during the sliding movement of the gate or affecting normal gate operation
(picture 14)



To check the guiding wheels and the axle for wear and tear
(picture 15)

(C) Glass Swing Door

- ❖ the door should be made of tempered glass (Picture 16);
- ❖ when dismantling or reinstalling a glass door, use suitable devices to keep it in place and transport it; and
- ❖ to devise and implement a safe system of work for dismantling or reinstalling of glass doors.



A glass swing door should be made of tempered glass
(Picture 16)

Other Important Points

- ❖ to devise a system for caretakers or security guards to report gate irregularities found during the course of normal work to their supervisors to facilitate follow-up action;
- ❖ to design a checklist for trained and competent personnel to conduct regular safety inspection of gates and make immediate repairs as required in accordance with the inspection findings; and
- ❖ to set up a regular gate maintenance system for competent technical personnel to perform maintenance and repairs of gates.

Useful Information

If you wish to enquire about this safety guide or require advice on occupational safety and health, please contact the Occupational Safety and Health Branch of the Labour Department through:

Telephone: 2559 2297 (auto-recording after office hours)

Fax: 2915 1410

E-mail: enquiry@labour.gov.hk

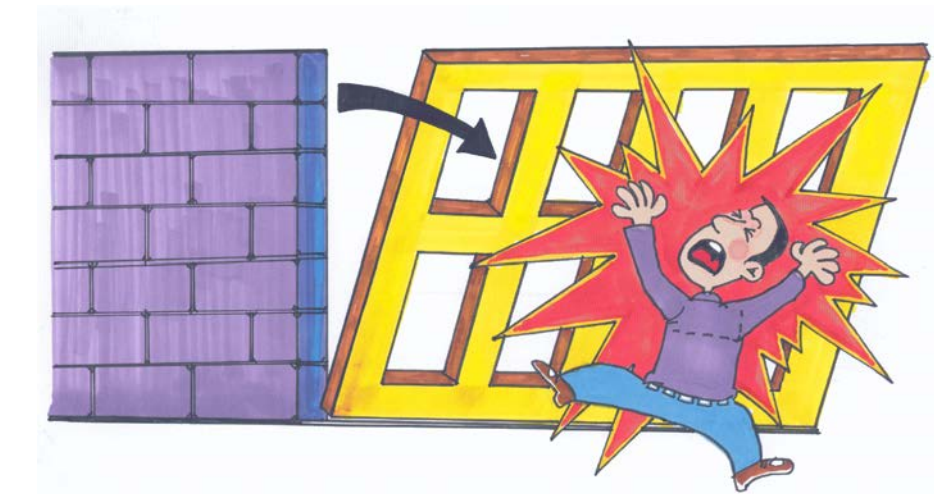
Information on the services offered by the Labour Department and on major labour legislation can also be found by visiting our website at <https://www.labour.gov.hk>.

You can also obtain information on the various services provided by the Occupational Safety and Health Council through its telephone hotline on 2739 9000.

Complaints

If you have any complaints about unsafe workplaces and practices, please call the Labour Department's occupational safety complaint hotline on 2542 2172. All complaints will be treated in the strictest confidence.

A Safety Guide on Gate Work



INTRODUCTION

In recent years, a number of accidents have occurred resulting in serious body injuries or even death of employees performing gate operations or gate-related work. There were two such fatal incidents in 2006. As gate accidents not only endanger employees but also pose a risk to public safety, they have caused growing concern in the community.

These accidents are mainly caused by methods of gate operation, safety devices, gate components and maintenance, including defective hinges, axles, bolts and track components, their improper installation and poor maintenance and repairs of gates, etc. As a result of prolonged operation and use as well as lack of regular inspections, repair and maintenance, the hinges, axles, bolts and track components of the gate often become rusty, deformed, excessively worn, cracked and disjointed (Pictures 1 to 6).

Therefore, well-functioning gate devices properly installed and maintained are essential for preventing gate accidents. In addition, regular inspections and a sound system for maintenance and report of damage can also enhance safe use of gates.



