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Circulated to

Building Developers and Owners

Town Councils, MCSTs

Window Contractors, Air-conditioning Contractors, and other Contractors

WSH Circular: Safe Work at Heights at Completed Buildings

WORK AT WINDOWS, BALCONIES, AIR-CONDITIONING LEDGES, ETC

In September 2017, a worker was killed when he fell from a window ledge on the 5th storey of a building while preparing to carry out work on an air conditioner compressor. Falls from heights is one of the top causes of workplace deaths and major injuries in Singapore.

The Commissioner for Workplace Safety and Health would like to remind employers engaged in work at heights at completed buildings that you must take reasonably practicable measures to ensure that workers are protected against falls from heights.

You may refer to Annex A for examples of good and bad work at heights practices. For those using personal fall arrest systems, Annex B highlights the various considerations you will need to keep in mind. For avoidance of doubt, the examples are by no means exhaustive and are only meant to be guidelines as to how work at heights may be made safer. The Ministry of Manpower will be stepping up inspections and punitive action will be taken for unsafe work at heights.

Yours faithfully,

Chan Yew Kwong

Deputy Commissioner for Workplace Safety and Health

What to do

Building Developers and Owners, Town Councils, Management Corporation Strata Titles (MCSTs)

- Hire competent contractors, with workers trained to work at heights and do their work safely, and have conducted their risk assessment for the appointed job .
- Consider safety for others in the workplace, such as barricading the work zone and affected areas.

Contractors

- Conduct risk assessments.
- Implement safe work procedures.
- Ensure there is relevant training and supervision for your workers.

Resources

Use the QR Code below to access the *Code of Practice for Working Safely at Heights*. There are other relevant resources such as the *Anchorage, Lifelines and Temporary Edge Protection Systems Guidelines*, and *Ladder Safety Guide* on WSH Council's website.
<http://www.wshc.sg/>



Annex A – Examples of Good and Bad Practices

The Workplace Safety and Health (Work at Heights) Regulations, imposes duties on principal, occupier, and employer of those carrying out any work at heights. This includes performing installation, dismantling, alteration or maintenance and repair of window, window blinds, safety grills, air-conditioning, etc. at the window or balcony or other places where workers can fall from heights.

There are several solutions available to make working at heights safer for the workers, even in a space constrained work environment. Examples of such solutions are shown in Table 1:

Table 1

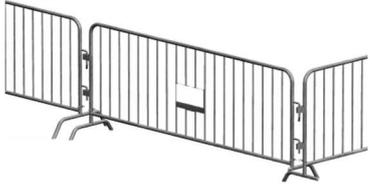
Solution Number	Method	Image for reference
1	<p>Podium step ladder Suitable for balconies or other work surface with a level surface.</p> <p><i>Note:</i></p> <ul style="list-style-type: none"> <i>The podium step ladder must come with barricade that provides 360° protection.</i> 	
2	<p>Vertical personnel lift Suitable for places with high ceilings or working from ground level.</p>	
3	<p>Proprietary Scaffold Suitable for level ground and places with high ceilings. When used in balconies or edge of building, the scaffold should be suitably tied back.</p> <p><i>Note:</i></p> <ul style="list-style-type: none"> <i>Scaffold erectors must be trained and supervised by a competent scaffold supervisor.</i> 	
4	<p>Travel restraint system (e.g. door jamb anchor) Transportable temporary anchor device is suitable for places without anchorage points.</p> <p><i>Note:</i></p> <ul style="list-style-type: none"> <i>Travel restraint system should restrict the travelling range of a person wearing the full-body harness so that the person cannot get into a position where the person could fall.</i> 	 <p>Door jamb anchor</p>

In a completed building environment, there are various scenarios where workers are required to carry out work at heights. Table 2 shows the bad examples and solutions to the scenarios.

Table 2

Scenario	Work at heights at balcony with no fall protection and incorrect work method.	Work at heights at balcony with incorrect anchorage point on railing and incorrect work method.	Work at heights at open sides with no fall protection and incorrect work method.
Possible Solution (Refer Table 1)	Solution number 1, 2, 3 and 4.	Solution number 1, 2, 3 and 4.	Solution number 2, 3 and 4.

Cordoning of Work Zone

<p>All work zone and affected areas must be cordoned off to restrict access, this includes below the work area where objects are potential to fall and hit a person.</p>	
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Supervision

Besides having the physical controls, it is also important to note that there must be adequate supervision for workers carrying out work at heights activities.

- A competent person should be appointed to provide proper and adequate supervision for workers to ensure that they are not exposed to hazards and all reasonable precautions have been taken where there is a risk of falling.
- Supervision is especially important if the workers are undergoing training, or are new or inexperienced and unfamiliar with the working environment.
- It is essential that persons performing supervisory roles must be competent and have the skills and knowledge of the work processes that they are to supervise.

Employers are responsible to put in place reasonable practicable control measures for your workers' safety while conducting work at heights at completed buildings.

The learning points and recommendations are not exhaustive and should neither be taken to encapsulate all the responsibilities imposed by law nor as replacement for independent legal advice.

Annex B – Considerations When Using Personal Fall Arrest Systems

It is important to note that risk assessment needs to be carried out prior to any work at heights (WAH) activities. Whenever possible, eliminate or substitute any WAH activities. Using temporary edge protection (such as guardrails) shall take precedence in fall prevention over the use of anchorages and lifelines, with proper personal protective equipment (PPE).

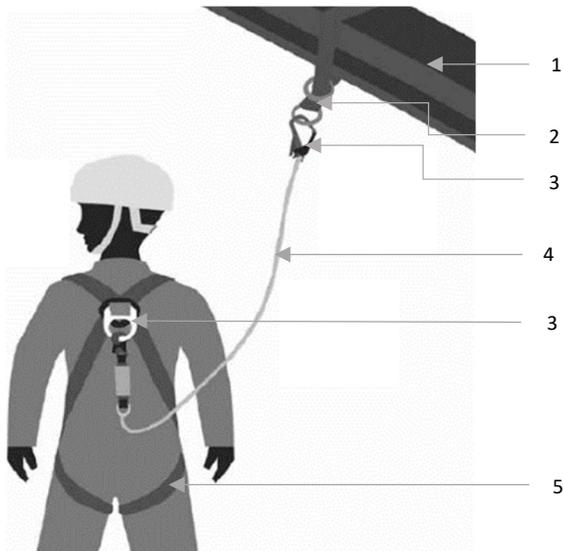
Personal Fall Arrest Systems

Personal fall arrest systems are considered PPE and are made of several components. For example, providing workers with safety body harnesses for fall arrest is insufficient, without considering proper anchorage points and other components.

The personal fall arrest system should consist of a suitable anchor, such as the following:

- a permanent structure or suitable features of a building (e.g., a welded eyebolt or a drilled hole in a steel beam);
- an anchor device that is specifically design-made (e.g., an eyebolt installed permanently or temporarily to a building or structure); or
- a feature of the building or structure (e.g., a structural column of which a lanyard, or anchor sling can be placed around).

Components of a personal fall arrest system are shown below:



- Employers are responsible to ensure that the personal fall arrest system is safe for use, including suitable equipment, and competencies of users.
- Employers are also responsible for implementing rescue procedures when using personal fall arrest systems.

No.	Key
1	Workplace Structure (e.g. structural column)
2	Anchor
3	Connector
4	Energy absorbing lanyard
5	Full body harness worn by user

The learning points and recommendations are not exhaustive and should neither be taken to encapsulate all the responsibilities imposed by law nor as replacement for independent legal advice.