



Systemic Safety Alert **Fall through Floor Openings**

Major systemic safety problems

During construction, floors openings may be left on building floors. Workers falling through these openings may sustain serious or even fatal injuries. Most accidents related to persons falling through openings are attributable to lack of adequate safety measures such as failure to provide secure coverings or suitable guard-rails, inadequate control of protective measures on the openings and absence of safe systems of work, etc. Major systemic safety deficiencies include:

- failure to conduct task-specific risk assessments and formulation of appropriate and adequate risk control measures in accordance with the risk assessments;
- failure to implement risk control measures and effective inspection programmes;
- slack control and monitoring to ensure that the risk control measures stay effective; and
- failure to provide workers with adequate safety information, instruction and training.

Accident prevention measures

Registered Safety Officers (RSOs) should advise their employers/clients to:

- (i) appoint a competent person to conduct task-specific risk assessments regarding the work at/ near floor openings to identify all foreseeable fall hazards in workplaces, and devise necessary safety precautions/ procedures to eliminate the hazards;
- (ii) devise and fully implement the corresponding risk control measures in accordance with the risk assessments, including:



Coverings for openings

- ensuring that all openings are covered by suitable and structurally sound materials of sufficient strength and load-bearing capacity and the coverings are so constructed to prevent the fall of persons, materials and articles;
- fixing the coverings securely in suitable positions to avoid accidental displacement;
- marking the coverings clearly and boldly with readable signs or markings to alert workers of openings underneath; and
- replacing the coverings immediately if they are damaged or improperly constructed.

Guarding of openings

- ensuring that all floor openings are provided with suitable guard-rails and toe-boards. The height of the top guard-rails shall be not less than 900 mm and not more than 1150 mm. The height of the intermediate guard-rails shall be not less than 450 mm and not more than 600 mm. The height of the toe-boards shall be not less than 200 mm.

(iii) implement effective proactive safety inspection programmes and provide stringent on-site monitoring, including:

- ensuring that all unprotected floor openings are identified in a timely manner;
- ensuring that the risk control measures as mentioned in item (ii) above are fully implemented as soon as possible;
- ensuring that no workers are working at/ near the openings until the above risk control measures are implemented;
- if work at/ near floor openings cannot be avoided and it is impracticable to



provide coverings/ guarding, setting up effective fall arresting systems, including providing suitable safety harnesses and fall arresters to all relevant workers, etc. and ensuring that they have properly and continuously attached the safety harnesses to suitable and secure anchorage;

- temporarily removing or not erecting the coverings, guard-rails and toe-boards for the time and to the extent necessary for the access of persons or movement of materials or other purposes of the work concerned. However, alternative adequate protection, such as personal fall arresting systems, shall be provided to prevent the fall of persons through the openings. Besides, the coverings, guard-rails and toe-boards shall be restored or erected as soon as practicable after the expiration of that time; and
- providing adequate and suitable lighting at workplaces, including the surrounding of floor openings.

(iv) provide all relevant workers with necessary safety information, instruction and training to ensure that they are familiar with safe working procedures, safety measures and emergency procedures, and fully understand their roles and responsibilities.

Registered Safety Auditors (RSAs) should take into account these systemic safety problems and accident prevention measures in executing safety audit functions.

DISCLAIMER

This Systemic Safety Alert is issued to draw the attention of interested parties to the relevant systemic safety problems and accident prevention measures necessary to protect people engaging in similar works activities. The material contained in this Alert constitutes general guidance only. It does not reduce, limit, or replace, any legal obligations upon any person to comply with any statutory duties under relevant legislation. Users such as Managers and Supervisors should make their own evaluation of the information contained in this Alert to determine if it can be applied to their own situations and practices. The Labour Department does NOT accept any responsibilities for any loss or damage resulting from the use of or failure to use the information contained herein.