Deformed slide-stopper at the top of the gate due to prolonged operation, excessive impact and vibration

(Picture 1)



Roller wheel at gate bottom has become rusty and cannot move

(Picture 2)



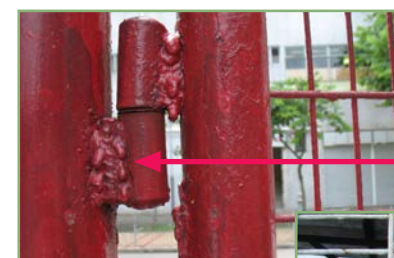
Debris left in the floor track affecting normal gate operation and may cause gate derailment

(Picture 3)



Gate hinge and axle have become rusty

(Picture 4)



Axle deformed and bent owing to prolonged operation and use of hinge and axle and excessive swinging of gate

(Picture 5)



(Picture 6)

Employees or security personnel in the property management industry often have to perform gate operations or gate-related work. To ensure the safety of these employees, a Committee on Occupational Safety and Health comprising the Hong Kong Association of Property Management Companies Limited, the Labour Department (LD) and the Occupational Safety and Health Council specially set up a working group to produce this safety guide on gate work. The gates referred herein are all manually operated gates.

This safety guide lists the key points in installation and maintenance of metal swing gate, metal horizontal sliding gate and glass swing door for reference by the property management industry. Employers should also carry out risk assessment on gate operation and gate-related work having regard to the actual situation of the workplace and formulate and implement a safe system of work to ensure the safety and health of employees concerned.

Gate operation or gate-related work is mainly governed by the general duty provisions under the Factories and Industrial Undertakings Ordinance (Cap. 59) and the Occupational Safety and Health Ordinance (Cap. 509). In providing a safe system of work for gate operation or gate-related work, reference can be made to LD's publications on work safety, namely "Five Steps to Risk Assessment", "A Guide to the Factories and Industrial Undertakings Ordinance (Section 6A) - General Duties of Proprietors" and "A Brief Guide to the Occupational Safety and Health Ordinance".

The consequence of neglecting gate safety can be very serious.



Safety Tips for Employers on Gate Operation or Gate-related Work

- ❖ Employers should provide and maintain a system of work on gate operation or gate-related work which is safe and without risks to health. The system should include:
 - risk assessment to examine in detail the work procedures, identify possible factors that can cause personal injuries and evaluate the adequacy of precautionary measures;
 - formulation and implementation of safety measures required for gate operation or gate-related work; and
 - regular inspection and a sound system for maintenance and report of damage to ensure that gate devices are well-functioning, correctly installed and properly maintained, etc.
- ❖ Employers should provide the necessary information, instructions, training and supervision to all employees in respect of gate operation or gate-related work to ensure their health and safety. Supervision should be carried out by those with sufficient safety knowledge and work experience to make sure that employees adopt the safety methods in place while at work. The information to be provided to employees should include:
 - safe operation methods;
 - work procedures;
 - potential operational risks; and
 - necessary precautionary measures.

Safety Tips for Employees on Gate Operation or Gate-related Work

In the course of work, employees should cooperate with the employer and follow closely the safe system of work for gate operation or gate-related work. They should also take care of the safety and health of those who may be affected by their negligence or recklessness at work, including the employees themselves. The points to note include:

- ❖ to receive safety training to gain an understanding of the potential work hazards and the precautionary measures;
- ❖ to use safety devices and facilities correctly without alteration, removal or interference; and
- ❖ to cease work immediately if any danger arises from work processes or the work environment, and report the case to the person-in-charge.

Key Points to Note on Gate Operation or Gate-related Work

The main points in installation and maintenance of metal swing gate, metal horizontal sliding gate and glass swing door are listed below:

(A) Metal Swing Gate

Any of the following ways can prevent dislodgement of the hinge from the axle which would cause the gate to collapse owing to loss of support:

- ❖ to add a stopper on one of the hinges to prevent the axle from pulling out from the hinge (Picture 7);
- ❖ to install a hinge in the reverse direction (Picture 8); or
- ❖ to use bolt-type hinges (Picture 9).

Additional stopper to prevent dislodgement at the hinge

(Picture 7)

